# 2nd Biennial Oklahoma Archaeology Conference

**March 1-3, 2018**

*University of Oklahoma*
*Thurman J. White Forum*
*1704 Asp Ave, Norman, OK 73072*

OKLAHOMA
Public Archaeology Network

# TABLE OF CONTENTS

# THURMAN J. WHITE FORUM BUILDING FLOOR PLAN

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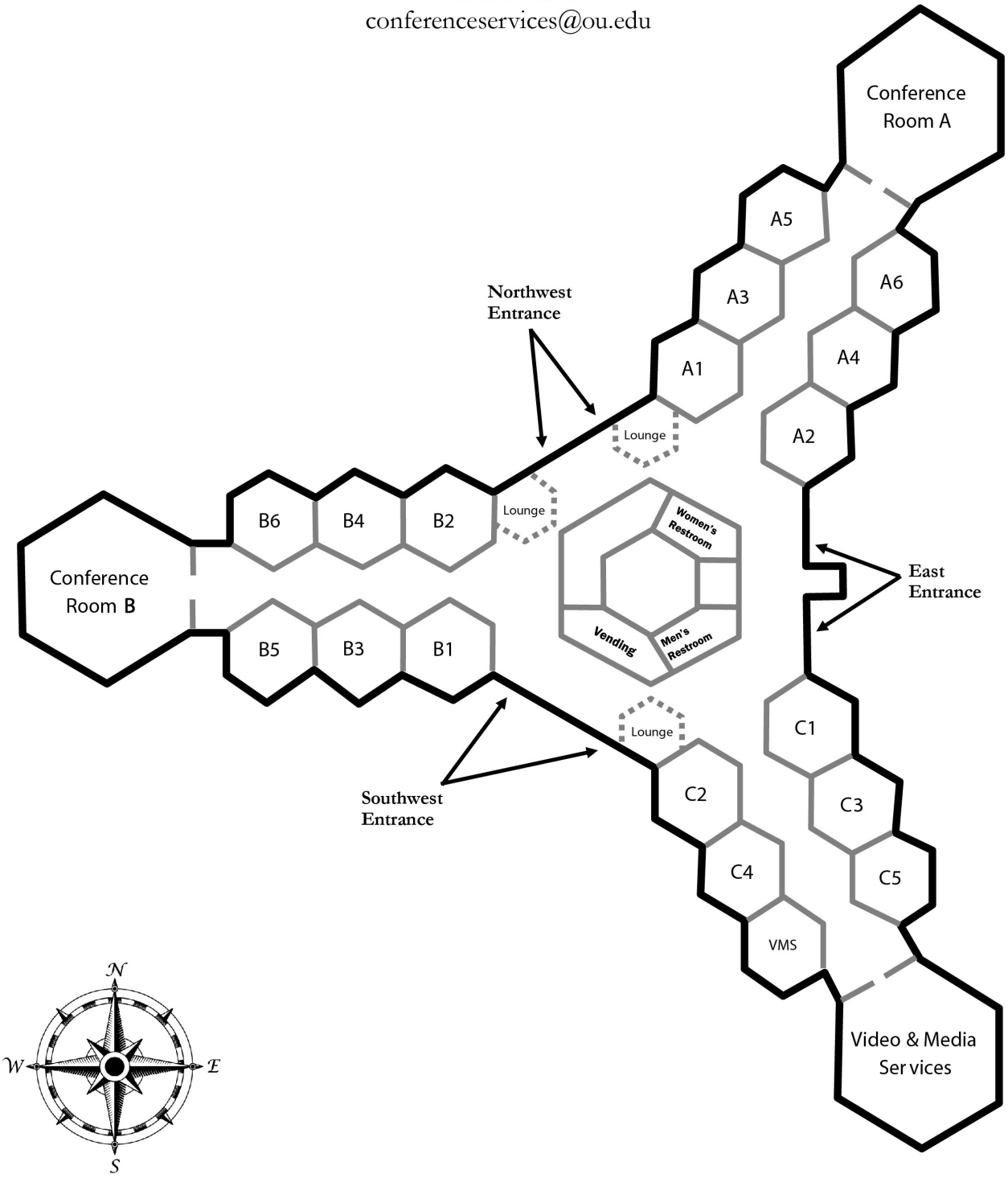

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OKPAN would also like to extend a special thanks to Arnold and Wanda Coldiron for establishing an endowment to advance public archaeology in Oklahoma. Earnings from that endowment contributed significantly to this year's Oklahoma Archaeology Conference.

# ACKNOWLEDGEMENTS

***Conference Host:*** The Oklahoma Public Archaeology Network (OKPAN)

***Conference Organizer:*** Allison Douglas

***Conference Committee:*** Allison Douglas, Paige Ford, and Delaney Cooley

***Program Organizer:*** Bonnie Pitblado, Allison Douglas, and Meghan Dudley

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# SPECIAL EVENTS SCHEDULE

## THURSDAY, MARCH 1ST

**Opening Reception and General Poster Session** - 6:30 to 8:30 pm
*Sam Noble Oklahoma Museum of Natural History*

## FRIDAY, MARCH 2ND

**Speaker-Hosted Discussion Luncheon** - 11:30 am to 1:00 pm
*Suite B2/B4*

**Poster Session (Current Research in Oklahoma)** - 4:00 to 5:30 pm
Featuring an open bar, courtesy of local breweries
*Corridor B*

**Oklahoma Archaeology Conference 2018 Banquet** - 6:00 to 9:00 pm
7:00 pm - Keynote presentation by Joe Watkins (ACE Consultants, President-Elect of the Society for American Archaeology, American Indian Liaison Officer with the National Park Service)
*Conference A*

## SATURDAY, MARCH 3RD

**OKPAN Advisory Board Meeting** - 12:00 to 1:00 pm
*Room A6*

# PROGRAM

## THURSDAY, MARCH 1

### Sam Noble Oklahoma Museum of Natural History

Opening Reception and General Poster Session 6:30-8:30 pm

**Douglas, Allison, Shawn Lambert, Kary Stackelbeck, Bonnie Pitblado and Meghan Dudley,** *Oklahoma Archaeology Month 2017: Many Pathways to Stewardship of Oklahoma's Past and Present*

**Rodgers, Jackie,** *Osage Nation Annual Heritage Site Visit*

**Cox, Thomas, Lee Bement, Adam Mathews and Carlos Cordova,** *Mammoth Localities in Oklahoma: Working with Communities to Enhance and Better Understand the Late Pleistocene*

**Ankele, William R., Amy E. Clark, Bonnie L. Pitblado, Rebecca A. Hawkins and Debra K. Green,** *Ready, Set, GOFAR! Introducing the Gang of Oklahoman First Americans Researchers*

**Ankele, William R., Rebecca A. Hawkins and Cody Blackbum,** *That Was Then, This Is Now: Exploratory Data Analysis at Antlers Hill Pueblo (LA 188473)*

**Krug, Andrew R., Kyle D. Waller and Christine S. VanPool,** *Isotopic Approaches to Marine Shell Exchange in the Greater Southwest*

**Cooley, Delaney,** *A Lithic Analysis Examining Ute Emergence on the Uncompahgre Plateau, Colorado*

**Green, Debra K.,** *Raiding, Trading, and Feasting: Multifaceted Landscapes in the Prehispanic Philippine Archipelago*

**Pace, Tommas,** *Unlocking Security: Roman Locks and Keys for Material Studies and Access Analysis*

**Mraz, Veronica,** *Hot Bifaces: An Examination of Flaking Properties from Heated and Unheated Bifaces*

**Miller, Melissa R.,** *An Actualistic Bison Butchery Using Banded Ironstone: The Creation of An Experimental Comparative Collection for Lithic Microwear Analysis*

**Tochtrop, Emily and Danielle Macdonald,** *The Right Tool for the Job: Identification of Multifunctional Tools Through Use-Wear Analysis*

**Bowman, Paul,** *Using Surface Metrology To Analyze Bone Surface Modifications in Archaeological Sites*

**Austin, Rita, Courtney Hofman and Sabrina Sholts,** *Assessing Dental Calculus Preservation in Museum Collections*

**Mann, Allison E., Susanna Sabin, Kirsten Ziesemer, Åshlid J. Vågene, Hannes Schroeder, Andrew T. Ozga, Krithivasan Sankaranarayanan, Courtney A. Hofman, James Fellows Yates, Domingo Salazar Garcia, Bruno Frohlich, Mark Aldenderfer, Menno Hoogland, Christopher Read, Johannes Krause, Corinne Hofman, Kristin Bos and Christina Warinner,** *Ancient DNA from Archaeological Teeth and Dental Calculus Preserves Traces of Biological Processes that Occur During an Individual's Life, and After Their Death*

**Hofman, Courtney A. and Karissa S. Hughes,** *ALIeNS: A Tool for Documenting the ArchaeoLogy of INvasive Species*

**Wright, Sterling, Karissa Hughes, Nihan Dilsad Kilic, Nawa Sugiyama and Courtney Hofman,** *Demystifying Teotihuacan Through the Microbiome*

## FRIDAY, MARCH 2

### Conference A

Plenary Session: Archaeology and Community: Local, Regional, National, and International Case Studies

*Organizer: Bonnie Pitblado*

8:30 **Peebles, Giovanna,** *Improving Our Communication Skills to Forge Stronger Community Bonds*

8:55 **Barnes, Ben,** *Shawnee Ancestral Ceramics: Recovering an Ancient Art Form through Archaeometrics*

9:20 **Carranza, Elizabeth Cruzado and Robert Connolly,** *Co-Creation in Public Archaeology: From Memphis, TN to Ancash, Peru*

9:45 **Break**

10:15 **Ellick, Carol,** *The Heritage Education Network, From Individual Efforts to Professional Actions*

10:40 **Pitblado, Bonnie, Allison Douglas, Meghan Dudley and Amy Clark,** *Introducing OKPAN, the Oklahoma Public Archaeology Network*

11:10 **Open Q&A**

## **Speaker-Hosted Discussion Luncheon** - Suite B2/B4 - *11:30 am* to *1:00 pm*
**Conference A**

Forum: Building and Sustaining Meaningful Collaborations among Archaeologists and Members of Oklahoma Tribal Nations 1:00-4:00 pm (Break from 2:30-3:00)

*Organizers and Moderators: Brandi Bethke and Bonnie Pitblado*

Participants: Jim Briscoe, Chris Cojeen, Amy Cojeen, Jackie Jackson, Gary McAdams, Ian Thompson, Sarah Trabert, Elsie Whitehorn

## Corridor B

Poster Session: Current Research in Oklahoma 4:00-5:30 pm

**Trabert, Sarah, Stephen Perkins, Richard Drass and Susan Vehik,** *Investigating the Deer Creek (34KA3) Site: A History of Work*

**Ellis, Addison,** *Preliminary Faunal Analysis on Materials from the Taovaya Village at Deer Creek*

**Pool, Samuel,** *Analysis of Faunal Remains at Deer Creek*

**Schneider, Gabriella,** *Lithic Artifacts at the Deer Creek Site (34KA3), Units S2E131 and S3E131*

**Wagnon, Emily,** *An Analysis of Artifacts Recovered from the Surface of the Deer Creek (34KA3) Site*

**Williams, Jennifer,** *Lithic Analysis from the Deer Creek (34KA3) Site: Units N21 E101 and N22 E 101*

**Hawkins, Rebecca A., Cassandra A. Kovin, Daniel Kovin and Russel K. Bohay,** *The Observation of Trifles: Survey Methods and Understanding Precontact Landscapes in Southeastern Oklahoma*

**Thompson, Thomas J. and Kevin W. Blackwood,** *Characterization of Chert Gravel Varieties and their Hydrogeological, Ecological, and Archaeological Significance in Karst Systems in the Arbuckle Mountains, Southern Oklahoma*

**Neel, Charles D.,** *Oakview Territory Period Schoolhouse*

**Larrick, Dakota, Leland Bement, K. C. Carlson and Joshua Davis,** *Black Bear Cache in the Oklahoma Panhandle: An Example of Quartzite Workmanship*

**Foreman, Kacie,** *Contents of a Felidae Coprolite from Domebo, a Paleoindian Kill Site*

**Gonzalez, Isaias,** *Revisited Palynology of the Domebo Site*

**Hill, Nicole,** *Reexamination of Human Interaction and Possible Contamination of the Domebo Mammoth Kill Site*

## **Oklahoma Archaeology Conference 2018 Banquet** - Conference A - *6:00* to *9:00 pm* (Keynote Presentation by Joe Watkins, *Co-creating Community: Integrating Academic, Professional, and Avocational Perspectives in Archaeology*)

## Saturday, March 3

### **Conference A**

Symposium: Current Research in Oklahoma

*Organizers: Patrick Livingood and Dean Afendras*

*Happy Hour sponsored by Crossed Cannons Brewery (Norman, Oklahoma)*

8:00 **Bement, Lee,** *Recent Archaeological Investigations in No Man's Land*

8:20 **Wyckoff, Don,** *Frisco Chert and Calf Creek People: A Lithic Conveyance Example*

8:40 **Andrews, Bryan,** *Hunter-Gatherer Archaeology in Eastern Oklahoma: Recent Research and Future Directions*

9:00 **Latham, Mark,** *Excavations at the Jumper Creek Site: Preliminary Results*

9:20 **Vehik, Susan,** *The Uncas (34KA172) Star Chart*

9:40 **Break**

10:00 **Lambert, Shawn,** *Crafted from a Distance: A Provenance and Stylistic Study of Spiro's Earliest Fineware Pottery*

10:20 **Sundermeyer, Scott,** *Geospatial Mapping of Geoarchaeological Literature in Oklahoma: Transportation Planning and Buried Archaeological Potential*

10:40 **Wood, Catherine,** *The Frontier and Colonialism: Fort Towson in Indian Territory (1824-1854)*

11:00 **Regnier, Amanda,** *Recent Archaeological Investigations at 19th Century Frontier Forts in Oklahoma*

11:20 **Byrd, Deanna,** *1902-1903: Choctaw Removals by Train*

11:40 **Buehler, Kent,** *Why Forensic Archaeology is More Than Just Recovering Human Remains*

## **OKPAN Advisory Board Meeting** - Room A6 - *12:00* to *1:00 pm*

## Conference A

Symposium: Oklahoma Archaeologists Worldwide

*Organizers: Amy Clark and Danielle Macdonald*

1:00 **Clark, Amy,** *Patterns in Stone: Deciphering Neanderthal Site and Land Use Through Lithic Scatters*

1:20 **Macdonald, Danielle,** *Communities of Interaction: Hunter-Gatherer Aggregation in Epipaleolithic Jordan*

1:40 **Buchanan, Briggs,** *Clovis Learning and the Colonization of North America*

2:00 **Hawkins, Rebecca,** *Rock Song: Confessions of an Oklahoma Lithic Analyst in New Mexico*

2:20 **Cordova, Carlos,** *Context and Processes in the Formation of the Paleoecological Record of Hall's Cave, Texas: Archaeological or Paleoecological Site?*

2:40 **Rush, Haley,** *The Rowe Valley Site (41WM437): A Study of Torah Period Subsistence Strategies in Central Texas*

3:00 **Break**

3:20 **Pailes, Matthew,** *Diversity and Persistence in the Borderlands Region*

3:40 **Pickering, Bob,** *Mining Old Collections for New Data: An Example from West Mexico*

4:00 **Levine, Mark, Scott Hammerstedt, Amanda Regnier and Alex Badillo,** *How to Find a Zapotec Temple: Geophysical Prospection and Digital Mapping at Monte Alban, Oaxaca (Mexico)*

4:20 **Williams, Joey,** *Amphorae, Fish Sauce, and the Colonial Encounter in Roman Portugal*

4:40 **Dudley, Meghan,** *People, Places, and Things: Identifying Socialized Landscapes in the Bridger Mountains, Montana*

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# ABSTRACT FOR FORUM

**Building and Sustaining Meaningful Collaborations among Archaeologists and Members of Oklahoma Tribal Nations**

*Organizers: Brandi Bethke and Bonnie Pitblado*

This forum assembles a panel of partners from archaeological and tribal communities in Oklahoma. Panelists will discuss how they developed their relationships and specific projects that have resulted from collaboration. Some of these partnerships are relatively new, while others are more developed. The goal of the forum is to provide a sampling of some of the ways communities in Oklahoma have been engaging with each other to research the vibrant cultures of our region. Toward the same end, participation will be encouraged from audience members who have themselves been, are, or plan to be part of additional collaborations.

# ABSTRACTS FOR PAPERS AND POSTERS

**Aldenderfer, Mark** (see **Mann, Allison E.**)

**Andrews, Brian** (Rogers State University)
*Hunter-Gatherer Archaeology in Eastern Oklahoma: Recent Research and Future Directions*
Eastern Oklahoma is physiographically diverse, situated where the prairie, plains, cross-timbers, and Ozarks meet. The ecological diversity afforded by this geologic variety was quite attractive to hunter-gatherers throughout prehistory, providing a varied but stable resource base, and the archaeological record of the area is very rich. Early Paleoindian period sites are relatively rare, though there are likely geologic reasons for this. Beginning in the late Paleoindian period (most notably, Dalton), and especially into the Archaic periods of the Holocene, the regional population appears to have steadily increased, ultimately peaking in the Mississippian period. Recent research in the area has focused on middle Holocene land-use and technological organization. Excavations at the deeply stratified Goodson Shelter site provide a record of technological changes in hunting gear throughout the entire Holocene as well as information on the relationship of these technological changes to subsistence practices. More recent survey work is beginning to flesh out the land-use patterns employed by these hunter-gatherers.

**Ankele, William R.** (University of Oklahoma/Algonquin Consultants), **Rebecca A. Hawkins** (Algonquin Consultants), **Cody Blackbum** (Algonquin Consultants)
*That was Then, This is Now: Exploratory Data Analysis at Antlers Hill Pueblo (LA 188473)*
Antlers Hill Pueblo (LA 188483) – located in the uplands between West Red and Whitewater canyons in Socorro County, New Mexico – is a small three-to-four-room pueblo dating to ca. AD 900-1250. Distinctive Mimbres Mogollon ceramics place it firmly within this Late Pithouse to Late Pueblo time frame. The relatively small size of the surface artifact assemblage (N=264) suggests that the pueblo was occupied for a short period, perhaps seasonally over several years. No temporally diagnostic flaked stone artifacts and no ground stone artifacts were observed, probably because they have been pilfered by local residents over the years. Limited by state requirements to a no-pick-up surface survey, archaeologists combined piece plotting and grid collection techniques to capture detailed information about surface-exposed ceramics and lithics. Using several exploratory data analyses, we examined variations in artifact distributions to ferret out any differences in activities across the site. We offer here our resultant site use and formation interpretations. Antlers Hill Pueblo provides a good example of the value of carefully mapped, surface-exposed archaeological data collected within the confines of a cultural resources management scope that demanded efficiency.

**Ankele, William R.** (University of Oklahoma, Algonquin Consultants), **Amy Clark** (OKPAN, Algonquin Consultants), **Bonnie L. Pitblado** (OKPAN), **Rebecca A. Hawkins** (Algonquin Consultants), **Debra K. Green** (Oklahoma Archeological Survey)
*Ready, Set, GOFAR! Introducing the Gang of Oklahoman First Americans Researchers*
The goal of our poster is to introduce our peers in the many communities that share a passion for Oklahoma's past to a new, long-term research initiative we have dubbed "GOFAR." As the title of the poster indicates, the acronym stands for "Gang of Oklahoman First Americans Researchers," and our general research agenda is to investigate the earliest human use of the Oklahoma landscape. More specifically, our principal research foci will initially include developing a geoarchaeological model to identify landscapes most likely to yield evidence

of late Ice Age and early Holocene human use, using the spatial structure and assemblage composition of identified sites to assess human mobility patterns, and evaluating how First Oklahomans incorporated higher altitude portions of the landscape such as the Ozark Plateau and western Ouachitas into their settlement strategies. In terms of our approach to what we hope will be decades of research, we plan to work hard from the beginning to make all phases of GOFAR work as inclusive of as many stakeholders as possible, expressly including members of tribal communities, avocational archaeologists, landowners, artifact collectors, students, and members of the public who would like to participate in our work as citizen scientists.

**Austin, Rita** (University of Oklahoma), **Courtney Hofman** (University of Oklahoma), **Sabrina Sholts** (National Museum of Natural History, Smithsonian Institution)
*Assessing Dental Calculus Preservation in Museum Collections*
Technological and analytical advancements of biomolecular techniques allow scientists and museums to explore and assess archaeological collections from a new perspective, revealing new insights into past peoples, health, and the environment. Dental calculus, in particular, has proven to be a reservoir rich in microbial biomolecules and can also contain human, pathogen, and dietary biomolecules, making it possible to research and reconstruct the oral microbiome and life histories. As dental calculus is a biofilm, sampling calculus is not destructive to the skeleton. Because of dental calculus' relatively new biomolecular potential, museums have been inundated with sampling requests. However, granting calculus sampling requests is a gamble at this time because many museums do not know whether calculus is present in their collections and if biomolecules are preserved. This poster will discuss preliminary results documenting the presence of dental calculus in Smithsonian's National Museum of Natural History's Physical Anthropology collections. Through thorough documentation and understanding of collection preservation, such information can be used to provide curators and collections staff with empirical data to make future decisions regarding care and study of collections.

**Badillo, Alex** (see **Levine, Marc**)

**Barnes, Ben** (Shawnee Tribe)
*Shawnee Ancestral Ceramics: Recovering an Ancient Art Form through Archaeometrics*
Shawnee citizens are seeking to rediscover our ancestral ceramic traditions by collaborating with universities and academic institutions. Shawnee people may be able to recapture a lost art form that may allow us to definitively say which ceramics were a product of a Shawnee cultural paradigm. We also will discuss what legal implications this research may have regarding "Native American Graves Protection and Repatriation Act" (NAGPRA), the "National Historic Preservation Act", as well as tribal sovereignty. Using connections with academics that have developed over the decades of our NAGPRA work, we have created partnerships to explore the archaeological and archival record for temporal and geographic areas of overlap where our Shawnee ancestors once inhabited, and compare the ceramics found in those contexts to carefully selected ceramics of the Middle Ohio River valley (MOV). From freshwater mussel shells of the MOV archaeological contexts, as well as historical Shawnee habitations, we seek answers by using tools such as Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP- MS) to see how people created, transported, and used ceramics. We are curious if these ceramics were made locally, or did people bring ceramics and/or temper from homeland areas.

**Bement, Lee** (see **Cox, Thomas**)

**Bement, Lee** (see **Larrick, Dakota**)

**Bement, Lee** (Oklahoma Archeological Survey)
*Recent Archaeological Investigations in No Man's Land*
This presentation outlines the results of excavation at the stratified Late Paleoindian age Bull Creek camp located in the Oklahoma panhandle. One occupation level is dominated by winter bison processing while another contains an extensive accumulation of animal species representing a summertime use of the site. The more general diet displayed in this level challenges the concept that Paleoindians in this area were primarily bison hunting specialists. Other sites in the valley provide a broader picture of the overall Late Paleoindian adaptation on this landscape and provides insight into seasonal use of the area. Recent results of special analyses including radiocarbon dates and stable isotope assays are also reported.

**Blackbum, Cody** (see **Ankele, William R.**)

**Blackwood, Kevin W.** (see **Thompson, Thomas J.**)

**Bohay, Russel K.** (see **Hawkins, Rebecca A.**)

**Bos, Kirsten** (see **Mann, Allison E.**)

**Bowman, Paul** (University of Tulsa)
*Using Surface Metrology to Analyze Bone Surface Modifications in Archaeological Sites*
Understanding the niche of early *Homo* can be a difficult task. Were they skilled, primary hunters or did they passively scavenge the kills from other predators for their protein? One of the methods for interpreting their resource procurement is the study of bone surface modifications (BSM's), more specifically cut marks. Being able to identify and distinguish cut marks from other taphonomic processes is ambiguous, however. A relatively new method within archaeology being used to study BSM's is surface metrology. Although microscopic analysis of cut marks, gnaw marks, abrasion, and others is not new, it has largely been subjective; surface metrology makes use of white light confocal microscopy to analyze surfaces using ISO roughness variables. The purpose of this research is to test the feasibility of utilizing roughness variables for differentiating cut marks from other BSM's. This method will be applied to the fossil record at an archaeological site, 'Ubeidya in Israel. Results from an initial experimental study will be presented.

**Buchanan, Briggs** (University of Tulsa)
*Clovis Learning and the Colonization of North America*
The timing of the earliest entry into North America is debatable, but what is not at issue is the point of origin of the early colonists: Humans entered the continent from Beringia and then made their way south along or near the Pacific Coast and/or through a corridor that ran between the Cordilleran and Laurentide ice sheets in western North America. At some point, they abandoned their Arctic-based tool complex for one more adapted to an entirely different environment. That new techno-complex is termed "Clovis"; its dispersal allows us to examine, at a fine scale, how colonization processes played out across a vast continent that at the time had a very small resident population. This talk explores the combination of learning models grounded in evolutionary

theory and new analytical methods in terms of what we know about the rapid spread of human groups across the last sizable landmass to witness human occupation. I also discuss the process of settling in or landscape learning that occurred after the initial dispersal.

**Buehler, Kent** (University of Oklahoma)
*Why Forensic Archaeology is More Than Just Recovering Human Remains*
Over the past 25 years, American forensic anthropologists have incorporated archaeological principles and field procedures into their case work fundamentally altering what had previously been largely a laboratory-based discipline. Unlike Great Britain where forensic anthropology and forensic archaeology are recognized as related but distinct subfields, forensic archaeology in the U.S. is usually considered a component of forensic anthropology. Unfortunately, the archaeological "component" is sometimes looked upon as merely a set of principles/techniques whose purpose is to recover the remains, albeit precisely, so that the main objective of analyzing the remains can begin. Indeed, only recently did the Physical Anthropology Section of the American Academy of Forensic Sciences become the Anthropology Section and allow the inclusion of archaeologists. Forensic archaeology offers unique and important contributions integral to forensic investigations apart from its role as a recovery process. Using actual cases, this presentation explores some of those contributions.

**Byrd, Deanna** (Choctaw Nation of Oklahoma Historic Preservation Department)
*1902-1903: Choctaw Removals by Train*
Following the Indian Removal Act, Choctaw Chiefs were forced to sign the Treaty of Dancing Rabbit Creek in 1830. This treaty not only ceded the last remaining Choctaw homelands in Mississippi, but also led to the removal of over 20,000 Choctaw people to Indian Territory through a series of orchestrated removals from 1830 to 1849. The last federal removal was organized in 1903, with the intent on removing more Choctaws people to Indian Territory in time for the closure of the Dawes Rolls. In anticipation to this, in 1902, land speculators were eager to exploit Choctaw families in order to take a portion of allotted lands. Over the past three years the Choctaw Nation of Oklahoma Historic Preservation Department has worked to research and document these stories of the final removal with the hope of honoring our ancestors and to contribute to the family history of Choctaw people today. This paper will discuss this research.

**Carlson, K. C.** (see **Larrick, Dakota**)

**Carranza, Elizabeth Cruzado** (Louisiana State University), **Robert Connolly** (Louisiana State University)
*Co-creation in Public Archaeology: From Memphis, TN to Ancash, Peru*
Co-creation, a theoretical and methodological approach that prioritizes the expressed need of local communities, provides an approach for public archaeology to move beyond typical collaborative projects. A significant difference between the two approaches is that collaborative research is often viewed as working for the local community whereas co-creative efforts are clearly performed with the local community. In co-creation, the local community is viewed as the generator of the research projects. This presentation explores initial applications of a co-creative process at the C.H. Nash Museum at Chucalissa in Memphis, Tennessee and then evaluate the efforts to create and implement a diversity of cultural heritage educational programs over a four-year period in the Ancash Region of Peru. Over that period, a decisive shift from an approach of creating products for the community to one where archaeologists worked directly with the community was realized. We

determined that a co-creative approach that prioritized the expressed needs of the community resulted in programs with an increased likelihood for being sustained by the local community. Finally, the paper considers alternative methods to evaluate co-creative approaches, including the Critical Assessment Framework as developed by Worts.

**Clark, Amy E.** (see **Ankele, William R.**)

**Clark, Amy E.** (see **Pitblado, Bonnie**)

**Clark, Amy E.** (Oklahoma Public Archaeology Network, Algonquin Consultants)
*Patterns in Stone: Deciphering Neanderthal Site and Land Use Through Lithic Scatters*
Open-air Middle Paleolithic sites in France are characterized by dense piles of lithic material grading into low density "empty" areas. These sites lack organic preservation, including bone, and many do not contain features such as hearths. Therefore, the dominant signal that remains is the result of lithic reduction. Spatial analysis can be used to differentiate the various processes that moved lithics away from where they were knapped. These include geologic or biogenic activity, tool use, site maintenance or cleaning, and accidental movement. Once these processes are disentangled, I am able to assess the number and duration of occupations, and through this, Neanderthal land use in general. The Middle Paleolithic sites included in my sample showed that Neanderthals lived in small groups and repeatedly visited the same points on the landscape, creating sites that are a mixture of short and long-term occupations.

**Connolly, Robert** (see **Carranza, Elizabeth Cruzado**)

**Cooley, Delaney** (University of Oklahoma)
*A Lithic Analysis Examining Ute Emergence on the Uncompahgre Plateau, Colorado*
The Numic Expansion (A.D. 1100 to 1400) and other explanatory models that have been used to explain the distribution of Numic speakers across the American West often fall short of providing specific methods for identifying peoples, such as Ute, in the archaeological record. This paper expands on previous investigations of this Numic Expansion narrative through the detailed reanalysis of lithics from two excavated sites: Christmas Rockshelter (5DT2) and Shavano Spring (5MN40). I compare lithic procurement and production strategies through time and between the two sites to characterize the degree of cultural continuity (or lack thereof) in the Uncompahgre Plateau, Colorado. I identify changes to projectile point and biface production and raw material selection strategies that are unique to occupations during and after the Numic Expansion. I conclude that these differences represent changes in the region reflecting the movement of people and exchange of materials, ideas, and knowledge.

**Cordova, Carlos** (see **Cox, Thomas**)

**Cordova, Carlos** (Oklahoma State University)
*Context and Processes in the Formation of the Paleoecological Record of Hall's Cave, Texas: Archaeological or Paleoecological Site?*
Hall's Cave is a karstic feature located in the south-central part of the Edwards Plateau in south Texas. The tightly dated sediment sequence in the cave and the number of proxies obtained from it make this location one

of the most complete and comprehensive records of paleoclimatic and paleoenvironmental change in Texas from the LGM to the near the present. Various studies in Hall's Cave have produced several paleontological, sedimentological, stable isotope, and palynological records. However, the geomorphological evolution of the cave and its surroundings have not been fully integrated into the interpretation of these records. Likewise, the paleoenvironmental records have not been evaluated in the context of human occupations of the cave. This study explores the geomorphological and archaeological context of the cave and their potential impact on the records of pollen, spores, phytoliths and other microfossils. In so doing, this study discusses the meaning of palynological records in the context of the surrounding modern vegetation, the dynamics of the landscape, and human presence in the cave. Part of the taphonomic analysis was carried out through data recovered from pollen and phytolith traps, as well as phytolith assemblages from local and regional grasses. One salient aspect that is apparent in the sediment depositional patterns and palynological assemblages is that in the early Holocene the roof of the cave began to collapse, opening the cave to larger amounts of windblown pollen and human disturbance.

**Cox, Thomas** (Oklahoma State University), **Lee Bement** (Oklahoma Archeological Survey), **Adam Mathews** (Oklahoma State University), **Carlos Cordova** (Oklahoma State University)
*Mammoth Localities in Oklahoma: Working with Communities to Enhance and Better Understand the Late Pleistocene*
There are over 50 recorded mammoth localities spread out over 22 Counties in Oklahoma. The majority of these sites are located in the western portion of the state. The majority of these localities would go undiscovered and unstudied if it were not for the local landowners reporting them and allowing researchers the opportunity to properly study them. Excavation and analysis can be a daunting task and often requires community involvement. Furthermore, communities can benefit from learning about the natural and cultural past of their land. This is also beneficial in advancing our knowledge of late Pleistocene fauna in the state. In the past five years local landowners from Alva, Buffalo, Eagle City, Helena, and Grandfield have played a vital role in this endeavor. Once information has been obtained it can then be disseminated back to the community so that they might become more knowledgeable about the natural heritage of their lands past. One technical aspect that has improved the facilitation and transfer of information is the use of Structure from Motion (SfM), a form of 3D imaging. 3D imaging is a means by which community users can not only learn, but have an interactive training tool for community use.

**Davis, Joshua** (see **Larrick, Dakota**)

**Douglas, Allison** (see **Pitblado, Bonnie**)

**Douglas, Allison** (University of Oklahoma, OKPAN), **Shawn Lambert** (University of Oklahoma), K**ary Stackelbeck** (Oklahoma Archeological Survey), **Bonnie Pitblado** (University of Oklahoma, OKPAN), **Meghan Dudley** (University of Oklahoma, OKPAN)
*Oklahoma Archaeology Month 2017: Many Pathways to Stewardship of Oklahoma's Past and Present*
Creating the 2017 Oklahoma Archaeology Month poster involved a collaborative effort that extended beyond the norm for those involved. From the competitive recruitment of a poster artist; to brainstorming a theme celebrating both the long-standing education and outreach efforts of the Oklahoma Archeological Survey and the founding of the Oklahoma Public Archaeology Network (OKPAN); to the content contributed by most of

Oklahoma's 39 American Indian nations and archaeologists in all sectors, the poster embodies myriad voices. The authors emerged from its creation feeling like we had been part of something unique and worth sharing with others passionate about inclusive archaeology.

**Drass, Richard** (see **Trabert, Sarah**)

**Dudley, Meghan** (see **Douglas, Allison**)

**Dudley, Meghan** (see **Pitblado, Bonnie**)

**Dudley, Meghan J.** (University of Oklahoma, OKPAN)
*People, Places, and Things: Identifying Hunter-Gatherer Socialized Landscapes in the Bridger Mountains, Montana*
Archaeologists working in the Rocky Mountains and throughout the world have long recognized that people invest social meanings into the landscape around them. Based on de Certeau's (1984) "Spatial Stories," these "socialized landscapes" consist of two archaeologically identifiable components: *espaces* (practiced spaces) and *tours* (practiced paths). I operationalize these ideas by creating archaeological expectations for six socialized landscape types and ask what types of socialized landscapes can we identify from a largely lithic archaeological record. I test my expectations with a pilot study in the Bridger Mountains, Montana. By controlling for time using projectile point types found at sites throughout the mountains, I conduct a series of four analyses by time period to determine what types of *espaces* and *tours* past peoples created. I then compare those results against my archaeological expectations and landscape types. Although this study reveals areas of the methodology and analyses that can be improved in future studies, my research suggests that we can use this approach to understand past hunter-gatherer socialized landscapes both in the Rocky Mountains and worldwide.

**Ellick, Carol** (The Heritage Education Network)
*The Heritage Education Network: From Individual Efforts to Professional Actions*
The force behind public outreach and archaeological education has been individuals within agencies, those who've formed committees, and those who have dedicated their professional careers to ensuring that we communicate beyond ourselves. However, after 30 years, this "profession" still basically exists at the whim of professional organizations, volunteer committees, and through dedicated individuals. In 2015, at the Archaeological Institute of America sponsored Educators' Conference in New Orleans, recommendations were made to move the profession of public outreach and education forward by establishing professional guidelines, ethics, and standards; producing articles for peer-reviewed publications; and creating an umbrella organization that would bridge the gap between professional heritage specialists and those who produce, use, and disseminate educational materials. This presentation introduces The Heritage Education Network (THEN), a nonprofit membership organization established in 2016 to achieve these goals and more.

**Ellis, Addison** (University of Oklahoma)
*Preliminary Faunal Analysis on Materials from the Taovaya Village at Deer Creek*
During the late 1600's, the fortified village at Deer Creek was home to a large band of Taovaya Wichita who were economically and culturally central to the Southern Plains. The Taovaya were sedentary horticulturalists and broad-spectrum hunter-gatherers who regularly exploited bison, deer, fish, turtle, and small game. There

appears to be consistency among Wichita groups' subsistence strategies at this time based on previous studies. Wichita peoples were regularly interacting with Puebloan and Southeastern groups by trading bison robes and other goods, potentially introducing exotic goods to the archaeological record of their refuse patterns. The trash mounds at Deer Creek have thus far produced more faunal remains than any other material type. This project outlines a preliminary analysis of the faunal assemblage found in a pit feature excavated over the summer of 2017 in order to identify subsistence patterns. For the purposes of this study I documented element and species frequency, as well as modifications such as cut marks, patterns of bone fat processing, and evidence of burning.

**Foreman, Kacie** (Cameron University)
*Contents of a Felidae Coprolite from Domebo, a Paleoindian Kill Site*
The Domebo site it southwest Oklahoma, first excavated in the early 1960s, reveals interesting evidence regarding the flora and fauna of the area during the Pleistocene epoch. Originally, the focus was on mammoth remains and human interaction. However, remains of other vertebrates were also found, but not all of these were reported at the time. Nearly 60 years later, the collections from the site were reexamined in hopes of building on the original research. In particular, this study looked at the remains of small mammals. Among the artifacts, was a coprolite which contained the remains of numerous small mammals, which were comparable to those that had been reported in the original journal. Based on the size, shape, and composition, the coprolite was most likely from a member of the Felidae family.

**Frohlich, Bruno** (see **Mann, Allison E.**)

**Garcia, Domingo Salazar** (see **Mann, Allison E.**)

**Gonzalez, Isaias** (Cameron University)
*Revisited Palynology of the Domebo Site*
The Domebo Paleo-Indian mammoth kill site was discovered in 1961 with extensive excavation undertaken from 1962 to 1963, with sporadic visitation from researchers until 1974. At that time the site was studied for Geomorphology, Stratigraphy, Archaeology, Vertebrate Paleontology, Ecology, and Palynology. Samples from the site were stored at the Museum of the Great Plains, and this project revisited the Palynology of the 13 taxa found by Wilson. Wilson found Gramineae, Compositae, Amaranth-Chenopod, Pinus, Picea, Juniperus, Ephedra, Populus, Quercus, Carya, Rhus, Ulmus, and Fern all to be present at the site. Using standard palynological techniques, we found mostly pine pollen. And because today, pine is found 100's of miles to the NW (the Oklahoma panhandle) and SE (the Arbuckle region) from the site, this suggests a major change in climate occurred over time.

**Green, Debra K.** (see **Ankele, William R.**)

**Green, Debra K.** (Oklahoma Archeological Survey)
*Raiding, Trading, and Feasting: Multifaceted Landscapes in the Prehispanic Archipelago*
At European contact, the Philippine archipelago was populated by numerous socio-politically complex maritime trading polities linked into the South China Sea-Indian Ocean luxury goods trade and interacting through river-based trade for raw materials with smaller-scale interior swidden farming and foraging groups. While historic records and archaeological work have illuminate dynamic aspects of socio-political structure and economy in

the precolonial complex societies of the Philippines, agricultural land use strategies and human impacts on prehispanic landscapes are little studied and poorly understood. More than two decades of regional-scale archaeological research in the roughly 300 km$^2$ Bais-Tanjay region has resulted in the documentation of more than 300 sites dated between the 6th and 16th centuries AD and the excavation of eleven sites, including the coastal polity center, upriver lowland secondary centers and villages, and interior foraging camps and swidden farmer homesteads. Geoarchaeological investigations reveal evidence of an evolving alluvial environment that both constrained human settlement and influenced a mix of land-use strategies.

**Hammerstedt, Scott** (see **Levine, Marc**)

**Hawkins, Rebecca A.** (see **Ankele, William R.**)

**Hawkins, Rebecca A.** (Algonquin Consultants)
*Rock Song: Confessions of an Oklahoma Lithic Analyst in New Mexico*
When I embarked in archaeology nearly 40 years ago, my specialty was Ohio Valley ceramics. Right after graduate school, I happily leapt into cultural resources management, wherein I both discovered the vastness of the a-ceramic archaeological record and had the chance to examine it from the left coast to the right. Since then, my research energies largely have been a celebration of flaked stone. Like other rock groupies, I frequently find myself standing at sites seemingly floating in time-space, sites temporally unanchored by diagnostic ceramics or even diagnostic lithics – at which point I resort to all manner of analytical contortions to interpret what we have found. The particular contortions I describe here were occasioned by several small, upland sites in West Red Canyon, Socorro County, New Mexico. These include three lithic scatters with no temporally diagnostic artifacts (just like 80% of the sites we find in Oklahoma), one lithic scatter with ca. AD 900-1100 ceramics, and one lithic scatter with ca. AD 900-1250 ceramics in and around a three-room pueblo. In comparing the debitage characteristics across these ceramic and a-ceramic sites, I have found some interesting patterns that now challenge us to ponder their formation histories.

**Hawkins, Rebecca A.** (Algonquin Consultants), **Cassandra A. Kovin** (Algonquin Consultants), **Daniel Kovin** (Algonquin Consultants), **Russell K. Bohay** (Algonquin Consultants)
*The Observation of Trifles: Survey Methods and Understanding Precontact Landscapes in Southeastern Oklahoma*
Sherlock Holmes once observed, while unraveling a murder in *The Boscombe Valley Mystery*: "You know my method. It is founded upon the observation of trifles." Indeed, it is the trifles of archaeological evidence that foster interpretations of site age and function, number of site residents, occupation duration, and how a site's cog otherwise fits into the wheels of an overall settlement and resource extraction system. In this presentation, which might better be called *The Vexing Case of Clues Under Grass*, our trifles are 1,068 artifacts found in 2,064 shovel tests during survey of 550 acres in southeastern Oklahoma's Little River National Wildlife Refuge. The intensive survey discovered 15 sites, six of which yielded temporally diagnostic artifacts. Site assemblages include plain and decorated ceramic sherds, ground stone and flaked stone artifacts, and pieces of thermally altered rock – some from feature context. While this survey has not laid bare a thwarted love, a secret criminal past, or a juicy blackmail plot, we have come to a pretty good understanding of site distribution along the lower reaches of Yashoo, Crooked, Yanubbee, and Terrapin creeks. We argue strongly that, were it not for systematic shovel testing, we would never have achieved this understanding.

**Hill, Nicole** (Cameron University)
*Reexamination of Human Interaction and Possible Contamination of the Domebo Mammoth Kill Site*
The Domebo Paleo-Indian Mammoth Kill site is dated at ±11,000-11,500 B.P. which suggests Clovis occupation. As well, additional early human artifacts and faunal remains have been recovered. The remains of the original 1962 Domebo excavation are now located at the Museum of the Great Plains and have been reexamined along with multiple undocumented samples in an attempt to identify and place them in correct chronology. New analysis of the remains strongly suggest evidence of utilization of the Domebo site over multiple cultural time periods. These include projectile points such as Folsom, Plainview, and Clovis, as well as remains of Washita pottery. Multiple faunal remains also exhibit possible human association. However, incomplete skeletal remains have not allowed for accurate interpretations on what other fauna existed with the mammoth.

**Hofman, Corinne** (see **Mann, Allison E.**)

**Hofman, Courtney A.** (see **Austin, Rita**)

**Hofman, Courtney A.** (see **Mann, Allison E.**)

**Hofman, Courtney A.** (see **Wright, Sterling**)

**Hofman, Courtney A.** (University of Oklahoma), **Karissa S. Hughes** (University of Oklahoma)
*ALIeNS: A Tool for Documenting the ArchaeoLogy of INvasive Species*
Human have translocated plants and animals to islands for millennia. However, systematic documentation of the global history of ancient invasion is challenging due to differences in archaeological practice across the world, varying definitions and types of evidence of translocation, and dispersed datasets. Building on recent attempts to establish criteria for evaluating possible ancient translocations, we developed an web-based resource for archaeologists, managers, and stakeholders to document ancient translocations. With the help of the research community, our goal is to amalgamate these data sets from published and gray literature to investigate the role humans have had in constructing the ecosystems we see today and ultimately, to bring archaeological data to the table in policy discussions of resource management.

**Hoogland, Menno** (see **Mann, Allison E.**)

**Hughes, Karissa S.** (see **Hofman, Courtney A.**)

**Hughes, Karissa S.** (see **Wright, Sterling**)

**Kilic, Nihan Dilsad** (see **Wright, Sterling**)

**Kovin, Cassandra A.** (see **Hawkins, Rebecca A.**)

**Kovin, Daniel** (see **Hawkins, Rebecca A.**)

**Krause, Johannes** (see **Mann, Allison E.**)

**Krug, Andrew R.** (University of Oklahoma), **Kyle D. Waller** (University of Missouri), **Christine S. Vanpool** (University of Missouri)
*Isotopic Approaches to Marine Shell Exchange in the Greater Southwest*
Excavations have uncovered millions of marine shells throughout the Greater Southwest. Marine shell was not an easily obtainable resource. The nearest location was the Gulf of California—accessible through the Sonoran Desert or Sierra Madre Occidental. The archaeological literature presents alternative hypotheses regarding shell acquisition: down-the-line trading vs direct procurement. There are substantial disagreements about the motives for exchange including prestige, patronage, and signaling group membership. Understanding where and from whom people in the Greater Southwest acquired marine shell are important components in deciphering the mechanisms and meanings behind shell exchange. Such reconstructions require a finer resolution of the geographic source location to the level of sub-regions along the Sonoran coastline. In this study, we contribute to this discussion by comparing carbon and oxygen isotope ratios of *Olivella*, *Conus*, *Glycymeris*, and *Nassarius* shell from 76 Draw, a Casas Grandes site near Deming, New Mexico, with several published modern Gulf of California datasets. Building upon previous isotopic analyses of marine shell in the Greater Southwest, we determine the provenance of seven shells from 76 Draw and propose a model of exchange for the Casas Grandes world.

**Lambert, Shawn** (see **Douglas, Allison**)

**Lambert, Shawn** (University of Oklahoma)
*Crafted from a Distance: A Provenance and Stylistic Study of Spiro's Earliest Fineware Pottery*
Instrumental Neutron Activation Analysis (INAA) is used to determine whether Early Caddo finewares were locally-made in the Arkansas Basin or produced by their Gulf Coastal Plain neighbors to the south. The INAA results, in concert with a stylistic study indicating very few potters had the knowledge to produce them, show finewares were produced in the Southern Caddo region and subsequently brought north to the Spiro Mounds site for mortuary use. These findings suggest an extensive history of specialized ritual production and long-distance exchange between two diverse areas of the Caddo much earlier than expected.

**Larrick, Dakota** (University of Oklahoma), **Leland Bement** (University of Oklahoma), **K. C. Carlson** (Augustana University), **Joshua Davis** (University of Oklahoma)
*Black Bear Cache in the Oklahoma Panhandle: An Example of Quartzite Workmanship*
This poster shares the analysis of the Black Bear Cache found in the far northwestern region of the Oklahoma panhandle near Black Mesa. The cache consists of three large quartzite artifacts deposited on a narrow ledge along a sandstone rock face. The significance of this cache is seen when the cached objects are compared to quarry blanks available at nearby Dakota quartzite sources. Additionally, this study documents the use of Dakota quartzite in an area where few fine-grained cherts are available. The age of the cache is yet to be determined.

**Latham, Mark** (Burns & McDonnell)
*Excavations at Jumper Creek Site: Preliminary Results*
This paper presents a preliminary results summary of the data recovery at the Jumper Creek site in southern Seminole County (34SM87). The investigation used standard, as well as advanced field methods and laboratory analyses. The standard procedures included the hand- and mechanical-excavation of 394.75 cubic meters and analysis and documentation of burned rock features, lithic artifacts, and macro-botanical remains. In attempts to gain more information from a buried site with poor preservation, a poorly understood site formation process, and recovery of certain exotic artifacts, we also conducted geophysical surveys, geoarchaeological and geomorphological investigations, photogrammetry, X-Ray fluorescence, protein residue, and Fourier Transform Infrared Spectroscopy (FTIR). The preliminary results of these investigations reveal a complex occupational history and shed light on many of the aspects of the Late Archaic in central Oklahoma.

**Levine, Marc** (Sam Noble Museum, University of Oklahoma), **Scott Hammerstedt** (Oklahoma Archeological Survey), **Amanda Regnier** (Oklahoma Archeological Survey), **Alex Badillo** (Indiana University)
*How to Find a Zapotec Temple: Geophysical Prospection and Digital Mapping at Monte Alban, Oaxaca (Mexico)*
Ongoing scholarly debate concerning the function, meaning, and history of Monte Albán's Main Plaza have important ramifications for our understanding of sociopolitical, economic, and religious life at the Zapotec capital. Although previous investigations have targeted many of the buildings that surround the plaza, none have focused explicitly on the plaza itself. This paper presents the preliminary results of the Proyecto Geofísico de Monte Albán (PGMA), a non-invasive study of the entire Main Plaza utilizing multiple geophysical prospection techniques, as well as microtopographic mapping via drone-aided photogrammetry and a robotic total station.

**Macdonald, Danielle** (see **Tochtrop, Emily**)

**Macdonald, Danielle** (University of Tulsa)
*Communities of Interaction: Hunter-Gatherers Aggregation in Epipaleolithic Jordan*
The transition from mobile hunting-gathering to sedentary agriculture (the Neolithic) in the Levant marks one of the pivotal shifts in human prehistory. However, prior to the Neolithic, hunter-gatherers in this region exhibited a wide range of mobility patterns, including large aggregation sites, suggesting that the transition to sedentism was not an abrupt change but a gradual transition. Furthermore, there is increasing evidence for complex behaviors during the early periods of the Epipalaeolithic, indicating nascent cultural patterns seen later in the Neolithic. This paper presents the results of excavations from the Epipalaeolithic site Kharaneh IV, Jordan, to address issues of hunter-gatherer complexity and aggregation prior to the Neolithic. The site served as an aggregation locale for Early and Middle Epipalaeolithic groups, who congregated at the site on a repeated and multi-seasonal basis, attracted to a local habitat rich in fauna and flora. Recent excavations have uncovered evidence of habitation including hut structures, numerous hearths, postholes, caches, and middens. The results from this research contributes to our knowledge of how hunter-gatherers interact and negotiate social relationships in large complex groups prior to the sedentism during the Neolithic, and how cultural patterns related to 'place' might have their origins in Epipalaeolithic life.

**Mann, Allison E.** (Max Planck Institute for the Science of Human History, University of Oklahoma), **Susanna Sabin** (Max Planck Institute for the Science of Human History), **Kirsten Ziesemer** (Lieden University), **Åshild J. Vågene** (Max Planck Institute for the Science of Human History), **Hannes Schroeder** (Leiden University, University of Copenhagen), **Andrew T. Ogza** (Arizona State University, University of Oklahoma), **Krithivasan Sankaranarayanan** (University of Oklahoma), **Courtney A. Hofman** (University of Oklahoma), **James Fellows Yates** (Max Planck Institute for the Science of Human History), **Domingo Salazar Garcia** (Max Planck Institute for the Science of Human History, Basque Foundation for Science), **Bruno Frohlich** (Dartmouth College, Smithsonian Institution), **Mark Aldenderfer** (University of California Merced), **Menno Hoogland** (Leiden University), **Christopher Read** (Institute of Technology, Sligo), **Johannes Krause** (Max Planck Institute for the Science of Human History), **Corinne Hofman** (Leiden University), **Kirsten Bos** (Max Planck Institute for the Science of Human History), **Christina Warinner** (Max Planck Institute for the Science of Human History, University of Oklahoma)

*Ancient DNA from Archaeological Teeth and Dental Calculus Preserves Traces of Biological Processes That Occur During an Individual's Life, and After Their Death*

Ancient DNA from archaeological remains provides unique insights into past human behavior, health, and evolution. Recent studies have suggested that dental calculus, the mineralized form of dental plaque, may provide a better preservation environment for ancient DNA than other archaeological remains. However, this hypothesis has not been systematically tested. In this study, 48 paired dentin and dental calculus samples from seven archaeological sites representing three continents and a wide age range (2920 BCE to 1866 CE) were sequenced using a high-throughput metagenomics approach. We find that dental calculus has a substantially higher DNA yield than dentin from the same individual and maintains a signature of an expected oral microbial community. A small subset of dentin samples (15%), however, retain a minor signature of oral microbes which may indicate oral bacteria participate in decomposition or invade the dentin during life. Finally, human DNA is highly fragmented independent of overall preservation level ($\overline{x}$ = 15 bp shorter) in dental calculus but not in dentin. This suggests the mode of incorporation of human DNA in these two substrates is different. We hypothesize this high fragmentation is the result of immune cell activity and bacterial derived nucleases during periodontal disease.

**Mathews, Adam** (see **Cox, Thomas**)

**Miller, Melissa R.** (University of Tulsa)

*An Actualistic Bison Butchery Using Banded Ironstone: The Creation of an Experimental Comparative Collection for Lithic Microwear Analysis*

Transitional lithic industries inform researchers about technological innovation during significant periods of human evolution. The Fauresmith, an Early Stone Age (ESA) to Middle Stone Age (MSA) transitional industry in South Africa, is characterized by the appearance of blades and composite tools alongside continuing traditions of large cutting tools, and coincides with the evolution of advanced *Homo* species during the Middle Pleistocene. This experiment is part of a larger project investigating the development and purpose of the Fauresmith at a site called Bestwood in Northern Cape, South Africa, using experimental and analytical techniques including post-depositional and microwear analyses. To facilitate microwear analysis on Fauresmith artifacts, an experimental comparative collection was created on banded ironstone raw material samples from Bestwood and surrounding areas. This poster reports on the actualistic butchery of a bison using lithic tools made from these raw material samples. Fresh edges were documented using stereomicroscopy and incident-

light microscopy before use, and again after the butchery to provide a model of butchery damage on banded ironstone which can be compared to Fauresmith archaeological assemblages.

**Mraz, Veronica** (University of Tulsa)
*Hot Bifaces: An Examination of Flaking Properties from Heated and Unheated Bifaces*
Archaeologists have long recognized that prehistoric people altered their lithic raw material by heating it either for social preference (color and texture change) and/or for altering the knapping properties of the cherts. Heat treatment experiments by archaeologists started in the 1960s, and since then there have been numerous experiments involving the heat treatment of cherts, jaspers, obsidian, silcretes, etc. Many of these studies attempted to ascertain what happens to cherts subjected to thermal alteration. While each of these experiments has provided something new to our understanding of thermal alteration of chert, there are still some fundamental gaps in our understanding of this process. There has been difficulty in the past with creating a standard method for quantifying the results of these tests, often describing the changes as "improving knappability" or "making knapping easier" but what exactly these subjective terms mean is unclear. The purpose of my research is to reduce subjectivity by quantifying the effects of heat-treatment and thus better understand why prehistoric groups engaged in the practice. In this poster I examine one aspect of this research looking specifically at the changes in flake characteristics from heated and un-heated biface.

**Neel, Charles D.** (Raba Kistner Environmental, Inc.)
*Oakview Territory Period Schoolhouse*
A Phase I cultural resources survey was completed by Red River Archaeology, LLC for approximately 31 miles of the Cimarron Electric Cooperative's Hennessey Substation Area rebuild project located in Kingfisher and Garfield counties of north-central Oklahoma. The survey was performed due to an undertaking utilizing Federal Emergency Management Agency (FEMA) funding. During survey of resources of the built environment, a farmstead complex of 11 structures was documented. One of these structures was attributed as the Oakview School, a one-room schoolhouse dating to ca. 1905. The schoolhouse was also known as the Haymaker School as its original location was diagonally across the road from the G. W. Haymaker property. This poster presents data on the Oakview (Haymaker) School building and its Territorial and Statehood Period history and utilization through archival and photographic data. The building retains its original fabric of weatherboard over framing and the shake roof is visible under the replacement asphalt shingles. All windows are original wood frame double hung 2/2 units with exterior trim although most glass panes are broken or missing. Blackboards are still attached to the interior wall at the rear gable end.

**Ogza, Andrew T.** (see **Mann, Allison E.**)

**Pace, Tommas** (Afendras Archaeology)
*Unlocking Security: Roman Locks and Keys for Material Studies and Access Analysis*
This poster is based on the MA Thesis research of Tommas Pace and details Roman locks and keys in the technological forms in which they occur: rotary, tumbler, and padlock for locks and homeric, tumbler, rotary, and ring for keys. While locks and keys have been identified from archaeological contexts as early as Mesopotamia, their mechanical operations and varietal differences had never been identified until now. This research identifies the different technological forms of locks and keys as they occur across the Roman Empire and frontier from a pool of artifacts examined from Pompeii, Herculaneum, Cyprus, Crete, North Africa, and

Roman Britain. The poster addresses how such a typology can benefit developing theories in Archaeology, such as Access Analysis. It also examines possible future research questions from this material culture, in addition to how the forms shaped the modern locks and keys as we know them today.

**Pailes, Matthew C.** (University of Oklahoma)
*Diversity and Persistence in the Borderlands Region*
This presentation will investigate community level social organization in the 13th to 15th centuries through a comparative approach, encompassing modern day Northwest Mexico and the U.S. Southwest. The archaeological societies included in this analysis are the Hohokam, Río Sonora, Casas Grandes, and Trincheras. A consideration of settlement patterns, variable investment in public and domestic architecture, material culture diversity, and prevalence of exterior exchange reveals substantial regional variation. I will assess how these qualities correlate with the differential persistence of these societies and address the question of why only the Rio Sonora region remained recognizable post AD 1450. I argue that the Rio Sonora exhibits far less regional consolidation than other societies in this region. This quality has previously been characterized as a lack of social complexity, but also contributed to greater resilience to social and ecological perturbations.

**Peebles, Giovanna** (Society for American Archaeology PEC Network of State Coordinators)
*Improving Our Communication Skills to Forge Stronger Community Bonds*
Interacting with communities is a critical part of our job as archaeologists. A community might be a group of people who lives in a specific area, like a village, town or city; or a cultural group such as an Indigenous community; or groups of individuals who share common values or interests, such as the Oklahoma farming community, the ranching community, the community of artifact collectors, or the Oklahoma Historical Society community, or the community of people who are care deeply about archaeology and are attending this conference. Archaeologists must communicate with all these communities and others as well since they are the important partners in our work to understand and preserve our long and rich history. Communication is a critical ingredient for developing positive relationships with these communities. Great communication promotes yet a higher level of success in building relationships. So how do we improve our communication skills to more effectively engage various communities? And how do we measure our success as our community bonds get stronger?

**Perkins, Stephen** (see **Trabert, Sarah**)

**Pickering, Robert B.** (University of Tulsa)
*Mining Old Collections for New Data: An Example from West Mexico*
Many museums across the world hold archaeological collections that were acquired with various degrees of contextual information from non-existent to extensive field note archives. Clearly, well documented objects or collections offer maximum research value but does that mean that collections with limited documentation have no research value? Research centering on the diverse and detailed ceramic figures from west Mexico has attempted to answer that question. Detailed examination of museum-based Mesoamerican collections beginning in the 1990s demonstrates that virtually any museum that has Mesoamerican material, has pottery figures and vessels from west Mexico. The number of anthropomorphic, zoomorphic and phytomorphics vessels number in the thousands. A data category of this magnitude offers great promise but also comes with significant short-comings. Using a forensic perspective and technologies and insights borrowed from numerous scientific fields,

this researcher has attempted to re-contextualize these collections and glean information from them that helps shed light on ancient west Mexican societies of two millennia ago.

**Pitblado, Bonnie** (see **Ankele, William R.**)

**Pitblado, Bonnie** (see **Douglas, Allison**)

**Pitblado, Bonnie** (OKPAN Executive Director), **Allison Douglas** (Director of Operations and Outreach), **Meghan Dudley** (Director of Education), **Amy Clark** (Director of Research)
*Introducing OKPAN, the Oklahoma Public Archaeology Network*
Founded in 2016, the Oklahoma Public Archaeology Network underwent its "soft launch" in 2017, with staff trying to raise community awareness of the program's existence and goals and formalize its core initiatives. 2018 marks OKPAN's move from "soft" to "hard" launch as a formally established entity designed to bridge Oklahoma communities with a passion for the past. In our talk, we introduce more fully OKPAN's mission, staff, and focal programs. Most importantly, we emphasize how any community member who embraces the dynamic past of our state can become involved in learning about it, teaching it, and advancing our collective and multi-vocal understanding of it.

**Pool, Samuel** (University of Oklahoma)
*Analysis of Faunal Remains at Deer Creek*
In the first half of the eighteenth century, one band of the Wichita tribe known as the Taovaya lived at the Deer Creek archaeological site in Kay County, Oklahoma. Using faunal analysis of three units excavated at Deer Creek during the summer of 2017, subsistence strategies of the Wichita tribe were examined. Bison bones and turtle shells made up ninety-four percent of the identifiable assemblage showing that bison and turtles were main food sources for the village occupants. However, the majority of the faunal remains were in poor condition and highly fragmented causing the bulk of the remains to be indeterminate. The findings suggest that the Wichita were processing bone marrow and grease production as part of their subsistence strategy. This intense extraction process leaves unidentifiable bone fragments that cannot be attributed to a specific species. Similar evidence has been found at other Wichita sites in Oklahoma and Kansas wherein faunal remains were all extensively fragmented. Lastly, the data supports that ancestral Wichita groups were using the entire carcass of the bison as part of their subsistence strategy.

**Read, Christopher** (see **Mann, Allison E.**)

**Regnier, Amanda** (see **Levine, Marc**)

**Regnier, Amanda** (Oklahoma Archeological Survey)
*Recent Archaeological Investigations at 19th Century Frontier Forts in Oklahoma*
For the past decade, the Oklahoma Archeological Survey, Oklahoma Historical Society, and Oklahoma Anthropological Society have collaborated on a number of excavation projects at antebellum sites in southern and eastern Oklahoma. In this presentation, I present a brief summary of the past and current field projects, including excavations, geophysical studies, and laboratory analysis. The sites discussed range from military posts to houses to Trail of Tears end depots.

**Rodgers, Jackie** (Osage Nation Historic Preservation Office)
*Osage Nation Annual Heritage Site Visit*
The Osage Nation's Ancestral Territory spans 618 counties within 15 states, but today the reservation consists of one county in northeastern Oklahoma. Every year the Osage Nation Historic Preservation Office takes up to twenty Osage constituents and other Tribal representatives to explore sites within Osage Ancestral Territory in an effort to reconnect the Osage people with their past. The Heritage Site Visit is a week-long trip that features historic Osage-related locations, archives, and artifacts with expert analysis and presentations by leading historical and archaeological professionals that are often inaccessible to the general public. This year we will be going to historic forts, missions, and village sites within Oklahoma, Arkansas, Missouri, and Kansas. Previous years featured Cahokia and other sites in the St. Louis area, and rock art and cave shelters in Arkansas. Reception has been very positive, and the program continues to grow annually.

**Rush, Haley** (Cox McLain Environmental Consulting Inc.)
*The Rowe Valley Site (41WM437): A Study of Torah Period Subsistence Strategies in Central Texas*
The Rowe Valley site (41WM437) is a large Toyah (AD 1250-1650) campsite in eastern Central Texas. Cultural materials recovered from the site are typical of other Toyah sites and include bison remains, a distinctive lithic toolkit, and ceramics, all of which greatly differ from the cultural materials in the preceding Austin Phase (AD 900-1250). The sweeping changes in material culture have been explained by some to be associated with the return of bison to Central Texas. An analysis of the Rowe Valley faunal materials and experimental studies were undertaken to better understand the hunting and use of large mammals at the site. The analysis and experimental studies suggest that although bison remains tend to dominate Toyah assemblages, at Rowe Valley the faunal assemblage is dominated by deer and antelope, which suggests a vastly different hunting strategy. Thus, the distinctive Toyah toolkit and ceramic use may not be fully explained as a response to a coeval increase in bison.

**Sabin, Susanna** (see **Mann, Allison E.**)

**Sankaranarayanan, Krithivasan** (see **Mann, Allison E.**)

**Schneider, Gabriella** (University of Oklahoma)
*Lithic Artifacts at the Deer Creek Site (34KA3), Units S2E131 and S3E131*
The Deer Creek site is located in Kay County, Oklahoma at the confluence of Deer Creek and the Arkansas River. It is recognized as an ancestral Wichita village, with a sister site (34KA5) located upriver. During the 2017 excavation of this village, units S2E131 and S3E131 were opened within the inner fortification ditch near a supposed entryway, the function of which is not currently known. A deposit of hundreds of chipped stone flakes, tightly packed in an oval shape, were recovered across three units in the area. The presence of this cache, paired with an analysis of other lithics from S2E131 and S3E131, do not support the use of a nearby gap in the fortification ditch as an entrance.

**Sholts, Sabrina** (see **Austin, Rita**)

**Schroeder, Hannes** (see **Mann, Allison E.**)

**Stackelbeck, Kary** (see **Douglas, Allison**)

**Sugiyama, Nawa** (see **Wright, Sterling**)

**Sundermeyer, Scott** (Oklahoma Department of Transportation)
*Geospatial Mapping of Geoarchaeological Literature in Oklahoma: Transportation Planning and Buried Archaeological Potential*
Federal agencies must consider the effects of their undertakings on historic properties, such as buildings, districts, structures, objects, and archaeological sites. Depositional processes, especially in fluvial settings have the potential to bury archaeological materials, such that they cannot be detected through traditional archaeological survey methods. Transportation agencies, responsible for implementing and maintaining safe transportation infrastructure, have a unique potential to disturb deeply buried archaeological deposits—especially through bridge replacement projects. Archaeologists from the Oklahoma Department of Transportation (ODOT), with assistance from Burns & McDonnell, developed a Geographic Information System (GIS) database of geomorphological and geoarchaeological studies completed in Oklahoma. This GIS database compiles all known technical reports and academic studies in Oklahoma, referenced these projects geographically, and created a geographic database of the projects. Coupled with existing soils and geology data, ODOT has begun using the database to identify projects that have the most potential to affect buried contexts suitable for containing deeply buried archaeological materials. ODOT plans to compile this information into an ArcGIS Online application that can be used by archaeologists in Oklahoma.

**Thompson, Thomas J.** (Open Range Archaeology), **Kevin W. Blackwood** (East Central University)
*Characterization of Chert Gravel Varieties and their Hydrogeological, Ecological, and Archaeological Significance in Karst Systems in the Arbuckle Mountains, Southern Oklahoma*
The Ordovician Arbuckle Group in southern Oklahoma is host to a diversity of chert types of varying abundance within several formations. Large nodules and layers of chert erode from limestone beds on the surface and within caves, where it crumbles and becomes mobilized by fluvial processes. Due to a high density of sinkholes and ponors, much of the surface chert is carried into the subsurface where it accumulates in thick and extensive gravel beds, contributing a heterogeneous alluvium component to a dynamic triple aquifer system. The most common cryptocrystalline silicate materials within these samples include, milky quartz, smoky quartz, and flint. A few jasper and agate chalcedony gravels were also identified. Within the karst systems, the gravel acts to filter-out larger organic materials and detritus. Where gravel accumulates in traps within phreatic loops, gravel boils develop on the downstream end and accelerate density stratification within the gravel trap. Bones of bison, broken speleothems, and a lithic projectile artifact of the Late Archaic have been recovered from smaller gravel traps and beds during dry conditions. Such items typically show little wear, suggesting the gravel helps to preserve such items when buried.

**Tochtrop, Emily** (University of Tulsa), **Danielle Macdonald** (University of Tulsa)
*The Right Tool for the Job: Identification of Multifunctional Tools Through Use-Wear Analysis*
Archaeological lithic artifacts are often described as single purpose objects: scrapers, projectile points, knives. However, ethnographic evidence suggests that many modern people use tools for multiple functions, either designing them as multipurpose tools or opportunistically using tools for the task at hand. Despite this, most use-wear experiments are focused towards single purpose tools, and many analysts argue that the use-traces on

tools reflect only the final task. In these experiments, we explore how tools can be used for multiple functions related to food processing, and the different microscopic traces that these functions leave on the surface of stone tools.

**Trabert, Sarah** (University of Oklahoma), **Stephen Perkins** (Oklahoma State University), **Richard Drass** (University of Oklahoma), **Susan Vehik** (University of Oklahoma)
*Investigating the Deer Creek (34KA3) Site: A History of Work*
The Deer Creek Site (34KA3) is the remains of an 18th-century ancestral Wichita village in Kay County, Oklahoma. Although professional and avocational archaeologists have known about the site for more than 100 years, it remained unexcavated until 2016. This poster provides a history of investigations at the site with a focus on the 2016 and 2017 excavations. This background information serves as an accompaniment to other posters in this session that will cover artifact analyses from the Deer Creek excavations.

**Vågene, Åshild J.** (see **Mann, Allison E.**)

**Vanpool, Christine S.** (see **Krug, Andrew R.**)

**Vehik, Susan** (see **Trabert, Sarah**)

**Vehik, Susan** (University of Oklahoma)
*The Uncas (34KA172) Star Chart*
In 1979 the first of four houses was excavated at the Uncas site in north-central Oklahoma. House 1 had a concentration of daub suggesting the presence of a panel in the south central area of the house. Within that concentration were a series of fragments with fingertip impressions in linear and curvilinear arrangements. An initial attempt to assemble the daub panel was made in 1979. Because of the time constraints of a contract project this attempt was unsuccessful. In 2015 another attempt was made. Most of the fingertip impressed pieces were reassembled but there remain blank areas. Nonetheless, enough of the panel was refitted to suggest that it is a star chart involving the Pleiades, Hyades, and possibly a comet or meteor.

**Wagnon, Emily** (University of Oklahoma)
*An Analysis of Artifacts Recovered from the Surface of the Deer Creek (34KA3) Site*
The Deer Creek site was inhabited by ancestral Wichita groups in the 1700s and known to researchers for more than 100 years. A large number of artifacts have been recovered from the surface over the last few decades, including stone tools. The collection under current analysis is from surveys at the site by Charles Steen and was donated to the Oklahoma Archaeological Survey in 1986. A brief summary of Charles Steen's career and interest in the Deer Cree site will be provided, followed by the results of an analysis of the stone tools and other artifacts that he collected from the site. These results will be compared to work from the Bryson Paddock site, a nearby contemporary village, to determine what types of tools and materials the tribe was using during the occupation.

**Waller, Kyle D.** (see **Krug, Andrew R.**)

**Warinner, Christina** (see **Mann, Allison E.**)

**Williams, Jennifer** (University of Oklahoma, Afendras Archaeology)
*Lithic Analysis from the Deer Creek (34KA3) Site: Units N21 E101 and N22 E 101*
The Deer Creek archaeological site (34KA3) is what remains of a historic, eighteenth-century Taovaya-Wichita village. Located in what is today Kay County, Oklahoma, it is in close proximity to its sister site: Bryson-Paddock. Both villages were occupied from at least 1680-1757 AD. During this time, the inhabitants of both Deer Creek and Bryson-Paddock were trading buffalo hides with the French, who used the nearby Arkansas River for travel and transport of goods. The Deer Creek and Bryson-Paddock sites have undergone several seasons of surveying, surface collection, archaeological testing, along with a small amount of formal excavation over several years, including 2017. The most recent excavation and initial processing of the lithics acquired from the site from June 6, 2017-July 27, 2017, from two units (N21 E101 and N22 E101) yielded results consistent with previous findings at Bryson-Paddock. The lithic tools at both villages seem to have been made with expediency and in great quantity to meet the demands of the buffalo hide-trade with the French.

**Williams, Joey** (University of Central Oklahoma)
*Amphorae, Fish Sauce, and the Colonial Encounter in Roman Portugal*
Garum, the modern name for a variety of ancient sauces and condiments produced from fermented fish entrails, was among the Romans' favorite foods. Garum was consumed from Pompeii to London, produced along the coasts of the Atlantic, the Mediterranean, and the Black Sea, and written about by philosophers, poets, and merchants. It was a quintessential Roman food, and imbued with symbolic weight as a product of Rome and a food consumed by Romans. The Iberian Peninsula dominated garum production in the Western Roman Empire. In many parts of Iberia garum production began almost as soon as the Romans arrived. Archaeological evidence suggests that garum and specialized garum containers were also produced in small batches in remote parts of Iberia, likely to meet a demand that the coastal industries could not reach. This paper examines the evidence for small-scale garum production in the hinterland of Iberia, particularly through the analogous presence of imitation containers for garum. Garum was as Roman a food as the Romans possessed, and the popularity of fish sauce even in the most remote regions of the Empire suggests that many, including the colonized, wished to have a taste of what garum, and Rome, had to offer.

**Wood, Catherine** (Oklahoma Historic Preservation Department)
*The Frontier and Colonialism: Fort Townson in Indian Territory (1824-1854)*
To study the American frontier and Indian Removal is to study colonialism on two levels. The first level as it was practiced during the 19th century with the forced relocation of Native Americans from their southern homelands to Indian Territory and the second level is the perpetuation of the colonialist mind set in the archaeological study and interpretation of frontier sites, most notably the military posts that were built along the boundary of Indian Territory. Fort Towson in southeastern Oklahoma received thousands of Native Americans who were removed from their homelands between 1831 and 1834. Yet, it was noted from archaeological research during the 1970s and 1980s of the fort that material culture associated with Native Americans for this period were not identified. This is indicative of the assumption that military sites conform to an easily recognizable structured format, while material culture remains of Native people during this period can be much more fragmented and less recognizable in the archaeological record. Therefore, the goal of this research is to understand the Native American diaspora of the frontier period and to decipher how past fieldwork and research has influenced our understanding of the events, movement and identity of people in the Southern Plains region during this time.

**Wright, Sterling** (University of Oklahoma), **Karissa Hughes** (University of Oklahoma), **Nihan Dilsad Kilic** (University of Oklahoma), **Nawa Sugiyama** (George Mason University), **Courtney Hofman** (University of Oklahoma)
*Demystifying Teotihuacan through the Microbiome*
During the first millennium CE, Teotihuacan was not only the largest city in Mesoamerica but was one of the largest cities in the world. Both the Mayans and Aztecs revered the ancient city and thought of it as a mythical place. While archaeological excavations have revealed that the city was an economic, political, and religious center, little is known about the individuals who lived there. To tackle this issue, we are applying molecular methods to assess biomolecule preservation in animal and human skeletal remains from two different localities in Teotihuacan. Twelve samples, including human dental calculus, golden eagle, puma and jaguar material from the Moon Pyramid and the Plaza de las Columnas are being assessed for biomolecular preservation. If the preservation is sufficient, we hope to conduct further downstream analyses including mitochondrial genome reconstruction and metagenomic analysis. By sequencing the mitochondrial DNA and microbiome of animals and humans at Teotihuacan, we hope to provide a deeper understanding about life in the city.

**Wyckoff, Don** (University of Oklahoma)
*Frisco Chert and Calf Creek People: A Lithic Conveyance Example*
Middle Holocene bearers of the Calf Creek material culture focused their chipped stone technology on regionally specific cherts. Knapping these different materials typically entailed multiple episodes of heat treatment. Over 40 sites in central and south-central Oklahoma are yielding an increasingly comprehensive perspective of the technology and structure of Calf Creek people's procurement, reduction, use, and dispersal of one such toolstone. The preferred material is Frisco chert, an indurated siliceous stone found in nodules and variably thick beds near the base of the prominent Pontotoc Ridge in southern Pontotoc and adjacent Coal counties. Small sites near Frisco exposures attest to quarrying and initial shaping bifacial cores there. Thirty to fifty miles west, sites in two riverside localities have caches of large spalls and heated bifaces knapped to vary stages of reduction ultimately destined to be the deeply basally notched projectiles/knives that distinguish Calf Creek hunting toolkits. These localities appear to have served as staging areas for foraging trips west and north into such watersheds as the Red, Washita, and Canadian rivers. Seasonal bison hunts are suspected to be represented by small camps and isolated projectiles found there.

**Yates, James Fellows** (see **Mann, Allison E.**)

**Ziesemer, Kirsten** (see **Mann, Allison E.**)

# NOTES

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**What You'll Do:**

- Create a 1- or 2-day workshop (a day = *ca*. 10:00 to 4:00) on an archaeological skill in which you have expertise
- Teach the workshop three times in one month (in Norman, Lawton, and Tulsa)

**What You'll Get:**

- Teaching experience
- $150 (1-day) or $300 (2-day) stipend to create and teach all your workshops
- Travel costs for out-of-town workshops

The Oklahoma Public Archaeology Network (OKPAN) seeks archaeologists to create and teach workshops for our "Archaeological Skills Workshop Series." Whether you excel at surveying, site recording, GIS, photogrammetry, or any other tool-of-the-trade, we want to recruit you to share your expertise with Oklahoma students, avocationals, and professionals!

For more information or to apply, visit www.okpan.org or email us at OKArchaeology@gmail.com. Applications due **6/01/2018**.


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