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ABSTRACTS OF INDIVIDUAL PRESENTATIONS

Abdo Hintzman, Kholood [102] see Hamilton, M. Colleen

Abe, Chiharu (Hakodate City, Japan)

[164] Strategies of Cultural Heritage Management in Hokkaido, Northern Japan
The Minamikayabe area of southern Hokkaido consists of a small fishing town within the Hakodate city district. This area is rich in Jomon culture sites ranging from ca. 10,000 B.P. to 2,300 B.P., with a subsistence economy involving hunting, fishing, and gathering. The 91 sites in the area include the middle Jomon settlement site of Ofune and the initial to late Jomon site of Kakinoshima with a large earthen mound. Both sites have been designated as national historic sites. A beautiful, hollow clay Dogu figure found at Chobonaino in 1975 was declared a national treasure.

Our excavations in the Minamikayabe area over four decades have provided new information about Jomon subsistence practices and spirituality. Our efforts have been equally focused on developing a new business model for the protection of sites, proper excavation, and development of both indoor and outdoor museums. Our business model to achieve effective management of archaeological resources involves cooperation among members of government, universities, private companies, and citizens.

Aben, Kathrina (University of Maryland, College Park)

[262] Invisible Communities: Developing a Filipino Discourse through Archaeology in Annapolis, Maryland
Since the early 20th century United States expansion policies, a Filipino community has resided in Annapolis, Maryland. Despite this long-term occupation, there presence is void from the generally biracial representation of white and black communities in the city. In the summer of 2012, Archaeology in Annapolis addresses this invisibility through the oral narratives of Filipino descendent and current groups. This paper will address the importance of ethnographic methods as a preliminary step in archaeological ventures of underrepresented minorities. The interview analysis indicates the potential for Filipino archaeology based on material cultural behavior retention and transformation, identified sites, and public interest for future exploration.

Acabado, Stephen [7] see Ledesma, Charmaine

Acabado, Stephen (University of Guam) and Marlon Martin (Save the Ifugao Terraces Movement, Inc.)

[165] Lessons from the 2012 Field Season of the Ifugao Archaeological Project
The Ifugao Archaeological Project (IAP) is a collaborative research program between the Save the Ifugao Terraces Movement, Inc. (SITMo- a local, grassroots NGO whose primary goal is to develop conservation programs for the Ifugao Rice Terraces [IRT], a UNESCO World Heritage Site) and various academic institutions. The IRT was enshrined in the World Heritage list in 1991, but the listing failed to encourage research on the long-history of the human-made landscape. Top-down approaches to conservation seem to be a non-factor to long-term maintenance of the terraced fields. In addition, archaeology was also overlooked in conservation programs. As a community-led project, the community (through SITMo), sought to include the deep history of the Ifugao in developing conservation plans for their tangible and intangible heritage. Thus, the 2012 field season of the IAP provided the first archaeological documentation of an early Ifugao village. The excavations will help provide information on the antiquity of the IRT and paleoenvironmental conditions of the region. Through the partnership of SITMo and various agencies, the 2012 field season became a success and widely received by local communities. In this paper, we present challenges and how we addressed them before, during, and after the field season.

Acosta-Ruiz, Marco Antonio

[107] Análisis contextual de sitios con manifestaciones gráficas rupestres en la Cuenca de Sayula, Jalisco
La presente ponencia aborda el estudio de una serie de sitios arqueológicos localizados en la Cuenca de Sayula, en el estado de Jalisco con presencia de manifestaciones gráficas rupestres en la técnica de petrograbado. El análisis no solo se limita a la descripción de algunos de los sitios y de sus motivos, sino que también expone aproximaciones a su posible interpretación partiendo desde la arqueología del paisaje y su interrelación con el ambiente en el cual se encuentran. De igual manera, se procesaron los resultados de la investigación con la ayuda de los Sistemas de Información Geográfica (SIG) como un fuerte apoyo para la interpretación tanto de los motivos como de la elección de los sitios para plasmar una parte de la ideología de las sociedades del pasado que se asentaron a lo largo y ancho de esta gran cuenca.

[107] Discussant

[107] Chair

Acuna, Mary Jane (Washington University in St. Louis)

[78] Bundling a Building: Art, Ideology and Politics at El Achiotal, Petén, Guatemala, in the Late Preclassic Period (250 BCE – 250 CE)
El Achiotal is a small Late Preclassic (250 B.C.E. – 250 C.E.) ceremonial and political center located along the western margin and off of the Central Karstic Uplands in Petén, Guatemala. Research in the main temple locus, Structure SC-01, has identified a long architectural history spanning several centuries, likely dating from the late Middle Preclassic (400 – 250 BCE) through the Early Classic (250 – 600 CE) periods. Tunnel excavations have revealed buildings with iconographic embellishments that demonstrate that its population was fluent in the regional symbolic vocabulary of both the Late Preclassic Maya and the ancestral Olmec, while also able to maintain a unique artistic style. In this paper, stylistic and iconographic analysis of the murals, sculpted art and architecture in the sequence demonstrate shifts over time in the ideological and political affiliation of the site’s leaders. These changes are further discussed in the context of political events occurring throughout the Petén during the Late and Terminal Preclassic periods.

Adachi, Noboru (University of Yamanashi, Department of Legal Medicine), Ken-ichi Shinoda (Department of Anthropology, National Museum of Na), Kazuo Umetu (Department of Forensic Medicine, Yamagata University), Osamu Kondo (Department of Anthropology, University of Tokyo,) and Yukio Dodo (Department of Anatomy and Anthropology, Tohoku University)

[194] Ethnic Derivation of the Hokkaido Ainu Inferred from Mitochondrial DNA Data
In the present study, we examined the genealogy of 119 Ainu skeletons of the Edo period (about 400 to 200 years before present) excavated from Hokkaido, the northernmost island of
Japan, through ancient mitochondrial DNA analyses. Twenty haplogroups were observed in these individuals, with haplogroups Y1 and N9b being predominant. The frequency of haplogroup Y1 is very high in the Okhotsk people, who had migrated from northeastern Eurasia to the coastal regions of northern and northeastern Hokkaido as well as southern Sakhalin during the fifth to the thirteenth century. On the contrary, haplogroup N9b has its highest frequency in the Hokkaido Jomon people. The fact that both Y1 and N9b are frequently observed in the Edo Ainu may indicate that the Ainu might have been established on the basis of the Hokkaido Jomon people with contributions from the Okhotsk people. Interestingly, haplogroup D4c1, which is almost exclusively observed in the Nivkhi people, was observed in the Edo Ainu. On the contrary, some of the Edo Ainu haplogroups are absent in Native Siberians but are commonly observed in modern Japanese. These findings suggest the multiethnic contributions to the formation of the Ainu.

Adams, Charles (University of Arizona)

[67] The Homol'ovi Research Program: Enriching Hopi History through Collaboration

From 1984 to 2006 the Homol'ovi Research Program of the Arizona State Museum, University of Arizona, focused its research on the excavation of several large ancient Hopi villages along the Little Colorado River 60 miles south of the Hopi mesas in northeastern Arizona. Critical to the success of the program from the beginning were its collaborative efforts with the Hopi Cultural Preservation Office and its advisory team of community elders. This paper describes that process, the benefits of collaboration between archaeologists and descendant communities, and the enhancement of knowledge that resulted.

Adams, Jacob [150] see Fisher, Philip

Adams, Jacob (Washington State University)

[150] An Experimental Study of Human Cores Compared to Geo-Cores

Differentiating culturally modified artifacts from geo-facts (stone modified by natural processes) has long been a topic of concern in archaeology. This issue is particularly pertinent to pre-Clovis occupations in the Americas with the discovery of possible archaeological remains that keep pushing the colonization of the New World back in time. Potential pre-Clovis sites, such as the Calico site in California, have come under heavy scrutiny in regard to differentiating cultural from natural specimens. Naturally made and culturally made lithic specimens will often exhibit similar characteristics such as point of impact and bulk of force. As lithic artifacts are the most common form of evidence for human behavior, it is important to have the ability to discern cultural artifacts from geo-facts. Here we present an experimental pilot study examining differences in fracture patterns and other characteristics of geo-cores and human made cores. The geo-cores were subjected to fracture from tumbling down a rocky hillside and the human made cores were systematically reduced by flintknapping.

[150] Chair

Adams, Ron (AINW)

[195] Ethnoarchaeological Perspectives on the Social Dynamics of Livestock Use in Eastern Indonesia

It has become increasingly evident that livestock was not merely a subsistence necessity in many early prehistoric agricultural societies. The symbolic importance of livestock, particularly cattle, in art and iconography in Neolithic societies attests to a conspicuous emphasis on these domesticated animals that extended beyond their nutritional value as a source of food or their role as strictly economic commodities. Drawing upon ethnoarchaeological work conducted in eastern Indonesia, this paper discusses the use of livestock in traditional societies and its implications for interpreting the role of livestock in the social realm of prehistoric agrarian societies. Large domesticated animals on the island of Sumba and elsewhere in Indonesia are generally not an ancillary dietary necessity to supplement cereal crops. Instead, they are reserved for ancient traditions tied to past socio-political orders that continue to define the relations between individuals and groups. These traditions include ritual feasts as well as the erection of stone monuments and elaborate houses, all of which are undertakings distinguished and characterized by the livestock required for their completion. In these contexts, domesticated animals are arguably the life-blood of the social and material world, serving a purpose that extends far beyond subsistence or as a secular commodity.

Addison, David [27] see Filimoehala, Christopher

Adelsberger, Katherine (Knox College) and Benjamin Porter (University of California, Berkeley)

[209] Are you Dhiban Strong? Designing, Promoting, and Managing a Middle Eastern Field School

Located in west-central Jordan, the Dhiban Project Field School teaches undergraduate students archaeological and environmental studies field research techniques. The students are also introduced to Jordan’s culture history, contemporary societies, and Islam. The program has grown recently from five undergraduate students each summer to now approximately 20 students. Most students attend one of the authors’ institutions and represent the diversity of the current college generation, although a majority are female. Students are drawn to the project for different reasons, from field training and cultural experience to a basic desire to study abroad. Yet Dhiban is not an “easy” project, certainly not for students looking for a relaxing summer experience. Dhiban is located in a semi-arid environment and a relatively impoverished region with residents wary of outsiders. Students find the project physically and psychologically challenging, albeit often a welcome change from ordinary life. Because of these conditions, the project approaches this session’s question concerning future growth and inclusion with caution. Field projects can provide a rich cultural experience for students, but these aspects of the curriculum subtract from teaching field techniques. The authors will explore how they design, market, and implement an effective field school curriculum under these adverse conditions.

Adnan, Aaqib [84] see Junker, Laura

Adovasio, J.M. [87] see Pitblado, Bonnie

Adovasio, James (Mercyhurst Archaeological Institute)

[135] Forensic Sedimentology: Retrospect 2013

During the 1970s, high-resolution analytical and descriptive protocols were developed for the characterization and description of microstrata at Meadowcroft Rockshelter, Washington County, Pennsylvania. Beginning in the 1980s, these same protocols—collectively subsumed under the rubric forensic sedimentology—were applied in a succession of successful ARPA prosecutions. The ability to essentially “fingerprint” sediments was a critical element in all of the cases, which included both open and closed archaeological loci. Highlights of several past cases are presented to illustrate the potency of these protocols. New developments in instrumentation are also detailed in terms of their applicability to future cases.

Affolter, Jehanne [142] see Fisher, Lynn

Agarwal, Sabrina (UC Berkeley), Clark Larsen (Department of Anthropology, The Ohio State University), Joshua Sadvari
Ambiental y la visión agroindustrial. Esta visión, por su parte, tuvo caso bajo este enfoque; se trata de la ex hacienda Lombardía, explorada en Michoacán. Este trabajo presenta un estudio de la materialización de la estrecha relación entre el entorno y los elementos, aparentemente desempeñados en el paisaje actual, como acueductos, tinas de obrajes, restos de construcciones, entre otros elementos, aparentemente diseminados en el paisaje actual, y la visión agroindustrial. Esta visión por su parte, tuvo un fuerte enfoque en el porfiriato y en el posterior a la Reforma agraria.

Agustí, Jordi (ICREA. Institut de paleoecologia humana i Evolució social. Terragona. Spain.) and Hugues-Alexandre Blain (Institut de Paleoeociologia humana i Evolució social)

Climate Dynamics and Early Human Dispersal out of Africa

Early human settlement in Western Eurasia was strongly influenced by ecological conditions rather than locomotor capabilities, its first occurrence in Western Europe being documented in periods of favorable climatic conditions. Despite the glacial-interglacial dynamics, the late Pliocene climate in the region analyzed must have remained reasonably mild and stable.

The early Pleistocene is characterized by a sharp climatic deterioration, which possibly impeded the settlement of this region by the early human population from the southern Caucasus. Shortly afterwards, when the climatic conditions are again favorable, this human presence is suddenly attested by thousands of lithic artifacts of Mode I at the sites of Fuente Nueva 3 and Barranco León 5 in the Guadix-Baza Basin (Spain), as well as hominid remains at Trinchera Elefante in the Atapuerca karstic complex (Spain). The climatic amelioration at the early-middle Pleistocene boundary again favored a human presence, as attested by Trinchera Dolina in Atapuerca and the site of Cúllar Baza 1 in the Guadix-Baza Basin. The data reported here clearly support the idea that an early human presence in Europe was strongly constrained by climatic and environmental conditions, and that physiology or cultural factors played a minor role.

Agustín, Agnolin [168] see Scheinsohn, Vivian

Aikens, C. Melvin (University of Oregon)

Late Pleistocene and Holocene Development of Anthropogenic Landscapes in China, Korea, Japan, and the Russian Far East

Humans of the Homo erectus stage were present in East Asia by a million years ago, with modern Homo sapiens prevalent after about 35,000 BP. With late Pleistocene warming of the global climate after about 22,000 BP, populations grew rapidly. In China, early farming communities and associated fields and water works appeared by about 9000 BP. By about 4000 BP royal governments, expanding economies, and explosive population growth were rapidly accelerating the expansion of anthropogenic landscapes in China, while large cities, roads, field and canal systems, and lavish mounded tombs for a growing aristocratic class proliferated steadily. Beyond China, stable hunting-fishing-gathering communities, rapid population growth, and agricultural beginnings characterized Manchuria, Korea, the Russian Far East, and Japan by about 7000 BP. In Korea and Japan the spread of paddy-field rice and mixed dryland agriculture, an associated proliferation of villages, and the inception of large towns and monumental mounded tombs for a growing social elite were well under way by about 3000 BP. Rice paddies, canals, dry fields, polders reclaimed from coastal zones, roads, fortresses, towns, and cities grew rapidly in Korea and Japan after about 1000 BP, as socioeconomic complexity and human population continued to grow rapidly.

Ainis, Amira [125] see Kauflin

Ajithprasad, P. [147] see Costa, August

Akojima, Isao [214] see Sakai, Masato

Akoshima, Kaoru (Tohoku University)
Integrating Lithic Microwear Traces with Site Structure and Settlement Mobility Patterns in the Upper Paleolithic of Northeast Japan

The paper investigates theoretical aspects of lithic use-wear analysis in conjunction with more macro-scale data structure such as tool distributions, conjoin, techno-typological variability and raw materials procurement. Case studies from the Japanese Upper Paleolithic period in Northeastern Japan are evaluated from technological organization perspectives in which use-wear traces are not only elucidated as evidence of "behavioral episodes" or "living floors" but as accumulated records of the cultural system on the landscape. The Kamino A site in Yamagata Prefecture was excavated by Department of Archaeology, Tohoku University in 1987, 1991, 2000, and the final excavation and analytical results were published in 2012. The assemblage mainly consists of backed knives, burins, end-scrapers, side-scrapers, notches and denticulates. Spatial and technological analyses indicate that they constitute two different "phases", that is, phase A (3,028 artifacts, AMS dated to 23,230 ± 80 BP) and phase B (4,454 artifacts). Phase A suggests relationship with Central and Western Japan, and phase B belongs to the developed blade based industry of Northeast Japan. Microwear data from different sites are discussed in terms of inter-site variability. Methodological problems include model building to compare use-wear traces detected on different locations of the same adaptive system.

Alarcon, Carmela (PAURARKU, Centro de Investigaciones Andinas) and Matthew Piscitelli (University of Illinois at Chicago)

Botanical Analysis of Plant Remains from Ceremonial Architecture at the Late Archaic Site of Huaricanga in the Fortaleza Valley of Peru

One of the main objectives of archaeological investigations at the Late Archaic (3,000-1,800 B.C.) site of Huaricanga has been to characterize the activities carried out within a series of early temple structures. Unfortunately, ceremonial architecture tends to lack macro-artifacts as dictated by culturally defined norms of ritual purity. However, botanical remains, recovered through a diverse array of techniques, have proven incredibly valuable in reconstructing the ancient activities within the sacred spaces at Huaricanga. In addition, a major research theme in the Central Andes has been the use and management of natural resources. More specifically, archaeologists have debated the role of grains/cereals in the emergence of complex societies in Peru. This poster presents the results of a variety of macro-botanical analyses performed not only to reconstruct ceremonial activities at Huaricanga, but also to clarify the role of plant resources during the Late Archaic Period along the north central coast of Peru.

Alarcón Ledesma, Carmela [285] see Piscitelli, Matthew

Manos and Metates from San Nicolas de Los Ranchos, Part Time Stoneworkers on Non-industrialized Production

Manos and metates are the archaeological tool sets that we can still find on rural modern day mesoamerican households. Checking the archaeological record their form has not changed much over time and according to the information from the conquest chronicles they are still used in the same way, on the other hand in most of the cases their production has been industrialized. The following is the description of the non-mechanized production of manos and metates by part time workers and the way the new tools are used and stored in their houses, trying to present viable archaeological models for the organization of the production of the tools and comparing the results to other ethnoarchaeological reports pointing out patterns and differences in the way metates are produced.

Albert, Rosa (ICREA/University of Barcelona), Irene Esteban

Phytoliths as a Proxy For Paleovegetation Reconstruction and Use of Plant Resources by Early Hominins

Adaptation of early human populations is closely linked to climate, environment and the way in which they were able to utilize the available resources. Our research attempts to reconstruct the vegetation present at two archaeological sites during two decisive moments in the history of humankind: i) Olduvai Gorge (Tanzania) where first Homo habilis were identified, and ii) Mossel Bay (South Africa) occupied by early Homo sapiens populations. Using phytoliths -siliceous micromains that reproduce the cellular tissue of plants- we try to reconstruct the vegetation of these two sites, to better understand the influence of the environment in human evolution. Our research includes the description and phytolith study of modern analogous landscapes which are later compared to the archaeological results. Fourier Transformed Infrared Spectroscopy (FT-IR) is used to determine the mineralogical components of sediments to understand the preservation conditions of the identified remains. The results obtained to date at Olduvai Gorge have allowed reconstructing the vegetation of FLK and HWKKE areas, where the remains of Paranthropus boisei and Homo habilis were recovered. Vegetation studies at Mossel Bay, have finalized at PP13B, showing the use of dicotyledonous leaf plants during low occupation moments. PP5/6 studies are still in process.

Alberti, Benjamin (Framingham State University) and Andres Laguens

Retentive Pots, Preoccupied People: Coping with Ontological Ambiguity in First Millennium AD Northwest Argentina

"The exchange model of action supposes that the other of the subject is another subject, not an object; and this, of course, is what perspectivism is all about" (Marilyn Strathern, 1992, Writing subject is another subject, not an object; and this, of course, is what perspectivism is all about)In the early Preceramic period, different communities in northwest Argentina displayed a common pattern of social organization in which the individual and the group were both the subject and the object of exchange...Diverse types of potbiters are argued for—one evidenced through daily practices of food preparation; the other through corporeal play and the making of pots as bodies. There was an inherent danger in establishing such relations. As such, both modes are characterized by fear and care—fear of the potential predatory relations established through repeated exchanges, and care that those relations are managed appropriately. Hence, the cases of "retentive" pots—deliberately only partially subjectivized—and disarticulated human bodies.

Alconini, Sonia [48] see Hard, Robert

Adevelopment of the 12H3 Pyramid in Xultun

At the site of Xultun, Guatemala, a massive plaza group comprised the heart of the ancient city, located on a naturally elevated area and designated as the B group plaza. This locality contains one of the oldest and largest ritual plazas in Xultun and is surrounded by monumental architecture. Rising above all other structures is the 12H3 pyramid, the largest structure by volume at Xultun. During the 2012 field season, the first excavations were conducted in and around the pyramid uncovering crucial details regarding its possible socio-political function, construction style and architectural phases. In this paper, we explain and examine the recent excavations at 12H3 and propose a functional
interpretation of the pyramid’s use and role in Maya society. This pyramid was repeatedly elaborated and expanded upon—from the Late Preclassic (250BC–AD250) through the Classic period (AD250–900)—demonstrating the longevity of its importance at Xultun alongside its four construction phases and four stelae (Early Classic to Late Classic in style and date) erected along its western façade. Possessing characteristics similar to other Early Classic pyramids, 12H3 can provide a better understanding regarding the Maya creation of a sacred space and how such spaces were maintained over time.

Aldenderfer, Mark [216] see Massa, Giovanni

**Aldenderfer, Mark (University of California) and Margarita Gleba (Institute of Archaeology, University College London)**

[249] Textile Technology in Nepal in the 5th-8th Centuries CE: The Case of Samdzong

Textile remains were recovered in the course of an ongoing project in Samdzong, Upper Mustang, Nepal, a location close to the border with Tibet. The sites are shaft tombs in very high altitude, remote locations, dated to the 5th-8th centuries CE. The dry climate and high altitude favored the preservation of organic materials, which generally do not survive in archaeological contexts, permitting exploration of textile technology in the area. One of the objects recovered from the elite Samdzong 5 tomb complex is composed of textile bands to which copper, glass and cloth beads are attached and may constitute the remains of a complex decorative headwear, which may have been attached to a gold/silver mask. Another textile from Samdzong 5 is a very fine silk fabric dyed red. There is no evidence for local silk production and the technical features of the find suggest that Samdzong was inserted into the long-distance trade network of the Silk Road. The paper presents the first results of textile and dye analyses of the Samdzong textiles and explores how indigenous communities in Nepal developed and adapted new textile technologies to fit local cultural and economical needs. The wider implications of these findings are discussed.

Alderson, Helen [217] see Weyrich, Laura

**Alderson, Helen (University of Otago) and Mark D. McCoy (University of Otago)**

[244] Geochemically Sourcing the Architectural Basalt of Nan Madol: New pXRF Results from the 2012 Field Survey in Nan Madol, Pohnpei, Federated States of Micronesia

The site of Nan Madol is an 81 hectare prehistoric administrative and ritual complex built into the lagoon of the volcanic high island of Pohnpei in the Federated States of Micronesia and consists of 93 islets built from basalt columns and boulders between A.D. 900 and A.D. 1650. In this paper we present new geochemical sourcing research aimed at modeling the effort expended by ancient Pohnpeians in building the site’s monumental scaled structures. Specifically, we will present the results of our 2012 field season during which we analyzed a subbasalt of the basalt architecture using portable XRF (pXRF). Once building material was sourced, a GIS model was then used to estimate changes in effort expenditure over time calculated based on weight of the blocks moved as well as the distance traversed. These results were then compared with several models representing expected outcomes in terms of the historical trajectory of labor mobilization over the history of the site’s construction and use.

Alegria, Crystal [269] see Moe, Jeanne

Alessa, Lilian [23] see Murphy, John

Alex, Bridget [79] see Alex, Bridget

**Alfonso-Durruty, Marta (Kansas State University, SASW Department)**

[26] Haunted by the Hunter: In the trail of the South American Models for Prehistoric Hunter-Gatherers

The historical influence of North America has led to the application of foreign models into South American Archaeological studies. In particular, cultural-evolution models and the associated Paleoindian and Archaic concepts simplify and obscure the diversity and complexity of hunter-gatherers in the South America. Hunter-gatherers of both the Paleoindian and the Archaic periods are commonly assumed to be egalitarian and simple. However, South American hunter-gatherers are characterized, even in sites as early as Monte Verde, for the diversity and flexibility of their economic adaptations and social organizations. The divergence from North American models includes the opportunistic exploitation of mega fauna, the presence of early permanent or semi-permanent settlements, transregionalism, monumental architecture, and, for some, an emphasis on marine resources, and relatively stable patterns of transhumance between the coast and the interior. Decades of archaeological and bioarchaeological research indicate that a careful consideration of the evidence accumulated can lead to models, questions, and research agendas that more accurately describe and assess a prehistoric that escapes foreign models as well as dogmatic ideas regarding the complexity and variability of early human occupations in South America.

Allard, Francis (Indiana University of Pennsylvania)


Discussions of pre-Han bronzes in Lingnan (present-day Guangdong and Guangxi) have so far mostly focused on the timing of the earliest evidence for metallurgy in the region, as well
as the issue of stylistic similarities and differences with bronzes made in central and northern China. On the basis of presently available evidence, Lingnan’s earliest locally produced bronzes date to around 1000 BCE, postdating by many hundreds of years similar developments in other regions of China. Archaeologists of Southeast Asia have also used the evidence from Lingnan to argue for—or against—the independence from China of that region’s earliest metallurgy. Along with reviewing the issues of timing and input from outside regions, this presentation discusses the (limited) range of technological evidence for early bronze metallurgy in Lingnan, as well as its sociopolitical dimensions as inferred from funerary evidence. It concludes that emerging inequality in Lingnan during the first half of the first millennium BCE was not based on the strict control of bronze production. Instead, the burials increasingly display an association between high status graves and the presence of bronzes of central or northern Chinese inspiration.

Allen, Melinda [27] see Morrison, Alex

Allen, Mitch (Left Coast Press, Inc.)

[99] From Marshalltown to Mark Twain: Challenges in Publishing Literary Archaeology

This presentation will examine archaeologists’ efforts to write more literary, accessible work for a general audience and the risks publishers like me take to publish these experimental works. Lessons learned from these attempts might be useful to others seeking a wider readership. Archaeologists are forced to stretch beyond self-imposed professional restraints and fill in gaps in the knowledge base to construct narratives about the past for the wider public. In doing so, they compete with novelists, pseudoarchaeologists, and journalists—none bound by the limits of data—in offering interpretations of the past. Archaeologists must also learn a wider variety of genres and media to identify which medium is the most effective for reaching specific audiences. They may consider sharing their authority by collaborating with others who might communicate the message better than the archaeologists can alone. Central to the presentation is the publisher’s role in encouraging authors toward more accessible writing techniques and the ways in which publishers can aid scholars to reach broader audiences.

Allen, Mark (California State Polytechnic University, Pomona)

[177] Scales of Warfare and Violence in California and Australia: Fighting Foragers and Collectors in Conflict

There has been a tremendous proliferation of archaeological and anthropological analyses of warfare in middle range societies and early states over the past two decades. In contrast, it is often assumed (largely through negative evidence) that warfare and violence were not common among foragers, or even semi-sedentary collectors. A second factor that has limited the study of hunter-gatherer conflict is the difficulty of archaeological detection. The most cited evidence for prehistoric conflict includes fortifications, specialized weapons, iconography, and large skeletal populations; none of which are widely associated with hunter-gatherers. Fortunately, two major cultural areas provide tremendous potential to advance our understanding of the range of violence and warfare among both foragers and collectors. California and Australia share several advantages, including: abundant archaeological and cultural resource management investigations, rich ethnographic sources, detailed ethnohistorical accounts, large volumes of curated weapons and armor, and indigenous cosmologies and oral histories that provide meaningful insight. Both areas are vast and characterized by extreme environmental variation inhabited by highly diverse hunter-gatherers. It is argued here that comparisons within and between California and Australia can help sweep away the factors which have heretofore limited the study of hunter-gatherer violence and warfare.

Allen, Melinda (University of Auckland)


Patrick Kirch’s research, both within the Hawaiian Islands and beyond, has been central to forging our understanding of Hawaiian origins and the chronology of island settlement for more than four decades. As he outlines in his most recent review of the Hawaiian sequence, improved radiocarbon chronologies along with new archaeological and paleoecological evidence has led to a growing consensus that the archipelago was settled around the 11th to 13th centuries AD, from a central East Polynesian source area. Historically, the Marquesas Islands, some 4000 km southeast of the Hawaiian chain, have been considered the most likely homeland for early Hawaiian colonists, with later arrivals from the Society Islands. In this paper I revisit the possibility of initial colonization of the Hawaiian chain from the Marquesas. New evidence on the chronology and character of early Marquesan settlement sites, along with other recent analyses relevant to understanding of cultural relatedness, are used to further evaluate the Marquesan homeland hypothesis.

Allentoft, Morten [263] see Oskam, Charlotte

Allison, James (Brigham Young University)

[16] Excavations at Alkali Ridge Site 13

Alkali Ridge Site 13 is one of the largest, and most extensively excavated Pueblo I villages in the Northern Southwest. It also is one of the earliest Pueblo I villages, dating to the late A.D. 700s. The site was first excavated in 1932 and 1933 by J.O. Brew of Harvard University, who dug all or part of 118 storage rooms, 11 pit houses, and 25 surface habitation rooms belonging to the early Pueblo I component. In 2012, the first excavations at the site since Brew’s work focused on reexcavation of several storage rooms previously excavated in 1932, screening of backdirt from the 1932 excavations, and limited excavation into previously undisturbed rooms. These excavations were on a much smaller scale than Brew’s, but they provide information about the field techniques and artifact collection strategies used in the 1930s that was not available in either the published report or the field notes; the new excavations also provide the opportunity to compare the results of modern excavation techniques and those used in the 1930s, and to consider the strengths and weaknesses of each approach.

Allison, James [175] see Richards, Katie

al-Nahar, Maysoon [201] see Olszewski, Deborah

Aloua, Ruth-Rebecca (Simon Fraser University, Department of Archaeology)

[203] Discussant

ALOUPI-SIOTIS, ELENI [178] see Chaviara, Artemi

Alt, Susan (Indiana University Bloomington)

[24] Immigrants on the Border: Cahokia and the Synergy of Mississippian on the Edge

Change in Mississippian societies has usually been investigated at centers, because Mississippian polities, while occasionally viewed from the peripheries, have not been theorized as having frontiers and borderlands. Borderlands, or frontiers, as places of liminality, dynamism, and instability have not typically been seen as integral to understanding Mississippian societies. The Cahokia case forces
important part of creating Mississippian through synergistic processes of immigration, hybridity, and proselytization.

Alvarez, Andrea (Institute for Synthesis in Interdisciplinary Science)

Sex identification of archaeological human remains is a common problem especially if the skeletons are sub-adult, incomplete or damaged. Current methods are based on the analysis of the amelogenin gene that can be found on both chromosomes X and Y. There are sequence and size divergences between the X and Y chromosomes that can be found on both chromosomes X and Y. Amelogenin analysis is deniable, but what consequences has the 30-season program had for the White Mountain Apache Tribe, its people, and its lands? How has Grasshopper as an institution and a group of people affected White Mountain Apache heritage stewardship and economic development, repatriation, and tourism initiatives? These questions and other matters relating to Grasshopper's local legacies are discussed from the vantage point of the tribe's current and past historic preservation officers.

Alvarez-Calderon, Rosabella [286] see Klaus, Haagen

Alvarez-Sandoval, Brenda A. (LANGEBIO CINVESTAV-IPN), Linda R. Manzanilla (Instituto de Investigaciones Antropológicas, UNAM) and Rafael Montiel (LANGEBIO CINVESTAV IPN) [41]

Sex Determination of Ancient Human Remains by HRM Analysis: The Case of Teopancacazo, Teotihuacan

Sex identification of archaeological human remains is a common problem especially if the skeletons are sub-adult, incomplete or damaged. Current methods are based on the analysis of the amelogenin gene that can be found on both chromosomes X and Y. There are sequence and size divergences between the X and Y versions, thus allowing sex determination after amplification of short fragments (106 and 112 bp). However, this method is not sensitive enough on samples presenting an extremely low amount and poor quality of DNA. Therefore, we developed a new method based on real-time polymerase chain reaction (PCR) amplification of smaller fragments (58 and 64 bp), followed by High Resolution Melting analysis. The method has proven to be useful even for samples in which the original method was inefficient. With this method we have been able to determine the sex of adults and infants found in Teopancacazo, Teotihuacan, which usually present small amounts of highly degraded genetic material. This new molecular tool is rapid, sensitive, effective, and less prone to spread contamination after PCR. Furthermore, as shorter fragments are amplified, we believe the random allele drop-out phenomena could be less severe. Problematic samples can be resolved by analysis of multiple replicas, as recommended elsewhere.

Alvarez-Sandoval, Brenda A. [17] see Montiel, Rafael

Alveshere, Andrea (Institute for Synthesis in Interdisciplinary Science)

Forgotten Studies, Buried Data: Unearthing the Hidden Potential of Interdisciplinary Archaeological Records

Created to manage ancient and forensic DNA taphonomy data, the Biomolecular Preservation and Detection Information System (BIOPADIS) has proven a valuable tool for the compilation and analysis of a diversity of quantitative and qualitative archaeological data. Ideally-suited for assessing correlations among the results of geochronological, zooarchaeological, and molecular analyses, this relational database system accommodates a comprehensive array of data on environmental (depositional through post-excavational) contexts, specimen properties, laboratory strategies, and analytical testing results. Due to the simplicity and flexibility of the BIOPADIS database design, this system is useful as a stand-alone solution for management of records from individual research projects and may be easily adapted to accommodate a virtually limitless range of additional data classes. BIOPADIS also holds great potential to function as a nexus for the archival and exchange of raw data among a global community of researchers and institutions. This may be of particular value in improving the accessibility of “negative” research results that are poor candidates for traditional publishing, of studies reported in the “grey literature” of Cultural Resource Management, and of other data that are otherwise unlikely to be widely distributed. A selection of interesting archaeological case studies highlights the features and potential of this system.

Amador, Fabio (National Geographic Society) and Guillermo de Anda (Universidad Autonoma de Yucatan) [109]


Recent discoveries in flooded caves in the Yucatan Peninsula have proven that these systems, commonly known as “cenotes,” contain an important quantity of very well preserved archaeological information. These flooded systems contain materials dating from the last Ice Age to the days of the ancient Maya that have been found in extraordinary state of preservation. Old paradigms are being challenged in light of the new information. However these fantastic systems are very fragile and must be treated with extreme care and under non-intrusive methods in order to get the best results. Researchers from the National Geographic Society and the University of Yucatan have developed new methods and strategies to study cenotes, and the first results of this collaboration are here presented.

Amano, Noel [7] see Ledesma, Charmaine

Ambrose, Stanley (U. Illinois, Urbana-Champaign) [131]

Consequences of the Toba Super-eruption for Human Adaptation and Evolution

The Toba super-eruption 73 ka may have caused a six-year long volcanic winter and intensified an 1800-year-long era of the coldest temperatures recorded in the Greenland ice cores. The early last glacial era of extreme cold from 70-60 ka likely prolonged the environmental and demographic impacts. Environmental, paleontological and genetic evidence shows that this period witnessed deforestation in central India, low lake levels Africa, boreal conditions in western Europe, regional population bottlenecks in several large mammal species, including humans and neanderthals, and regional or total extinction of a dozen southeast Asian large mammal species. Modern humans and neanderthals apparently responded to this era of severe glacial environments in different ways. African archaeological evidence suggests a transition in social and territorial organization from small, defended territories to extended inter-group cooperative networks. Information sharing may have helped to reduce risk in the unpredictable environments of the early last glacial. Conversely, neanderthals apparently continued to live in small, closed territories with limited intergroup interactions, often involving violence and cannibalism. African moderns behaved
more like human tribes; neanderthals behaved more like primate troops. These differences in territorial organization and information sharing may have been responsible for the replacement of neanderthals by African modern humans.

Ambose, Stanley H. [172] see Salazar-Garcia, Domingo Carlos

Ames, Nicholas (University of California, Berkeley), Hanna Huynh (University of California, Berkeley), Alan Farahani (University of California, Berkeley) and Benjamin Porter (University of California, Berkeley)

[149] Heavy-Fraction Microdebris Enhance the Interpretation of Cultural Practices in Middle Islamic West-Central Jordan

In this poster, we present heavy fraction data from a barrel-vaulted room from the archaeological site of Dhiban, Jordan, dating to the Middle Islamic period (12th - 15th centuries CE). We argue for the analysis of material residues smaller than four millimeters ("microdebris") deriving from flotation samples collected in the course of archaeological excavation. Relatively little is known about daily life during the Middle Islamic period outside of written sources. High-resolution investigation of both large and small residues facilitates the identification of past cultural activities in this context. Our analysis reveals that smaller residue sizes often provide information distinct from larger residue sizes, especially in the ubiquity or presence of different materials. Ceramics are abundant in larger fraction sizes, yet they are relatively infrequent in smaller residue sizes, probably due to depositional practices. Remains of marine vertebrates and invertebrates that provide evidence of long-distance trade and water-resource use are rarely found in larger residue sizes, but are present even in the smallest remains. Our research suggests that the analysis of microdebris is a valuable source of data that supplements the interpretation of past cultural practices.

Ames, Christopher [162] see Bisson, Michael

Ames, Kenneth (Portland State University)

[170] Discussant

Ames, Christopher (McGill University, Department of Anthropology), Carlos E. Cordova (Department of Geography, Oklahoma State University), April Nowell (Department of Anthropology, University of Victoria), James T. Pokines (Department of Anatomy and Neurobiology, Boston University) and Michael S. Bisson (Department of Anthropology, McGill University)

[224] Hominin Occupation and Landscape Evolution at the Druze Marsh Site in Northeast Jordan

The former Druze Marsh is located approximately 75 km east of Amman in the Hashemite Kingdom of Jordan. It covers roughly 2 km2 adjacent to the town of North Azraq and sits on the northwest edge of Qa’ Azraq, the salt mudflat marking the lowest point of the 13,000 km2 Azraq basin. The region is well known for producing both surface and buried Paleolithic remains, but little was known from the Druze Marsh itself until over-pumping of the aquifer lowered the water table and exposed the former marsh bed in the mid-1990s. Through a series of test pits and controlled excavation in the dry marsh bed our team has identified extensive buried archaeological landscapes from the Late Lower, Middle, Upper, and Epipaleolithic. This sequence is embedded in a stratigraphic succession characterized by cyclical aggradations of lacustrine and palustrine deposits intercalated with erosional unconformities and pedogenic carbonate development, suggesting considerable shifts in the local paleoenvironments and geomorphic processes throughout the late Pleistocene. Deciphering prehistoric settlement and land-use in this context requires a detailed understanding of landscape evolution and site formation in order to disentangle the geogenic and behavioral contributions to the patterning of the archaeological record.

Amundsen-Meyer, Lindsay

[264] Nested Landscapes: Ecological and Spiritual Use of Plains Landscape during the Late Prehistoric Period

The Willow Creek Study Region, located along the eastern edge of the foothills in Southern Alberta (the wintering ground of the Blackfoot people), is unique both in the overall number and diversity of archaeological sites as well as the number of culturally-important places present. The study region is ecologically rich, with easy access to critical winter resources such as wood, water and bison. However, new evidence from a multi-year survey project suggests that ideological influences were also playing an important role in prehistoric settlement choices. The evidence suggests that people were moving along known trails between a series of established, culturally important stopping places, such as Willow Creek, within an ecologically rich landscape. This pattern appears to have emerged during the Late Prehistoric, showing a significant shift from settlement patterns of earlier periods. The specific location of Late Prehistoric archaeological sites on the landscape in this region appears to be tied to views, important landmarks, and named places. In this paper, I propose to paint a picture of nested land use in which both ecological and ideological influences are important site selection criteria.

[264] Chair

Anastassova, Elka [227] see Gurova, Maria

Ancona Aragón, Iliana [288] see Bishop, Ronald

Anderies, John M [23] see Freeman, Jacob

Anders, Jake (University of Alaska-Anchorage)


Until recently, non-coastal or upland archaeological sites in the Aleutian Islands of Alaska have been a poorly studied avenue of archaeological inquiry. Since 2007, the University of Alaska Anchorage has led intensive research on upland archaeological sites on the southwestern portion of Adak Island in the Central Aleutian Islands. As a part of this research, a GIS-based weighted-value site location model was created based on assumptions about how maritime-oriented precontact Aleut or Unangan people used an upland environment that was largely devoid of substantial food resources, and empirical observations about observed site locations. Analysis of various upland site characteristics suggests the presence of functional differences between upland sites, which may indicate a more diversified use of upland areas than previously thought. Drawing on parameters of the natural, socio-cultural, and maritime environments that are thought to have affected the lives of pre-Russian Aleut people, the model provides future researchers in the Aleutian Islands with an explicit and quantified template that can be tested and refined as further research is conducted.

Andersen, Søren [68] see Gron, Kurt

Anderson, Cheryl (University of Nevada, Las Vegas)

[39] Mortuary Ritual and Identity among the Ancestral Tarahumara

This research provides evidence that supports the idea that the ancestral Tarahumara had a distinct cultural identity in the precolonial period extending back at least 600 years. The idea of a precontact Tarahumara cultural identity is based on mortuary data from archaeological sites that are consistent with ethnohistoric accounts of Tarahumara burial rituals. These ritual behaviors are linked to Tarahumara ideology and are quite distinct from other
groups in the region. The practices include the use of burial caves, multiple interments, wrapping bodies in mats and blankets, placement of fire next to the deceased and grave goods such as food and personal items. San Francisco de Borja (A.D. 1280-1400) is a mortuary cave site located in Chihuahua, Mexico and it was excavated in the 1950s by Richard and Sheilagh Brooks. A recent reanalysis of the human remains from this site has been performed and processes such as commingling, burning, and weathering were recorded. Additionally, grave items such as corn cobs, beads and pottery were located in the cave. The results of the analysis of the remains from this site show that the historic Tarahumara are descendants of these precolonial peoples.

Anderson, Kirk (Museum of Northern Arizona, Flagstaff)
[123] Landscape Dynamics Near Tolakai, New Mexico

The geomorphic setting of Tolakai is similar to many ephemeral drainages in the southwestern U.S., where deep arroyos expose Late Holocene alluvium. Two distinct alluvial terraces are present, the older correlating with the Tségi Formation (app. 7000 B.C. to A.D. 700), and the younger correlating with the Naha Formation (A.D. 1450 – 1880). The Tségi-aged deposits have agricultural rock alignments across the surface and contain buried Basketmaker III through early PII (app. A.D. 400 – 1050) cultural materials. The Naha-aged deposits contain over 20 juniper trees buried by up to 2 meters of well-stratified alluvial and eolian deposits. Based on tree diameter and relative geographic position, it appears there are two periods of germination. Nearby chronologies from buried trees also indicate two distinct germination periods, one during the A.D. 1400s and another in the 1700s. After analysis of 22 tree samples, we hope to determine if the same periods of germination and sedimentation occurred at Tolakai as elsewhere in the region. Ethnohistoric accounts of Spanish incursions and Navajo settlements are detailed for this area, and combining these rich cultural histories with high-resolution dendrogeomorphic reconstructions provides valuable information regarding landscape dynamics during the Protohistoric period.

Anderson, Elyse (University of Florida)
[127] The Timucuan Division of Animistic Practice

A critical examination of Timucuan ethnography strongly hints at animistic practice, that human and animal interactions were guided by both ecological and cosmological principles. Furthermore, the literature suggests these relations were gendered. Timucuan men, women, and two-spirits engaged with animal persons in unique ways. This variation could potentially be reflected in the archaeological record. Looking specifically at Silver Glen Run (8LA1-W Locus C), an ancestral Timucuan village site in Florida, a methodological approach to capture nuanced animal and human interaction is proposed.

Anderson, Kirk [131] see Elson, Mark

Anderson, Douglas

Since its creation in 1956 by Professor J. Louis Giddings, the first director of Brown University’s Haffenreffer Museum of Anthropology, the Circumpolar Program at Brown University has conducted archaeological, ethnoarchaeological, and ethnographic research across the northern circumpolar zone, provided fieldwork and laboratory opportunities in northern archaeology for a vast number of undergraduate and graduate students, trained a generation of fieldworkers and teachers now working in the North and training new generations, and contributed through publications and presentations to our current understanding of archaeological diversity and ethnographic traditions across the northern world. Today, the Circumpolar Laboratory, established in 1973 at the Haffenreffer Museum, remains deeply engaged in interdisciplinary research, student training, active programs of fieldwork, and the analysis and preservation of critical archaeological collections from some of the most important archaeological sites in Western Alaska. This poster presents an overview of the achievements of the Circumpolar Laboratory’s past and present staff, students, and alumni, its current projects, and resources available through Brown University’s Circumpolar Laboratory to researchers and others interested in northern archaeology and the interdisciplinary study of the peoples of the North.

Anderson, Shelby (Portland State University)
[258] The Difficulty of Sourcing Hunter-Gatherer Pottery: A Case Study from Northern Alaska

Social networks are central to northern hunter-gatherer lifeways, past and present. Networks are a conduit for ideas, information, and material goods to move within and between groups. Social network size and extent change over time in relation to various social and environmental factors, also serving as a social safety net in times of stress. Pottery sourcing is one approach to studying hunter-gatherer social networks. Reconstructing past networks can be difficult, however, particularly in northern settings where higher mobility, transport costs, and a shortened season for raw material procurement and production are all significant factors in shaping ceramic assemblages. The challenges of reconstructing social networks and studying northern pottery traditions as part of the hunter-gatherer foraging spectrum are considered in this paper through a northern Alaskan case study. Geochemical sourcing and formal technological data are used to test hypotheses about social networks over the last 1000 years in northwest Alaska. Results of these analyses indicate that ceramics were circulating more widely than expected and hint at changes in raw material procurement strategies during the study period. Mitigating factors unique to the study of hunter-gatherer pottery (e.g. mobility, transport, etc.) are considered in the context of these findings.

Anderton, John (Northern Michigan University), Marla Buckmaster, James Paquette and Robert Legg
[119] Archaeology on the Cusp of a Changing World: The GLO# 3 site (20MQ140), an Early Fur Trade-Era Winter Occupation in the Lake Superior Basin, USA

Seventeen years ago, four iconographic (“Jesuit”) brass rings, a French clasp knife blade, and a number of other early Fur Trade-Era trade goods were discovered at the terminus of a Native American trail approximately 15 km west of Lake Superior’s south shore in the Upper Peninsula of Michigan, USA. Limited follow-up formal test excavations at the site in 1999 and 2000 uncovered a small number of additional European trade items and confirmed the presence of an early contact period Native occupation at the locale. In 2012, expanded excavations at the site revealed a well preserved hearth and other features, large amounts of fragmented and burned bone (primarily from moose and beaver), a fifth iconographic ring, glass trade beads, a leather belt and birch bark fragments, iron implements, and triangular stone projectile points. Preliminary interpretations of the site suggest it is a circa 1630-1650 proto-historic or early historic contact-related occupation connected to Native American use of interior winter territories. While firm tribal affiliation is unclear, it is likely the site is Anishinaabe.

Andolina, Darren (University of California, Davis) and Adie Whitaker (Far Western Anthropological Research Group, Inc.)
[12] Habitat Suitability and the Establishment and Maintenance of Social Boundaries

The earliest evidence of widespread and prolonged coastal residence in Northwestern California dates only to the Late
Andrade, Agustin (Zona Arqueológica de Monte Albán, INAH) [114] Los contextos funerarios de San Sebastián Teitipac

Durante el desarrollo del proyecto de Salvamento de Arqueológico Libramiento Sur Oaxaca, 2010, se exploraron diversos sitios arqueológicos en los Valles Centrales de Oaxaca. Uno de estos sitios es El Popote ubicado al Oeste del poblado actual de San Sebastián Teitipac.

Este asentamiento conformado por dos áreas: una pequeña área nuclear de 2 estructuras, y otra área terrazaed, en la cual se localizaron diversos tipos de enterramientos, desde simples excavaciones realizadas en el subsuelo, hasta una tumba en la que se localizaron más de 7 individuos. Además, de lo anterior, vale la pena destacar que estos mismos enterramientos pertenecen a dos periodos culturales diferentes: Monte Albán II (200 a.C. -200 d.C.) y Monte Albán IIIIB-IV (450-950 d.C.).

En la presente ponencia se pretende discutir las implicaciones culturales que se han logrado establecer a partir del estudio de los materiales paleontológicos recuperados en este sitio arqueológico.

Andrews, Bradford (Pacific Lutheran University) [229] Calixtlahuaca Stone Tools: Technological Trends and Their Socioeconomic Implications

This paper discusses the general patterns reflected by the flaked stone obsidian tools from Postclassic Calixtlahuaca. Its assemblage is interesting for a number of reasons. First, it represents the only assemblage from a provincial context that is primarily composed of gray obsidian. Second, although core-blade technology is predominant, it also has bifacial and bipolar-related artifacts. The biface material includes a variety of biface implements and debitage related to their production, which indicates that bifaces were at least partially processed in the city’s households. The bipolar material is a major surprise because this technology is generally thought to be a Formative period reduction strategy, largely replaced by core-blade technology later in time. These data are used to explore the dynamics of trade and exchange that may have played out in the western periphery of the empire. One important question revolves around the issue of whether Calixtlahuaca maintained economic independence even after it became part of the empire. Interestingly, these data indicate a substantial change in the stone tool provisioning system post-Aztec conquest. Specifically, it appears that Calixtlahuaca acquired significantly more obsidian via the commercial system anchored in the Basin of Mexico.

Andrus, Fred [172] see West, Catherine

Angel, Jules (The Ohio State University, Dept. of Anthropology.) [135] What the Water Gave Me: A Case Study of Bone Recovery from a Fluvial Environment in Clark County, Ohio.

Bones that are transported fluvially always present recovery challenges. Many factors influence where the elements may be found, such as length of time since death, if the body was left whole or not, scavenger activity, water flow, natural impediments like rocks and trees, slope from deposition area, size, slope and land use of floodplain areas, as well as element size, shape, and condition (with or without soft tissue). Conducting meaningful experiments given these variables is also difficult. In this situation, case studies can present useful information to future investigators tasked with finding such remains. In the case presented here, remains of a person were found in a creek bed by anthropologists two years after the initial disappearance, and after numerous searches by the police, non-dog search and rescue units, and members of the public. An initial site survey, including informal talks with the manager of the land, plus another walk through with the recovery team, yielded valuable information that drove the search. This case illustrates how personnel specifically trained in searching for human bone material can increase the likelihood of finding remains even after an area has been searched and cleared by other types of search and recovery teams.

Angell, Elizabeth (Columbia University) [134] Risk Archipelagos: Islands of Disaster in Urban Turkey

Writing after Hurricane Katrina, Dawdy (2006) argues of post-disaster contexts that “perhaps under no other conditions are the relations between people and their landscape quite so self-conscious or quite so active.” The paper explores the experience of dwelling in the seismically active landscape of contemporary urban Turkey, a country crisscrossed with fault lines and subject to frequent and often devastating earthquakes, most recently in the Marmara region just west of Istanbul (1999) and the eastern Turkish province of Van (2011). As disasters that originate from the interaction of geology and the built environment, earthquakes are profoundly local events: they threaten particular places in particular ways, generating risk and ruin out of place-specific assemblages of fault orientation, building composition, population distribution, legal and political infrastructure, and cultural behavior. Drawing on historical and ethnographic research and engaging...
with the archaeological literature on disaster, the paper will examine the spatial effects of seismicity through the islands of risk and destruction in Turkish cities dealing with the experience of recent earthquakes (Van) and the anticipation of future ones (Istanbul).

Anselmi, Lisa (Buffalo State College) and Kevin Williams (SUNY Buffalo State) [40]

Reconnecting with the Past: Locating Historical Graves Using Ground Penetrating Radar in Western New York

This poster presents the preliminary results of two public outreach projects undertaken by the SUNY Buffalo State Archaeological Field School and members of the Buffalo State Earth Sciences and Science Education department in summer 2012. Our first project aided the Ellicottville Town Historical Society in an exploration of the Jefferson St. Cemetery in Ellicottville, NY. Our second project aided People, Inc., the leading non-profit human services agency in Western New York, in their effort to restore the Niagara County Almshouse Cemetery in Lockport, NY. Both projects were completed using ground penetrating radar in order to delineate areas of the cemeteries that contain unmarked graves and, in the case of the Almshouse Cemetery, the perimeter of the graveyard. The results of the projects will be used to erect central markers to memorialize unmarked burials at each cemetery and to restore the boundary of the Almshouse Cemetery.

Anson, Dimitri [27] see Pietrusewsky, Michael

Anspach, Easton (Columbia University) [134]

Bounded Earth: A Look at Inka Wak’as

Both the spiritual and physical worlds of the ancient Andes were permeated by a complex system of sacred shrines known as wak’as. A great deal of work has been done to date on the interconnection and importance of these shrines within the elaborate Inka perception and manipulation of a recursive, animate landscape. This has included a great deal of work on the intricate network of lines that connected these shrines, known as zeque’s, as well as the role of wak’as in state ritual. Recently there has been a shift in focus to examining the structure of wak’as as a reflection of Inka perceptions of their world, including the setting apart and bounding of these shrines from the surrounding landscape. This paper will examine this phenomenon by considering wak’as as cosmological, ritual, and physical islands, set apart from the rest of the world and reached through ceremonial journeys undertaken as a way of connecting the disparate realms and spaces of the Andean universe. In addition, this work will explore how these wak’as have become part of modern archaeological parks, which are themselves islands in a growing and changing urban landscape, and how this inclusion has affected their use and efficacy.

[200] Discussant

Anthony, David (Hartwick College) [211]

Why Should Archaeologists Care About Language? Lessons from the Old World

Linguistics and archaeology, companion disciplines in the nationalist 19th century, have grown apart. Yet all anthropologists recognize that language is a central element of social identity, that it encodes all symbolic beliefs, and that it contains numerous clues as to geographic origin. Reconstructed proto-languages are like texts retrieved from the non-literate past, rich with meanings and concepts that are obtainable no other way. In North America the shallow time depth of written texts is challenging, but in the Old World the long written record demonstrates where languages shift or persist over time, and where language and material culture correspond. New approaches to language and archaeology in the Old World might show how language and material culture could be utilized in the New World.

Antillón, Rafael Cruz [252] see Hull, Sharon

Anton, Susan and J. Josh Snodgrass (University of Oregon) [215]

Greener Pastures? Climate Variability and Dispersals in Early Homo

Members of the genus Homo were the first hominins to disperse from Africa and likely the first to move into temperate environments. Shortly after 2 million years ago, early Homo comprised a diverse set of species in East and South Africa with an archaeological record suggestive of a dietary shift and increased ranging. By about 1.8 million years ago the genus was broadly dispersed in Asia. A number of models have been proposed to explain this dispersal. Early Homo species together are larger in brain and body size than Australopithecus; thus, increased size, home range, and efficiency in ranging have been implicated. The genus arose during a time of heightened climatic variability, and increased developmental and behavioral plasticity have been hypothesized as keys to successful dispersal into varied environments. We consider recent fossil and archaeological evidence that offers some surprising insights about intraspecific variation in size, body proportions and ranging. Much evidence suggests that increased diet quality and decreased extrinsic mortality (e.g., predation rates) may be factors in successful dispersal. Further, data from recent humans offer important clues as to how to interrogate the fossil/archaeological record to consider the role of climatic variability on dispersal in early Homo.

Antoniou, Anna [205] see Mattes, Matt

Aquino, Valorie (University of New Mexico) [256]

Chronological Calibration and the Dynamics of Climate and Culture Change at the Lowland Maya Center of Uxbenká, Belize

A great deal of scholarly and popular attention has focused on the role of climate change for the widespread decline of long-lived Maya political institutions at the end of the Classic Period (AD 800-1000). It is generally accepted that there was no pan-Maya collapse and that the decline primarily affected political strategies rather than the societal fabric of Maya civilization. Determining the exact relationships between climate and culture change, however, is dependent on making chronological and spatial correlations between cultural and climatic datasets. At the Preclassic and Classic Period Maya center of Uxbenká in southern Belize, we have reduced the chronological uncertainties of these records by combining long-count dates on stone monuments, architectural stratigraphy and high-precision AMS 14C dates within a Bayesian statistical framework. We compared these data with a subannually resolved and precisely uranium-series dated paleoclimate record from a nearby cave/speleothem deposit. We discuss how these techniques for chronology-building have illuminated our understanding of Uxbenká’s historical and political trajectory within the context of regional climatic change.

[256] Chair

Aragon, Leslie [43] see Fladd, Samantha

Aragon, Leslie [85]

What’s in a Name? Ontologies of Hohokam Figurines

Anthropologists, and increasingly archaeologists, are using the word ‘ontology’ with escalating frequency. In Philosophy, where it originated, several subdivisions exist within the discipline, all of which deal with grouping things that exist into categories. What
can archaeologists learn by taking this concept from philosophy and applying it to archaeology? Further, how do we recognize the ontologies of others, particularly those who did not leave a written record, in the archaeological record? The way that people categorize things plays a role in how they are disposed of. Patterns in depositional practices emerge as visible traces in the archaeological record that allow us to recognize other people's ontologies. This is an important concept for archaeologists to address prehistoric value, since the value of a given object cannot be assessed without knowing how people in the past categorized things. In my work with anthropomorphic Hohokam figurines, I use ontology to explore the life histories of figurines from their manufacture, through deposition in the archaeological record, and subsequent excavation in modern times. This poster describes the techniques used to consider ontological approaches in archaeology as well as the findings of my current project.

Arakawa, Fumiyasu [65] see Glowacki, Donna

Arakawa, Fumiyasu (New Mexico State University), David Gonzales (Fort Lewis College) and Alan Koenig (U.S. Geological Survey)  
[86] Methodology for Sourcing Sanidine Basalt (Trachyte) Tempered Materials in the American Southwest  
For several decades, archaeologists have used various methods to source pottery clay and temper depending upon site context and available resources. This research begins by investigating sanidine-bearing igneous temper sources (also known as trachyte or trachybasalt) that was frequently used for pottery manufacture by the ancestral Pueblo people in the Mesa Verde region of the American Southwest from tenth to thirteenth century. In addition to identifying temper sources in the region, a major goal of this research is to discuss petrographic and geochemical analyses (i.e. electron microprobe, Laser-Ablation Inductively Coupled Plasma Mass Spectrometry [LA-ICP MS or ICP-MS], and Instrumental Neutron Activation [INAA]) and to evaluate the strengths and weaknesses of each analysis. Consequently, the results of these analyses and subsequent discussion will aid other researchers sourcing pottery tempered materials from diverse archaeological contexts.

Araujo, Astolfo [80] see Okumura, Mercedes

Araujo, Astolfo (Museum of Archaeology and Ethnology - USP), Aldo Malagö (Museum of Archaeology and Ethnology, University of), Olivia Ricci (UNESP - Rio Claro, Brazil) and Felipe Sabatelaü (Museum of Archaeology and Ethnology, University of)  
[224] Microartifacts Redux: What Happened with the Potential for Site Discovery?  
Thirty years ago, Fladmark's (1982) seminal paper on microartifact analysis was published. In the years that followed, several theoretical and methodological advances were achieved. However, it can be said that nowadays microartifact analysis is far from being a standard practice in archaeology. Even when used, microartifact analysis is usually directed to intrasite spatial analysis, and very rarely inside a landscape approach, or as a discovery technique. We will discuss some reasons for this state of the art, and present preliminary results from SE Brazil. It is our claim that microartifacts can be successfully used as markers of human activity in the landscape, especially in tropical regions, and that the development of techniques suited for this aim must be pursued.

Archer, Will [155] see McPherron, Shannon

Ardren, Traci (University of Miami)  
[127] Social Imaginaries as a Means to Understand

Ancient Childhood

Humans are social beings and we are a product of our relationships—this is true of our own lives today as well as the lives of ancient people. Identities, as a form of social community building, are one of the primary mechanisms by which cultures reproduce themselves through instruction and performance of values, goals, behaviors, etc. While such behaviors and beliefs leave a material residue available to archaeologists, these data are reflections of common understandings, worked out through dialogue and interaction. Viewing the social identities of ancient societies as forms of the social imaginary allows us to see material culture and its circulations as part of a discourse about identity and membership. This can promote a study of contingent change rather than universal. Africans and Europeans in an ancient past filled with interested agents who make strategic choices. I will explore the application of the social imaginary as a framework in which to understand how age based identities were deployed or rejected within ancient. Labor, especially the spiritual work of community redemption, was a central part of the performance of this imaginary.

Ardura, Dominique [124] see Tushingham, Shannon

Arendt, Beatrix (John Milner Associates)  
[271] Tracking Evidence for Missionization at the Hopedale Mission in Canada  
The Moravians initially established the Hopedale mission along the coast of Labrador, Canada in 1782, with the intention of "delivering salvation" without changing any aspect of Inuit culture. However, the missionaries quickly realized that converting the Inuit required dismantling their existing ideological system, and ensuring Inuit progression toward contemporary civilization. The introduction of Western institutions such as schools, medicine, and even social etiquette was intended to elevate the Inuit from their perceived squalor, and reach a social ideal founded firmly in Christian as well as Enlightenment theories. The common belief of the time was that political, moral and intellectual advancement was tied directly to material acquisition. Similarly, the progress of the Inuit on the road to religious salvation was rooted in the values of materialism, such as the consumption of particular European goods. In this paper, I explore the historical and archaeological data from Hopedale to track the import of European materials as proxy evidence for identifying changing consumption habits of both Inuit and Moravians.

Ardvéalo Pakarati, Cristián [164] see Van Tilburg, Jo Anne

Arqanazar, Diego [193] see Fondevieille, Luis

Argueta, Cristina [166] see Pineda De Carias, Maria-Cristina

Arkush, Brooke [183] see Wismer-Lanoë, Meredith

Amendariz, Xabier [7] see Walker Vadillo, Veronica

Armstrong, Stephanie [254] see Roksandic, Mirjana

Armstrong, Douglas (Syracuse University)  
[292] Systems of Enslavement and Transformations to Freedom in the Caribbean  
Archaeological explorations of contexts and outcomes of colonial encounters between Africans and Europeans in the Caribbean region. The emergence of large scale plantation economies led to
a social and economic system built upon the exploitation of the
slave trade and the use of enslaved laborers. This paper will
examine archaeological case studies from British colonial settings
(Barbados and Jamaica) and the Danish West Indies (St. Jan and
St. Thomas), to explore the emergence and social systems built
upon slave labor and ways in which those who were enslaved
attempted to resist slavery and gain freedom and ways in which
the struggle for freedom has been integrated into heritage
management through interpretive archaeology.

Arnould, Charlotte (CNRs)

[144] Early to Late Classic Population Mobility in La
Joyanca, Northwestern Peten, Guatemala
Most occupational histories of Maya Lowland cities register a
substantial growth in population change from Early to Late Classic
periods. What has not been established is the proportion of such
increase that must be assigned to demographic (“natural”) growth
in situ and immigration from rural areas. At La Joyanca,
Guatemala, a medium-sized center with a 160-hectare residential
zone, a burst of monumental construction occurred in both the
public plaza and neighborhoods by AD 600-700. While the
paleoenvironmental sequence (based on the analysis of a core
taken from a lake 5 km from La Joyanca) indicates an abrupt
paleoenvironmental sequence (based on the analysis of a core
zone, a burst of monumental construction occurred in both the
public plaza and neighborhoods by AD 600-700. While the
results of carbon and sulphur show a very homogenous behavior,
investigate the feeding behavior of these individuals. Isotope
millennia.

genetic diversity and population size over time. Results suggest a
analysis of internal dynamics during Classic times. Preliminary
results and interpretations from the 2012 field season are
presented.

[144] Chair

Arndt, Uraula (Simon Fraser University, Department of
Archaeology), Olaf Nehlich (Department of Anthropology, Unioverse of British ), Alan McMillan (Department of
Archaeology, Simon Fraser University), Michael Richards
(Department of Anthropology, University of British ) and
Dongya Yang (Department of Anthropology, University of British )

[71] Using Ancient DNA and Stable Isotopes On
Archaeological Cetacean Samples to
Investigate Target Species In Pre-Industrial
Whaling in Barkley Sound
Archaeological research can be used to gain important insights on
the interaction of humans with their environment, for example
hunted species and their natural history. For this study, whale
bones from excavations at Barkley Sound were used to investigate
the antiquity of whaling and the resources available to early
hunters, using ancient DNA and stable isotopes.

Analyses of 264 whale bones revealed 78.8% humpback whales
and 13% grey whale followed by other species in low quantities.
Humpback whales were analyzed further to study changes in
genetic diversity and population size over time. Results suggest a
long term stable population frequenting Barkley Sound over four
millennia.

Stable isotopes of humpback and grey whales were analyzed to
investigate the feeding behavior of these individuals. Isotope
results of carbon and sulphur show a very homogenous behavior,
whereas nitrogen demonstrates highly variable dietary habits.
Results of this study suggests that the whales hunted by Nuu-
chah-nulth people for at least 4000 years were likely the ancestral
populations of modern whales in the region, based on similar
genetic structure and feeding behavior.
This study is an example of how archaeological science can
contribute to the investigation of ancient ecosystems, equally
supporting archaeological and conservation research.

Arnold, Elizabeth [186] see Madden, Gwyn

Arnold, Philip (Loyola University Chicago)

[275] Teotepc and a New Tuxtla Prehistory
Archaeological research at Teotepc, located in the Tuxtla
Mountains of southern Veracruz, Mexico, is providing an
alternative scenario for the region’s long-term politico-economic
development. Conventional accounts of Tuxtla’s cultural
transformations generally emphasize external contact, be it via the
southern Gulf Olmec during the Formative Period or Teotihuacan
during the Classic Period. Evidence from Teotepc, however,
suggests that the western Tuxtla was characterized by a
significant autochthonous development. Moreover, evidence is
mounting that the influence provided by extra-regional agents has
been overstated. This paper employs several lines of data to
examine and reassert the impact of foreign interests on Tuxtla’s
prehistory. This evaluation reframes Tuxtla’s prehistory as one in
which local cultural expression were largely consonant with other
Gulf lowlands occupations and were only moderately affected by
extra-regional contact.

[275] Chair

Aronsen, Gary [260] see Brownlee, Sarah

Aronsen, Gary (Yale University), Ana Marichal (Yale
University) and Sarah Brownlee (Yale University)

[260] Osteology of the Yale-New Haven 4: Health,
Occupation, and Trauma Biomarkers
The four skeletons recovered from the Yale-New Haven
Hospital construction site show multiple indicators of disease,
trauma, and occupational stresses. All four individuals exhibit
pathologies and damage associated with manual labor. Dental
attrition and calculus accumulation suggest a diet of coarse and
starchy foods. The older female possesses unique osteoarthritic
to the knee that are strongly suggestive of a repetitive
activity, possibly a factory-based or other labor-intensive
occupation. One male shows multiple healed fractures that likely
resulted from a serious fall or blunt trauma, as well as bony
changes suggestive of infectious diseases. Two individuals have
periomem trauma indicators. Evidence of cultural activities, i.e.
pipe smoking, is also evident.

When viewed in toto, our osteological analysis provides a
unique look into the 1850s working class of New Haven – a
population overlooked in most history books. We describe the
significance of these biomarkers through comparative osteology
and in the contexts of industrial, immigrant and historical data for
the Northeastern United States. Furthermore, our results are
augmented by collaboration with experts in other fields to further elucidate
individual identity, life history, and population/socioeconomic
status.

[260] Discussant

Aronsson, Peter (Linnaeus University)

[72] Representing Age in the National Museum
In this paper age will be in focus using both qualitative and
quantitative material to discuss the role this plays both as a
dimension in heritage representations and as a strata of the
audience. National museums have a prominent standing both as
homes for scientifically legitimate and politically sanctioned
representation of history and preferred values of taste and
community. Museums are visited by citizens, immigrants and
tourists of all ages. In a large scale European project, European
National Museums: Identity politics, the uses of the past and the
European citizen (EuNaMus), comparative research has mapped
the meaning and experience of these institutions. The results have
so far been discussed mainly in terms of how identity politics act
on ideas of nationality, ethnicity and scientific truth. In social
and cultural policies the inclusion of young people and minority groups
Transmission of ectoparasites. The prevalence of pediculosis activities in very circumscribed places, which facilitated the among them. In addition, they likely carried out their daily camp Chinchorro. Chinchorro fishermen lived in small huts, which could high prevalence shows that such conditions existed for the crowd disease and is more associated with large populations. The excellent preservation of mummies permitted to study the degree of infestations by Pediculus humanus capitis which is usually transmitted by head to head contact. An area of 2x2cm² on each mummy’s head was systematically inspected for louse nits using a hand held 10X lens. Hairs with nits/eggs and lice were collected and analyzed using optic and scanning electronic microscopy. About 75% (47/63) of the mummies, of all ages and both sexes resulted positive with an average of 8.2 nits per positive individual. Microscopic analyses revealed all developmental stages and micromorphology of the ectoparasite. The results of the analysis were surprising. Louse infestation is a crowd disease and is more associated with large populations. The high prevalence shows that such conditions existed for the Chinchorro. Chinchorro fishermen lived in small huts, which could have contributed to the high prevalence and spread of pediculosis among them. In addition, they likely carried out their daily camp activities in very circumscribed places, which facilitated the transmission of ectoparasites. The prevalence of pediculosis could be a useful bioindicator to debate cultural behavior and paleoepidemiology in prehistoric populations.

Chair

Discussant

Chair

Discussant

Chair
As prominent as ritual performance was for cementing authority in Archaic states, community performances oriented more to the populace than the king could be equally important. Such instances, however, are far less often discussed. This presentation considers paired, mutually contemporary observances, royal and commoner, at the Classic Maya polity capital of Quiriguá, in what is now Guatemala. It then draws comparisons with select instances elsewhere in Mesoamerica, including Copan, Honduras, plus the non-Maya polity capitals of Quelepa, in eastern El Salvador, and Gualajquito, in west-central Honduras. The central argument is that understanding the nature of ritual in Archaic states requires consideration of practices enacted by the range of society’s members. Among the questions asked are whether such multifaceted sets of practices are mutually complementary, hint at subordinates’ resistance to central authority, or fit other interaction models.

[166] Discussant

Asmerom, Yemane [109] see Rissolo, Dominique

Asouti, Eleni [32] see Marciniak, Arkadiusz

Astete, Fernando [200] see Ziółkowski, Mariusz

Astorino, Claudia [22] see Bae, Christopher

Asthullo, Fernando

[1] Phytoliths, Paleoenvironment, and Human Settlement of the Northern Ecuadorian Andes Middle Holocene grassland composition, vegetation dynamics, and ancient terracing in Andean páramos and montane forest were studied based on quantitative phytolith analysis. Paleoecological samples were taken at the archaeological site of Palo Blanco in the highlands of northern Ecuador, which reflect the presence of permanent grass vegetation with changes in its composition. Human impact is observed in the modification of natural slopes creating terraces. Minor changes in the frequencies of grass vegetation of the Panicoideae subfamily suggest a weather fluctuation about 3640 BP. This paper provides a comprehensive overview of the phytolith spectrum present in different levels of the terraces, which can guide future paleoenvironmental research in the Andean highlands.

Atherton, Heather (Columbia University)

[134] Desert Islands: Frontiers of Isolation in Colonial New Mexico

Like islands, frontiers are conceived of as bounded spaces and are often viewed as far-off and isolated places. Frontiers also serve to demarcate the edge of a territory, such as a nation or empire. Despite their role as border for a region, frontiers are recognized as being somewhat permeable and fluid as well. Taking island studies as my muse, this paper considers the movement of goods and people across the northern borderlands of New Spain. In particular, I draw upon data from rural villages in the colonial province of New Mexico. Charting the flow of goods and people into and across this desert “island”, I explore notions of locality and how they lay in opposition to what was perceived of as foreign as well as administratively distant.

Atici, Levent [3] see MacIntosh, Sarah

Atici, Levent (University of Nevada, Las Vegas) and Burçin Erdogu (University of Thrace, Turkey)

[263] Zooarchaeology of the Neolithization of Europe: New Evidence from Ugurlu Höyük, Gökçeada, Turkey

The revolutionary transformation of societies from foraging to farming in Southwest Asia and the subsequent spread of emerging economies into Europe via a process called Neolithization have been one of the most enduring research agendas in archaeology. Currently, archaeologists approach the Neolithization of Europe from a dichotomized perspective using two competing models: the “wave of advance” model postulates that people advanced on an
East-West axis with their ideas and technology, as well as their crops and livestock, gradually colonizing Europe. The “leapfrogging” model argues the advance of small, maritime populations following a coastal route hopping from island to island. Uğurlu Höyük is a Neolithic settlement on Gökpınar, the largest Turkish island in the Aegean Sea, and currently the only site with an early Neolithic component found in the eastern Aegean and between Southeast Europe and Southwest Asia. As such, Uğurlu Höyük sheds new light on and significantly contributes to our understanding of the development of agricultural societies in Southeast Europe. In this presentation, we focus on material culture and animal exploitation strategies at Uğurlu Höyük and add new data to research in Neolithization of Europe.

Auble, Brent (George Mason University)

Exploring the Development of Complex Civilization in Ancient Peru Using an Agent-Based Model

The expansion of the population along the river valleys from the Pacific Ocean up to the Peruvian Andes has been posited as a driver of increasing social complexity. In this study, a preliminary agent-based model (ABM) has been developed that explores the development of an initial fishing village along the ocean at the mouth of a river based on population growth and increasing needs for diverse resources. The model shows theoretically that expansion up the river valleys could be explained by increasing population size and resource requirements, and may help shed some light on whether this is consistent with Moseley’s Maritime Foundations Hypothesis.

Aufeheide, Arthur [50] see Brown, Emma

Auge, C. Riley (University of Montana), Mary Bobbit (University of Montana), T.A. Foor (University of Montana) and Kelly Dixon (University of Montana)

Indigenous Uses of Non-traditional Artifacts at a Mid-Fraser Village

At the end of the 18th century, British, French, and Russian fur traders made first contact with the indigenous Pacific Northwest inhabitants. Through networks of direct and indirect trading interactions, objects of European design and manufacture steadily became components of Pacific Northwest native people’s material culture. The introduction into indigenous cultures of new materials for traditional technologies (e.g., metal projectile points) and the presentment of novel objects (e.g., horseshoes, mirrors) surely affected traditional behavior. However, as has been documented in other culture contact contexts, the adoption of non-traditional materials and objects often resulted in adapting those forms physically or ideologically to correspond with traditional modes of meaning. By examining a small group of 18th-19th century artifacts excavated during the 2012 fieldwork from House Pit 54 of the Bridge River Site (EeR14) in British Columbia under the direction of Dr. Anna Prentiss, we consider multivalent interpretations to better understand how native people appropriated non-traditional material culture to function within their own cultural framework.

Auge, C. Riley [120] see Bobbit, Mary

Auguste, Ivince [292] see Hofman, Corinne

Austin, Anne [129] see Simpson, Bethany

Aveni, Anthony (Colgate University) and David Stuart (University of Texas)

Calendars, Astronomy, and Math at the “Xultun Institute of Advanced Study”

We can be sure that the discovery of the complex of numbers painted in the codex style on the walls of Str. 10K2 at the Classic Maya site of Xultun, Guatemala deal with calendrical, astronomical, and numerical computations of the kind found in the much later codices. This offers us an opportunity to generate testable hypotheses, based on the considerable body of knowledge about the codices, regarding the ends served by these remarkable numbers. In this presentation we present further information gleaned from these numbers since our publications in 2012 and we discuss some of the new ideas we have been considering.

[166] Discussant

Awe, Jaime [171] see Horn, Sherman

Ayres, William [244] see Seikel, Katherine

Ayres, William (University of Oregon)

[244] Discussant

Babcock, Thomas

Utatlan: The Postclassic Community of the K’iche’ Maya

Archaeological interpretations of spatial organization and social stratification of the late Postclassic K’iche’ Mayan center of Utatlan, Guatemala are presented. The K’iche’ ruling elite were purported to be Mexicanized Mayans from the Gulf Coastal area of Mexico, migrating to the highlands following political changes at Chichén Itzá. Ethnohistorical records have been interpreted to suggest a dual kingship and both tripartite and quadripartite components in the political and social organization of the K’iche’. These may also have been present at Chichén Itzá and at Tayasal. A royal burial excavated at Utatlan may attest to a dual kingship.

The non-local elite dominated an indigenous K’iche’ population. This indigenous group comprised a spatially segregated commoner population of the city. Archaeological evidence indicates commoner houses conformed to a template that predated founding of the late Postclassic city by over 700 years, and their use continued unabated for nearly 300 years after incorporation into the Postclassic city. This city had an elite epicenter with an adjacent lower-level elite zone, separated by a barrier from the commoner zone, and had an entry fortification. This may mirror the spatial arrangement of the Kaqchikel Mayan center at iximché.

Bachelet, Caroline

[103] Wood exploitation in the “Cidade de Pedra” (Rondonópolis, Mato Grosso, Brazil) from the Middle Holocene: An Anthropological Analysis

Research in southern central Brazil, in “Cidade de Pedra” (Rondonópolis, Mato Grosso) revealed a significant prehistoric sequence settlement dating from the mid-Holocene to late Holocene. The diversity of materials so far discovered attests to the presence of several groups: first, pre-ceramists, and then, ceramists from 2800 years BP, when the first ceramic sherds at the Ferraz Egreja site appeared. In each of the excavated sites, the large quantity of combustion remains testifies the use and exploitation of wood by men. This work presents the first results of anthropological analysis performed from vestiges of hearths, firebrands and charcoal concentrations collected in four habitat sites throughout this chronological period. By approaching paleoethnobotanical and paleoecological issues, this paper provides the first data on the regional paleovegetation and human behaviors in regarding wood collection resources for the last 5000 years.
Backes, Clarus [288] see Cheetham, David

Baierlipp, Michael [125] see Kaufmann, Kira

Bae, Kidong (Hanyang University, Korea) [22]

Baichtal, James [167] see Moss, Madonna

Baierlipp, Michael [125] see Kaufmann, Kira

Backo, Heather (Tulane University) and John Verano (Tulane University) [57]

The New Temple and Temporal Continuity in Human Sacrifice at the site of Moche, Peru

Excavations at the site of Moche, on the northern coast of Peru, have revealed a late period ceremonial structure designated Platform III, or the New Temple. This temple postdates the use of the larger Huaca de la Luna and represents a shift in ceremonial activities at the site. There is now evidence for continuity, however, in the practice of prisoner sacrifice persisting at this later ceremonial structure. Multiple clusters of human skeletal elements, representing several individuals, have been excavated from windblown sand with no evidence for severe pluvial episodes. Similar to the prisoner sacrifices of Huaca de la Luna, all are male with abundant perimortem trauma, including cut marks related to disembemnerent, defleshing, and decapitation. Also found among the remains is the earliest existing example of chest opening related to ritual activity on the north coast of Peru.

The New Temple is currently the only known late Moche to Transitional period site with skeletal evidence for the continuation of prisoner sacrifice. Although unique in this context, the New Temple reflects ritual continuity between the earliest to final Moche occupation at the site, and possibly into later period sites, such as Pacatnamu, as reflected in the practice of chest opening.

Bae, Christopher [22] see Lee, Chulmin

Bae, Christopher (University of Hawaii at Manoa) [22]

Late Pleistocene Hominin Fossils from Ryonggok (Democratic People’s Republic of Korea): Linear and Geometric Morphometric Perspectives

Ryonggok Cave, located near Pyongyang (Democratic People’s Republic of Korea), is perhaps the most important Late Pleistocene hominin fossil locality in the Korean peninsula. Numerous hominin fossils were found, representing at least five individuals. The hominin fossil assemblage includes two relatively intact crania, several mandibles, and a series of postcranial remains. The focus of the present study is the two relatively complete crania (#3 and #7), with the goal to determine which hominin taxa these Korean fossils might be most appropriately allocated to. Comparative data were collected on a series of human skeletons from Chosun Dynasty (1392-1897 A.D.) cemeteries in the Republic of Korea and on a range of modern humans and casts of hominin fossils (e.g., Homo erectus, H. neanderthalensis, Upper Paleolithic modern humans) stored in the American Museum of Natural History. A series of linear and geometric morphometric (GM) data were collected directly on these casts and modern human specimens. Results from principal component and discriminant function analyses suggest the Ryonggok hominins might be more closely aligned with modern humans than fossil hominin taxa. Implications of these results are discussed as well as the chronometric age of the Ryonggok hominins.

Bailey, Geoff [215]

Dynamic Landscapes as Agents of Human Evolution and Dispersal

The notion of ‘landscape’, with its emphasis on the spatial dimension of human activity, and as the effective arena of social and ecological interaction and human adaptation is a powerful one. However, the immense geochronological and geomorphological challenges of reconstructing the physical landscape settings in the Pleistocene have deterred investigation of this key variable. The difficulties are compounded by the fact that regions with the greatest concentration of early finds are active geologically, because of high levels of tectonic activity or other instabilities such as sea-level change and crustal deformation. Landscape reconstructions are especially difficult in such regions, and relationships with human activity are further obscured by the all-pervasive problem of differential visibility and preservation. We argue that the inherently dynamic nature of these unstable landscapes has made them powerful agents of biological and social change, selecting for, stimulating, obstructing or accelerating the latent and emerging properties of the human evolutionary trajectory, provide examples in support of this idea, and assert the importance of pursuing a research agenda of multiscalar landscape reconstruction if we are to understand fully the role of environmental, ecological and climatic changes in human evolution.

Bailey, Laura and Catherine Johns [119]

Materiality of Energy: Mass Consumption Issues in Material Culture on Public Transit

Archaeologists have often considered their task to be the delineation of shifting adaptations over time, based either on the systemic or individual advantages of different behaviors and technologies. Yet attempts to understand the processes that have led to adaptations often remain obscure in archaeological contexts. In order to address this broader problem an ethnoarchaeological and historical analysis of the Denver public transportation system and its predecessors was conducted, with special attention being paid to the current Light Rail system. We examine the shifts between public and private forms of transportation during the 20th and 21st centuries in Denver and elsewhere, pointing out the role of population growth and changing economical situations as being the principal motivator in bringing about technological change. A series of interviews among current Light rail passengers uncovered five main reasons for using this form of public transportation, most of which could be considered an adaptation to modern stressors. This study therefore contributes to archaeological studies of the agency of adaptation to population growth.
boundaries of the Sinixt/Arrow Lakes people. Sixty-four potential source samples were collected from an area spanning approximately 300 km². Petrographic and chemical analysis by portable XRF and WD-XRF will be used to characterize and define the different volcanic rock units within this region. Artifacts from the site will then be chemically analyzed using an Innov-X portable XRF unit and, if possible, assigned to the corresponding source locality.

Bair, Daniel [207] see Terry, Richard

Baird, Douglas [3] see Fairbairn, Andrew

Baizel, Sarah (UC San Diego) [238]

Before and After: Burials and the Reuse of Ceremonial Space at the Omo M10 Temple, Moquegua, Peru

The placement of human burials in monumental architecture during episodes of (re-)construction and abandonment has been documented in many regions of the pre-Hispanic Andes, including the capital of the highland Tiwanaku state (A.D. 500-1000). Previous research at the provincial Tiwanaku ceremonial center Omo M10 in the Moquegua Valley of Southern Peru has documented the presence of Tiwanaku interments in one of the lateral temple platforms, known as M10B. Recent excavations cast new light on the original nature and function of this monumental substructure, and address the questions of when and why it was transformed into a burial space. Data from the initial construction and subsequent mortuary occupation of this sector of the Omo temple elucidate the temporal and functional relationships between platform and cemetery, of ceremonial spaces and mortuary monuments.

Balamaseda, Jorge [234] see Lailson Tinoco, Becket

Balanzategui, Daniela (Simon Fraser University) [1]

Colonial Indigenous and Mestizo Foodways: Ceramic Analysis and Ethnoarchaeology in the Highlands of Ecuador

Archaeological approaches regarding cultural change or continuity after the Spanish conquest of America have been focused on presenting proportions of European (majolica) vs. Indigenous (coarse earthenware) ceramic styles. This thesis provides a reconstruction and quantification of vessel forms from an 18th century household (Riobamba, Ecuador). The results are compared with inventories and interviews from ten modern Indigenous and Mestizo households in the Highlands of Ecuador, in order to understand colonial food preparation and consumption traditions. Testing colonial practices, this work proposes that Mestizo population has been politically situated to practice European foodways to maintain social status and reinforce their separation from Indigenous people. Indigenous people intentionally continue local traditions of communal feasting with the use of large pots to express their identity. The theoretical implications of these findings shed light on a complex combination of domestic practices as builders of negotiable ethnic identities.

Balco, William (University of Wisconsin-Milwaukee) [25]

Compositional Analysis of Indigenous Iron Age Pottery from Western Sicily: From Challenge to Interpretation

Pottery production and exchange remain popular foci of post-excision materials analysis research in western Sicily. Few studies however, explore Iron Age Sicilian pottery from a compositional perspective. Exportation issues, materials preservation, and budget constraints have limited the scope of compositional studies and largely confined interpretations to the results of stylistic evaluations. Unlike previous, destructive compositional analyses of Mediterranean pottery, non-destructive techniques facilitate the study of pottery while maintaining high curation standards. This paper presents a viable non-destructive method for analyzing pottery from the seventh through fourth centuries BC using a portable x-ray fluorescence (pXRF) instrument. Challenges such as transporting the instrument internationally and overcoming electrical current fluctuations are discussed. The results of this study suggest that pXRF instruments can be successfully employed in urban as well as remote rural settings. The resulting pXRF data was used as a complement to more traditional stylistic and morphometric analyses. The combined data set allows a more focused examination of the production and exchange of Iron Age western Sicilian pottery within the context of the ancient Mediterranean economy.

Ballard, Chris (Australian National University) [292]

The Encounter of Historicitics

As Marshall Sahlins and others have demonstrated, historicities, or cultural logics of temporal process, play a critical role in cross-cultural encounters. On either side of the encounter, they guide the anticipation of novelty and structure subsequent reflection on events and the constitution of historical narratives. But, in the course of encounters, these historicities are themselves put at risk, or laid open to the possibility of transformation; the fundamental tenets of cosmological process and temporality are exposed to radically different conceptions of the past and the future. Acknowledging the cyclical flow of inspiration between Melanesian and Central and South American history and anthropology, and drawing on particular events in the 16th-century Caribbean and the 20th-century Pacific, this paper explores the consequences of encounters between strongly contrasting historicities, and the production of commensurable forms of historical consciousness.

Ballenger, Jesse [116] see Zedeño, Maria

Ballenger, Jesse (Statistical Research) and Jonathan Mabry (Historic Preservation Office, City of Tuscon) [291]

Temporal Frequency Distributions of Alluvium in the American Southwest: Taphonomic, Paleohydraulic, and Demographic Implications

The use of radiocarbon frequency distributions to reconstruct prehistoric human and animal populations must account for taphonomic loss and other factors. Researchers recently proposed a correction for “taphonomic bias” that is based on the radiocarbon frequency of a global sample of volcanic deposits. Analysis of radiocarbon dates sampled from the alluvium of the San Pedro and Santa Cruz rivers and their tributaries in southeastern Arizona shows that discovery and scientific biases also play an important role in the creation of radiocarbon frequency distributions, and that the rate of “taphonomic bias” in prehistory is not predicted by the radiocarbon frequency of volcanic deposits.

Ballensky, Tamara [109] see Brady, James

Balluns-Stanton, Brian [185] see Crook, Penny

Balme, Jane and Sue O’Connor (Australian National University) [227]

Traditions and Change in Scaphopod Shell Beads in the Southern Kimberley, Australia from the Pleistocene to the Recent Past

Shell beads were made in Australia from about 35,000 years ago. They include perforated marine gastropods and intentionally fractured segments of scaphopod. In the southern Kimberley scaphopod beads are found in both Pleistocene and Holocene contexts. While some of the oldest examples are in archaeological sites which were close to the Pleistocene coastline in the southern...
Kimberley, they are also found in sites which were over 500 km distant at the time of their deposition. This suggests that they were traded or exchanged "down the line." Historic photos and ethnographic evidence reveal that in the recent past such beads were worn as strands and as hair adornments by Indigenous people in coastal locations. There is no record of their use in the inland regions perhaps suggesting that they were used differently in inland locations or a break in traditional use. Here we look at some of the features of the beads from a number of Kimberley sites and speculate on the nature of the distribution networks over time.

Bamforth, Fiona [77] see Moussa, Nour

Bane, Barbara [91] see Bane, Barbara

Bane, Barbara (National Park Service) and Barbara Bane (National Park Service) [91]

Last Flight of a Nighthawk: The Recovery of Threatened Armament at a WWII Plane Crash Site in Yosemite National Park, CA

In April 1944, an Army Air Corps P-70 Nighthawk fighter plane on a night flight mission crashed in Yosemite National Park, CA. While the Army removed pilot remains and sensitive military equipment later that year, extensive portions of the burned plane remained at the crash site in the park’s remote backcountry. This paper describes the park’s efforts in 2012 to relocate the site, document the archeological site, and retrieve the plane’s armament by mule train when threats of looting appeared on social media websites.

Banks, Kimball [125] see Green, Debra

Banning, EB [58] see Hitchings, Philip

Baran, Ania [266] see Wilkerson, Emily

Barba, Fabio [17] see Escorcia, Lilia

Barba, Luis (Universidad Nacional, Autonoma De Mexico), Agustin Ortiz (IIA, UNAM), Jorge Blancas y (IIA, UNAM) and David Carballo (Boston University) [231]

Dedición de Estructuras Arqueológicas Enterradas y Determinación de Áreas de Actividad en La Laguna, Tlacaxcal

Desde hace más de tres décadas nuestro laboratorio ha establecido una metodología para el estudio de sitios arqueológicos. Dicha metodología incluye fotografía aérea, topografía con GPS, estudios de gradiente magnético, resistividad eléctrica, geo-radar y el análisis químico de los pisos excavados para la determinación de áreas de actividad. Mediante un acuerdo de colaboración esta metodología ha sido utilizada con éxito en el sitio La Laguna Tlacxcal. La Laguna ha sido considerado como el sitio de mayor tamaño en el norte de Tlacxcal durante la segunda parte del Formativo (c. 600 a.C. – 100 d.C.), y ha tenido varias etapas previas de estudio. Como parte del proyecto dirigido por David Carballo desde 2008, se han excavado varias estructuras localizadas previamente mediante estudios geofísicos: un juego de pelota, un altar central en la plaza (E-12L-5), basamentos piramidales como las (E-12L-1 y la 13M-1), así como una zona de producción y probablemente habitacional denominada como Estructura 12M-3 a y b respectivamente y cuyos resultados son parte importante de la presente ponencia. El estudio incluye la detección de residuos químicos en las muestras obtenidas al perforar el piso de manera sistemática, siguiendo la retícula de excavación.

Barber, Sarah (University of Central Florida), Arthur Joyce (University of Colorado at Boulder) and Jeffrey Brzezinski (University of Colorado at Boulder) [78]

Recent Excavations at the Rio Viejo Acropolis, Oaxaca, Mexico

With a volume conservatively estimated at 455,000 m3, the Rio Viejo acropolis was one of the largest monumental facilities in pre-Columbian Oaxaca. As originally built, the acropolis consisted of a series of earthen substructures that reached between 7 and 17 m above the ancient floodplain of the nearby Rio Verde. Much of the acropolis was built during the late Terminal Formative period (A.D. 100 and 250); the area was largely abandoned during the Early Classic period (A.D. 250 – 500), and then was reoccupied in the Late Classic period (A.D. 500 – 800). Excavations conducted in 2009 and 2012 on the acropolis have clarified current understanding of how this monumental space was constructed, used, and ultimately abandoned. Results indicate that much of the acropolis was built in a few brief, massive construction episodes rather than cumulatively over an extended period. Formative period activities on the acropolis included feasting and intensive burning, probably for very large-scale food preparation. Later activities, including those of the Late Classic period, appear to have been commemorative until the acropolis was occupied for domestic use at the end of the Classic or beginning of the Postclassic.

[78] Chair

Barber, Sarah [133] see Joyce, Arthur

Bardolph, Dana (University of California Santa Barbara ), Brian Billman (University of North Carolina Chapel Hill) and Jesús Briceño (Ministerio de Cultura del Perú) [70]

Gallinazo Phase Foodways in the Moche Valley of North Coastal Peru: New Research Directions and Paleoethnobotanical Evidence

This poster presents paleoethnobotanical data from a coastal Gallinazo Phase (0-200 A.D.) settlement in the middle Moche Valley of north coastal Peru. With most archaeological research devoted to the subsequent Moche period, relatively little focus has been given to the Gallinazo Phase. This period is particularly interesting as it is linked to a variety of cultural issues, including a complex set of interactions, tensions, and influences that accompanied the population movements, subsistence trends, and changes in architecture and ceramics apparent in the archaeological record prior to the consolidation of the Southern Moche polity. To date, no macrobotanical analyses have been conducted from Gallinazo Phase sites that were systematically sampled with modern recovery techniques for paleoethnobotanical remains. This poster presents preliminary results from an analysis of flotation samples from West Cerro León (MV-224), a defensive coastal Gallinazo Phase settlement, as part of establishing baseline subsistence data for comparison with other sites in the Moche Valley. Data from this study will be used to address future research questions related to agricultural intensification, place-based foodways, and highland-coastal interaction that profoundly shaped the prehistory of the region.

Barham, Anthony (Australian National University ), Philip Hughes (HEH Pty Ltd and Australian National University ), Marjorie Sullivan (HEH Pty Ltd and Australiannational University ), O’Connor Susan (Archaeology and Natural History, Australian Nation) and Faulkner Patrick (University of Queensland ) [224]

Geoarchaeological Advances in Identifying Shell "Scatters" As Middens Located on Tropical Shorelines Influenced by Catastrophic Marine Inundation Events (Cyclones and Tsunamis)
Identifying small deposits of shell as either a product of human food discard (middens) or the geomorphological product of wave reworking of shell-rich intertidal facies (e.g. cheniers) can be challenging. Extra interpretive difficulty occurs on coasts utilized by shell-collecting indigenous hunter-gatherers where landforms were, and still are, subject to episodic Catastrophic Marine Inundation Events (CIMES) e.g. cyclones and tsunamis. Failure to assess the origin of a shell “scatter” unequivocally, with strong evidential basis, may be far-reaching in terms of legislative compliance.

The paper presents results from “mixed-method” laboratory-supported geoarchaeological field investigations on low elevation macrotidal coastlines in Western Australia (WA). In the Pilbara, mining development impacts geologically old shorelines overlain and on-lapped by Holocene sedimentary veneers. Robust identification of the process origin of shell-matters is needed a) for heritage compliance ahead of infrastructure development and b) to improve risk assessment and design durability of the infrastructure once built with respect to storm inundations. Case studies show how utilizing 14C age-cohort analysis of sites combined with local facies architecture models yield substantially improved insights into the origin, antiquity and depositional history of shell “scatter” sites on these coasts with implications for sites on CIME-affected Indian and Pacific shorelines.

Barker, Alex (University of Missouri)


Studies of iconography and the recovery of meaning in prehistory tend to be speculative, offering neither a significant degree of rigor nor opportunities for other scholars to examine the logical entailments and inferential integrity of the arguments proposed. But while signs are arbitrary, the relationship between signs in a symbolic system are not, allowing processualist approaches to the interpretation of meaning. Using Peirce’s abductive inference a method is explored for developing iconographic interpretations which may be more rigorously assessed, allowing scholars to choose among alternative explanations or reconstructions by considering the explanatory power of the proposed reconstruction when applied to additional parts of the corpus. While any given sign may be polysemic, a method for assessing the validity of proposed interpretations should allow scholars to elucidate one or more meanings in a more systematic manner—and offering the potential to understand not only what but also how symbols mean.

Barna, Benjamin (University of Nevada, Reno)

[73] Investigating Pili at Laumai`a: A Hawaiian Metaphor for Cultural Hybridity among Nineteenth-Century Ranchworkers

During the nineteenth century, the nascent Hawaiian ranching community coalesced out of Hawaiians and immigrants from Europe, Asia, and the United States into a distinctive, culturally-hybrid paniolo cowboy subculture. The ranching community served as a kind of cultural refuge, retaining the use of the Hawaiian language and other practices when foreign colonial powers sought to assimilate Hawai`i’s multietnic population to their own Western ways. At the same time, the paniolo community borrowed and adopted aspects of the lifeways of the immigrants who joined their ranks. The usual acculturation models of “melting pots” and “salad bowls” fail to describe the decades-long process of ethnic integration on Hawai`i’s ranches. This paper proposes instead that the ethnogenesis of the paniolo community can be explained through the notion of pili, a Hawaiian metaphor involving mixing, relatedness, and ancestry. Evidence from two ranching cabins at Laumai`a on the Island of Hawai`i is used to illustrate how this metaphor describes the roles that ranch work and management practices played in the ethnogenesis of a culturally-hybrid occupational community.

Barnard, Hans (Cotsen Institute of Archaeology at UCLA) and Willeke Wendrich (Department of Near Eastern Languages and Cultures)

[129] The Problems and Possibilities Of Preserving the Mud-Brick Structures of Kananis (Fayum, Egypt)

Apart from its two temples built of local stone, the buildings in the city of Kananis (northwestern Egypt) are mostly constructed out of mud-brick (adobe). During large-scale excavations at the beginning of the 20th century many of the ancient buildings were exposed and left standing 2-3 stories high. Wind erosion, the decay of organic materials, and the robbing of usable items have since reduced most of the excavated structures down to their foundations. Studies of the local climate, the ancient architecture and building techniques, and the mud-bricks themselves have been initiated in an effort to better understand and possibly retard the deterioration of the city. Selected parts have already been reburied and plans to construct a replica of one of the ancient structures for visitors to experience instead of the vulnerable originals are in an advanced preparatory stage. The first and second phases of the creation of a visitor’s center were implemented in the winters of 2011 and 2012, respectively.

Barnes, Kelli (BLM Owyhee Field Office), Nicole Misarti (Water and Environmental Research Center, UAF), Bruce Finney (Dept. of Biological Sciences, Idaho State U.) and Herbert Maschner (CAMAS/IMNH, Idaho State University)

[45] The Shell Game: Exploring Ancient Human Ecosystems Using Stable Isotopes from Marine Shells

Carbon, nitrogen, and oxygen stable isotopes from a variety of marine shellfish species were examined from both archaeological and modern contexts. We assessed a range of factors accounting for isotopic variability including spatial, temporal, preservational, and methodological, in addition to fractionation differences between shell and soft tissue organics. Certain species have a greater potential for retaining diagnostic organic carbon and nitrogen isotope values in the archaeological record; thus making them better candidates to help reconstruct lower trophic levels of ancient food webs. Additionally, the use of oxygen isotopes in examining patterns of climate change is well established and of increasing importance to understanding effects of global climate on past and present island populations. Samples were collected from several locations around Sanak Island, Alaska and analyzed at the Idaho State University CAMAS lab using an isotope ratio mass spectrometer. Methods and results for limpets, periwinkles, chitons, and urchins are discussed in relation to regional climatic changes and localized resource use by ancient Aleuts. Variations in local climate and productivity affect human exposure to risk and influences technological innovations observable in the archaeological record. Shell isotope studies can help us to address such questions at a relatively fine spatial and temporal scale.

Barnett, Kristen [120] see Hamilton, Phillip

Barnett, Kristen

[127] Beyond Ecology: A Look at Demographic Change through Women’s Reproductive Choices

Theories of demographic change have long been predicated on ecological conditions associated with access to food resources. I argue that, throughout time and space, while demography may be impacted to varying degrees by ecological context, it is a human universal that population is always informed by women’s reproductive choices. In an attempt to understand the social, economic and demographic impacts of women’s reproductive choices, I take a close examination of Housepit 54 at the Bridge River Village, located in the Mid-Fraser Canyon on the X’misten Reserve, BC. It is clear that within this house both women and children had significant influences on the organization of space. I draw on spatial analysis of archaeological materials and
paleoclimate reconstruction to develop a model designed to measure the degree to which women’s decisions regarding reproduction, child rearing relate to the wider environmental, demographic, and socio-cultural contexts.

[127] Chair

Baron, Joanne (University of Pennsylvania) and Caroline Parris (Tulane University)

“You Must Carry Them, Feed Them, and Eat With Them”: Precolombian Patron Deity Veneration and its Modern Parallels

Many modern communities in Mesoamerica are named for Catholic saints believed to serve as their patrons and protectors. These patron saints were introduced by the Spanish clergy in the Colonial period after Spain's conquest of the New World. But many practices of patron saint veneration have parallels to pre-Columbian patron deity veneration. These include large-scale celebrations in which community members shared food and drink with deities and with one another. The notion of feeding the gods is reflected in both modern and ancient discourses as well as in the archaeological record. In this paper we will discuss these food-sharing practices of modern communities in Mexico and Guatemala and discuss archaeological evidence for analogous practices at the Classic period Maya site of La Corona, Guatemala.

Barone, Pier Matteo (University of Roma Tre/American University of Rome/Forensic Geoscience Italy), Carlotta Ferrara (Physics Dept. - University of Roma Tre), Elena Pettinelli (Physics Dept. - University of Roma Tre) and Adam Fazzari (Sensors & Software, Inc)

Forensic Archaeology and Forensic Geophysics: A Very Useful Joint Effort

Forensic Archaeology can be defined as “the application of archaeological theories and recordation and recovery methods to processing of criminal scenes” (Crist, 2001). Beside this forensic expertise, Forensic Geophysics is a useful and complementary science used for forensic purposes. It studies, searches, localizes and maps buried objects or targets (from weapons or metallic barrels till human burials and bunkers) beneath the soil or the water, using geophysics tools. Geophysical methods have the capability to aid the research and the recovery of these targets, because they can investigate large areas non-destructively and rapidly where a suspect, illegal burial or, in general, a forensic target was tried to hide in the subsoil. The Ground Penetrating Radar (GPR) is one of the most useful geophysical tools able to investigate targets beneath the soil (Annan 2004).

The aim of this paper is to highlight not only the potentiality of both forensic approaches together, but also in which way they could be helpful during the forensic investigations, in terms of high-quality results and fast acquisition. These are very useful sciences, but it is necessary to know the principles and the procedures to obtain best results.

Barr, William (University of Texas at Austin), Tomislav Urban (Texas Advanced Computing Center - University of Texas) and Denne Reed (University of Texas at Austin)

A Comparison of Ontologies and Data Schemas in Paleolithic Archaeology

Data standards provide a framework for data sharing and can comprise logical ontologies and data schemas. Ontologies provide the logical framework that describes the (often hierarchical) relationships between entities and classes of things, while data schemas provide stable lexicons for referring to those entities along with information about the format in which the information is stored. In this paper we present a comparison of the ontologies and data schema used by a range of archaeological research projects in order to identify the most common ontological relationships and the most useful and prevalent terms used in data schemas. This survey provides the starting point for creating a root set of terms and relationships suitable for a data standard in paleolithic archaeology.

Barreto, Dr. Cristiana (Museu de Arqueologia e Etnologia)

Beyond Pots and Pans: Ceramic Style and Iconography in Precolombian Amazonia

This paper will discuss the regional distribution of ceramic styles and iconographic themes in the Amazon just before European contact. It addresses the role of ceramic imagery in the shaping of territoriality, exchange networks, and multilingual interaction in both Central and Lower Amazon. It argues that in the Amazon, ceramic objects such as figurines, funerary urns and ritual vessels were part of a wide repertoire of technologies of communication and social interaction which played a major role in both reinforcing cultural identity and validating social formations through specific symbolic contents.

Barrett, Thomas (SWCA ) and Ron Kneebone (USACE Albuquerque District)

Obsidian at Teotepet: Preliminary Results and Historical Perspectives

Preliminary archaeological analysis of excavated obsidian from Teotepet is presented and compared with data collected and analyzed nearly two decades ago from the same site, as well as its regional neighbors. First, this paper explores the patterning evident in the recent data and seeks to relate it to the structure and operation of the prehispanic obsidian craft industry as postulated by previous researchers, and specifically, the political-economic paradigm promulgated by Robert Santley. In light of recent research in the Tuxtlas, the role of Matacapan, and indeed Teotihuacan, within the obsidian production-distribution system for raw materials and finished products must be reassessed. Finally, a re-orientation of our perspective on the obsidian craft industry in the Tuxtlas is suggested, one that emphasizes specifically intra-regional behavior, ranging from utilitarian tool production to specialized ritual consumption, and that will finally and fully complement the foreign focus of the past twenty years.

Barrientos, Gustavo (Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata) and Juan Bautista Belardi (Unidad Académica Río Gallegos, Universidad Nacional)

Patterns and Processes of Holocene Hunter-Gatherer Diversification in Southern Patagonia

Historical and ethnographic accounts refer to the existence of two different hunter-gatherer lifeways in the southern extreme of South America at the time of the European arrival: a) terrestrial hunter-gatherers, distributed in most of the inland environments of Patagonia and Tierra del Fuego; b) maritime (canoeists) hunter-gatherers, spread along the western and southern coast of continental Patagonia and Tierra del Fuego. Archaeological evidence, however, suggests a greater diversity, raising questions about how much variation in foraging lifeways was likely present during the Holocene and if such variation would be properly fitted into an adaptive radiation model. Bioarchaeological data shows that an adaptive radiation hypothesis cannot be supported due to the polyphyletic origin of the populations involved and the rather moderate character of the documented pattern of adaptive diversification observed in Fuego-Patagonia throughout the Holocene. In particular, a major north-south population dispersal event likely involving some degree of replacement may have taken place at around 3000 14C years BP. The aim of this presentation is to explore the archaeological record of the land strip between 44º-54º of southern latitude in search of evidence about changes in technology and land use patterns that could be putatively linked with this population event.

Barry, Jack (Trent University) and Gyles Iannone (Trent University)

Spatially and Socially Conceived Borderlands: A View from the Ancient Maya Center of
Minahna, Belize

The reconstruction of polity boundaries is essential to the study of dynamic processes that shape and change socio-political institutions in early state societies. The difficulty in studying boundaries archaeologically is well documented, and in the Maya subarea researchers have often relied upon artificial mathematical models, as well as epigraphic data and other historical sources of information to inform their models. More recently, the analytical powers of Geographic Information Systems (GIS) have been utilized to model socio-political boundaries, but with mixed results. In this paper, the ancient Maya center of Minahna, Belize, is used as a case study to present a conjunctive approach as a way to address community boundaries and territoriality of a frontier polity. GIS-based viewshed analyses and cost path analyses are tempered with archaeological material correlates and ethnographic and ethnohistoric data to explore spatially and socially constructed community boundaries. An emphasis of the role that collective memory plays in defining these dynamic boundaries provides a connective framework between the material correlates and human agentive processes that reaffirm them. Importantly, this study benefits from a large, multivariate dataset that transcends the elite agentive processes that reaffirm them. The demonstration of the role of collective memory in defining the dynamic boundaries provides a connective framework between the material correlates and human agentive processes that reaffirm them. Importantly, this study benefits from a large, multivariate dataset that transcends the elite agentive processes that reaffirm them.

Bar-Yosef, Ofer (Harvard University)

Bar-Yosef Mayer, Daniella (Tel Aviv University)

Barton, C. Michael (Arizona State University)

Barton, C. Michael (University of California, Davis), Christopher Morgan (University of Nevada, Reno) and Mingjie Yi (Institute of Vertebrate Paleontology and Paleoanth)

Barton, Loukas (University of Pittsburgh), Robert Bettinger (University of California, Davis), Christopher Morgan (University of Nevada, Reno) and Mingjie Yi (Institute of Vertebrate Paleontology and Paleoanth)

Bartelink, Eric see Johnson, Phillip

Batun-Alpuche, Adolfo (Universidad de Oriente)

Basgall, Mark (CSU Sacramento)

Batun-Alpuche, Adolfo (Universidad de Oriente)

Barton, C. Michael [23] see Bergin, Sean

Barton, Loukas (University of Pittsburgh), Robert Bettinger (University of California, Davis), Christopher Morgan (University of Nevada, Reno) and Mingjie Yi (Institute of Vertebrate Paleontology and Paleoanth)

Barton, Loukas (University of Pittsburgh), Robert Bettinger (University of California, Davis), Christopher Morgan (University of Nevada, Reno) and Mingjie Yi (Institute of Vertebrate Paleontology and Paleoanth)

Bartone, Dianna [100] see Oka, Rahul

Basgall, Mark [12] see Delacorte, Michael

Basgall, Mark (CSU Sacramento)

Bathurst, Rhonda (Western University) and Kira Westby (Western University)

Bar-Yosef Mayer, Daniella (Tel Aviv University)

Bar-Yosef, Ofer (Harvard University)

Bar-Yosef, Ofer (Harvard University)

Bar-Yosef, Ofer (Harvard University)

Bar-Yosef, Ofer (Harvard University)

Bar-Yosef, Ofer (Harvard University)
Beyond Modern Maya Campesinos
Collaborative Archaeology: Giving the Tools of Archaeological Interpretation to Maya University Students.

During the fall of 2010, I started teaching archaeology at the first state university created in Eastern Yucatan, known as Universidad de Oriente (UNO). Located in the town of Valladolid, this new university was opened by the state in order to provide intercultural education primarily to young Maya descendants from small towns throughout the region. This paper presents and discusses the triumphs and challenges of teaching Maya descendants about their own history and about the scientific tools used by archaeologists to interpret their prehispanic past. I discuss and evaluate the efficacy of being a native Maya archaeologist and a professor of archaeology.

Bauer, Jeremy (Vanderbilt University)

[171] In the Shadows of the Gods: Correlating E-Groups and Households through Time and Space

The appearance of ‘E-Group’ architectural assemblages at the onset of the Middle Formative period immediately presaged the appearance of many of the social institutions equated with Maya state level society across the highlands, lowlands and Pacific coast. Indeed, the coincidental appearance of E-groups and hereditary social difference cannot be ignored. What has been ignored, however, are attempts to link the two in meaningful ways. With few exceptions, most archaeological inquiry and analysis of E-groups and their surrounding architecture focuses too heavily on cosmological meaning or solar phenomenon, rather than social phenomena. While E-group plazas and architecture connected city inhabitants with cosmic myth, solar cycles, and ritual landscapes, it also meaningfully connected them to each other, and to surrounding political entities with similar worldviews. These social connections, forged through shared cosmology, memories, and recursive daily practices, laid the backdrop for the emergence social difference. In this milieu, households in direct proximity to the E-group, or with ancestral claims to their foundations, likely drew the most social and economic benefits. This paper will examine these contextual connections between E-groups and housemounds in the Maya area through time and space, assess the implications for social change, and suggest avenues for future inquiry.

Baumann, Steve [85] see Greene, Richard

[165] You are Who You Meet: Identity Formation in the Mimbres Valley

The characterization of a population as a collective entity indicates that individuals have enough commonalities to be identified as members of the same group. The identity of such a population is defined by both intragroup similarities and opposition to other groups. Interaction between groups serves to maintain and challenge social boundaries, forcing collective identity to be reshaped and renegotiated. Previous studies of interaction have addressed numerous topics such as the distribution, exchange, and the spread of ideas and technological forms across space. What has not often been discussed in detail is the role that these kinds of interactions played in the negotiation of identity. Using the prehistoric Mimbres of the American Southwest as a case study, this paper investigates the utility of exploring regional multicultural interactions to better understand identity formation of past populations. The interface between interaction and identity reveals methods by which culture change can be investigated in the archaeological record.

Baustian, Kathryn (University of Nevada, Las Vegas)

[101] You are Who You Meet: Identity Formation in the Mimbres Valley

The characterization of a population as a collective entity indicates that individuals have enough commonalities to be identified as members of the same group. The identity of such a population is defined by both intragroup similarities and opposition to other groups. Interaction between groups serves to maintain and challenge social boundaries, forcing collective identity to be reshaped and renegotiated. Previous studies of interaction have addressed numerous topics such as the distribution, exchange, and the spread of ideas and technological forms across space. What has not often been discussed in detail is the role that these kinds of interactions played in the negotiation of identity. Using the prehistoric Mimbres of the American Southwest as a case study, this paper investigates the utility of exploring regional multicultural interactions to better understand identity formation of past populations. The interface between interaction and identity reveals methods by which culture change can be investigated in the archaeological record.

Chair

Bautista, Stefanie (Stanford University)

[214] The Reuse of Space and Place during the Paracas-Nasca Transition: The Case of Uchuchuma, Aja Valley, Peru

Exploring the changes and continuities of material practices found within domestic and public spaces can help archaeologists better understand how major social transformations affected the lives of peripheral populations. This paper considers the re-use of domestic and public spaces within the context of the Paracas-Nasca transition on the Peruvian south coast. In the southern Nasca region, the transition from the Late Formative (200 B.C. - A.D. 1) to the Early Intermediate Period (EIP) (A.D. 1-700) witnesses the development of Nasca society out of the preceding Paracas culture. The nature of this Paracas-Nasca transitional period from the perspective of a domestic peripheral site remains unclear. Recent excavations at Uchuchuma, a prehispanic residential village located in the chapiyunga of the Aja Valley, Peru, have revealed evidence for the reuse of Paracas activity spaces. This paper explores recent findings from the domestic and public spaces at Uchuchuma and presents implications this research has for understanding of the Paracas-Nasca transition.

Chair

Bautista, Stefanie L. [214] see Van Gijseghem, Hendrik

Baxter, Erin

[16] Re-“Imaging” Aztec Ruins: An Assessment of Great House Architecture Form and Function through Historic Morris Photographs

Aztec West was excavated by Earl Morris in the early 20th century. His published notes were extensive for their time, but amounted to fewer than 400 words of description per greasehouse room, and even fewer for kivas. Morris, however, took over 1000 photographs, most of which have never been published. This paper will examine a few of these photographs and discuss interpretations and re-interpretations of architectural function, particularly with respect to wainscoting, pilasters and adobe masonry.

Chair

Baxter, Jane (DePaul University)

[74] Discussant

Baxter, Carey (USACE ERDC-CERL), George Calfas (University of Illinois, Champaign-Urbana), Anne Dain-Owens (US Army Corps of Engineers, ERDC-CERL), Michael Hargrave (US Army Corps of Engineers, ERDC-CERL) and Scott Tweddale (US Army Corps of Engineers, ERDC-CERL)

[183] Detection of Historic Farmsteads in Modified Bare Earth LiDAR Imagery

LiDAR (light detection and ranging) data density, return classification, and surface editing are strong determinants of the potential to detect and characterize relatively small and topographically subtle archaeological and historic landscape features and impacts such as looter holes. Low density (ca. 1 point per meter) data is increasingly available at little or no cost, but standard bare earth models dramatically reduce the visibility of such features. We evaluate the extent to which archaeological and historic landscape features can be detected in low density LiDAR data by systematically comparing raster images, bare earth models, and bare earth models with selected classifications retained with site plans derived from previous National Register of Historic Places eligibility evaluations of historic sites at Fort Riley, Kansas, and elsewhere. Labor costs associated with use of modified bare earth models is more than offset by improvements in feature detection.
Bayani, Narges [157] see Thornton, Christopher

Bayham, Frank (California State University, Chico), R. Kelly Beck (University of Utah) and Kimberley L. Carpenter (Far Western Anthropological Research Group, Inc.)

[177] Large Game Exploitation at the Boundaries: Modeling and Measuring Competition and Conflict Using Stable Isotopes

Being a high-ranking prey item, large game are often desired for both their economic and prestige values both of which may be converted to an individual's status. As such, big game can serve as a potential axis for competition between linguistic or ethnically distinct groups particularly under conditions of population stress leading to resource depression. This dynamic has been modeled and tested in the western Great Basin (Bayham, Beck and Carpenter 2012). We here further refine the parameters of the model and explore how and under what conditions competition may lead to conflict. Implications of the model are evaluated and some preliminary tests are explored using stable isotope analysis.

Bayman, James

[255] Culture, History, and Colonialism in the Hawaiian Islands

Publication of the award-winning book Anahulu: The Anthropology of History in the Kingdom of Hawai’i by Patrick Kirch and Marshall Sahlins was a milestone in the study of the world's local and global past(s). This book illustrated and highlighted the distinctive opportunities in Hawai‘i for integrating archaeological and documentary materials in the interpretation of history and the perspective of multiple voices and nested scales of analysis. The central findings of the research by Kirch and Sahlins have simultaneously enriched -- and complicated -- current investigations into the cultural, economic, and moral underpinnings of emergent colonialism in the Pacific Basin and elsewhere. Information gathered and investigated by Kirch and Sahlins underscored the dynamic cultural imperatives and individual (and collective) agencies in the political economy of "first" contact, eventual colonialism, and, perhaps ironically, the ongoing construction and perpetuation of traditional culture in the Hawaiian archipelago. This presentation outlines selected examples in Hawai‘i’s past that exemplify this process of cultural persistence in the face of profound change. Examples are drawn from previous archaeological studies and they are focused on the material record of technological change. This paper also acknowledges the ramifications of this phenomenon for contemporary society in the Hawaiian archipelago.

[176] Discussant

Bazaliiskii, Vladimir [194] see Schulting, Rick

Beasley, Melanie (University of California, San Diego)


This presentation examines the role of maritime adaptation and marine mammal dietary resource exploitation in Baja California. Prehistoric Southern California Channel Islands and Baja California populations have often been recognized as “The Dolphin Hunters.” Much debate surrounds ideas concerning the degree of maritime knowledge and how far into the open-ocean early populations traveled to procure resources. Stable carbon and nitrogen isotope values distinguish large oceanic mammals from coastal dwelling marine mammals. This presentation will be a meta-analysis of stable isotope research of Baja California archaeological sites along the Pacific Ocean (Cape Region) and the Gulf of California (Bahia de Las Animas) to evaluate which category of marine mammals served as the primary source of dietary protein through time. Results indicate that coastal foraging species contributed more significantly to prehistoric diet in both regions. This suggests that maritime practices and hunting methods were likely used for exploiting marine mammal species inhabiting ocean waters closer to the coast rather than open-ocean.

[138] Chair

Beauchesne, Patrick (University of California, Berkeley)

[74] Understanding Children in the Past through Life Course Perspectives

Although few in number, bioarchaeological studies of ancient Romans have yielded important findings regarding the daily lives of non-elite people, knowledge of whom is often absent in other scholarly sources. This paper argues that future bioarchaeological studies have even more to offer by implementing life course perspectives, which come from many disciplines, and offer at their core a developmental and historical framework to studying the lives of individuals or groups. One of the predominant advantages of life course perspectives is that they investigate the lives of children. The study of the Roman family, and the lives of children in particular, are increasingly important in Roman studies. We argue in this paper that life course approaches provide useful and powerful new starting points to talk about how “children become children” in diverse biocultural contexts. Children have been studied extensively in past populations, but primarily through biological lenses that focus on health and pathology. Bioarchaeological voices speaking about the social lives of children have remained largely silent. In this paper we use examples from the Roman Imperial period to highlight how existing methods can be used and interpreted in new ways to make inferences on the process of childhood.

[74] Chair

Beaudoin, Alwynne (Royal Alberta Museum) and Gerald Oetelaar (Department of Archaeology, University of Calgary)

[131] Landscape Recovery and Resource Availability Following the Mazama Ashfall on the Northern Great Plains

The Mazama ashfall about 7600 years ago affected much of western North America. It was undoubtedly a significant natural
disaster for the people in the region, including those over 1000 km from the vent in southern Alberta. The Mount St Helens 1980 eruption provides comparative data to assess landscape recovery following ashfall and indicates considerable ecosystem resiliency. Monitoring shows the importance of “islands”, either protected areas where ash did not accumulate or places where ashfall was thin and easily removed, as “hotspots” for reoccupation by plants and animals. Some biota were survivors, especially burrowing animals or plants with underground bulbs and rhizomes. These so-called “biological legacies” were important in landscape recovery. Other biota were colonizers using varying dispersal mechanisms. Thirty years post-eruption, landscape recovery is proceeding well, albeit with different productivity and diversity levels than before. For the archaeological past in the Mazama ashfall envelope, this suggests that habitable landscapes may have reconstituted relatively quickly, especially in areas of topographic diversity, including uplands (e.g., Cypress Hills), river valleys, and hummocky terrain. Increased patchiness in resources (e.g., berry plants) may have resulted, however. Surviving the immediate event and post-eruptive months would have been the major challenges for people in the region.

Beaudoin, Alwynne [131] see Oetelaar, Gerald

Beaule, Christine (University of Hawaii at Manoa)

[176] Theoretical Approaches to Cross-Cultural Interaction, from Contact to Colonialism

This presentation offers a theoretical discussion of conceptual frameworks used by historic and prehistoric archaeologists to study culture contact in many different contexts. The term culture contact itself is reformulated into a continuum ranging from short-term contact on one end to colonial occupation of a region on the other. This work draws on the scholarship of many archaeologists to offer a set of conceptual tools for grappling with, describing, and explaining some of the complexities of interaction between distinct populations who may or may not identify as ethnically different, and who may or may not belong to political entities with very different levels of political power. Expanding colonial frameworks beyond historical interactions between indigenous peoples and the expanding European capitalist world economy has given archaeologists tools to recognize and describe the sometimes violent frontiers of territorial or imperial expansion in prehistory, and the ensuing political, social and material hybridization that impacts both native and foreign residents of a site or region. Thus a comparative framework is suggested to encompass a range of intercultural interaction that includes colonialism, imperialism, integration at various levels, diasporas, creolization, slavery, and exchange. It is illustrated with references to Spanish colonialism in the Americas and the Philippines.

[176] Chair

Becerra Valdivia, Lorena [149] see Jones, Terrah

Beck, R (University of Utah), Jack M. Broughton (University of Utah), Joan B. Coltrain (University of Utah), Dennis H. O'Rourke (University of Utah) and Alan R. Rogers (University of Utah)

[71] Ancient DNA Analysis Confirms a Late Holocene Population Bottleneck in California Tule Elk (Cervus elaphus nannodes)

Zooarchaeological analyses suggest a case of late Holocene resource depression in California tule elk (Cervus elaphus nannodes). We report an independent test of this that examines trends in genetic diversity derived from ancient DNA extracted from archaeological elk bone. Mitochondrial DNA sequence data from tule elk recovered from late Holocene deposits of the Emeryville Shellmound, California, indicate a dramatic decline in genetic diversity beginning about 1200 B.P. The analysis has implications for our understanding of change in human behavior and biology during late Holocene of central California, the methodology of resource depression analyses, and the conservation biology of tule elk.

Beck, Colleen (Desert Research Institute)

[122] An Overview of the Archaeology of Nuclear Testing at the Nevada National Security Site

The Nevada Test Site, now named the Nevada National Security Site due to a change of mission, is located 65 miles northwest of Las Vegas and is operated by the U.S. Department of Energy. The National Nuclear Security Administration Nevada Site Office. This test site was the United States continental nuclear testing ground during the Cold War. Between January 20, 1951 and September 23, 1992, the United States conducted 928 nuclear tests there, 100 atmospheric and 828 underground tests. Other nuclear-related projects also were carried out within the site boundaries, an area of 1,360 square miles. The nuclear archaeology program has documented more than 650 nuclear testing associated buildings, structures, and objects, as well as artifacts related to the construction and use of testing locations. This work includes atmospheric and underground testing areas as well as the camp that housed military troops that were participants in atmospheric testing exercises. Archaeological research also has been conducted on other types of nuclear research programs, such as the Rare Reactor Experiment Nevada, an Environmental Protection Agency experimental farm, and the Nuclear Rocket Development Station. Current research is focuses on atmospheric testing remains at the northern end of the Nevada National Security Site.

[122] Chair

Beck, R. Kelly [177] see Bayham, Frank

Becker, Rory (EOU), Danny Walker (Office of the Wyoming State Archaeologist), Daniel Lynch (UMASS- Amherst) and Steve Haak (Independent Researcher)

[276] Searching for a Lost Mass Grave in Wyoming

One of the mysteries of Wyoming History is what really happened on a July day in 1865 during a battle between 20 United States soldiers lead by 11th Kansas Volunteer Cavalry Commissary Sgt. Amos Custard and 2-300 Sioux, Cheyenne and Arapaho warriors at what has become known as the Battle of Red Buttes. Archaeological and historical research since the 1920s has failed to reveal the exact location of the Battle of Red Buttes. A reevaluation of the battle including additional archaeological field research has been ongoing since 2008 but has still failed to locate either the battle or the mass grave. Forty-five acres covering all proposed areas where the battle could have occurred were surveyed with Bartington magnetometers in 2012. Historical accounts of the battle will be reviewed followed by discussions of the 2012 survey. While a four hour battle may have an ephemeral archaeological footprint, it should still be visible because of the battle activities (i.e., burned wagon parts). Geological conditions, albeit away from reservoirs, related to drought conditions in Wyoming during the 20th century and today may be affecting the attempts to locate the battlefield.

Becker, Mark (ASM Affiliates, Inc.) and Ian Scharlotta (ASM Affiliates, Inc.)

[291] Hunter-Gatherer Spatiotemporal Patterning in San Diego County

A growing database of archaeological radiocarbon dates collected in and around San Diego County, California provides the opportunity to examine the efficacy of regional cultural phases based on prehistoric population histories. Current models generally hold that continuous sequential cultural phases provide explanatory structure to regional archaeological knowledge in spite of a complex physical environment spanning beaches, coastal lagoons, mountains and upland areas, and desert. Summed
probability functions and numerical modeling methods provide insight into spatiotemporal demographic patterns. Preliminary evidence suggests that phases defined primarily through lithic typologies may not reflect regional trends, but rather functional adaptations to specific environments.

Beckett, Ronald [1] see Ordoñez, Maria

**Becks, Fanya (Stanford University)**

[169] More than Residing

This paper will discuss the difficulties Native Californian peoples of the Bay Area have had as a result of historicized rhetoric of erasure and a lack of representation in local and state historical accounts and history writing. This rhetoric, and the difficulties Native Californian descendant communities face are based in the colonial project and have become embedded in the academic and non-academic history making of the Bay Area through the practice of archaeology. The Muwekma Ohlone Tribe of the San Francisco Bay Area, as an acknowledged but unrecognized tribe, has undertaken historical, archaeological and educational projects to work toward decolonizing their own history. In this paper I will discuss what can be done through academic archaeology to aid in the long process of decolonizing Californian history.

**Beckwith, Walter**


The geochemical analysis of obsidian has allowed for great insights into the local and long distance interaction of Maya political economies. This paper presents data concerning one such analysis from northwestern Belize. A sample of obsidian artifacts recovered from the various contexts of the Dos Hombres to Gran Cacao (DH2GC) and related neighboring archaeological projects was analyzed using portable x-ray fluorescence spectrometry (pXRF) to quantify trace element composition and discriminate their raw material source. Artifact provenance allows for further exploration into the patterns of obsidian procurement and exchange in the region. In addition, this study highlights the potential of pXRF technology in future provenance studies throughout the Three Rivers Region.

BEDFORD, Stuart [27] see HERRSCHER, Estelle

**Beekman, Christopher (University of Colorado Denver)**

[133] Built Space as Political Fields: Community vs. Lineage Strategies in the Tequila Valleys

This paper operationalizes the Corporate and Exclusionary strategies proposed by Blanton and his colleagues (1996) by associating them with four contemporaneous social institutions in the Teuchitlán culture of pre-Columbian Jalisco with associating them with four contemporaneous social institutions in Formative and Early Classic. This allows me to bridge the gap between Blanton’s work on political strategies and his regional settlement pattern research, and simultaneously contribute to the growing interest in the spatial aspects of authority (Smith 2003).

Beeton, Tyler [222] see Glantz, Michelle

**Beier, Zachary (Syracuse University)**

[261] "All the King's Men": Labor and Diversity at the Cabrits Garrison, Dominica

The policy of incorporating enslaved laborers into colonial military installations became standard British military policy in the eighteenth century. The Cabrits Garrison, Dominica, occupied by the British military between 1763 and 1854, was built entirely by enslaved labor and staffed with Afro-Caribbean soldiers following the introduction of the West India Regiments in 1795. Using available archival and archaeological evidence from structures occupied by the British military, including enslaved laborers and soldiers of African descent, this paper compares eighteenth- and nineteenth-century residential quarters to provide a vantage point exploring symmetries and asymmetries between structural principles and agent-centered practice. I examine this setting for its connection to developments in the British military complex, as well as the integration of Caribbean plantation culture and politics into the structure of daily life at the Cabrits Garrison. I employ intra-site comparisons and analytical approaches to reconstruct occupational histories and better understand social interactions as well as the manner in which changes in the labor regime effected identity formation. Approaching British fortifications in this manner contributes to black Atlantic military history—a lens that works to embody the diversity of these military communities and the tangible and intangible products of their labor.

[261] Discussant

[261] Chair

Belardi, Juan Bautista [26] see Barrientos, Gustavo

Belardi, Juan (Univ Nac de la Patagonia Austral), Gisela Cassiodoro (CONICET-INAPL), Rafael Goñi (INAPL-UBA-UNCPBA), Michael Glasscock (University of Missouri) and Alejandro Súunico (Universidad Nacional de la Patagonia Austral)

[148] Limolites from Southern Patagonia (Argentina): Their Source and Archaeological Artifact Distributions

One important aspect to be known on hunter gatherer Patagonian archaeology is their mobility and interaction spheres, mainly along the Late Holocene. One way to approach this is tracing the distribution of lithic archaeological materials. Artifacts made on limolite (a sedimentological silicified rock) are found on the western strip of southern Patagonia. On the base of the high density of archaeological material and geomorphological studies the source and quarries of limolite were identified in the lake Cardiel. The geochemical study of samples from both the source and archaeological sites from several neighbor basins allowed to trace the use of this rock and to model its circulation. There is geochemical intrasource variability but it seems not be related to their fracture and quality properties. The archaeological spatial distribution indicates that limolite circulation has a southern vector and was incorporated from the beginning of the human occupations. From a geographical standing this is a marked difference when one compares to the distribution of the Pampa del Asador obsidian which shows a broader circulation pattern. This could be related to the greater availability of high quality rocks (obsidian and chert) northwards of the limolite source

Belcher, William [190] see Ikehara-Quebral, Rona

Belfer-Cohen, Anna [248] see Shaham, Dana

Bell, Alison (Washington and Lee University)


Historical archaeologies of many periods and places tend to illuminate experiences of outliers – the wealthy, influential, and
urban on the one hand, the deeply socially disenfranchised or otherwise “exotic” on the other — more fully than those of the demographic middle. As we frequently know less about the material lives, experiences, and aspirations of the broad socio-economic center, this paper investigates “middling” people in rural Virginia during the 18th and 19th centuries. Archival, oral historical, and archaeological research on tenant farmers and farm managers/overseers raises a number of questions, including fundamental ones about their construction of personhood. Despite efforts to accommodate their actions to models of conspicuous display that convincingly fit their more (and often less) affluent contemporaries, there is little indication that the middling regularly conceptualized persons as individuals striving to exhibit hidden qualities through the consumption of costly material culture. To understand their constructions of personhood, this paper follows the “ethnographic”/archaeological lead of information left by two tenant farmers and one farm manager in Virginia (c. 1775–1825), and posits that relationships among things and people — nexuses of labor, kin, livestock, and land — rather than ambitious individualism were constitutive of “the person.”

Bell, Ellen (California State University, Stanislaus) [57]

Layers of Meaning: Multi-Level Caches and Offerings at Copan, Honduras

While the tombs that held the remains of the kings of the Classic period (A.D. 425-825) Maya center of Copan, Honduras, have garnered copious attention, they are but one element of a multi-faceted program of ritual activity that defined sacred space at the center. This paper explores the use of multi-level, “cosmological” offerings to structure royal space within the Early Classic levels of the Copan Acropolis and to underwrite strategies of political legitimation. By recapitulating layered cosmology and locating the ruler at its center, these placed deposits work to align the social and political hierarchy with culturally constructed visions of the natural order, thus reinforcing claims to power that are, at times, not particularly well founded. This analysis brings to the forefront elements of ritual practice that, taken together with royal interments and other highly visible elements of the built environment, provide a deeper and more nuanced understanding of materialized discourses than has been achieved previously.

Bell, Colleen (University of Tulsa), Miriam Belmaker (University of Tulsa) and Donald Henry (University of Tulsa) [253]

Comparison between 3D Geometric Morphometric Analysis over Traditional Linear Methods in Lithic Assemblages: Tor Faraj, Jordan, a Middle Paleolithic Site as a Case Study

Characterization of lithics is at the core of understanding early human behavior. Accurate and repeatable measurements are vital for our ability to cross compare assemblages synchronically and diachronically. Today, these measurements are obtained through calipers. Recently, the use of 3D geometric morphometrics has revolutionized paleoanthropological studies, but this has not transitioned to lithic analysis. The potential for increased accuracy and the ability to gather new information has been suggested (Crompton, 2007) but merits additional research. This study will compare these two methods using the Middle Paleolithic site Tor Faraj, Jordan as a case study. The lithic assemblage from this collection has well known provenience and good taphonomic control. These advantages make the collection ideal for a methodological comparison. Results indicate that 3D geometric morphometrics produces results with less inter and intra observers’ variability with reduced margin of error over the digital calipers for all variables measured. Furthermore, the use of GM allowed us to test for several additional variables that we cannot test with linear measurements alone. Therefore, we conclude that the application of GM has great potential and 3D scanning has an application for answering several of the outstanding questions regarding characterization of lithic assemblages.

Bellantoni, Nicholas [260] Bioarchaeological Recovery of Four Catholic Burials, New Haven, Connecticut

In July of 2011, the CT State Archaeologist was notified by the New Haven Police Department that skeletal remains had been uncovered during construction activities at Yale-New Haven Hospital. Rescue excavations of four individuals were undertaken. In 1854, the hospital site was the location of the Christ’s Church, the first Roman Catholic church and its associated burying ground. By the 20th century, the cemetery was lost and forgotten in city’s cultural memory. Christ’s Church cared for Irish immigrants and the poor. Three of the four burials were stacked into the same grave shaft. This paper presents the discovery, bioarchaeological removal, and community involvement of the project.

[260] Discussant
[260] Chair

Bello, Silvia [98] see Evans, Adrian

Bello, Charles (Federal Emergency Management Agency (FEMA-DHS)), Alvin J. Windy Boy, Sr. (THPO - Chippewa Cree Tribe, Rocky Boys Reservation), Robert C. O’Boyle (Archaeologist - Chippewa Cree Tribe, Rocky Boys Re) and Duncan Standing Rock (Chippewa Cree Cultural Resource Preservation Department) [262]


The impact of natural disasters on cultural resources is well-known in Western U.S. Indian Country. Tribes are often challenged in the ability to address such concerns. This paper addresses measures funded by FEMA through the Hazard Mitigation Grant Program in partnership with the Chippewa Cree Tribal Council and the Historic Preservation Office (THPO). Two projects are presented, both identified in the Tribe’s Multi-Hazard Mitigation Plan. The first repairs damage / stabilizes Crier’s Rock, a traditional cultural property that is deteriorating from repeat flooding. Geotechnical analysis and (green) engineering practices sympathetic to the importance of the site are employed, resulting from THPO input / conditions, guidance from elders, and cooperation from the BIA and Montana SHPO.

The second is an educational awareness project where funding mitigates against the loss of Chippewa Cree history and culture by training anyone who works on the Reservation. The project is overseen by THPO staff and combines a variety of innovative methods (weighted on traditional knowledge and Federal compliance). This project speaks directly to the Mission Statement of the Tribe’s Cultural Resource Preservation Dept. — “To maintain and inspire traditional values relating to the Ojibwa and Ne-hi-yah-w through established principles: Culture, History, Language and Life.”

[262] Chair

Bellorado, Benjamin A. [51] see Hurst, Winston

Bellorado, Benjamin (University of Arizona), Laurie Webster (University of Arizona) and Thomas Windes (University of New Mexico) [139]

Footsteps of Identity: The Context of Pueblo III Sandal Imagery in the Northern Southwest

In the wake of the Chaco Regional System with its pilgrimage and road systems, walking and moving appear to have been of particular importance in ancestral Pueblo society. The technology
of walking across the landscape, namely with sandals, evidently held special meaning for ancestral Puebloan peoples as did leaving one’s mark on the land through depictions of sandals or sandal tracks. Rock art distributions, incised and painted wall murals, tree-ring dating of intact kiva roofs, and almost-forgotten museum collections from southeastern Utah suggest that a tradition of rock art and kiva murals depicting sandals or sandal tracks was pervasive in the area between A.D. 1200 and 1250. These sandal images provide an immobile record of an otherwise highly mobile and perishable technology, which, by its very nature, walked away from its place of manufacture. Many of these sandal images exhibit a common vernacular of distinct design layouts and construction techniques that likely signaled individual and group identity and possibly ethnicity within and between communities of practice. This presentation discusses the dating and context of Pueblo III sandal imagery in the Comb Ridge and Cedar Mesa areas of southeastern Utah and offers ideas about the significance of this figurative art tradition.

Bellot-Gurlet, Ludovic (Université Pierre-et-Marie-Curie), Laurence Manolakakis (CNRS, Lab. Trajectoires), Martine Regert (CNRS, Lab. Cepam) and Céline Paris (CNRS, Lab. Ladir) [39]

From Materials to Symbolic Function: Pigments and Glue Residues in a Neolithic Funerary Context

Two grave pits in a Neolithic burial monument from Northern France, dating to 4200 BC, produced numerous finds and in particular 16 projectile points. A black, amorphous matter was observed on several of these flint points and, more exceptionally, one showed a blue-grey line on its axis. This projectile point is too large and heavy to be a functional arrowhead. Before examining the significance of these finds in their funerary context, the two types of residue had to be identified. An analytical strategy was thus developed to characterize the mineral substances in the blue residue, as well as the organic materials making up the black aggregates sticking to the arrowheads, using a combination of structural and separating methods (infrared and Raman spectroscopies, mass spectrometry, gas chromatography). The burial within a monument, the abundance of projectiles, in particular in one of the graves, its elaborate construction, together with the adhesive materials and coloring associated with lithic arrowheads, are all criteria that indicate a particular status for the deceased, whose weapons could be those of a great warrior or great hunter.

Belmaker, Miriam [162] see Clardy, Kelsey

Beltrán, Boris [21] see Rivera Castillo, Patricia

Beltrán Medina, José Carlos (Centro INAH Nayarit) [107]

Mololoa, un entierro en la montaña

Este escrito tiene por propósito la descripción de las características principales de un entierro colectivo encontrado en las faldas del cerro de la Batea, ubicado en las afueras de la ciudad de Tepic. El entierro esta formado por 11 individuos que fueron cremados y depositados en 2 urnas cilíndricas antropomórficas y en 10 ollas, tratándose de un rito fúnebre complejo de dobles exequias, donde están presentes varios procesos como la preparación de los cuerpos, la cremación, el acomodo de las cenizas y de los restos humanos en el interior de las urnas, y el entierro del conjunto ya en su ubicación final. Para poder cumplir con nuestro propósito es presentada la disposición que mostraban los diferentes elementos arqueológicos entre sí, al momento de su hallazgo, así como los diversos materiales arqueológicos procedentes de este entierro, compuesto por un altar lítico que constituye la parte central del conjunto, lo mismo que por 17 figurillas sólidas antropomórfas y 2 figurillas zoomorfias, lo mismo que por una raedera y una navajilla de obsidiana verde, las cuales constituyen la ofrenda principal junto con las vasijas, ollas y umas funerarias.

Bement, Leland (Oklahoma Archeological Survey, OU) [276]

The Effects of Multi-Year Droughts on Cultural Resources: Headaches and Research Potentials

Severe multi-year drought in Oklahoma has lowered reservoir levels, exposing cultural resources including human burials. This drought has also dried vegetation, providing fuel for extensive grass fires that destabilize the landscape and promote erosion that also increases cultural resource exposure and destruction. Two examples of drought-induced cultural resource management actions are presented and discussed in terms of decision making and problem solving for property managers and the research potential this situation provides.

Chair

Bement, Leland [116] see Carlson, Kristen

Benally-Littletree, Yolanda (Navajo Mine) [152]

Collaborative Archaeology and Private Industry: Moving Beyond Section 106

To fulfill the Section 106 consultation with the Navajo Tribe’s Historic Preservation Officer, there was an agreement to put together a popular summary about the area that was scheduled to be impacted by mining in the near future. The popular summary was a collaborative effort with guidance from the THPO to write from a Native perspective as opposed to traditionally "western" archaeological perspective. The stories would come from oral traditions passed on from the people within the community and the tribe which would be brought together to explain why people came together to this one area. The popular summary not only presented what artifacts were found, but also what clans lived in the area and where they originated from. The summary included many colorful stories and old photos that showed progress since the 1950s. The focus was on the history of the people from the area, not on mining.

Bender, Shilo (University of Missouri), Jeffrey Ferguson (University of Missouri) and Scott VanKeuren (University of Vermont) [267]

Rapid Qualitative Compositional Analysis of Ceramic Paints: A Study of Fourmile Polychrome

Portable X-Ray Florescence (pXRF) is a valuable analytical technique for rapid compositional analysis. Ceramic paints and other surface features pose a particular problem for XRF due to the inability to control for varying paint thickness and the contribution the of underlying slip and paste. In this study of mineral paints in fourteenth-century red ware from east-central Arizona, we developed a protocol for the rapid in-field qualitative analysis of the paint composition. The study yielded differences in the paints between typical Fourmile-style bowls and contemporary copies, which corroborates the results of a recent compositional study of sherd samples that used inductively coupled plasma-mass spectrometry.

Bennett, Gwen (McGill University, Depts. Anthropology & EAS) [24]

Borders on the Land, Borders in the Mind: The Archaeology of the Khitan/Liao Period in North China

The Khitans ranged around China’s Great Wall region and across Mongolia, established the Liao Empire in 907, and controlled a continental scale realm until they were conquered in 1125. Chinese records, rich tombs, pagodas, and walled cities across the northern landscape provide material documentation of elite life, but we know little about the larger society that sustained that archaeologically and historically visible life, or about the complex
socio-economic-political web the Khitans emerged from. Chinese records described the Khitans as nomads, and almost all subsequent historical and archaeological work has been predicated on this assumption. But insistence on the nomadic nature of the Khitans has much to do with the researchers who studied them, and whose self-identification as ethnic Han elite instilled the idea that non-agrarian life was "uncivilized." Until recently, archaeological work in China has maintained this conceptual boundary, by its insistence on mapping out bounded homogeneous cultural units, focusing on elite-oriented sites, and studying different classes of artifacts in isolation. This paper presents work on Chifeng, Inner Mongolia that is overcoming the colonial contact and colonization, Amerindian genetic heritage is homogeneous cultural units, focusing on elite-oriented sites, and instilled the idea that non-agrarian life was "uncivilized." Until the destructive approach is still not fully appreciated by the custodians of human remains and Sr isotopes for the reconstruction of human migrations. Thus far, the isotopic measurements necessitated the cutting of bones and teeth to obtain data from flat cross sections. While the cutting itself only consumes a small amount of material (the width of the cutting blade is less than 100 μm), this slightly destructive approach is still not fully appreciated by the custodians of valuable human fossils. This is of particular importance in Australia, where all fossil human remains are sacred. We have started to use laser ablation surface profiling for the rapid assessment of whether human bones or teeth are suitable for subsequent dating. This is now further investigated to full depth profiling. While there are considerable analytical problems associated with this method it has the promise that the cutting can be completely avoided and all isotopic data can be extracted from a single hole with a 300 to 400 μm diameter.

Benson, Alexa and Rainer Grun (Professor in the Dept of Archaeology and Anthropology) [11] Laser Ablation Depth Profiling of U-series and Sr Isotopes in Human Fossils

In recent years we have focused on using laser ablation ICP-MS for the analysis of U-series isotopes for the dating of human remains and Sr isotopes for the reconstruction of human migrations. Thus far, the isotopic measurements necessitated the cutting of bones and teeth to obtain data from flat cross sections. While the cutting itself only consumes a small amount of material (the width of the cutting blade is less than 100 μm), this slightly destructive approach is still not fully appreciated by the custodians of valuable human fossils. This is of particular importance in Australia, where all fossil human remains are sacred. We have started to use laser ablation surface profiling for the rapid assessment of whether human bones or teeth are suitable for subsequent dating. This is now further investigated to full depth profiling. While there are considerable analytical problems associated with this method it has the promise that the cutting can be completely avoided and all isotopic data can be extracted from a single hole with a 300 to 400 μm diameter.

Benson, Lisa (University of Utah and SWCA) and Katie Saunders (University of Utah and Natural History Museum of U) [41] A Look at Osteological Stressors during the Fremont Period in Utah

Many projects throughout various parts of the world have reported several different osteological effects as a result of agricultural based diets. We would like to see if there is a correlation between stress markers in the biological record and the current data we have about agriculture in the Fremont Period in Utah. This study will be conducted at the Natural History Museum of Utah, Salt Lake City, and will compare the Fremont with the Anasazi sample to determine if the lower return rates of an agricultural diet had an apparent negative effect on the osteological record. Three skeletal stress markers will be analyzed: enamel hypoplasia, periostitis lesions (in the tibia), and cribra orbitalia. We hope to see a correlation between the archaeological and osteological data.

Berg, Greg [251] see Congram, Derek

Bergin, Sean (School of Human Evolution and Social Change, ASU) and C. Michael Barton (Arizona State University) [23] Dimensions of Human Land-Use Practices: An Exploration of Socio-Natural Interactions in Neolithic Spain

The term “agropastoral” encompasses a wide diversity of human domestic subsistence systems and social arrangements—and a corresponding diversity of ways in which associated land-use impacts the natural world. We use computational modeling to systematically explore the range of land-use practices in Neolithic-level agropastoral communities and their consequences for Mediterranean landscapes and village life.

The MedLands Modeling Laboratory (MML) couples an agent-based model of small-scale agropastoralists with models of landscape evolution to enable controlled study of socio-natural interactions. In the MML, agropastoralists make subsistence decisions at a household-level based upon past returns, household needs, ownership constraints, and conditions in the surrounding environment. These decisions drive land-use practices that can reshape the landscape through the interactions with natural processes like climate, vegetation growth, erosion, and soil fertility.

Here we evaluate human impacts to the environment in the Penaguila valley of eastern Spain across a range of Neolithic land-use practices spanning plant cultivation to pastoralism, and assess the recursive consequences of anthropogenic landscape change on Neolithic communities. The MML provides a modeling environment in which to compare the sustainability of different combinations of farming and herding, and their role in transforming Mediterranean landscapes into the configurations that characterize the region today.

Benoit, Beren (Université des Antilles et de la Guayane-EA 929) [292] Why We Are Our Fathers: Amerindian Heritages Social Integration Process in the French West Indies

Amerindian Kalinago peoples are very rare in Fort-de-France or Pointe-à-Pitre streets nowadays. Due to the dramatic aspects of colonial contact and colonization, Amerindian genetic heritage is now very low in the French Antilles in comparisons with African, Asian and European ones. However, Guadeloupe, and more so Martinique, have been pioneer places and central actors in pre-Columbian archaeology in the West Indies. Amerindian legacies, near invisible for centuries, in the past two decades have a real place in this territory’s cultural landscape. In this presentation we will analyze the historical steps of Amerindian legacies’ integration in French West Indies heritage and identify creole constitutive elements. In this way, we will try to identify and analyze the social and cultural mechanisms associated with this process and link them to the self-identity building process in the French Caribbean.

Berdan, Frances (California State University San Bernardino) [133] Commodity Complexes in the Late Postclassic Mesoamerican World System

This paper takes a “product-based approach” to world systems, using as its model the “goods-based approach” to world systems formulated by Richard Banton and his colleagues in 2005. In this approach they analyzed the economic dimensions, dynamics, and contexts of five important commodities: obsidian, salt, cacao, cotton cloth, and pottery. Much as Banton and his colleagues selected a small sample for their study, I limit my discussion to two types of products: feathered adornments and turquoise mosaics. Both were luxuries, and both were economically and socially complex. These objects had complicated production histories, their manufacture depended on the acquisition of a wide range of raw materials from varied ecological regions, the use of a wide variety of tools, and the application of highly specialized knowledge and techniques. The manufacture of any of these objects required that these materials and human skills converge at the same time and place. A primary goal of this paper is to illustrate how this was achieved, and to demonstrate how unraveling the life histories of these production systems can provide clues to the integration and dynamics of the Late Postclassic Mesoamerican World System.

Discussant

Laser Ablation
Berkebile, Jean (University of Cincinnati)

Investigating Subsistence Diversity in the Upper Basin: New Archaeobotanical Analysis at MU 125

The unique topography of the Upper Basin, on the southern rim of the Grand Canyon, makes it a transitional environment that acts as a cultural and environmental frontier. The pinyon-juniper woodland environment of the Upper Basin hosts a diversity of wild resources that provided opportunities for a variety of subsistence strategies. While the dominant paradigm interprets the Anasazi as strict maize agriculturalists, archaeobotanical evidence from Site 17, a multi-room masonry structure, has been interpreted as evidence for a mixed subsistence economy based on a macrobotanical assemblage that yielded 99.5% wild remains and 0.5% domesticated remains. This evidence suggests a more heterogeneous pattern of subsistence adaptations among Late Pueblo II (A.D. 1050-1100) Kayenta Anasazi populations than previously considered. To explore this question, I conducted archaeobotanical analysis on site MU 125, a six-room masonry structure occupied from A.D. 1070-1090, which is not only contemporary with and typologically analogous to Site 17, but is also situated in the same type of Upper Sonoran environment. Preliminary analysis of wild plant ubiquity, abundance, and seasonality of MU 125 adds to our understanding of Ancient Puebloan subsistence practices and resource activity scheduling.

Berman, Mary Jane (Center for American and World Cultures)

Discussant

Berma, Francesco [290] see Thibodeau, Megan

Bernardini, Wesley (University of Redlands)

Visual Prominence and the Stability of Cultural Landscapes

This paper presents an analysis of landscapes and prominent landforms in the American Southwest. Guided by insights from Hopi traditional knowledge, a massive GIS analysis is employed to quantify the stability of regional cultural landscapes over time. The analysis highlights the exceptional continuity of the Hopi cultural landscape and the role played by landforms whose visual prominence helped to anchor religious practice, collective memory, and group identity.

Beron, Monica

[20]

Engagement between Prehispanic Hunter-Gatherers and Dogs from Western Pampa, Argentina: Diet and Mortuary Practices

Among the various links between man and dogs, one of the most intimate is that involving its presence in mortuary contexts, a fact documented in various parts of the world. Recently, a double burial of a subadult human male in close association with a specimen of Canis familiaris has been recorded at the site Chenque I (Lihué Calel, province of La Pampa, Argentina). The radiocarbon date obtained (930 ± 30 years BP) clearly points the presence of domesticated dogs in prehispanic times in this area of the southern cone of America. Otherwise, the stable isotopes analyses of dog remains indicate a diet similar to those of human’s tendencies in the area. The dog shows an injury in right scapula, partially healed prior to death and a severe wear of the dentition. Also, this burial is heavily ritualized burial because the child has an important ajuar and is carefully placed in intimate relationship with the dog, to the point that the animal’s limbs were placed over the child's body. These data suggests a situation of pet treatment and special care of this animal.

Berquist, Stephen

[200] Terraces all the Way Down: Ideology and Ontology in an Andean Agricultural Landscape

One of the most visually striking aspects of the Andean landscape is the extensive terracing of the mountain slopes. Although such terraces, known as andenes, are agriculturally efficacious, it has been noted repeatedly that the scale of these modifications to the landscape, especially in the Inka heartland, is beyond what might be expected solely in the context of agricultural production. This paper will present original research on the physical characteristics of such terraces as might be relevant to agriculture, as well as on the location of terrace complexes in relation to contemporaneous archaeological remains. Drawing on previously published research regarding andenes this paper will examine how terraces were deployed as an ideological tool by the expanding Inka State. Moreover, the ubiquity of terraces and the centrality of agricultural praxis to the Inka state prompt the leveraging of andenes as an analytical device, to investigate how the implications of this state mobilization of the landscape may broaden our understanding of indigenous Andean ontologies. To accomplish this goal, this paper will mobilize the work of social theorists such as Barthes, Heidegger, and Deleuze in order to set the andenes within a broader network of being and becoming.

Berry, Michael [106] see Kohler, Tim

Bertulli, Margaret [221] see Dawson, Peter

Bestel, Sheahan and Tianlong Jiao (Bishop Museum, Hawaii)

[66] Archaeobotany of Proto-Austronesian Sites

An archaeobotanical analysis of proto-Austronesian sites located on the Fujian coast of south China was undertaken. Flotation samples from the shell midden site of Damaoshan were collected and sorted and plant residue analysis from pottery at the same site was undertaken. Other sites in Fujian Province, including the Tanshishan site, were also sampled for evidence of plant foods that may hint at the identity of the proto-Austronesian people.

Bethke, Brandi (University of Arizona)

[278] A Networked Landscape: Understanding Meaningful Places along the Niobrara/Missouri National Scenic Riverways (NIMI)

The Niobrara/Missouri National Scenic Riverways (NIMI) straddles the South Dakota-Nebraska border on the eastern reaches of the Great Plains. The NIMI is a culturally rich and historically diverse area that has experienced a fluid movement of past and present native groups in, out, and within its boundaries. This paper combines archaeological, historic, and ethnographic evidence of land utilization, focusing particularly on the similarities and differences of experience of the Ponca, Omaha, Yankton and Santee Sioux tribes, each of whom have in the past and continued to maintain unique cultural ties to the riverways. The study focuses on bonds between the natural, cultural, social, and spiritual worlds, and how these relate to the physical landscape. Data from within and outside the park boundaries is used to better understand the park’s place in these regional cultural histories. The broader regional landscape focus facilitates an exploration of connections between sites, significant places, and landmarks in and outside of the parks that were potentially used by the same groups of people and their descendants. A discussion of methods for conducting cultural landscape surveys through collaborative research among NPS, university researchers, and native groups helps to better understand diverse conceptions of NIMI’s land and resources.

Bettencourt, Nichole [62] see Goodman-Elgar, Melissa

Bettencourt, Nichole (Washington State University)

Chair
Mudbricks are one of the oldest and most commonly employed building materials in the world due to their stability, durability, and ease of manufacture. The amount of labor invested in the manufacture and construction of mudbrick architecture has a direct correlation with the scale of a site and the complexity of social interactions between its members. Very little work has been done in South America using geoarchaeological methods to study mudbricks, and proposed lines of research for the methods discussed in this paper include geochemical sourcing of mudbricks and the analysis of structural properties at various stages of building construction, use, and abandonment. Simple visual macro-analysis can make general distinctions between temper and mudbrick compositions, with more nuanced comparisons provided by thin section analysis. Additionally, elemental composition analyses may be able to distinguish between potential source communities by differences in mineral compositions of the sediments used. Furthermore, little research has been done on the effect of firing temperatures on the structure and coloration of mudbricks. By utilizing four geoarchaeological methods (thin section analysis, XRF analysis, and the measurement of color and apparent porosity) research in mudbrick sourcing and structural properties can be expanded past work currently done in South America.

Bettinger, Robert (University of California-Davis)

Hunter-Gather Mobility and the Development of Millet Agriculture in North-Central China

That the origins of millet agriculture in North China remain nearly as enigmatic as they were 20 years ago despite substantial recent research suggests a problem having more to do with the kind of hunter-gatherer groups that first experimented with millet production, and the reasons for those experiments, than poor site preservation or researcher indifference. Mobility is almost certainly the heart of the problem. Three sites in north-central China (Pigeon Mountain, Shuidonggou 12, and Dadiwan) demonstrate that in its westernmost Laoguantai center, early millet agriculture developed out of an intensive hunting adaptation strongly dependent on winter mobility that generated a vanishingly thin archaeological record. Microblade technology was key to this adaptation, mainly in connection with microblade use as insets in composite knives needed for production of sophisticated cold weather clothing needed for the kind of winter mobile hunting Binford termed "serial specialist." Limited time and opportunities compressed this production into a very narrow seasonal window, putting a premium on highly streamlined routines where microblade technology excels. Fast-growing millet, which could be planted and harvested to fill a resource void, as well as feed dogs needed for hunting and transport, was especially well-suited to this wide-ranging, highly mobile system.

Bevan, Andrew (University College London) and Andrew Bevan (University College London)

Joint Evolutionary Models of Places, Paths, and Landscapes

Comparative, longitudinal analysis of human settlement is one of the areas where archaeology is well-placed to contribute to wider debates in social science, with particular attention to demographic flows, economic transactions and/or other social interactions among neighboring settlements. This paper explores some computational and spatial modeling approaches to the coupled evolution of settlement hierarchies, route systems, and anthropogenic landscapes. It builds on a series of methods drawn from point process modeling and urban geography, but ultimately suggests a combined approach that is tailored to the uncertainties presented by archaeological evidence. A case study using Mediterranean datasets is offered as an example of the benefits of this kind of model-based inquiry.

Bevan, Andrew [23] see Bevan, Andrew

Bey, George (Mississippi College) and Rossana May Ciau

The Preclassic and the Rise of Social Complexity in the Bolonchen District of Yucatan

The southern Puuc region of Yucatan, known as the Bolonchen District, was occupied early in the history of the northern Maya. Unlike the northern Puuc where huge centers developed in the Middle Preclassic, sites remained small throughout the Preclassic in the south. Archaeology in the region reveals variation in site layout and history with some sites abandoned in the Preclassic and other occupations continuing into the Classic Period. Using data from over a decade of research at Kiuic and other sites studied in the Bolonchen Regional Archaeological Project, this paper looks at the initial occupation and development of communities in this harsh environmental zone as well as relationships between the region and the rest of the Puuc and larger northern Maya lowlands. Sites such as Kiuic were already part of a larger Maya world in the early Middle Preclassic and evidence for ceramic exchange using ICP-MS data suggests both local and long-distance exchange in the Middle Preclassic. Recent data is leading to a reevaluation of the scale of monumental architecture at Kiuic and the nature of residential occupation.

Bey III, George [65] see Parker, Evan

Bezerra, Marcia (UFPA/IPHAN)

Connecting Dots: The Construction of "Amazonian Archaeology" in the Curricula of Graduate and Undergraduate Courses in Amazon

Over the past decades, Amazonian Archaeology has been changing dramatically as new interpretations about local contexts are provided. The theoretical parameters for understanding the archaeological record in Amazon have led to an interesting and refreshing panorama of the past that reveals a meaningful diversity of cultural practices and, at the same time, points to data and phenomena that share strong similarities, even in distinct contexts in the region. Nevertheless, the possibility of "connecting dots" along Amazonian, does not legitimize a concept as "Amazonian Archaeology." In this paper I briefly discuss this concept as an analytical category for understanding the construction of knowledge concerning archaeology as it is presented to the new generation of archaeologists trained by five universities located in different states in Amazon.

Bhak, Jong [22] see Bhak, Jong

Bhak, Jong (Genome Foundation), Jong Bhak (Personal Genomics Institute, Genome Research Found), YoungAh Shin (Personal Genomics Institute, Genome Research Found), Sanghoon Song (Personal Genomics Institute, Genome Research Found) and PASNP Consortium (PASNP consortium)

Single Route Asian Migration and Koreans by Genetic Markers

Genomes contain the most definite information on the evolutionary history of humans. Genome sequencing technologies enable us to investigate the hidden genetic history of modern humans. The
discovery of new markers for identifying ethnic and individual expressions of traits is essential in genetics-based archaeology. We present a Pan-Asian study of human migration using DNA chips and discuss the future genome technology to refine the genetic diversity and migration of Asian ethnic groups, especially East Asians.

Bhan, K. [147] see Costa, August

Bhiry, Najat [137] see Steelandt, Stéphanie

Bianco, Briana [234] Beekeeping Practices in Modern and Ancient Yucatán: Going from the Known to the Unknown

According to historic documents and scarce archaeological data, apiculture with the stingless bee, Melipona beecheii, was significant in the diet, economy, tribute, medicine, and ritual practices of pre-Columbian Mesoamerica. Beekeeping practices have changed as a result of the introduction of other species of bees, as well as taxation and intensification of honey and wax production under the Spanish colonial regime. Today, the global economy has linked Yucatán’s beekeeping cooperatives with the rest of the world. Current meliponiculture gives us a frame of reference for interpreting the archaeological record. This poster focuses on ethnoarchaeological studies carried out in Yucatán, Mexico. Soil samples collected from underneath and near beehives, as well as samples of honey and wax, were analyzed using Fourier Transform Infrared Spectroscopy in order to identify possible chemical signatures for soil near apiaries. The soil was also tested for pH and nitrate differences with the goal of developing new methods to identify apiaries in the archaeological record. Ethnoarchaeological and soil chemical studies inform conservation efforts aimed to prevent the disappearance of traditional beekeeping practices, the disappearance of the variety of plants necessary to produce honey, and the disappearance of stingless bees themselves.

Bickham, Maureen (University of Missouri St. Louis) [6] Marine Shell Exchange among Mississippian People of the Southeastern United States

The Mississippian Period (AD 1000-1400) of the Midwestern and Southeastern United States is well recognized for its extensive networks of long-distance trade, through which exotic items and associated iconography and ideologies were shared among sites. Marine shell was one such item that has been recovered from numerous Mississippian sites, where it was often crafted into beads, incised gorgets, and other symbolically and ritually important products, yet specific networks of shell exchange are not well understood. Using a GIS analysis, marine gastropod habitats are compared with excavated shell artifacts in archaeological assemblages from Cahokia, Etowah, Moundville, and Spiro. The comparative assessment of material from multiple sites is useful to help identify possible networks of exchange, providing a better understanding of Mississippian interaction.

Bickler, Simon [27] see Mulrooney, Mara

Biehl, Peter (SUNY Buffalo) [52] Discussant

[221] Chair

Biella, Jan [53] Discussant

Bies, Michael [18] Rolling Rock

Several images within the Dinwoody Tradition have been identified as actors or characters in the legends of the Shoshone and Gosiute. This paper will present an additional identification for consideration.

Biggs, Jack (Texas A&M University) [39] Mortuary Correlates of Maya Cranial Shaping in the Pasión Region

In the Pasión region of the Southern Lowlands of Guatemala, the ancient Maya practiced various types of intentional cranial shaping. This permanent body modification was employed by different techniques in order to accomplish certain and desired shapes. Using cranial data gathered from the sites within the Pasión region (such as Tamarindito, Dos Pilas, Aguateca, Altar de Sacrificios, and Seibal) along with the corresponding mortuary data, this paper will draw correlations between the specific types of cranial shaping and social status in ancient Maya society. Although most of the cranial shaping conforms to the tabular oblique variety, key burials in unusual mortuary contexts show distinct shapes that may be informative of social position within the sphere of the ancient Maya world.

Bignon, Olivier [227] see Peschaux, Caroline

Biittner, Katie (University of Alberta) [8] Footprints and Black Stones: Documenting Cultural Heritage Sites in Iringa

Working closely with local communities has facilitated the documentation of a number of interesting cultural heritage sites in Iringa Region, Tanzania. Two of these sites are described by locals as containing "footprints" similar to those found at Laetoli in northern Tanzania. Analysis of these footprints indicated that they are "just" natural impressions in the rock. Although not of archaeological or paleoanthropological significance, these two "footprint" sites are an important part of the local cultural landscape. A discussion of a third site, that of the "Black Stones of Ruaha River", will further illustrate the importance of documenting landscape features as key components of the heritage and history of a region.

Bikoulis, Peter (University of Toronto) [240] Adapting Geographical Information Science Techniques to Study Settlement Logic: An Experiment in Site Exploitation Territory Analysis

This paper presents the results of exploitation territory analysis, commonly known as "site catchment analysis," investigating agricultural productivity potential of selected prehistoric sites using Normalized Difference Vegetation Indices (NDVI) derived from archived MODIS satellite imagery. Exploitation territories surrounding sites used in this case study are generated using the open source GIS known as GRASS. The NDVI is typically used within geography as a measure of vegetation productivity, but has been adapted here to archaeological purposes through the creation of a composite image based on long-term climate data and historical census and agricultural statistics. As an experimental simulation of prehistoric environmental conditions that may have affected settlement location selection, the results presented suggest that regional variability may have affected settlement location choice. This may suggest that prehistoric peoples preferentially selected locations based on their general productivity potential. Finally, the results may have predictive value as to the location of as-of-yet unknown sites, through a definition of the ecological conductions to support village farming; in-the-field testing will be required to confirm this.
Billman, Brian [70] see Bardolph, Dana

Billman, Brian (UNC & MOCHE, Inc) and Jesus Briceño Rosario (ICPAC and El Ministerio de Cultura, Peru) [165] Patrimonio y Comunidad en Perú: Archaeology as Social Engagement

In 1997 we began a collaborating with communities on our research project on the interaction of ancient highland and coastal communities in the Moche Valley, Peru. Although conceived as a traditional research project with research questions and hypotheses, soon we realized that the archaeological heritage of the valley would not survive unless there were new preservation initiatives. We found the most effective means of heritage preservation was through community engagement. However community heritage preservation means engagement in the struggles of community members for self-respect and a better life. Archaeology can be a positive force in social change.

Bilton, Evelyn [18] see Mark, Robert

Bilton, Evelyn, Robert Mark (Rupesrian CyberServices) and Donald E. Weaver, Jr. (Plateau Mountain Desert Research) [18] Sears Point Rock Art and Beyond: 2008-2012 Recording Project, Arizona, USA

Utilized for centuries by the Desert Archaic, Patayan and Hohokam Cultures, and perhaps Paleoindians, the National Register Sears Point Archaeological District (SPAD) is located along the rich riparian habitat of the lower Gila River. Currently managed by the Yuma Field Office of the Bureau of Land Management, the SPAD is within a designated Area of Critical Environmental Concern. It is still utilized by several Tribes that claim cultural affiliation there. Rupesrian CyberServices and Plateau Mountain Desert Research not only mapped over 2000 petroglyph panels and 87 features including rock piles, rock rings, artifact scatter, a rock shelter, hunting blind, geoglyphs, and scattered rock alignments; but also, many historic features and over 30 kilometers of pre-historic, historic, and animal trails. Recording SPAD required a four-year effort with help from 50 volunteers, and some unusual techniques such as photographing subtle features using balloons – both helium and hot air. Sears Point is considered a major regional gathering area, where surrounding people came together to collect food resources and participate in ceremonies. Documenting the features and analyzing their relationship to approximately 10,000 petroglyph elements increases our understanding of prehistory of the Sears Point region within the greater Colorado/Gila River System.

Bilton, David [170] see Letham, Bryn

Bilton, David (University of Toronto) and Danielle A. MacDonald (University of Toronto) [227] Manufacturing Mortuary Beads on the Northwest Coast: Applications of Quantitative Microscopy to Bead Assemblages

Recent excavations north of Vancouver, Canada have uncovered human burials interred with small stone and shell disc beads. Two of these burials contained over 10,000 and 350,000 beads respectively, and date to c.4000 B.P., 1500 years earlier than other archaeological evidence for pronounced social inequality on the Northwest Coast. Although the beads from each burial appear similar, their metric differ significantly. suggesting they were manufactured by separate craft communities or specialists. In this paper we test the applicability of laser scanning confocal microscopy for the quantification of surface texture resulting from unique manufacturing techniques and wear processes. This new method is used to link microscopic traces to unique gestures and techniques of past craft-people. Through the quantification of manufacturing traces at the microscopic level, details about the technological and social aspects of the bead burial tradition are placed in context with the exchange of prestige items. Long distance exchange and trade networks of wealth items are described in ethnographies of the Coast Salish from the region. The development of these networks is seen as critical to the development of pronounced social inequality on the Northwest Coast and the bead burials could significantly contribute to our understanding of this emergence.

Binning, Jeanné (California Department of Transportation) and Joan Schneider (California Department of Parks and Recreation (Ret) [250] Poi Pounders in the Archaeological Record of the Hawaiian Islands

Poi pounders, characteristic items of East Polynesian material culture, were important food-processing tools whose significance in Hawaiian society was not limited to their food preparation functions. These tools were highly curated and they are rarely found archaeologically. The material correlates of the manufacture-use-discard trajectory for poi pounders have not been well distinguished in the prehistoric record of the Hawaiian Islands. It is important that the use-life of this artifact type be made visible. To do so would contribute to a better understanding of prehistoric Hawaiian economic organization. This paper reports on efforts to better detect poi pounder manufacture and use in the archaeological record of Hawai'i.

Biondi, Franco [87] see Villagran, Victor

Birch, Jennifer (University of Georgia) and Ronald F. Williamson (Archaeological Services Inc.) [65] Navigating Ancestral Landscapes in the Northern Iroquoian World

Recognizing responsibilities to communities of the living and the dead was an essential component of Huron-Wendat culture. Because Northern Iroquoians relocated their villages every 15-30 years the landscape they inhabited would have contained more abandoned than occupied village sites. In this paper we use archaeological and ethnographic data to explore processes of village abandonment and the experience of abandoned villages in precontact Iroquoia. We draw upon site relocation sequences on the north shore of Lake Ontario to address questions of why villages were abandoned and how conditions which prompted relocation changed from generation to generation based on historical and environmental contingencies. We will discuss how processes of village relocation and abandonment played out "on the ground" and how the formation of large community aggregates complicated these events, both in terms of logistics and decision-making. We also discuss how the continued abandonment of village sites created ancestral landscapes that included sites of pilgrimage, resource extraction and ceremony. As communities of the dead, abandoned villages were part of a larger set of spiritual responsibilities to meaningful places in the landscape.

Bird, Douglas (Stanford University) [212] Aboriginal Australians as Trophic Regulators: Fire, Hunting, and Niche Construction in the Western Desert of Australia.

Western Australian deserts have many ecological features that suggest a deep history of co-evolution between humans, the resources they rely on, and the structure of the habitats they occupy. Here we present data illustrating how Martu foragers, Traditional Owners of a large region of Australia’s Western Desert, serve as trophic regulators and apex predators, both in their hunting of mesopredator populations and in their fire-mediated disturbance of plant communities. The results of their daily patterns of subsistence create landscapes that are truly anthropogenic, and have likely co-evolved with a number of species that became extinct or highly vulnerable when Martu foraging patterns were disrupted. We find evidence of regulatory effects on mesopredator populations, increased availability and
diversity of habitat niches that favor endemic mammals, and reduced climate-related variability in fire size and severity in landscapes where Martu continue to frequently hunt and burn compared to landscapes dominated by a climate-driven fire regime. We explore the implications of the Martu pattern for recognizing the signatures the environmental engineering and anthropogenic landscapes archaeologically.

[2] Discussant

Birkenfeld, Michal (Institute of Archaeology, The Hebrew University of Jerusalem) and A. Nigel Goring-Morris (Institute of Archaeology, The Hebrew University of Jerusalem) [162] A Multi-Scale Approach to Pre-Pottery Neolithic Settlement Systems in the Lower Galilee, Israel

The Pre-Pottery Neolithic period (PPN) in the Levant corresponds to fundamental social and economic changes: the emergence of large sedentary village communities, and the shift from foraging to food production. The PPNB (ca. 8,500-6,400 cal B.C.) represents the climax of Neolithization processes, when settlements in the Levant became larger and more densely populated and exchange systems intensified. Settlement and associated subsistence patterns, however, display considerable regional variability, as adaptations to local conditions in different regions contributed to the formation of distinct local patterns and a mosaic of subsistence modes.

The lower Galilee is a well-defined geographical unit providing an excellent opportunity to conduct integrated regional studies. Archaeological research in this area has been extensive. A long-term field project at the cult and mortuary center of Kfar HaHoresh forms the basis for comparative studies with neighboring village communities. It is hypothesized that social organization, interaction and change should be mirrored in both intra-site spatial and inter-site settlement patternings. The rich datasets available are amenable to GIS analysis facilitating study of the nature and structure of dynamic PPNB settlement systems in the Lower Galilee. These are examined at several scales ranging from inter- to intra-site as well as at regional levels.

Birnbaum, Michelle [25] see Calfas, George

Birnbaum, Michelle (University of Wisconsin - Milwaukee) [25] Characterizing North Bay Ceramic Pastes Using pXRF, XRD, and Optical Petrography

The North Bay culture is a non-Hopewelian Middle Woodland manifestation definitionally restricted to lakeshore settings on Wisconsin’s Door Peninsula and the southern Green Bay locale. The culture is primarily recognized by friable, thick-wares ceramics heavily tempered with coarse grit. Recently, the distinctive physical characteristics of this pottery have been used to identify ceramic materials and associated sites as North Bay in areas well outside the Door Peninsula core area. This paper reports preliminary results of a compositional analysis of North Bay pottery from within and outside the core area. Data was collected using a portable X-ray fluorescence analyzer (pXRF), X-ray diffraction (XRD), and optical petrography. Results are used to describe the ceramic paste composition typical of core area North Bay pottery and compare this characterization to pastes found in “North Bay” ceramics from outside the core North Bay area. Implications for our understanding of the Middle Woodland cultural landscape in the western Great Lakes and the degree to North Bay groups interacted with other Middle Woodland middle tier cultures are discussed.

Bishop, Katelyn [68] see Lemoine, Ximena

Bishop, Ronald (Smithsonian Institution), James Doyle Doyle (Brown University), Socorro Jiménez Alvarez (Universidad Autonoma de Yucatan), Iliana Ancona Aragón (Universidad Autonoma de Yucatan) and James Blackman (Smithsonian Institution) [288] Middle–Late Formative Maya Ceramics: Circulation or Local Production?

Middle to Late Formative pottery, especially that of the Sierra Red and Joventud ceramic types, occur at many sites throughout the Maya Lowlands and in the upper reaches of the Usumacinta and Grijalva river drainages. Compositional research during the past half-decade has begun to show distinct manufacturing districts that are used to infer a sharing of technological knowledge and differential use of tempering materials. The study is anchored on the Trinidad region of the lower-middle Usumacinta from which subregional variation can be assessed during this early period of societal growth.

Biskowski, Martin (California State University, Sacramento) and Jessica Jones (California State University, Sacramento) [250] Early Formative Grinding Tools at Paso de la Amada

Despite the centrality of grinding tools in later Mesoamerican households, the early growth of this industry has received little analytical attention. Recent studies of grinding tools from Paso de la Amada provide a picture of this industry during its Early Formative development. Since dependence on maize was still emerging, the grinding tools often are small and comparatively simple in design. Interestingly, many tools are gracile and extremely well-shaped. These tools not only are incompatible with heavy grinding use but also display a degree of workmanship consistent with symbolic display and perhaps feasting. They contrast sharply with cruder, heavy-duty tools commonly found in later Middle Formative contexts.

Bisson, Michael (McGill University), April Nowell (University of Victoria), Carlos Cordova (Oklahoma State University), Melanie Poupart (McGill University) and Christopher Ames (McGill University) [162] Dissecting a Lower and Middle Paleolithic Palimpsest on the Madaba Plateau, Jordan

WZM-2, a Paleolithic flint-source on the Madaba Plateau, Jordan, has a complex history of deposition, erosion and colluvial movement of sediments that altered the spatial relationships of artifacts. This created a cumulative surface palimpsest with limited stratigraphic integrity below surface. Techniques for investigating these types of disturbed sites are discussed, including transect surface collections, systematic total collection of grids, and archaeological test trenches. In order to identify the parts of the Paleolithic sequence present, the WZM-2 assemblage was subject to spatial analysis using ARC-GIS and statistical analysis of technological attributes combined with the identification of artifact types and techniques of manufacture known to have chronological significance. With the exception of a Late Pleistocene - Holocene chipping area at the northeastern end of the site, WZM-2 is primarily a Middle Paleolithic lithic acquisition and processing site, dating to MIS-5, with some exploitation during the preceding late Lower Paleolithic Acheuleo-Yabrudian. Although the disturbed nature of many open-air sites limits the types of behavioral information that can be obtained, their location on the paleo-landscape as well as the aggregate characteristics of their assemblages can provide important clues to early hominin land-use patterns, economies, and provisioning strategies.

Bisson, Michael S. [224] see Ames, Christopher

Bisulca, Christina (The Bernice Pauahi Bishop Museum, Department of Conservation), Kamalu du Preez (Department of Cultural Collections, The Bernice Pa), Lisa Schattenburg-Raymond (Department of Cultural Collections, The Bernice Pa) and Betty Kam (Department of Cultural Collections, The Bernice Pa) [5] Dye Analysis of Hawaiian Barkcloth

There have been only a handful of scientific analyses to determine the colorants used in Polynesian barkcloth. Hawaiian barkcloth (kapa) is unique in the Pacific due to its broad range of colorants
derived primarily from native plant sources. After western contact, kapa was gradually replaced by imported textiles and the practice waned during the 18th century. Today, most of the materials and methods known about traditional kapa manufacture are from historic descriptions by early missionaries and explorers. Modern methods of analysis can now provide more definitive data on these ancient practices. The Bishop Museum has initiated an investigation into the identification of the dyes, resins and pigments in kapa. The Bishop Museum holds the fullest collection of kapa, including some of the earliest pieces collected from Cooks voyage in the 18th century. Analyses are primarily focused on determining the dye sources using high performance liquid chromatography (HPLC), which can identify dyes with exceedingly small samples. HPLC results to date show that traditional dyes are primarily extracts from noni (Morinda citrifolia) or turmeric (Curcuma longa), confirming some early historical accounts. This study also explores how imported materials are incorporated into kapa in post contact Hawaii.

Bisulca, Christina [139] see Santarelli, Brunella

Black, Kevin (History Colorado)
[206] Landscape Use in the Pawnee Buttes Area, Colorado
A sample survey in the Pawnee Buttes area of Weld County, northeastern Colorado was initiated in June 2012 with several goals in mind: evaluating a predictive model of tipi ring locations, establishing potential site impacts from increasing oil-and-gas development, and training volunteers in field survey and site recording methods. Previous research had suggested that prehistoric site density may be lower in zones closer to the Pawnee Buttes themselves, perhaps because these visually prominent landforms were considered sacred spaces in at least some time frames. Results to date define settlement trends of dispersed hunting stations on slopes below the crests of hills and ridges, camps in proximity to larger drainages at a distance from the buttes, and sites with possible ritual features on prominences and ridges. HPLC results to date show that traditional dyes are primarily extracts from noni (Morinda citrifolia) or turmeric (Curcuma longa), confirming some early historical accounts. This study also explores how imported materials are incorporated into kapa in post contact Hawaii.

Blackmore, Chelsea (University of California, Santa Cruz)
[100] Poverty of Interpretations or Ancient Maya
Feminist and household perspectives in ancient Maya studies have led to an increasing interest in the everyday lives of lower status peoples. Commoners, in particular, are characterized by wealth, or more specifically their lack of wealth. Although access to resources and material goods often define differences in class position, we rarely include the concept of poverty in our discussions. In this paper, I explore two primary questions: 1) Is the concept of poverty applicable to prehistoric state societies like that of the ancient Maya? And 2) How do neo-liberal conceptions of class mobility affect archaeological interpretations of class structure and commoner agency?

Blackwell, Bonnie A.B. (Williams College & RFK Science Institute), Ada L. Huang (RFK Science Research Institute), Maurice Hardy (CNRS, Nanterre, France), Francine David (CNRS, Nanterre, France) and Clare Tolmie (University of Iowa)
[96] ESR Dating in a Mousterian Layer at Grotte du Bison, Arcy-sur-Cure, France
A partially collapsed cave with an extant gallery and another 30 m2 of deposits out front, Grotte du Bison opens facing south atop a small cliff 6 m above the Cure. Mousterian and Châtelperronian layers have produced hearths, ochre, manuports, and lithics, including bifaces, scrapers, cortical and retouched flakes. Levallois technology dominated the Charentian Mousterian industry, made mainly on flint and silcrete. Most cores and tools, mainly sidescrapers and endscrapers, were found in the main gallery or outside. Inside, roughly equal numbers of reindeer, horse, and bovid fossils occur, plus birds, fish, some larger herbivores, and carnivores. Pollen analyses suggest a cold steppe. The Mousterian layers have yielded 20 human remains, including a partial adult maxilla, isolated permanent and deciduous teeth. One Equus tooth was ESR dated from Couche I in the Mousterian layers. The external dose rate was determined by measuring the radioactivity in five associated sediment samples, assuming no cosmic dose given the sample’s position deep within the cave. U in the enamel ranged from 0.16-0.25 ppm, while dentinal U ranged from 3.73-17.13 ppm. Isochron analysis suggests that some U remobilization has occurred recently. Nonetheless, the mean LU ages correlate well with late Oxygen Isotope Stage 3.

Blagg, Jennifer (Connecticut College Computer Science), Anthony Graesch (Connecticut College) and Christine Chung (Connecticut College)
This poster highlights a collaborative, interdisciplinary project that marries the technical and design-based expertise of computer science with the goals of anthropological, community-focused research for the purpose of placing the dissemination of heritage information firmly in the hands of local communities. The recent innovation and influx of portable consumer electronics with substantial processing power and multi-media digital capabilities affords opportunity to disseminate heritage-related information, including the results of archaeological research, to much wider audiences. This poster focuses on one example - mediated reality (MR) - as applied in southwestern British Columbia. When coupled with the philosophies underlying open-source software and open-community online projects, MR applications for smartphones can aid substantially in (1) the pursuit of educational and outreach goals, including cultural tourism, and (2) resolving inequities in the authorship of local histories. To date, the production of MR applications, such as paddle- and smartphone-aided tours available in museums, has been the province of costly specialized software firms. Open-source MR programs are an important step toward decolonizing heritage management and are an effective medium for indigenous groups to selectively share information.
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about landscapes, sites, and features, among other tangible and intangible attributes of local cultures.

Blaire, Elliot (UC Berkeley)
[227] 
Elemental Analysis of Glass Beads from Mission Santa Catalina de Guale

Glass beads have long been one of the most abundant and important artifact classes available to historical archaeologists working in the Americas. This is certainly true at Mission Santa Catalina de Guale, a 17th century Spanish Mission from La Florida (St. Catherines Island, GA), where almost 70,000 beads have been recovered during excavations by the American Museum of Natural History. While this large and diverse collection includes beads manufactured from around the globe, many of which are diagnostic and/or stylistically unique, the bulk of the collection consists of glass beads of simple construction—widely considered to be relatively non-diagnostic. This paper discusses the ongoing analysis of these “non-diagnostic” beads using X-ray fluorescence spectrometry (XRF), demonstrating how elemental analysis can expand the interpretive potential and transcend the “humility” of these things. Specifically, at Mission Santa Catalina detailed bead compositional data are allowing architectural and mortuary chronologies to be refined, our understanding of global trade networks to be enhanced, and intra-community social relationships to be explored.

Blair, Susan (University of New Brunswick) and Melanie Wiber (University of New Brunswick)
[24] 
Ancient “Mesh Societies”? What Augustine Mound Can Teach Us About Deconstructing Centers and Boundaries

Hierarchy is inherent in models of space and time, as is illustrated by “core-peripheries”, and ideas of diffusion and progressivist change. Despite lack of evidence, widespread archaeological manifestations are often implicitly configured as having dominant centers, subordinate edges, and boundaries. In the “far” Northeast of North America, archaeological phenomena such as “Adena” are assumed to spread from a center in the Midwest to the Canadian Maritimes. This is despite evidence from locally Early Maritime Woodland assemblages, such as the Augustine Mound, of material and ideological richness, and the balancing of local contributions with uptake of non-local materials and forms. We argue that dominant narratives of hierarchy derive from normative histories and long-standing archaeological constructs, but also from hierarchical epistemologies that are a part of a Western worldview. This perspective naturalizes top-down, centered networks as the primary organizing principle for large collectives of people. In this paper we explore recent work by Escobar and others who propose models of decentered meshworks as a methodological mechanism for understanding large-scale interrelationships between small-scale collectives and individuals, and as tools for deconstructing edges and centers. The implications are both methodological and theoretical.

Blanco, Monica (Northern Illinois University)
[86] 
Further Analysis of San Marcos Subsurface Material: What Material Culture Can Tell Us about Demography and Social Complexity

Demography and social complexity at San Marcos remains limited. The American Southwest is a well-documented area, however, population size and the questions of whether an intricate social hierarchy was in place is still questioned. The following research presents a collections-based investigation approach to analyzing demography and social complexity of San Marcos Pueblo, located in New Mexico, via excavated material culture from 1990 excavation collection currently housed at the Field Museum in Chicago, Illinois. The collection were used in recording the date of occupation of twenty-five room blocks, for which sample dates are available, examining whether or not all room blocks were occupied simultaneously or sequentially. Moreover, room function is analyzed via the represented materials and identified materials that may indicate inequality and social complexity. Diagnostic ceramic rims were used to identify population shifts within the site. Six groups were identified. Group one corresponds with migration into the southwest section of San Marcos. Groups two and three correlate with a shift east. Groups four, five and six shifted to the northeast and northwest section of San Marcos.

Ground stone, chipped stone and bone may correlate with social complexity, specifically room function and identifying markers symbolizing status difference. Nevertheless, evidence for social complexity at San Marcos remains limited.

Blanco, Ericka [107] 
Los procesos y sus permanencias. El caso de la Isla de Atitlán en el Occidente de México

La antigua configuración lacustre de la zona Valles de Jalisco ha permitido el desarrollo de importantes fenómenos sociales a lo largo de más de cinco milenios. En las últimas décadas se han registrado una cantidad importante de asentamientos prehispanicos que reflejan diversidad socio-política, económica, ideológica y cronológica. El presente trabajo coloca bajo la lupa a la Isla de Atitlán, área que nos invita a explorar la zona bajo el enfoque de las permanencias. La isla se ubica dentro de la extinta Laguna de Magdalena, donde los materiales de superficie reflejan una ocupación continua. Entre ellos destaca una zona de desecho de objetos de obsidiana que se extiende por varias hectáreas. Ello sugiere que desde su aparición fue reutilizado posiblemente hasta la llegada de los españoles. Este hecho permite formular importantes interrogantes en torno a los procesos de transformación social que se desarrollaron en la zona. Será pues la tarea primordial de esta investigación determinar la naturaleza de la acumulación de obsidiana, para explicar tales características son las que priorizan a la isla para desarrollar la misma actividad, y por qué dicha práctica no presenta modificaciones sustanciales pese a los cambios socio-políticos que se presentan en el resto de la zona.

Blancas, Jorge [166] see Carballo, David
Blancas y. Jorge [231] see Barba, Luis

Blanco, Jessica (Northern Illinois University)
[231] 
El ritual en contextos domésticos de Xochitécatl-Cacaxtla

El presente trabajo se centra en una unidad habitacional del periodo Epiclásico: “La Casa del Pórtico”. Localizada a 500 metros en línea recta de Cacaxtla, la ubica en un punto estratégico. A diferencia de otras unidades habitacionales en donde se ha documentado la presencia de actividades productivas –Casa de los Mezcaleros, Casa de los Lapidarios (Serra y Lazcano 2011), La Casa del Pórtico destaca por algunas particularidades que han sido el motivo principal para ahondar en temas relacionados con validar una interpretación basada en datos precisos tanto de excavación como de análisis de materiales, con especial interés en el contexto de nuestra evidencia. La Casa del Pórtico conjuga dos aspectos: la evidencia arqueológica nos aporta información para validar el calificativo de unidad habitacional residencial. Por otro lado, a pesar de la complejidad no encontramos evidencia de algún tipo de actividad productiva como en otros complejos habitacionales del sitio. Entrelazando los datos obtenidos tanto en campo como en laboratorio, haciendo énfasis en el contexto de los elementos, detectamos una serie de características que nos sugieren una actividad de carácter ritual, misma que está incidiendo económica
Blanford, Adam (University of Colorado Boulder)
[234]  
Rethinking Tarascan Political and Spatial Organization

The Tarascan (Purépecha) Empire ruled much of west Mexico during the 15th and 16th centuries AD. Through ethnohistorical texts like the Relación de Michoacán, the Tarascans described their empire as a tripartite alliance between the settlements of Tzintzuntzan, Ihuatzio, and Patzcuaro. The lords of these settlements expanded Tarascan political influence throughout west Mexico, and established subordinate lords in settlements throughout the territory. However, scholarly interpretations suggest that the Tarascan Empire did not fully develop until lord Zizispandaquare consolidated political and religious authority at Tzintzuntzan, making it the sole capital of the Tarascan Empire. Though Ihuatzio and Patzcuaro played important roles in imperial formation and continued to play important roles until the Spanish Conquest, they are often overlooked. Recent research uses ethnohistorical texts as narratives of indigenous history to evaluate imperial development from the native perspective, while archaeological and remote sensing data are evaluated in light of these new ethnohistorical interpretations. These data are used to propose an alternative model of Tarascan organizational structure.

Blanton, Dennis (University of Virginia)
[124]  
Evolution of a Ritual: Pipes and Smoking in Etowah’s Realm

The reasons religions change and the processes by which those changes occur may both be explored through the study of ritual. Here those issues are examined in the context of late prehistoric Mississippian societies in the southeastern United States, specifically within the realm of Etowah, which was one of the preeminent political and religious centers of the region. A progression of changes in both the physical form of smoking pipes and their contexts of discovery reveals how the rite was differently controlled and performed in accordance with varying social, political, and economic circumstances.

Blanton, Richard (Purdue University) Lane Faragher (CINVESTAV del IPN)
[231]  
Pottery, Production, and Politics at Late Postclassic Tlaxcallan

Studies have demonstrated that, during the Late Postclassic, Central Mexico was a key economic region, marked by intensive agriculture, extensive craft specialization, and complex interlocking markets. Much of our understanding of this highly commercialized landscape comes from extensive archaeological and ethnohistoric research in the Basin of Mexico and Morelos. Tlaxcala, which was identified by the Conquistadores and early chroniclers as a major market place and economic force, has largely been ignored. We began to fill this lacuna by describing the ceramic economy of the Late Postclassic city of Tlaxcallan. We burrow further into our collections and surface data to elucidate how ceramic production, distribution, and consumption were organized. Combining petrography, systematic measurements of vessel uniformity, and surface evidence of intensive production, we demonstrate that the ceramic economy of Tlaxcallan was highly commercialized, especially with respect to polychrome pottery. As such, Tlaxcallan may have been the largest center of polychrome production in Central Mexico, exceeding the better-known centers of Cholula and Chalco in importance. However, we also consider the iconographic content of Tlaxcallan polychromes and suggest that the consumption of Tlaxcallan vs. Cholulteca or Chalco polychromes signaled political and ideological affiliations as well as marked social boundaries.

Blasing, Robert [276] see Bement, Leland

Bleed, Peter (University of Nebraska-Lincoln) and Daniel Osborne (University of Nebraska-Lincoln)
[212]  
Searching Lithic Technology and the Complex Control of Food for the Roots of Human Niche Construction

Viewing humans as culturally enabled “niche constructors” has helped archeologists understand ecological adjustments made by people and species that interacted with them. Reference to the ability of humans to alter their situation and aggressively embrace modifications of their own creation, however, fails to explain the basis of these principles of human evolution. Using interaction models, this paper considers two archeologically observable behavioral complexes that differentiate humans from other mammals and that lie at the base of aggressive niche construction. Commitment to chipped stone tool technology increased hominid technical impacts, enhanced analytical cognitive ability, keyed early hominids to resource assessment and distribution, and made transportation of materials a significant human behavior. Human eating behavior, featuring complex control of food availability and socially structured management of consumption, increased niche modification by encouraging storage, transportation, and focused interaction with specific resources.

Bliesing, Meggan [54] see Wallis, Neill

Bliege Bird, Rebecca [212] see Bird, Douglas

Blitz, John (University of Alabama)
[178]  
Skeuomorphs, Textured Pottery, and Technological Innovation

Behaviorist and selectionist ceramic technology studies identify texture applied to vessel surfaces, such as corrugation, impressing, and stamping, as utilitarian attributes to be evaluated by performance efficiency. I reject this conclusion because the laboratory experiments are based on the unsubstantiated inference that textured surfaces are utilitarian performance characteristics. I propose that textured ceramic surfaces are skeuomorphic decorations that mimic and reference other containers such as woven baskets or fabric bags. Skeuomorphs originate as design elements that were functional on the prototype artifact but through time become non-functional decorative attributes on a derivative artifact. I review the evidence for ceramic skeuomorphs in the archaeological record and discuss the role of skeuomorphs in technological innovation. Skeuomorphs facilitate acceptance of innovations by evoking valued social memories and identities linked to the prototype artifact. By materializing the pre-existing familiar value as a decoration transferred to unfamiliar innovations, skeuomorphs extend the frame of reference to new objects and create new value by association and connotation.

Blomster, Jeffrey (George Washington University)
[145]  
Urbanism and Production in the Mixteca Alta: The Yucuita Phase at Etlatongo, Oaxaca, Mexico

Transformations in social-political organization occur throughout the state of Oaxaca during the Late and Terminal Formative periods. Urban societies appear in various regions of Oaxaca along with associated changes in socio-political and economic organization. In addition to monumental architecture and public art, these larger changes were materialized in pottery, objects that dominated domestic assemblage from all socio-economic positions. The recent definition of the Yucuita phase, from 500 to 300 B.C.E., at the site of Etlatongo, in the Mixteca Alta of Oaxaca, allows for comparisons of ceramic forms and production with materials from the preceding ceramic phases. This paper explores
changes in production through a focus on paste and non-plastic inclusions, forms, surface treatment, and decoration. From the Cruz B phase (1150 – 850 B.C.E.) to the Yucuita phase, these comparisons indicate changing emphasis in aesthetics and the surface of pottery in the Early Formative to a focus on more consistent production of pottery in the Middle/Late Formative, which may signal changes in the ceramic industry and socio-political organization. These changes also track with visual imagery materialized in ceramic figures from the same time periods.

[145] Chair

Blount, Clinton [119] see Peelo, Sarah

Blum, Megan [87] see Pitolblado, Bonnie

Blum, Jacquelyn [40] see Laak, Emily

Blum, Jacquelyn and Alexis Jordan (University of Wisconsin-Milwaukee)

An In-depth Comparison of Immigrant Life Expectancies from German Lutheran Cemeteries in Southeastern Wisconsin

Understanding differential life expectancies within and between immigrant populations during the nineteenth century in Southeastern Wisconsin provides a window into long-term patterns of social and political disparities. As these disparities played out, they were reflected in the mortuary record in both cultural and physical attributes. This analysis is anchored by an examination of life expectancies between local German Lutherans during the mid-nineteenth to early twentieth century. Comparisons of osteological traits are contextualized within the larger framework of Southeastern Wisconsin German Lutheran cemeteries. This data comes from individuals disinterred from two cemeteries in Ozaukee County and is supplemented with textual material from adjacent regions.

Blyth, Tania [260] see Pelletier, Natalie

Boaretto, Elisabetta [79] see Alex, Bridget

Bobbit, Mary [120] see Auge, C Riley

Bobbitt, Mary (University of Montana), C. Riley Auge (University of Montana), T. A. Foor (University of Montana) and Kelly J. Dixon (University of Montana)

Interpreting the Intra and Extra Regional Trade Networks at the Bridge River Site

Indigenous cultures of the Pacific Northwest were dramatically impacted by trade goods that came to the region during the 18th and 19th centuries. Trading posts were subsequently established throughout this region, and by 1792 maritime fur trading activities between indigenous people and Europeans were well underway. Recent field work lead by Dr. Anna Prentiss at the Bridge River site (EeR14), located in the Middle Fraser Canyon of Southern British Columbia, has yielded a small percentage of artifacts that correlate to the period associated with early European – First Nation interactions. Objects such as iron spear points, flat glass, and beads from Housepit 54 at the site are suggestive of ways in which materials introduced by Europeans made their way to local households. Here we examine these artifacts in order to explore the ways in which traditional people in the Middle Fraser Canyon incorporated trade materials into their everyday lives, underscoring the implications such information has for understanding the intra and extra-regional trade networks.

Bocinsky, R. Kyle [23] see Reese, Kelsey

Bocinsky, R. Kyle (Washington State University)

The Defensive Coast

Recent attempts to create an index of site defensibility for the Northwest Coast and elsewhere have used a null model of zero
defensibility; i.e., the site does not have any defensive advantage when approached from its immediate surroundings. Such a model is useful for comparing sites to one-another, but does not necessarily reflect an agent's consideration of defensibility when choosing a place to be on a landscape. Instead, people make decisions in the context of their local and regional environments: their set of possible choices. In order to understand the importance of defensibility in past peoples' behavior, we must first quantify the defensibility of their landscapes. In this paper, I build off a defensibility index developed by Martindale and Supernant (2009) by fully specifying their geospatial indices pertaining to visibility and elevation and adapting them to a raster landscape (a digital elevation model). I then examine the defensibility of recorded pre- and post-contact archaeological sites in the Gulf of Georgia and lower Fraser River valley of British Columbia in light of the baseline defensibility of the landscape. By doing so I am able to consider to what extent peoples' initial decisions of where to build are defensive.

Boczkiewicz, Roberta [263] see Jeske, Robert

Boehm, Andrew (Southern Methodist University) [68]

General Trends in Bison Foraging on the Great Plains over the Last 13,000 Years

The American bison was a key resource for Great Plains groups for over 10,000 years. The ubiquity of bison in the archaeological record across the millennia suggests that bison were a predictable resource throughout this period. To examine this proposition, I developed a database of published carbon, nitrogen, and oxygen isotope values derived from bison and covering a 13,000-year record for the entire Great Plains. General trends observed in the bison isotope database are compared to previous studies on soil organic carbon to examine the variability in bison foraging preference over time. Increased variability in carbon values likely signiflies that bison were forced, either by climatic changes or predation, to consume plants outside their preferred forage, which may be an indication of periods when bison were less predictable. In response to unpredictable bison behavior, human groups were potentially forced to expand their diet breadth during these periods.

Boesch, Christophe [38] see Fahy, Geraldine E.

Bogaard, Amy [32] see Carter, Tristan

Bogucki, Peter (Princeton University) [211]

"Disruptive Technologies" and the Transition to Agriculture in Northern and Western Europe

The transition to agriculture in northern and western Europe took place over a millennium later than the establishment of farming communities in adjacent central Europe, but then occurred quickly just after 4000 BC. This paper explores the proposition that certain elements of the agricultural economy from central Europe presented themselves to the foragers in the British Isles and Scandinavia as "disruptive technologies," innovations that rather than improving existing processes and products introduce novel techniques that exploit hitherto-unused economic niches. A possible candidate for such a disruptive technology derived from the central European Neolithic economy could have been the use of cow's milk and its processing into derivative products, a novel practice that may have appealed to some foragers and opened the door for other agricultural practices.

Boivin, Nicole (University of Oxford) [146]

Mobile Societies and Archaic Globalization in the Early Indian Ocean

The Indian Ocean littoral saw the gradual emergence of networks of commercial exchange and cultural interaction beginning in the Bronze Age. The genesis of early trade activities in this arena is normally understood within the framework of a state-oriented system, defined by the activities of markets, governments, and state-based merchants. Omitted from most analyses is consideration of the more mobile societies that frequently played a key role in the acquisition and physical movement of trade products. In the Indian Ocean world, such societies fed into commercial networks a range of forest, sea, and highland products, most notably the highly sought after 'spices' widely used in the ancient world for medicinal, ritual, and symbolic purposes. They also played an overlooked role in transporting trade products, sometimes over significant distances and in surprisingly large craft. It is suggested that models of early globalization need to take into account the synergistic relationships that were established between settled and mobile peoples, and the misleading impressions of isolation and passivity that frequently serve, along with taphonomic and historical biases, to mask the activities of these early agents of globalization.

Bollwerk, Elizabeth (University of Virginia) [29]

From Cultural Complexes to Complex Social Topography: A History of Spatial Approaches to Native Cultural Landscapes in the Middle Atlantic

Over the past 150 years Middle Atlantic archaeologists have used a variety of spatial approaches to depict past Native social landscapes. The primary model used throughout the early twentieth century generated cultural group territories encompassing hundreds of miles. In the second half of the twentieth century the Midwestern Taxonomic System and Cultural Complexes were in vogue. While these approaches emphasized different material traits, the predominant use of cultural territories and complexes to depict prehistoric archaeological cultures modeled past Native societies as isolated, static, and rigidly bounded. In the last half of the twentieth century and the first decades of the twenty-first century Middle Atlantic archaeologists have provided alternatives to previous depictions by using different methodological and theoretical approaches and interpretative frameworks when considering variation in Native material culture. These approaches have revealed dynamic aspects of Native social landscapes that were overlooked by previous models. However, the acknowledgment of social complexity introduces the challenge of how to depict the more intricate social networks of past Native communities. The conclusion of this paper will explore what archaeologists can learn from Digital Humanities approaches to Geographic Information Systems to improve the cartographic conventions we use to illustrate Native social topography.

Bond, Stanley [280]

Changing Traditions in Hawaiian Rock Art: Examples From Kaloko-Honokohau National Historical Park

After contact Hawaiians quickly incorporated European goods into their material culture. Items especially sought by the ali`i (Hawaiian chiefs) included weapons for island conquest and ships to transport large numbers of warriors. These objects were described by native Hawaiian historians in their writings and incorporated in both traditional and non-traditional ways into Hawaiian rock art. Analysis of specific images; such as ships,
cannons, and muskets; and placing these images within the larger context of full petroglyph panels and Hawaiian interpretation of their history may provide some insight into the cultural significance of these new acquired European items.

Bonsall, Clive [227] see Gurova, Maria

Bonstead, Leah [206] see Hudson, Erin

Boon, Andrea [173] see Neusius, Sarah

Boor, Jocelyn (University of Wisconsin-Milwaukee) [25]
Compositional Analysis of Bronze Age Ceramics from Tell Hadidi, Syria: A Comparison of Three Data Sets
Compositional analysis of a sample of Bronze Age pottery from the site of Tell Hadidi in northern Syria was conducted using portable X-ray fluorescence analyzers (pXRF) as well as ceramic petrography. Data on 337 vessels recovered from Area C, a presumed ritual activity locus, was collected using NITON XL10 and Bruker Tracer III+ handheld units. These data were used to establish geochemical signatures for clay types and sources, test the relative chronology established for Area C, and determine whether certain vessel forms can be linked to specific clay mixtures. A comparison of the pXRF analysis to data derived from petrographic analysis of ceramic thin sections highlights the need to conduct complementary sets of compositional analyses whenever possible.

Boor, Lewis (University of Wisconsin-Milwaukee) [106] see Mills, Barbara

Boor, Lewis (University of Arizona) [218] They Sought a Country: Gallina Resistance and Identity in the New Mexican Highlands
In this presentation, I will examine the Gallina culture (A.D. 1100 – 1300) of northern New Mexico and, using them as a type study, will argue that our inability to fit them nicely into modern archaeological taxonomies is the result of their intentional refusal to conform to the characteristics of much more densely inhabited neighboring regions. Using the Gallina, I define a cultural form, which when present is frequently the product of cultural resistance, called atavism. Atavistic cultures are often less populous than their neighbors and use purposeful isolation, traditional technologies and rituals, and invented traditions to produce a society whose connection with the past, both real and constructed, functionally opposes the trending cultural currents of the day. Modern cultures which display traits of atavism will be discussed and comparisons to the Gallina will be drawn.

Boric, Dusan (Cardiff University), Emanuela Cristiani (University of Cambridge), Zvezdana Vusovic-Lucic (National Museum, Niksic) and Dusan Mihailovic (Belgrade University) [80] Upper Paleolithic Marmot Hunting in the Dinaric Alps: Late Glacial Reorganization of Montenegrin Mountains?
The Balkans is often considered a refugium of European foragers during the Last Glacial Maximum (LGM), along with possible importance of the North Adriatic Plain as an area that might have seen the concentration of resources and human groups. Yet, the topography of large areas of the western Balkans is characterized by extensive mountain ranges known as the Dinaric Alps with many high altitude locations. The character of human occupation before, during and after the LGM in this region is poorly understood if compared with the Italian Alps and Prealps, where research-to-date has provided more detailed information about human responses to changing climatic conditions in the course of the Late Pleistocene and early Holocene. Recent archaeological research in the mountainous areas of western Montenegro has identified marmot hunting dated to the Late Glacial interstadials and may suggest a process of recolonization of higher altitude locations after the LGM. The presented focus on marmot hunting in the southern Dinaric Alps is comparable to several similar sites previously identified in the Alpine region.

Boric, Dusan [250] see Cristiani, Emanuela

Borrazzo, Karen [26] see Borrazzo, Karen

Borrazzo, Karen (CONICET-IMHICIHU, UBA), Karen Borrazzo (CONICET-IMHICIHU, UBA), Marcelo Cardillo (CONICET-IMHICIHU, UBA) and Judith Charlin (CONICET-IMHICIHU, UBA) [26] Spatial Patterns in Late Holocene Lithic Technology of Tierra del Fuego: Evidence from Raw Material and Projectile Point Variations
This presentation focuses on the study of lithic raw material distribution and morphological variations in lithic projectile points during the Late Holocene in Tierra del Fuego (Patagonia, Southernmost South America). The main goal of our study is to explore and discuss the regional distribution of some raw materials with focal availability, and the spatial patterns of projectile point size and shape variation throughout the Grande Island and neighboring areas. Raw material study is based on petrographic, geochemical and technological analyses. Projectile point size and shape variations, as well as its geographical patterns of distribution, are assessed through geometric morphometrics and spatial analyses. The results of raw material analyses points to the existence of a wide social network that integrated distant spaces within the Island, archipelago and the mainland. In contrast, despite the short geographic distance recorded among some of the samples considered, there are significant differences in projectile point variations, which exhibit spatial structuration. These results highlight the different scales of social boundaries and interaction among Fuegian hunter-gatherer populations during the Late Holocene.

Borroz, Luis (CONICET) [26] Discussant

Borroz, Luis [26] see Morello Repetto, Flavia

Borroz, Mario (California State University Northridge) and Michael Love (California State University Northridge) [171] Domestic Obsidian Production and Consumption at the Middle Preclassic Site of La Blanca, San Marcos, Guatemala
The Lithic analysis of household debitage from the Middle Preclassic (900-600 B.C) site of La Blanca, Guatemala, is reported. Questions concerning possible elite control and restriction of distribution of obsidian as a resource, and access to different stages of tool stone production in varying functional contexts, are the primary focus of the study. Excavations in residential zones at La Blanca show significant social differentiation at the household level. The households are ranked, which has been determined by the densities and quality of: prestige goods, architecture, faunal remains, and ceramics. These differences carry over into the lithic assemblages, allowing the data to express variable access to tool stone across the site, and production, particularly in terms of prismatic and expedient/flake cores. Variances in prismatic blades are also analyzed, not solely numerically, but also for size, quality of material, and sources the parent stone derives from. These differences serve to highlight the relationship between centralized political institutions and households in Preclassic Mesoamerica.

Bos, Kirsten (University of Tuebingen) and Johannes Krause
Bosch, Marjolein (MPI-EVA Dept. Human Evolution), Laura Niven (MPI-EVA Dept. Human Evolution), John de Vos (NCB Naturalis) and Jean-Jacques Hublin (MPI-EVA Dept. Human Evolution)

New Data on Middle Paleolithic Subsistence Behavior at Ka‘ar Akil (Lebanon).

Ka‘ar Akil is a key archaeological site in the Near East with a 23 meter sequence covering a long time span from the Middle Paleolithic to the Epi-Paleolithic. Here we present zooarchaeological data on the multilayered Middle Paleolithic deposits. Taking into account the collection bias of these 1930s-1940s excavations toward identifiable remains, the material is clearly anthropogenic in origin as seen by the cutmarks and numerous green break fractures as well as evidence for burning. Generally, carnivores make up only 1 to 2% of the faunal assemblage per layer and carnivore modifications are rare. Therefore, a bias through carnivore ravaging is not likely. Similarly, density mediated destruction did not significantly alter the assemblage. Zooarchaeological analysis of vertebrate remains include: taxonomic evenness, skeletal element frequencies, mortality profiles, etc. At Ka‘ar Akil Dama mesopotamica, Bos sp. and Sus scrofa are the most frequent taxa throughout the sequence. Contrary to many other Middle Paleolithic Levantine assemblages, gazelle remains are rare and equids are absent, whereas wild boar is one of the dominating species. The unusual pattern observed at Ka‘ar Akil broadens our view of Middle Paleolithic subsistence behavior in the Near East. Funding: Max Planck Society.

Bostwick, Todd (PaleoWest Archaeology)

Hohokam Sunwatching at the Shaw Butte Hilltop Site in Phoenix, Arizona

With its broad valleys bordered by steep, narrow mountains, the Sonoran Desert’s sweeping landscape of earth and sky lends itself well to the observation of astronomical phenomena. The native peoples of southern Arizona have long watched the patterned movement of several celestial bodies, especially the sun, for timekeeping and have incorporated stories about them into their oral traditions. This paper discusses research conducted at the Shaw Butte Hilltop Site in Phoenix, Arizona, which has documented evidence for the marking of the sun’s annual journey through the sky by the prehistoric Hohokam culture. For more than 1000 years, Hohokam farmers employed sophisticated engineering skills in constructing their extensive canal systems. These farmers would have been in tune with the desert’s bimodal rainfall pattern and the Salt and Gila River’s annual flood cycles, with labor demands and ritual obligations following those natural cycles. It is argued in this paper that the Hohokam tracked the seasons through the observation from hilltop sites of the sun’s movement in order to create a calendar that established a framework for organizing seasonal labor demands and ritual obligations.

Boudreaux, Sarah Nicole (Texas Tech University)

Life on the Edge: New Perspectives, Thoughts, and Future Research Ideas on the Ancient Maya Hinterland in Northwestern Belize

This paper will provide interpretations of the ancient Maya hinterland by analyzing mapping and artifact data collected within the Dos Hombres to Gran Cacao Archaeology Project (DH2GC) and will present an outline for future investigations. Since the first field season in 2009, research efforts within the DH2GC have uncovered new data that have revealed integral components for understanding the Maya hinterland in a social, economic, and ecological context. Additionally, site planning, settlement patterning, new perspectives about economic drivers, and latest ideas about chronology in the area will be discussed. In the concluding remarks, the paper will outline future investigations within the project in regard to ceramic analysis. By concentrating on craft production/specialization via ceramic manufacture, new data will be derived by focusing on the economic implications and social relations people had with the movement and manufacturing of goods across their environment.

Boudreaux, Edmond and Kandace Hollenbach

Archaeological Research Laboratory - University of Tennessee

Feasting and Early Platform Mound Construction on the Gulf Coast of Mississippi

Many early platform mounds (pre-A.D. 700) in the southeastern United States appear to have been places where large groups gathered for the performance of communal rituals. Activities that accompanied these gatherings included the erection of monumental posts, the production and exchange of objects from nonlocal materials, and the manipulation of special objects. Feasting events that involved the large-scale preparation and consumption of food and the consumption of special foods also appear to have been an important part of many of these gatherings at early platform mounds. This paper will report on the investigation of the Jackson Landing site, an earthwork and platform mound site on the northern Gulf of Mexico in coastal Mississippi where feasting was associated with the initiation of mound construction at approximately A.D. 660. Seasonal indicators from plant remains suggest that these events took place in the fall, perhaps as part of regular ritual gatherings that occurred within the space defined by Jackson Landing’s earthwork. Feasting events at the site involved the manipulation of special objects and the consumption of special foods, including the earliest evidence for maize in the area.
zooarchaeological research.

Boulanger, Matthew [62] see Lattanzi, Gregory

Boyce, Joe (School of Geography and Earth Sciences, McMaster University), Peter Dao (School of Geography and Earth Sciences, McMaster U), Despina Koutras, Maria (Epheoria of Enalion Antiquities, Athens, Greece), Eduard Reinhardt (School of Geography and Earth Sciences, McMaster U) and Richard Rothaus (Trefoli Cultural and Environmental Heritage, Sauk)

Coastal Reconstruction of Submerged Bronze Age Shorelines and Anchorage Sites at Kalamianos (Korphos, Greece)

Rapid changes in relative sea level (RSL) have dramatically altered the configuration of the Aegean coast since it was first settled by prehistoric peoples. At Kalamianos, a newly discovered Mycenaean settlement on the Saronic Gulf, a RSL rise of 6 m is indicated by submerged architectural features and beachrock (3.5-5.9 m depth) containing Helladic pottery. A detailed underwater geophysical and geomorphic survey was conducted to map the Bronze shoreline position and to identify potential anchorage sites. Beachrock elevations, 14C chronology and micropaleontological data were used to construct a RSL curve and paleoshoreline maps. During the Early Helladic occupation of the site, the mainland was connected to a small island by a narrow isthmus with a well-sheltered harbor basin on its lee side. During the subsequent Mycenaean phase, sea level rose by about 1.5 m, submerging the promontory. Mycenaean ship activity is recorded by abundant pottery and wood charcoal fragments (AMS 14C age 1640-1400 cal BC) in beachrock and ballast mounds identified by magnetic gradiometer surveys. No evidence was found for a constructed harbor at Kalamianos but the well-protected natural embayments afforded by coastal headlands would have provided safe anchorages under varying wind and wave conditions.

Boyce, Joseph [162] see Reinhardt, Eduard

Boyce, Charles (Radford University) and Donna Boyd (Radford University)

The Scales of Archaeological Theory

As has been the case in cultural anthropology, for decades archaeologists have hotly debated various theories seeking to enhance our interpretation of the past. While in some cases, theoretical approaches are diametrically opposed to one another—such as postmodernist reflexive interpretations and the more scientifically oriented methods of the New Archaeology—others merely reflect a difference in subject matter, context, and research questions and goals. Following ideas espoused by Michael Schiffer, we suggest that theories that may appear incompatible are not, but instead reflect different scales of inquiry. For example, just as one would not use a multivariate statistical technique like factor analysis to analyze a nominal data set, a more individualistic theory, such as agency theory, might better explain the contents of a specific burial than evolutionary theory, which would be more effective in answering large scale questions. This does not mean that agency theory and evolutionary theory are incompatible—we may be appropriate to both the level and nature of inquiry being addressed. In this paper, different scales of anthropological and archaeological theory are described to illustrate their overall compatibility, once their different levels of inquiry are recognized.

Boyd, Donna [153] see Boyd, Charles

Boyce, Matthew, Andrew Lints (Western Heritage), Clarence Surette (Dept. of Anthropology, Lakehead University) and Scott Hamilton (Dept. of Anthropology, Lakehead University)

[258] Maize Horticulture and the Woodland Tradition in Subarctic North America

Recent archaeological research indicates that maize and other cultivars were consumed by precontact societies in subarctic North America since at least AD 500. It is unclear, however, if domesticated plants were obtained in these northern settings primarily through long-distance trade or local gardening. In this study, we present the first evidence of ancient food production in the North American boreal forest and, by extension, the most northerly example of precontact horticulture in the Americas. Our data consist of plant microfossils (starch granules, phytoliths, and pollen) recovered from archaeological features, grinding stones, and carbonized food residues from a cluster of Middle and Late Woodland sites located approximately 350 km south of the Hudson Bay Lowlands in Northern Ontario, Canada. We argue that food production in this region was embedded in a pre-existing seasonal round centered on the autumn wild rice (Zizania sp.) harvest, and necessitated no significant changes in mobility/site permanency, food processing or storage technology, or economic scheduling. As a result, low-level food production may have rapidly spread across the southern boreal forest while leaving behind few archaeological traces of this event. These results indicate that horticulture was far more widespread in North America than archaeologists have previously recognized.

Boyer, Alison (University of Tennessee)

Holocene Extinctions of Pacific Island Birds: What Was the Role of Humans?

Avian remains found in archaeological settings have revolutionized our understanding of the ancient biodiversity of Pacific islands and the interactions between people and birds throughout the history of human occupation. We now know that extinctions of birds followed human colonization on virtually every inhabited island across the Pacific. What can these extinctions tell us about the human-bird interactions that led to their demise? At least two-thirds of the landbirds on Pacific islands went extinct in the period between first human arrival and European contact, with extinction rates linked to island and species characteristics that increased susceptibility to hunting and habitat destruction. In the Hawaiian islands, prehistoric extinctions showed a strong bias toward larger body sizes and flightless, ground-nesting species, which points to human hunting as a causal mechanism for their extinction. However, many small, specialized species, mostly granivores and frugivores, also disappeared, implicating a wide suite of human impacts including clearing of dry forests. Extinctions were ecologically selective and the observed patterns point to the importance of different anthropogenic mechanisms. Human foraging and other subsistence activities placed severe ecological constraints on island avifaunas such that large, endemic species with high metabolic and habitat requirements were prone to extinction.

Boyntner, Ran (USC)

The Changing Dynamics of Archaeology Field Schools: Data from the Archaeological Institute of America (AIA), 2008-2012

The Archaeological Institute of America (AIA) website is a central digital location for archaeologists to publicize their field schools and for students to explore great diversity of offerings. Exploring its database, therefore, provide interesting insights into trends and scale of field school offerings. This paper will examine data from the AIA database dated to 2008-2012. It will present the impact of the 2008 economic crisis on field school offerings, examine shifts in field school costs and evaluate total numbers of students attending archaeology field schools, both domestic and international. Analysis of the AIA database is supported by conjunctures driven from data analysis of the UCLA Field Program (2007-2010) and the Institute for Field Research (2012) where the number of field schools is more limited but data resolution is significantly higher. Using the aggregate of data, this paper will compare results from archaeology field school data with those published by the Institute for International Education which tracks
ABSTRACTS OF THE SAA 78th ANNUAL MEETING

Chair

Bracamentes Gutierrez, Juan Jose G.

The Historical Archeology of the Port of San Blas

A través del estudio de fuentes históricas y de los artefactos arqueológicos analizaremos la importancia que tuvo el bastión septentrional en la Nueva Galicia del siglo XVIII. Se exponen los antecedentes que impulsaron su instalación como el reformismo Borbón, el fenómeno de piratería en el Pacífico y la ocupación de espacios por compañías comerciales rusas y británicas. Se revisan los patrones de asentamiento de la villa como una forma de replicar los modelos poblacionales hispanos en donde confluyó la sociedad civil, militar y comercial. Los residentes de este ancladero fueron una elite privilegiada, por ello tuvieron inclinación por consumir bienes exóticos como método de distinción social. Dichos materiales identificados en prospecciones de superficie van desde las porcelanas orientales, mayólicas y cerámicas de origen europeo, entre otras. La introducción de estas mercaderías se inserta perfectamente en el desarrollo de la economía mundo capitalista, de esa manera se expondrá brevemente la importancia de la teoría de Wallerstein para explicar los acontecimientos históricos.

Bracewell, Jennifer (McGill University)

The Infertile Crescent Revisited: A Case (Study) for the History of Archaeology

This paper examines the history of archaeological research concerning the eastern coast of James Bay in northern Quebec. This area is one of the most remote and heavily forested in Canada. Very little actual fieldwork was undertaken here until rescue excavations in the 1970s. Despite this, the region’s prehistory had already been defined by archaeologists: it was thought to have changed very little in subsistence or culture since the area was occupied, as it was part of the “Infertile Crescent” of the Canadian North. The construction of prehistory in northern Quebec began with the earliest contact of Europeans with Native Canadians and has developed from religious explanations to classical evolutionary ones to culture-historical ones to neoevolutionary scientific ones. Although the theoretical interpretations have changed, the content has remained surprisingly constant. The remoteness and size of the Shield, and the challenges of researching in the area, led to generalizations that telescoped thousands of years and eight million square miles into a single interpretation, based ultimately on eighteenth- and nineteenth-century assumptions about hunter-gatherers, environmental determinism and race. This paper traces how these assumptions have affected the archaeology of the twentieth century in James Bay and northern Quebec.

Brack, Michael [148] see Sanchez, Ismael

Bracken, Justin (CUNY Graduate Center)

Late Maya Reconceptualization and Reshaping of the Landscape: Late Postclassic Evidence from the Site of Tayasal on Lake Petén Itzá in Northern Guatemala

As the last holdout against Spanish conquest and missionization in Mesoamerica, the Petén Lakes region offers a glimpse into the lattermost pre-Colonial Maya activities. Recent work at the site of Tayasal, in and around the San Bernabé Mission there, has provided new insights not only into life in the mission, but also into the occupation of the area in the times preceding Conquest. With the earliest construction dating to the Late Preclassic, this portion of the site supported waves of occupation through the ensuing phases of Mesoamerican prehistory and into the Colonial Era. Taking a Dwelling Perspective, this paper investigates the interaction of the Postclassic Maya with the built landscape as a reconceptualization of space, which intertwines their immediate concerns and beliefs with the material remains of the past. It was this negotiation between past and present that laid the groundwork for household-scale routines and rituals during the Postclassic and through to the ethnographically-known era which followed.

Bradley, Bruce [227] see Gurova, Maria

Bradshaw, Elizabeth

[31] Discussant

Brady, James (Cal State L.A.)

A Preliminary Discussion of the Cueva de Rey Condoy Mud Sculptures

The Cueva de Rey Condoy in the Mixe speaking region of Oaxaca contains an array of iconography, the most spectacular of which are several dozen life-sized, three dimensional mud sculptures. Many of the figures rank among the most sexually explicit in all of Mesoamerican art. Female figures are depicted with bared breasts, spread legs and prominently displayed vulvas. Males are shown as nude with large penises. One sculpture shows a male and female in the act of sexual intercourse. One of the male figures is carried out in Olmec style. Additionally, the corpus includes a number of feline figures and a reptilian figure. The figures are interpreted here as relating to well established Mesoamerica myths of origin and group genesis.

[109] Chair

Bragdon, Kathleen (William and Mary)

The Trope of Conspicuous Consumption in Native Southern New England: Dress and Gendered Performance among 17th Century Ruling Elites

Several accounts written by seventeenth century English observers of native dress and adornment in southern New England focus on the "finery" that distinguished the native elite, especially elite women. This paper investigates these accounts, examining them from a literary, cultural, and post-colonial perspective. From this, it will be possible to suggest an alternative explanation for gendered performance in the region, one that links material signals to the political, social, and economic realities of the contact era in the Northeast.

Braje, Todd (San Diego State University)

Humans and the Acceleration of Animal and Plant Extinctions

One of the more enduring and stirring debates in archaeology has revolved around the role humans have played in the extinction of large terrestrial mammals (megafauna) in Australia and the Americas near the end of the Pleistocene. Rather than seeking a prime driver (e.g., climate change, human hunting, disease, or other causes) for Pleistocene extinctions, we focus on the process of human migrations and technological developments during the last 50,000 years, changes that initiated an essentially continuous cascade of ecological changes and transformations of regional floral and faunal communities. Hunting, the translocation of plants and animals, human landscape modifications, and evolving human subsistence and cultural systems all contributed to a growing human domination of earth's continental and oceanic ecosystems. We explore the deep history of anthropogenic extinctions, trace the accelerating loss of biodiversity around the globe, and argue that Late Pleistocene and Holocene extinctions can be seen as part of a single complex process of extinctions that have been increasingly driven by anthropogenic factors that continue today.
Brannan, Stefan (University of Georgia)

The Occupational History of Singer-Moye, the Second Largest Mississippian Period Site You’ve Never Heard of

Singer-Moye is a large, multi-mound Mississippian site in southwestern Georgia. Previous investigations here concentrated on architectural evidence for mound use on four of the eight mounds. In 2012, The University of Georgia conducted an extensive survey employing shovel testing and shallow geophysical survey, concentrating on non-mound areas. This work helped define the extent of the settlement, identify residential and other activity areas, and contribute to chronological refinement. This paper describes these results and compares the occupational history of Singer-Moye to contemporary sites in the Deep South, including Moundville and Etowah.

Brantingham, P. Jeffrey [291] see Rhode, David

Braswell, Geoffrey (UC San Diego) and Beniamino Volta (UC San Diego)

Absolute and Relative Time: Understanding the Chronology of Chichen Itza

The ancient Maya constructed sophisticated and complex calendars that reflected and structured their perceptions of the world. So, too, do archaeologists. Such archaeological chronologies reflect our current interpretations of ancient Maya history, yet often conflate or limit new understanding. In the case of Chichen Itza, conflicting chronologies derived from Maya hieroglyphic inscriptions, the books of Chilam Balam, ceramic studies, architectural analysis, and radiocarbon dates have made it difficult to define absolute time the growth and collapse of the great city. In this presentation, we summarize alternative chronologies of Chichen Itza and attempt to resolve some of the differences among them using Bayesian statistics in order to better understand the history of the site.

Bray, Tamara (Wayne State University)

Commensal Politics in the Andes: A Comparison of Wari and Inca State Ceramic Assemblages

This paper examines the political and symbolic implications of culinary assemblages associated with the Andean conquest states of the Wari and Inca. A comparative analysis of the vessel forms and the imagery found on 'state pottery' allows us to more clearly articulate the role of commensality and art in the construction of state authority and strategies of legitimization. While charting the evolution of imperial symbolizing practices in Andes, the study has broader implications for more general theories about the role of ideology in the development of early expansionary states.

Brennan, Candice [186] see Sweeney, Angelina

Brennan, Michael (University of Rhode Island, Graduate School of Oceanography)

A Summary of Data Recovery Investigations in the Vicinity of Tolakai, Navajo-Gallup Water Supply Project, Northwest New Mexico

PaleoWest Archaeology conducted data recovery investigations at four prehistoric sites along the Navajo-Gallup Water Supply Project (NGWSP) right-of-way north of Gallup, New Mexico. A Basketmaker III site with two large pit structures and over two dozen extramural features, and two Pueblo II surface masonry pueblo sites are discussed. Both of the pueblos have kivas, living rooms, and storage features that were excavated over one meter into bedrock. These Pueblo II habitation sites represent an interesting contrast to the classic Prudden Unit layout that is common during this period. The fourth site is an agricultural locality with a protohistoric terrace that has up to 20 buried juniper trees. An overview of ongoing and upcoming survey, testing, and data recovery work in the NGWSP area is also discussed.

Breunig, Robert and Jim Enote (A:shwi A:wan Museum and Cultural Center, Zuni Pueblo)

Forming Partnerships with Tribal Communities

This presentation will focus on how a "mainstream" museum collaborates with tribal communities. We will describe tribal
involvement in the design of the Easton Collection Center at the Museum of Northern Arizona and the program partnership between the Museum of Northern Arizona and the A:shiwi A:wan Museum and Cultural Center at Zuni Pueblo. We will describe collaboration on exhibit planning and implementation, a collections collaborative, and an annual cultural festival. The presentation will discuss a model relationship employing on-going collaboration.

Brewer, Jeffrey (University of Cincinnati) and David Hyde (Western State Colorado University)  
[235] Settlement Pattern Analysis at the Medicinal Trail Community, Northwestern Belize  

Two years of total station mapping at the Maya hinterland settlement at the Medicinal Trail Community of northwestern Belize has revealed a pattern of settlement selection. The community consists of a wide range of formal courtyard groups, multiple landscape modifications including terraces, depressions, and linear features, and a number of informal mound clusters. Total station mapping has revealed a settlement pattern in which, (a) the largest, and most complex household groups are associated with ridge tops, (b) possible artificial drainages and reservoirs are associated with dense settlement, and (c) numerous terraces are located on the slopes of the ridges, near some of the drainage features.

Brewington, Seth [273] see Nelson, Margaret

Brewington, Seth (City University of New York, The Graduate Center)  
[273] The Social Costs of Sustainability in the Faroe Islands  

Though the development of sustainable, resilient societies is generally viewed as a successful and desirable outcome, the maintenance of such systems inevitably involves trade-offs, the costs of which are often not carried equally by all segments of society. In this paper I examine several dimensions of human security in the Faroe Islands, a small archipelago in the North Atlantic. Despite a marginal climate and paucity of arable land, the agro-pastoralist settlers of the Faroes were able to develop a resilient society through a combination of factors, including heavy exploitation of “pseudo-infinite” wild resources and the establishment of self-regulating communal institutions and strong social cohesion. The 12th and 13th centuries CE, however, brought significant social, economic, and environmental challenges, several of which represented real threats to the integrity of the sustainable system of land- and resource-use. Though sustainability of the resource base was ultimately maintained, this appears to have been achieved in large part through measures that disproportionately impacted a significant portion of Faroese society.

Brickley, Megan [42] see Lockau, Laura

Brill, James  
[177] Violent Adaptations: Technology of Violence and Cultural Evolution along the Santa Barbara Channel  

This study attempts to link environmental change and increases in violence along the Santa Barbara Channel in the Late Middle period through changes in technology. This study combines models of technological investment with studies of artifact standardization to determine if the prehistoric Chumash used violence as an adaptive response. This study expands on the theories of technological investment, hypothesizing that an investment in the technologies used in violence were used as a means of cultural adaptation. From the collection of the Santa Barbara Museum of Natural History projectiles points, spears, and pestles were analyzed to determine if the tools used in violence in general, and during times of increased violence, showed reduced variation through time. Changes in artifact variability were accessed using the Coefficient of Variation (CV), which was used to compare the degree of variation in tools used in violence to those unrelated to violence across geography, association, and time. The time periods compared in this study was the Late Early Period to the Late Period (6630 BC- AD 1604). It was hypothesized that artifacts used in violence would have a lower CV% in general, and a lower CV% during times of increased violence, indicating specialization.

Britton, Kate [20] see McManus, Ellen

Britton, Kate (University of Aberdeen), Rick Knecht (University of Aberdeen), Ellen McManus (University of Aberdeen) and Mike Richards (University of British Columbia)  
[138] Maritime Adaptations and Dietary Variation in Prehistoric Western Alaska: Stable Isotope Analysis of Permafrost-Preserved Human Hair  

The reconstruction of diet and subsistence strategies is integral to understanding early human colorizations and cultural adaptations, especially in the Arctic - one of the last areas of North America to be permanently inhabited. However, evidence for early subsistence practices in Western Alaska varies, particularly with regards to the emergence, importance and intensity of sea mammal hunting. Here we present stable carbon and nitrogen isotope data from permafrost-preserved human hair from two new prehistoric sites in Western Alaska, providing a direct measure of diet. The isotope evidence indicates a heavy reliance on sea mammal protein amongst the earlier Norton-period group (1750±40 cal BP). In contrast, analysis of the more recent Thule-period hair samples (650±40 cal BP; 570±30 cal BP) reveals a more mixed diet, including terrestrial animal protein. These analyses provide direct evidence for dietary differences amongst Alaska’s early Eskimo groups and confirm the antiquity of
specialized sea mammal hunting and procurement technologies. The results of this study have implications for our understanding of human adaptation to maritime and high latitude environments, and the geographical and temporal complexity in early Arctic subsistence.

Britton, Emma

Preliminary Analysis of Black Pigment Recipes on Casas Grandes Polychromes

Field observations regarding the varying textures of black paint on Casas Grandes polychromes from Site 204 (Upper Tinaja), located in Chihuahua, Mexico, ranged from matte, sugary, to true-glaze-paint, indicating that there were likely multiple pigment recipes utilized to decorate ceramics at this site. However, these visual manifestations of possible paint recipes did not necessarily correspond to specific ceramic formal types, nor paste-temper recipes. Continuing laboratory investigations, using portable X-ray Fluorescence, have suggested, based on presence-absence of different elements, that up to seven distinct elemental recipes may have been utilized, through time, on many different ceramic formal types, at Site 204. These elements do not necessarily co-occur geologically, which suggests that multiple pigment rocks were mixed together, intentionally, in order to create the same, or similar, black pigment manifestations. This poster investigates possible motives for these varying recipes, ranging from functional to cosmological.

Broda, Johanna (UNAM, MEXICO)

The Comparative Study of Indigenous Calendar Festivals and Astronomical Dates: Mesoamerica and the Andes

In Mesoamerica, the dates of February 12, April 30, August 13 and October 30 are particularly important in the annual cycle of Calendar Festivals being closely related to agricultural activities and the seasonal cycle. These dates were already significant in Prehispanic times since they are reflected in the orientation of archaeological sites and individual buildings by an acmpt of 105.5° towards sunrise and 285.5° towards sunset. Among other sites, this orientation exists at Teotihuacan. In this paper, I compare my research of ethnographic and ethnographic data from Central Mexico with some consideration of the significance of precisely these dates for the Quechus of the Southern Andes, particularly the regions of Cuzco and Lake Titicaca. The comparative study of the Aztecs and the Incas, which has also been a field of research of Anthony Aveni over the years, may contribute to gain a broader understanding of Native American calendars and astronomy.

Brokaw, Nicholas [213] see Beach, Timothy

Broodbank, Cyprian

Did Islands Make Much Difference to World Prehistory? Perspectives from the Mediterranean

Island archaeology is a well-established field, but in an age of competing demands on archaeological and wider resources, it is timely to ask what it does for overall understanding of prehistory and the shape of the world we live in. Three answers spring to mind. One is that it offers our best route into the deeper past of island societies, and this is certainly a substantial good within its own terms of reference, not least as such societies today are among the most threatened on the planet. Second, it is claimed that island research contributes to the comparative study of broader social process; the applied truth of this appears less demonstrable, and thinly evidenced. The third is that intervening islands and islanders had a significant impact on what went on in the continental world around them. Intriguingly, this is often questionable; how often prior to the recent expansion of global navigation did it make much surrounding difference if an archipelago lay empty or was peopled? For a variety of partly configurational reasons, the Mediterranean theatre offers an exception in this respect, and this papers highlights key junctures at which the presence of islands clearly shaped overall Mediterranean prehistory.

Brook, George [28] see Franco, Nora

Brooks, Alison (George Washington University), Richard Potts (Human Origins Program, NMNH, Smithsonian Institution), Matthew W. Tocheri (Human Origins Program, NMNH, Smithsonian Institution) and Christian A. Tryon (New York University/ HOP, NMNH, Smithsonian Institution)

Coding the Paleolithic of East Africa: Problems, Possibilities, and Procedures

Since 2002, the Smithsonian’s Human Origins Program has developed a database relevant to human evolution from published localities, searchable by location, by time range and by data category: Archaeology, Hominins, Fauna, Chronology, Environment and Stratigraphic Context. Data involving artifacts are most problematic, due to a lack of standardization, both in the archaeologists’ categories and in the shaping, reshaping and/or use of artifacts by their ancient makers. The current HOP-DB includes 739 unique published terms to describe artifacts from 471 EastAfrican sites. Archaeological taxonomies are developed not to reflect underlying biological or geological processes, but to answer questions about past behavior. These taxonomies may reflect past cognitive and technological abilities, intentions, raw materials, use history, cultural practices and other factors. To improve the utility of this and/or other databases we suggest a three-stage process: 1) ascertain what questions the archaeological community is asking about past behavior and what categories of material culture appear to be most useful, most discussed, most agreed on and/or most problematic; 2) refining questions and relevant categories that appear to be the most useful and commonly held; and 3) apply these categories to the raw data in the HOP-DB or other databases to test specific hypotheses.

Brooks, Alison S. [11] see Ranhorn, Kathryn

Brotherson, David [7] see Chhay, Rachna

Brotherson, David (University of Sydney)

The Fortification of Angkor Wat

The enclosure wall of Angkor Wat features several thousand regularly spaced postholes. The postholes are located around the entire perimeter and are of two types: horizontal holes situated along the upper edge of the inside face, and vertical holes along the top. This research presents the postholes’ first systematic survey and study. The results of the survey demonstrate a high degree of standardization in the size and shape of the postholes. The spatial distribution of the postholes is consistent over a considerable distance. The relationship between the postholes and the construction phases of the wall allows a relative chronology to be established. The outcome of this analysis shows that the postholes supported a defensive structure and are consistent with the traces of a wooden platform and palisade. The date of the installation of these defensive works is as yet unknown, however the likely historical context is sometime from the 1590s until the 1630s CE.

Broughton, Jack M. [71] see Beck, R

Brown, Linda (The George Washington University)

Personhood, Nawales, and Sacred Objects: A Case Study from the Contemporary Tz’utujil Maya Area

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From a relational perspective, personhood is not an a priori state of being but a status afforded to certain plants, animals, and things who, in some important ways, “act like persons” in social relationships with others. In this paper, I explore relational personhood through the sacred materials used by contemporary Maya ritual practitioners. In the highlands of Guatemala, Tz’utujil ritual practitioners collect and curate certain types of materials, including antiquities, as sacred objects. Carefully stored on altars and in personal sacred bundles, these items are considered animate objects embodied by a class of potent beings known locally as nawales. Nawales are multifaceted beings - culture heroes, ancestors, earth deities, and santos, among others - who come from an era prior to the creation of our present sun. Curated sacra display a significant aspect of personhood, as they engage in reciprocal exchange. They provide the fertility of humans, forests and fields, and actively mentor and communicate with their human caretakers in dreams. In return, ritual practitioners provide nawales with fire (food, drink, warmth), as there is none in their world. Through daily ritual practices with these powerful embodied objects, ritual practitioners bring renewed meaning to the deep past in the present.

Brown, Sarah (University of California, Davis), Christynn Darwent (University of California, Davis) and Ben Sacks (University of California, Davis)

Ancient DNA Analysis of Dog Remains from the North American Arctic

The Thule people are known for their innovation and rapid colonization of the North American Arctic, ca. 1000 years ago. A distinguishing characteristic of Thule culture relative to previous Arctic cultures was increased use of dogs, particularly for dogsled traction. Use of dogs by the Thule is reflected in the archaeological record by a dramatic increase in dog remains in zooarchaeological assemblages. Here, we present results from an Arctic wide survey and analysis of the temporal and spatial distribution of dog remains and their genetic characteristics. We compare diversity of the D-loop region of the mitochondrial DNA in Thule and Paleoeskimo dogs from Alaska (Interior as well as Coastal), Canada, Greenland, and Paleoeskimo dogs from Chukotka, Siberia to assess origins, interchange, and changes through time.

Brown, M. Kathryn [48] see Hard, Robert

Brown, Emma, Ben Stern (Archaeological Sciences, University of Bradford), Arthur Auferheide (Emeritus, University of Minnesota at Duluth) and Andrew Wilson (Archaeological Sciences, University of Bradford)

Chemical Evidence for Snuffing Practices in the Azapa Valley, Northern Chile, during the Late Intermediate Period

Snuff trays and tubes for inhaling psychoactive snuff are well documented in archaeological contexts from northern Chile. Chemical analyses of suspected snuff samples from archaeological contexts confirm that alkaloids capable of producing visual hallucinations were present in snuff, yet direct evidence for inhalation of snuff by ancient Andean populations is lacking. Based on prior successful analyses of ancient hair for coca metabolites, a total of 46 hair samples from individuals associated with the Cabuza culture, dating to the Late Intermediate Period, were tested for a number of psychoactive compounds using liquid chromatography tandem mass spectrometry (LC-MS/MS). Two individuals, an adult male aged around 35 identified as an Orejon, and a young adult female had traces of bufotenine in their hair. Bufotenine is the main alkaloid in Anadenanthera, a species of tree of which the bark and seeds have been used to make a psychoactive snuff. These results are the first report of bufotenine being detected in ancient hair samples. The results are discussed within the wider archaeological and bio-cultural context.
Our understanding of the Middle Preclassic time period in the Belize River Valley has greatly increased over the past two decades. Recent research in the Belize River Valley has shed light on early settlement patterns, domestic and public architecture, as well as early ritual practices. Several types of architectural features appear to be common at a number of Middle Preclassic sites. Domestic buildings are most often low, apsidal shaped platforms and are commonly associated with chultuns and midden deposits. Public buildings appear to be more variable with several types encountered to date. These include large, rectangular shaped platforms, circular and key-hole shaped platforms, as well as two-tiered pyramidal structures. The architectural complexes referred to as “E-Groups” begin during this dynamic period and appear to function as ceremonial places on the landscape. This paper examines the evidence for ritual activity associated with both domestic and public Middle Preclassic architecture and discusses broad patterns of continuity and discontinuity seen from the data.

Brownlee, Sarah [260] see Aronsen, Gary

Brughmans, Tom [23] see Romanowska, Izabela

Brughmans, Tom (Archaeological Computing Research Group, University of Southampton)

[106] Just Points and Lines? Exploratory Network Analysis from a Roman Archaeology Perspective

Many archaeological applications of formal network techniques consist of an exploration of empirically attested archaeological entities linked by relationships (of whatever nature the researcher considers meaningful). Among the most common issues with these exploratory approaches are how different data types can be used to create networks or validate hypothetical relational processes and how long-term change in connectivity can be explored. This paper will discuss these issues from a Roman archaeology perspective through a case study on urban connectivity in Roman Southern Spain.

Traditional approaches to the archaeology of Roman southern Spain have neglected the study of inter-urban connections. Iron Age (ca. 5th century B.C. to 3rd century B.C.) and Roman (ca. 3rd century B.C. to 5th century A.D.) sites as well as different archaeological data types are often studied independently, which is necessary for a critical understanding of these different sources. However, all these sources were also once part of a single long-term cultural process. A multi-scalar exploratory network method is introduced that aims to explore aspects of the changing interactions between 190 sites dated to a range of ten centuries as evidenced through ten archaeological data types. In doing this the potential and limitations of such an approach will be critically evaluated.

[161] Discussant

[106] Chair

Brunal-Perry, Oma

[95] The Early European Exploration in the Marianas

Spanish and Portuguese exploration the late 15th and early 16th centuries was an effort on finding a westward route to and laying claim to the Indies— islands known for their rich spices. Their voyages resulted in European sailing vessels first exploring the islands in Micronesia. When Ferdinand Magellan arrived in the Mariana Islands on March 6, 1521 while seeking this westward route to the spice rich Indies, it heralded the beginning of European dominance in Micronesia that would span more than four centuries. Continuous European contact began with Spanish control of the Mariana Islands in 1565. European sailing vessels exploring and exploiting Micronesia reflect the changing requirements of discovery, conquest, commercialization and colonization. The influence and impact of Europeans on the indigenous people of the islands was widespread. One of the direct results was the eventual disappearance of many of the indigenous craft of Micronesia that were essential to their island life for the mobility, inter-island communication and resource exploitation that reflected and adaptation over the centuries to the forces of nature.

Brundiers, Katja [273] see Swantek, Laura

Bruning, Susan (Southern Methodist University)

[282] Discussant

In July 2011, construction at Connecticut’s Yale-New Haven Hospital was interrupted by the discovery of human skeletons. The remains were exposed via trench excavation, and lay under a large concrete foundation slab poured in the 1970s. Review of historical records and maps indicate that these remains are from a cemetery associated with New Haven’s first Roman Catholic Church established in 1830 and evacuated after a fire in 1848. Four adult human skeletons were recovered, and a few associated artifacts were found. Many of the skeletal elements have some postmortem damage, but overall the remains are remarkably well-preserved. Two of the skeletons are female, one aged 25-35 years, and the other possibly 60-70. The other two are male, one also 25-35, and the other over 60. Both younger individuals have remarkably complete and unworn dentition, while both older individuals show antemortem tooth loss and extreme dental wear.

Brownlee, Anna [60] see Machicado, Eduardo

Brownlee, Anna (The Ohio State University)

[195] From Abstract Strucures to Navigable Spaces: Reconsidering the Use of Pacific Ethnographies in Amazonian Archaeology

Neo-evolutionist models of social formation relied heavily on data from Pacific ethnographies for defining particular levels of social integration. This paper examines the impact of these models, and of specific socio-structural forms observed in Pacific Island societies, on the development of archaeological research in Amazonia. The question of the existence of complex societies, and especially chiefdoms in Amazonia, was central in defining Amazonia as a cultural area, and has remained a focal point of ongoing debates. Definitions of chiefdoms, or stratified/redistribution societies, were distilled almost exclusively from data from the Pacific; key authors that defined and refined these models (e.g. Carneiro, Service, or Fried, Service) are cited in Amazonianist archaeological literature, wherein neo-evolutionism serves as a framing mechanism and interpretive lens for archaeological work. Though the direct link to these theorists has sunk beneath the surface, Amazonian archaeology remains largely beholden to these models and responsible to narratives created within a neo-evolutionist framing. I briefly consider the impact of this directed approach on the development of both Amazonian and Pacific archaeologies, especially in light of debates on appropriate uses of ethnographies, then propose alternative dimensions along which comparisons between pre-Contact cultures of Amazonia and the Pacific may be productively developed.

[60] Chair
Bruno, Maria (Dickinson College)

[60] The Place of Maize and Manioc in Prehistoric Agricultural Intensification in the Amazon Basin: An Archaeobotanical Perspective

It is now widely accepted that prehistoric farmers across the Amazon Basin found novel ways to increase plant food production despite the relatively poor soils that they inhabited. Currently, archaeobotanists are employing a range of analytical techniques to understand the similarities and differences in agricultural intensification strategies across the sub-regions of the basin. In this paper, I examine the debates surrounding the relative importance of manioc and maize in agricultural intensification, an issue that traverses the region. While ethnographic data suggest that manioc was a principal player, the archaeological record presents little direct evidence for it. Based on both archaeobotanical remains and human isotopic data, Anna Roosevelt argued that maize played a more important role than manioc in the process of intensification at Parvana, Venezuela. Here, I consider both arguments in the light of recent archaeobotanical studies at the monumental mound site of Loma Salvatierra, Bolivia. While our data suggest that maize was more prevalent than manioc, is this a model that can be applied across the basin? Moreover, what biases in the use and preservation of these species make it difficult to truly unravel the role that each of these crops played in ancient Amazonian food production.

Brunswig, Robert [75] see Montgomery, Christine

Brunswig, Robert (University of No Colorado)

[75] Mountain Ute and Earliest Numic Colonization of the Southern Rocky Mountains: A New Perspective from the Sue Site, North Park, Colorado

From 2007 to 2010, University of Northern Colorado excavations at the Sue Site (5JA421), Ballinger Draw, North Park, Colorado, produced evidence of stratified prehistoric Ute hunter-gatherer camp occupations dating from ca. AD 1100 to AD 1400. Eighteen AMS radiocarbon dates from charcoal, pottery residue, and bone samples were stratigraphically consistent. Agreement of bone dates with wood charcoal dates precluded the possibility of an “old wood” dating problem. The site’s chronology is earliest in North Central Colorado’s Rockies and as early as more westerly Colorado Plateau and eastern Great Basin regions. Faunal material showed procurement and processing of bison, pronghorn, bighorn sheep, deer, elk, fish, and moose. Fetal bison bone and grass seed and berry pottery residue documented late spring and fall hunting and game processing. Obsidian and other lithic tool source analyses showed contact with contemporary Numic and non-Numic territories in Yellowstone (Wyoming), Colorado Plateau (western Utah and Colorado), Wyoming Basin, Middle Rocky Mountains (Idaho), and Southern Rocky Mountains (north central Colorado and northern New Mexico).

Chair

Bryant, Hamilton [6] see Lobiondo, Matthew

Bryant, Jeff


This paper provides initial insight into the cultural soilscape at the Dos Hombres to Gran Cacao Archaeology Project. The soil on the project area was collected and tested for a range of chemical signatures associated with behavior and to investigate new signatures that have the potential to measure the level of investment in soil management. A chemical imbalance contributing to P-fixation was identified which may have reduced crop yields in urban areas. Sulfur (S) was identified as a possible proxy for measuring the use of gypsum as a soil amenity. Analyzing soil chemistry, conservation infrastructure and applying folk soil taxonomy at elite and commoner sites may provide a testable means by which develop a better understanding of social stratification in the complex dialectic between the Maya and their soil.

Bryce, Byl [39] see Whittaker, John

Brzezinski, Jeffrey [63] see Butler, Michelle

Brzezinski, Jeffrey (University of Colorado at Boulder), Arthur Joyce (University of Colorado at Boulder), Sarah Barber (University of Central Florida) and Carlo Lucido (University of Central Florida)

[145] Political Centralization and Ceramic Iconography in the Lower Rio Verde Valley

Research regarding the emergence of political centralization in precolombian Oaxaca has typically focused on tombs, monumental buildings, and prestige goods obtained through long-distance trade. However, ceramic analysis can also inform our understanding of inequality based on materials used in everyday life. Through an analysis of iconographic pottery found at sites throughout Oaxaca’s lower Rio Verde Valley, this study explores the Terminal Formative period (150 B.C. – A.D. 250) development of a centralized polity with its political seat at the site of Rio Viejo. During the Miniyua phase (150 B.C. – A.D. 100), potters adorned gray ware serving vessels with abstract decorations. By the Chacahua phase (A.D. 100 – 250), ceramic iconography became more intricate, depicting common Formative-period Mesoamerican themes such as depictions of maize and climatic phenomena. We argue that the increase in complex icons during the Chacahua phase provides evidence of an attempt by elites at Rio Viejo to promote a set of regionally shared religious principles that supported political centralization.

Buchanan, Briggs [158] see Scholnick, Jonathan

Buchanan, Briggs (Simon Fraser University), Mark Collard (Simon Fraser University) and Michael O’Brien (University of Missouri)

[220] Spatial Variation in the Shape of Clovis Points: A Geometric Morphometric Approach

Clovis points have been found throughout the contiguous United States, southern Canada, and northern Mexico. Geographic variation in the shape of Clovis points has long interested Paleoindian archaeologists. One hypothesis contends that Clovis points varied little across North America. Another argues that variation in Clovis point shape is correlated with distance as a consequence of cultural diffusion. A third hypothesis avers that Clovis point shape is dependent on local environmental conditions. Here, we report a study in which we sought to shed light on these hypotheses with geometric morphometric techniques and a sample of Clovis points from several regions of North America. Having acquired, processed, and extracted shape variables from our sample of points, we used discriminant function analysis to examine whether there are significant shape differences among points from different regions, and matrix correlation analysis to evaluate the relationship between geographic distance and point shape. The matrix correlation analysis revealed no relationship between geographic distance and point shape. In contrast, the discriminant function analysis indicated that there are regional differences in the shape of Clovis points. Follow-up analyses indicated that these differences are better explained by the repeated operation of the founder effect than by adaptation to local environmental conditions.
Buck, Brandon (Radford University)

**[149]** Geochemical Analysis of Unfired and Fired Clay Collected from Virginia River Drainages

This pilot study is focused on the possibilities of sourcing clay from Virginia river drainages using a Niton XL3T600 series portable x-ray florescence device (XRF). Clay samples collected from the four river drainages in Virginia will be geochemically tested to find any chemical variation. The first test will be on unfired samples collected from these areas. The second test will be performed on fired samples. These samples will be fired using traditional methods used by Native Americans in the Southeast. The final test will be conducted on ceramics recovered from Native American sites in the Southeast. The three categories tested will be compared using statistical methods. This comparison will show the possibilities of sourcing clay and using x-ray florescence to answer archaeological questions.

Buck, Paul (Nevada State College/Desert Research Institute) and Donald Sabol (Desert Research Institute)

**[206]** Remote Sensing for Detection of Prehistoric Landscape Use in NW Arizona, USA

Optimal maize field locations possibly used by prehistoric agriculturalists in the Mt. Trumbull portion of the Colorado Plateau in NW AZ were modeled using remotely sensed data and ground based observations. We constructed “restrictive” (or classification) models and “fuzzy logic” (or grouping) optimality models. There is a clear preference for larger multi-room sites to be found closer to optimal areas. The smaller one room structural sites are not located closer to the most optimal places as might be expected if they are in fact “field houses”. Smaller sites may have been established near optimal field locations only after ~ AD 800, by which time the larger C and L-shaped pueblos had already been established near the most optimal field locations. As this portion of the Mt. Trumbull area got increasingly “packed” during the later periods, it may be that kin groups from the larger residential sites established field houses to monitor their more marginal fields. This process might have intensified in the 12th and 13th centuries as environmental conditions deteriorated, or at any time when summer monsoonal rains needed for successful agriculture became reduced for long periods.

Bueno, Lucas (Universidade Federal de Santa Catarina)

**[26]** Peopling the Eastern South America: Occupying the Landscape and Constructing Territories in Central Brazilian Plateau during Pleistocene/Holocene Transition

New evidence from well documented contexts from Central Brazilian Plateau (CBP) have shown ancient archaeological sites with dates from the 12th millennium BP, slightly older than the northern and the southern parts of the country, and much older than most Atlantic coastal occupation. The central hypothesis for this presentation is that the very extensive rivers that cross-cut CBP and their forested valley terraces have acted as axial corridors for human penetration during the late Pleistocene times, allowing the peopling of southeast, central and northeast Brazil. In this paper the São Francisco River basin has been chosen as a case study, in order to explore the hypothesis that this river has performed a major role in human dispersion through the eastern portion of the vast Central Brazilian Plateau, a process that could be related to major climatic changes that occurred between the end of the Pleistocene and beginning of the Holocene. Based on theoretical models of human dispersal, the option for a dispersal movement based on a river system creates some expectations regarding site locations and assemblage composition. In this paper this pattern is suggested against the available archaeological context of this region between the 12th and 10th millennia.

Buffington, Abigail

**[201]** Patterns of Plant Exploitation of an Iron Age Town: The Macrobotanical Remains of Khirbat al-Mudayna, Wadi ath-Thamad, Jordan

Central Jordan in the Iron II B is an archaeological period that has not been explored in depth by paleoethnobotanists, despite its long history of interest to archaeologists and philologists. Considering the historical events surrounding this region in this period, evidence of this type possesses a great potential for assessing the impact of the growing political and social developments on the subsistence and resource strategies as well as environmental impacts of these changes visible at the site level. This study has attempted to address how these larger regional
processes could have potentially affected plant use in this period. The site of Khirbat al-Mudayna on the Wadi ath-Thamad, a fortified site featuring a potential of three phases in this period, offers an opportunity to address this gap in knowledge. The site, along with the surrounding survey area of contemporary fortified settlements, has been excavated since 1996 by the Wadi ath-Thamad Project and this study has addressed the analysis of light flotation samples collected from the 2001 season to the 2012 season from a variety of contexts.

**Buhay, Bill (University of Winnipeg), Yadira Chinique de Añas (Faculty of Biology, University of Havana), Ron Ato Rodriguez (Faculty of Biology, University of Havana), David Smith (Department of Anthropology, University of Toronto) and Mirjana Roksandic (Department of Anthropology, University of Winnipeg)**

*Food Producers or Gatherers: Bioarchaeological and Geochemical Evidence of Cultivation at Canimar Abajo, Cuba*

New stable isotope (carbon and nitrogen) and trace element (Sr, Ca, Cu, Zn, Br) evidence from human bone remains recovered from the archeological site at Canimar Abajo (Matanzas, Cuba) helps dispel the traditional notion that these pre-Columbian people were exclusively hunter-fisher-gathers. Maize, bean and sweet potato starches recovered from the dental calculus of some individuals buried in the both the early (~1000 BCE) and younger (~500 CE) cemeteries complement the geochemical evidence thereby supporting the idea of a much earlier introduction of cultigens to Cuba than originally thought.

**Buikstra, Jane (Arizona State University)**

*Discussant*

**Bulbeck, David (Australian National University), Ben Marwick (University of Washington), Sue O'Connor (Australian National University), Ambra Calo (Australian National University) and Jack Fenner (Australian National University)**

*The Prehistoric Archaeology of the Routa Region of Central Sulawesi*

At a crossroads between Asia, Australia and the Pacific, our project recognizes Sulawesi as critical to understanding the human history of our region over the past 50,000 years. Sulawesi is strategically positioned to test competing models of initial modern human expansion, and subsequent trajectories of cultural change and interaction. We describe preliminary results of recent survey and excavation in the Routa region of Sulawesi.

**Bulgrin, Lon (NAVFAC Marianas)**

*The Rosario House At Hagatna, Guam: 18th and 19th Century Commodity Availability and Consumer Choice*

Archaeological test excavations conducted at the Rosario house in 1988 recovered the largest collection of Euro-American and Chinese ceramics discovered to date in the Marianas Islands. This diverse and rich collection was recently cataloged and yielded data giving insight into patterns of commodity availability and choice. This collection is particularly important to the historical archaeology of the Marianas as World War II combat and subsequent battlefield clean-up operations destroyed the major villages throughout the archipelago and severely impacted the historical archaeological deposits that were associated.

**Bullion, Elissa (Washington University in St. Louis)**

*Children of the Blue Wolf: Working towards an Integrated Linguistic-Historic-Archaeological Approach to Identity in the Orkhon Turkic State*

The First and Second Turkic Khanates (552-630, 862-745 CE) represent a period in Central Asian history of intense political unification, social hierarchy, and exchange networks. Historic and linguistic research has been conducted based on Old Turkic scripts as well as accounts taken from the Tang and other neighboring polities, while archaeological investigations have been conducted on habitation sites, burials, and monuments throughout Central Asia. However, relying on any one of these approaches proves problematic for the investigation of social identity. This poster explores how linguistic and historic studies, can inform our interpretation of Turkic social identity when combined with archaeological data from burials. Burials can serve as proxies to a range of social identities including kinship, political, and religious among others. Without knowledge of what social identities existed during the Turkic period, it would be difficult to tease out the meaning of practices. On their own, historic and linguistic accounts may be biased by the selective nature of written records, most notably leaving out the experiences of non-elite individuals. But when combined, the historic accounts of political and kinship structure give us a frame of reference within which we can interpret the symbolic and material contents of burials.

**Bunce, Michael [263] see Oskam, Charlotte**

**Bunce, Michael (aDNA lab, Murdoch University, Perth, Australia), Daithi Murray (aDNA lab, Murdoch University, Perth, Australia), James Haile (aDNA lab, Murdoch University, Perth, Australia), Nicole White (aDNA lab, Murdoch University, Perth, Australia) and Joe Dortch (Eureka Archaeological Research, University of West)**

*Scrapheap Challenge: Ancient DNA from Archaeological Bone Fragments Provides Insights into Zooarchaeological Assemblages and Past Biodiversity*

Caves in the southwest of Western Australia provide a unique opportunity to study a combined 50,000 year record of past biodiversity and Aboriginal archaeology. Devil’s Lair represents one of the oldest dated sites in Australia. Problem Statement: Morphologically indistinct post-cranial bone fragments are of limited use in identifying fauna. Can ancient DNA techniques coupled with next-generation DNA sequencing (NGS) technologies assist in identifications? Data: During recent excavations thousands of small bone fragments were collected. Small sections of these fragments (within each layer) were drilled to form a ‘bulk powder’ from which ancient DNA was characterized using NGS. Results: Over 35,000 mitochondrial amplicon sequences were generated allowing the identification of a diverse range of taxa dating back to 40,000 years BP. Multiple animal families were identified, ranging from Tasmanian devils to black swans. The methodology advocated here provides a new way to compile a DNA-based zooarchaeological assemblage. Conclusions: The bulk processing method represents a novel, cost-effective use for bone fragments, providing accurate species information on material that might otherwise ends up on the scrapheap. It is anticipated that this approach will become a valuable part of the archaeological toolkit into the future, especially if material is collected and stored appropriately.

**Bunten, Alexis (IPinCH)**

*Discussant*

**Buonasera, Tammy (University of Arizona)**

*More than Acorns and Small Seeds: Extra-Utilitarian Aspects of Ground Stone from the South San Francisco Bay Area*

At European contact, central California was occupied by nonegalitarian hunting and gathering peoples dependent on the storage and processing of acorns and other plant resources. Ground stone milling tools were integral to economic and social transformations in California prehistory, and variation in their morphology, manufacturing costs, uses, and associations may
reflect social and ideological changes as well as purely economic shifts in resource use. However, historical trends in research objectives, along with assumptions about the entirely mundane character of ground stone tools, have caused much of the variability and many “extra-utilitarian” aspects of these artifacts to be overlooked. This study analyzed synchronic and diachronic variability in form, manufacturing effort, and use-wear among grave-associated ground-stone artifacts spanning approximately 6,000 years of prehistory in the southern San Francisco Bay Area. An overtly symbolic dimension associated with mortars and pestles seems to emerge during the Late Holocene with the addition of highly formalized and expensive flower-pot mortars, very long shaped pestles, and additional embellishments such as shell bead appliquéd and painted designs. Large, costly, and embellished mortars exist alongside less costly, smaller, less formalized milling tools. Archaeological and ethnographic evidence supports the inferred association of certain mortars with feasting and ritual activities.

Burch, Ashley (JPAC-CIL), Jennie Jin (JPAC-CIL), Carrie LeGarde (JPAC-CIL) and Elizabeth Okrutny (JPAC-CIL) [251]

Don’t Be Fooled by Taphonomy

Taphonomy has been a useful tool in the forensic community for segregating commingled remains and is currently utilized by the Joint POW/MIA Accounting Command Central Identification Laboratory (JPAC CIL). In the early 1990s, 208 boxes of American remains were turned over by the Democratic People’s Republic of Korea to JPAC CIL. Each box was purported to contain a single individual; however, further assessment of the boxes revealed the remains to be highly commingled. Currently, through mitochondrial DNA (mtDNA) testing and anthropological methods, the remains are being segregated from the commingled assemblage into single individuals. Taphonomy has been beneficial as a method of further segregation in cases where multiple individuals are represented in remains sharing a single mtDNA sequence and exhibiting multiple taphonomic patterns. Alternatively, this project has also encountered a single box of remains that appears to be consistent in taphonomy, size, and morphology, as well as lacks any duplication of elements (suggesting MNI is one), yet mtDNA results show that the box contains multiple mtDNA sequences. Similar taphonomic characteristics may be misleading and should not be used as the only method of sorting commingled remains; however, when used with other methods, taphonomy remains a useful tool for segregation.

Burch, Ashley [22] see Jin, Jennie

Burger, Richard [164] see Salazar, Lucy

Burham, Melissa (University of Arizona) [160]
Social Complexity on the Periphery: The Implications of Ceibal’s Very Minor Centers

The lowland Maya site of Ceibal has an almost two-thousand-year occupation beginning in the Middle Preclassic period and continuing until the Terminal Classic. As such, this site provides invaluable insights into the emergence of social complexity and how elites maintained social hierarchies through time in the lowland Maya region. Arguably, in order to explore these questions, it is necessary to focus on lesser elite and commoner populations residing on the peripheries of political centers. In the 1980’s, Gair Tourtellot surveyed the peripheries of Ceibal to understand changes in occupational patterns throughout the site’s history. He found many minor ceremonial centers that also have long, continual occupations. Building on Tourtellot’s survey, two very minor ceremonial centers on the periphery of Ceibal’s main ceremonial Group A were excavated during the 2012 field season of the Ceibal-Petexbatun Project. The results of these preliminary finding provide valuable information about the social and political nature of these minor centers on the peripheries.

Burke, Adrian (Université de Montréal) [229]
Geochemical Characterization of Obsidian from the Toluca Valley using XRF

In 2010, the lead author carried out geoarchaeological fieldwork in the northeast valley of Toluca, sampling obsidian from two sources: Siffari, near Jocotitlan (secondary surface deposits), and Las Palomas, east of Temoaya (bedrock outcrop). Our objective was to characterize local obsidians from the Toluca Valley in order to assess their role in the regional Postclassic economy. We also wanted to see if people at the ancient city of Calixtlahuaca were using these raw materials during the Aztec period. This may be significant given that Calixtlahuaca is the only Late Postclassic obsidian assemblage from Central Mexico that is not dominated by green obsidian. We present new quantitative data on the geochemistry of obsidian from these two sources based on polarized, energy-dispersive X-ray fluorescence (ED-XRF), XRF data for Calixtlahuaca archaeological samples is also compared to our geochemical data for Siffari and Las Palomas and other published data for obsidians from central Mexico.

Burke, Ariane (Université de Montréal) [215]
The Impact of Climate Variability on the Spatial Distribution of Human Populations during the Last Glacial Maximum

Human sensitivity to short time-scale (interannual) climate variability is explored using the spatial distribution of archaeological sites during the Last Glacial Maximum (LGM) in the Iberian Peninsula and high-resolution (10x10 km2) climate simulations. We demonstrate that anatomically modern humans responded to climate variability, particularly fluctuations in precipitation levels, during the LGM by adjusting their spatial distribution. Climate variability during the LGM, therefore, is potentially an important factor to consider when investigating the pattern of human population expansion during and after a period of initial colonization.

Burke Davies, Clare (University of Sheffield Department of Archaeology), Peter. M. Day (University of Sheffield Department of Archaeology), Anno Hein (Institute of Materials Science, NCSR Demokritos), Aggeliki Kossyva (4th Ephorate of Prehistoric and Classical Antiquit) and James. R. Wiseman (Department of Archaeology, Boston University) [288]
Settlement Scale, Pottery Production, and Patterns of Consumption: Early Helladic Korinthia and the Argolid.

The third millennium BC in the Aegean has received considerable attention in attempts to explain the rise of palatial centers, which emerged during the second millennium, focusing on changes in craft technology and specialization as an impetus for societal change.

However, this narrative of change has been constructed at the expense of a coherent picture of the character of Early Bronze Age crafting practices and the degree of interaction between communities. The present project examines ceramic material culture in Early Bronze Age of Mainland Greece. In work which integrates macroscopic, petrographic, chemical and SEM analysis of Early Helladic II ceramics from Korinthia and the Argolid, it examines the varied ceramic landscape of these areas, relating new understandings of provenance and technology to issues of scale, both in terms of settlement size and craft production.
Building on previous work by NAA, undertaken by Michael Attas, we suggest instances of localized small-scale production and juxtapose these with evidence of larger scale production in some centers, whose products have a broad distribution.

Burke, David [5] see Wong, Megan

Butler, Sarah [48] see Giessler, Kalena

Butler, Michelle (University of California, Riverside), Arthur Joyce (University of Colorado, Boulder), Jeffrey Brzezinski (University of Colorado, Boulder) and Kathleen Paul (Arizona State University) [63]

Teotihuacan and Oaxaca: Social Transformations at the Scale of the Local Community and the Polity

Current debate regarding the impact of Teotihuacan in Oaxaca has centered almost exclusively on the degree to which Teotihuacan politically dominated various regions. However, much of the evidence from Oaxaca suggests that interaction may have been mutually beneficial, involving migration and the exchange of cultural materials among multiple groups of people. In this paper, we discuss the current evidence for a Teotihuacan presence in coastal Oaxaca and the role it may have had in generating new constellations of social and political identities at both the local...
community and the polity scales. Revising the scales at which archaeologists investigate interaction provides a fuller understanding of how these networks transformed identities and power relations. Teotihuacan-related materials found in communal ritual contexts in the lower Rio Verde valley of Oaxaca’s Pacific coast suggest that interaction with Teotihuacan provided communities with new material and ideological resources to reestablish themselves as competing political authorities after the collapse of Rio Viejo, while simultaneously referencing traditions of the region’s shared history. Refocusing attention on communal practices and identity enables the evaluation of communal affiliations in relation to emerging political forces, and the degree to which identity was being asserted in both local and interregional networks.

Butler, Virginia (Portland State University) [170] Discussant

Butler, Don (University of Calgary) and Peter Dawson (University of Calgary) [224] Clarifying Hunter-Gatherer Site Structures Using Fourier Transform Infrared Spectroscopy: A Case Study from a Taltheilei Settlement in the Canadian Subarctic

Fourier transform infrared spectroscopy of soils and reference materials provides an accessible, rapid, and cost effective means of discovering micro–archaeological evidence valuable for reconstructing hunter–gatherer site structures. Our case study at a tundra–based Taltheilei settlement (ca. A.D. 500 and 650) in northern Canada contributes to developing micro–archaeological approaches suitable for locating and defining hearth and midden features on hunter–gathering sites. A weak yet pervasive signal for montgomeryite was developed from the diagenesis of dispersed ash and carbon processing residues. An absence of spatially patterned carbonated apatite and authigenic phosphates in soils from across the settlement and an abundance of burned bone and carbonated apatite in two pit–house hearths indicate that some bone was not discarded, but was rather used as fuel. Cristallinity indices and carbonate/phosphate ratios for burned bones indicate high intensity burning. These data, along with the presence of semi–subterranean dwellings, demonstrate that the tundra–based Ikirahak settlement was occupied during cold seasons, which is a type of settlement behavior previously unrecognized in the Taltheilei archaeological record.

Buvit, Ian [222] see Izuho, Masami

Buvit, Ian [233] Late Quaternary Stratigraphy of the Shimaki Paleolithic Site

Excavations at the Shimaki site (N43°14’, E143°18’) revealed a Paleolithic component fission-track dated to 21,700±1800 cal BP with a wedge-shaped “micro” core and thousands of other flaked–stone artifacts. The site profile is divided into four lithostratigraphic units. The lowest, Unit I, comprises coarse sediments representing lateral accretion of a meandering river. Moving upward, Unit II is the Sipfa-2 Tephra (ca. 43,000 cal BP). The fall was so thick at Shimaki that it altered the course of the river, causing a shift from bar to floodplain deposition. Unit III comprises a thick bed of silty sediments laid down on an actively building floodplain. Several buried soils were identified within the unit, evidence of landform stability and perhaps environmental change: the Paleolithic cultural layer was discovered within one of these soils. Unit IV overlies the archaeological component and is preliminarily identified as the Sipfa-1 Tephra (ca. 19,000 cal BP). It appears that the cultural layer represents a pre-last glacial maximum occupation when inhabitants were utilizing a relatively high stable alluvial terrace.

Byerly, Ryan [58] Late Holocene Drought and Mojave Desert Archaeology: Perspectives from Twentynine Palms and Johnson Valley, California

Myriad research has focused on the nature of human adaptations to prolonged drought in the Mojave Desert during the Medieval Climate Anomaly (MCA) (600-1150 cal BP). Interpretations regarding the consequences of these droughts, which are well-defined by paleoclimate reconstructions, range from having little effect on regional settlement systems, to prompting drastic shifts in community organization, subsistence pursuits, and conveyance networks. Here, various data gathered from site evaluations at the Marine Corps Air Ground Combat Center in Twentynine Palms, California and nearby Johnson Valley, are reviewed and presented to provide a focused perspective of how MCA conditions might have affected local settlement. The degree to which upland resources and habitats may have been utilized is emphasized in this review.

Byington, Mark (Harvard University) and Sunmi Park [289] Problems Concerning the Bronze Antenna Daggers of Northeast Asia

Among artifacts of the late Bronze Age and early Iron Age in northeast Asia, the so-called antenna dagger is particularly interesting in that it is highly diagnostic and, despite the small number of known specimens, spans a broad (but longitudinally narrow) region from northeastern China, through the Korean peninsula, and to southwestern Japan. Until the late 1990s the majority of antenna dagger finds in this region have lacked archaeological context, but this has changed recently with a number of excavations in Korea and China, allowing a more precise study of typological variation, chronology, and social context. This paper proposes to analyze the full range of known specimens of this dagger type in order to determine their developmental processes, their geographical propagation, and their social significance. I intend to highlight the anomalous character of these daggers as atypical artifacts regardless of the region in which they are found, and attempt to account for their unusual distribution patterns as reflective of attempts to express chiefly authority in regions characterized by extended sociopolitical flux and intensive inter-regional exchange.

Byrd, Brian [2] see Whitaker, Adrian

Cabo, Luis (Mercyhurst University) and Dennis Dirkmaat (Mercyhurst University) [193] Defining Forensic Anthropology

The last two decades have witnessed the growth and widespread recognition of forensic archaeology as an important field within the forensic sciences. A recent poll taken among members of the Physical Anthropology section of the American Academy of Forensic Sciences revealed that most of those professionals prefer processing the outdoor forensic scene themselves, and using forensic archaeological techniques over conventional criminalistical protocols for this task. However, while recognizing taphonomy and archaeological recovery techniques as some of the main skills in the forensic anthropology toolkit, they showed little appreciation for more conceptual contents of archaeological theory. Similarly, at least two major schools have arisen regarding the nature and scope of forensic archaeology. One of them, mostly composed of American practitioners educated in the four-field approach, sees forensic archaeology as a sub-discipline of forensic anthropology. The second one, based mainly in the United Kingdom, considers forensic anthropologists and forensic archaeologists as separate entities. This presentation discusses the main outputs that, in our view, a forensic archaeological recovery should display in order to be recognized as such, and the very basic practices that must be included in the recovery protocol to produce those outputs.