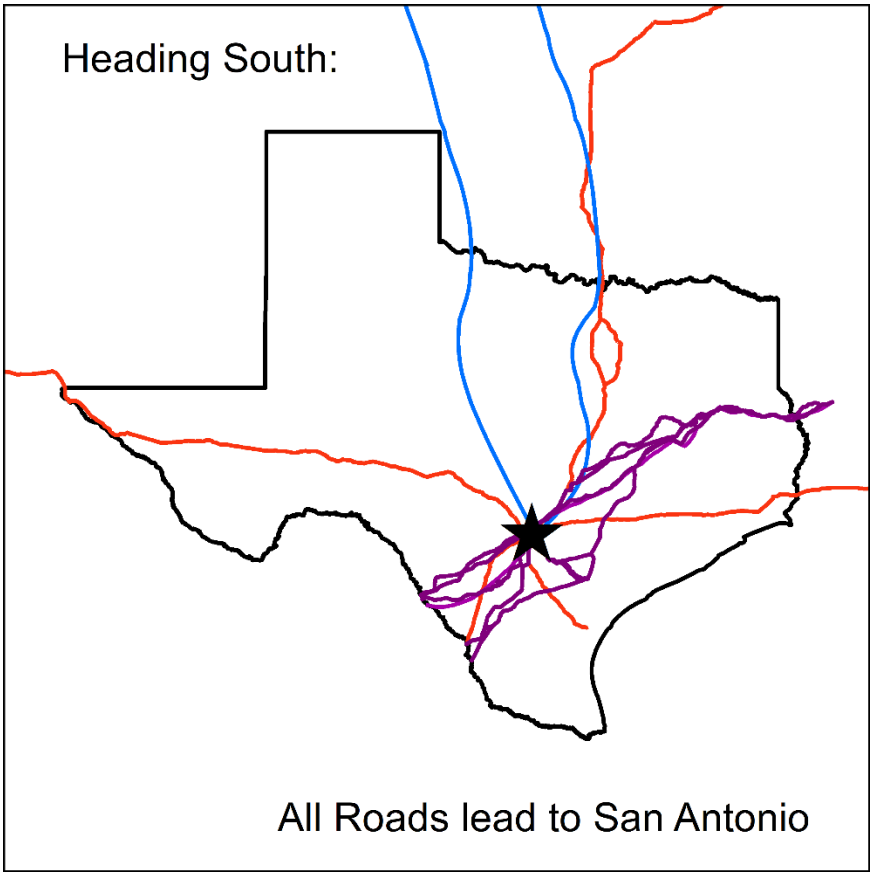
76th Annual Plains Anthropological Conference



San Antonio, Texas
October 24-27, 2018

	Fiesta A Ballroom	Crockett West Room	Crockett East Room	Fiesta B Ballroom
Thursday Morning	Archaeology at the Gault Site, Texas: Digging Deeper	Student Poster Competition	Historical Archaeology	Vendors/Exhibits
Thursday Afternoon	A Public Archaeology PANdemic? An Introduction to the Florida, Oklahoma, Texas & Utah Public Archaeology Networks	Northern and Central Plains	Student Paper Competition	Vendors/Exhibits
			Zooarchaeology and Archaeobotany	Flintknapping Demonstration
Friday Morning	Paleoindian and Archaic	Science and Public Outreach	An Active Environment: Landscapes and Natural Resources on the Plains and Prairie	Vendors/Exhibits
Friday Afternoon	Geoarchaeology in Cultural Resource Management (CRM): Why We Do It and Its Role and Future in CRM	Paleoindian and Archaic	Southern Plains	Vendors/Exhibits
Saturday Morning	Advancing Theory and Methods in Contact Period Archaeology	Central Plains	Northern Plains	Vendors/Exhibits

Conference Host:
Texas State University, Center for Archaeological Studies

Conference Committee

- Todd M. Ahlman
- Alison Hadley Hilburn
- Jodi Jacobson
- Mark Howe

Thank you Chris Johnston, Treasurer of the Plains Anthropological Society, for your invaluable support and assistance.

Conference Logo:
The logo of the 76th Annual Plains Anthropological Conference shows the various roads, historic trails, cattle trails and modern interstates that all traveled to, from, and through San Antonio. The blue lines represent the Western and Chisholm trails. The various routes of the El Camino Real are in purple. The modern day interstate highway system are in red.

The 76th Plains Anthropological Conference thanks our conference partners:

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CONFERENCE VENDORS & EXHIBITS

- Center for Applied Isotope Studies – University of Georgia
- Elliot Werner Publications
- Oklahoma Public Archaeology Network
- Plains Anthropological Society
- Susan Vehik

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The North Dakota Archaeological Association (NDAA) is a non-profit 501(c)4 organization of enthusiasts and professional archaeologists interested in the archaeology of North Dakota.

***North Dakota Archaeology* now seeking manuscripts!**

- Peer reviewed journal
- Articles should focus on North Dakota and adjoining states and provinces
- Eligible topics include archaeology and culture history, as well as methodological and theoretical issues in Northern Plains archaeology

For more information on submissions see:
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Visit our website at http://www.ndarchaeology.org/ or check out the NDAA on Facebook! Email us with questions at ndaainfo@gmail.com.

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Contact Dr. Kacy L. Hollenback (khollenback@smu.edu) or Dr. David J. Meltzer (dmeltzer@smu.edu).
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GENERAL INFORMATION

Conference Headquarters: All conference events, except for the guided tours on Wednesday and the reception on Thursday evening, will be held at the La Quinta Inn & Suites, Riverwalk (303 Blum St, San Antonio, Texas; (210) 222-9181or http://www.laquintasanantonioriverwalk.com/).

Local Transportation:

- Super Shuttle
- Car Rentals
- Taxi Cabs and Limousines
- Uber, Lyft, Get Me Ride, and Wingz

Parking: Parking is available for guests of the La Quinta Inn & Suites surface parking lot for $14 per night. Other parking options are available at nearby surface lots and parking garages.

Registration: The registration and information table is located in the La Quinta Foyer. Hours of operation: Wednesday, October 24 from 4:00 to 9:00 p.m., Thursday, October 25 from 8:00 a.m. to 5:00 p.m., and Friday, October 26 from 8:00 a.m. to 5:00 p.m.

Presentation Preview Area: Computers are available for use by conference attendees in the hotel Business Center in the La Quinta's lobby on the ground floor.

Sessions: All symposia and paper sessions are in the Fiesta A Ballroom and Crocket East Room. Symposium and paper sessions will also be held in the Crockett West Room on Saturday morning.

Poster Sessions: Poster sessions are located in the Crockett West Room on Thursday and Friday.

Session Moderators and Presenters:
Session moderators must adhere to the presentation schedule and keep presenters on time. Please give each presenter a two-minute

warning before the end of their allotted time. All papers are 20 minutes in length. If a presenter is a “no-show” the session moderator will call a break for the appropriate amount of time. Moderators are asked to remind all attendees to silence cell phones. Presenters and moderators are expected to arrive at the meeting room 20 minutes prior to the beginning of the session in order to load your presentation on to the session computer unless it has been pre-loaded by the moderator. All presentations must be in Microsoft Office format.

Vendors & Exhibits: Vendor and exhibit space is in the Fiesta B Ballroom on the ground floor of the conference hotel. The room is open 8:00 a.m. to 5:00 p.m. on Thursday and Friday. The room will be accessible from 7:30 a.m. to 5:30 p.m. for use by vendors/exhibitors.

Conference Merchandise: Conference t-shirts and coffee cups may be purchased at the registration table. Supplies are limited.

Breaks and Refreshments: Coffee and light refreshments will be served in Bowie East Room.

Early Bird Party: The Early Bird Party is in the Fiesta Ballroom on Wednesday, October 4 from 7:00 p.m. to 11:30. Free food and drinks are available while they last. A cash bar is also available.

Board Meetings: Two meetings of the Plains Anthropological Society Board of Directors are scheduled. The first meeting is at 6:00 p.m. on Wednesday, October 24 in the Crockett East Room. The second meeting immediately follows the Plains Anthropological Society business meeting in the Fiesta A Ballroom on Friday, October 26.

Business Meeting: The annual business meeting of the Plains Anthropological Society is scheduled for 5:00 p.m. in the Fiesta A Ballroom on Friday, October 6.

Student Workshop Luncheon: In addition to student paper and poster competitions, a session will be available for students. It is hosted by the Plains Anthropological Society Student Affairs Committee. The workshop includes a lunch and will be held in the Bowie West Room of the La Quinta from noon to 1:00 p.m. on Friday, October 26, 2017.

Thursday Reception: The annual reception for conference attendees is planned for Thursday, October 25 from 5:30 to 8:30 p.m. at the Institute of Texan Cultures (ITC) (located at 801 E. Cesar E. Chavez Blvd., at the corner of Chavez and Tower of the Americas Way). The ITC is located on the HemisFair Park (approximately one mile south of the conference hotel). The ITC has its origin in the 1968 HemisFair celebration and serves as Texas' primary center of multicultural education. Parking is available to the west of the ITC. Bus transportation from the La Quinta to the ITC will be available from around 5:30 to 8:30.

Reception highlights:

- Free Texas-inspired appetizers and drinks are available while they last.
- New exhibits featuring beer brewing in Texas and El Dia De Los Muertos
- Indoor and outdoor exhibits featuring the diverse cultures in Texas and material from UT San Antonio's Special Collections.

Banquet, Keynote Address: A banquet will be held in the Fiesta CD Ballroom at 7:00 p.m. on Friday, October 26. This year's keynote address speaker is Dr. Carolyn Boyd. Dr. Boyd is the Shumla Endowed Research Professor in the Department of Anthropology at Texas State University. She is the founder of a nonprofit organization, Shumla Archaeological Research and Education Center (www.shumla.org), which was established in 1998 to preserve the oldest known "books" in North America – the rock art of the Lower Pecos Canyonlands in southwest Texas and Coahuila, Mexico. Boyd is the ex officio head of research for Shumla and serves on the organization's board of directors. Boyd received her doctorate in archaeology from Texas A&M University based on her analysis of the 4,000-year-old rock art of the Lower Pecos. She is author of Rock Art of the Lower Pecos, published in 2003 by Texas A&M University Press and The White Shaman Mural: An Enduring Creation Narrative, published in 2016 by the University of Texas Press, which received the 2017 Scholarly Book Award from the Society for American Archaeology. She has been published in numerous peer reviewed journals, such as Antiquity, American Antiquity, Latin American Antiquity, Revista Iberoamericana de Lingüística, and Archaeometry and has contributed chapters in several edited volumes. Boyd teaches Field Methods in Rock Art, a three-week field school offered through Texas State University, and gives numerous lectures around the country and abroad.

Dr. Boyd's Keynote Address is entitled:
The White Shaman Mural: An Enduring Creation Narrative in the Rock Art of the Lower Pecos

The prehistoric hunter-gatherers of the Lower Pecos Canyonlands of Texas and Coahuila, Mexico, created some of the most spectacularly complex rock art of the ancient world. Perhaps the greatest of these masterpieces is the White Shaman mural, an intricate painting that spans some twenty-six feet in length and thirteen feet in height on the wall of a shallow cave overlooking the Pecos River. In The White Shaman Mural, Carolyn E. Boyd

takes us on a journey of discovery as she builds a convincing case that the mural tells a story of the birth of the sun and the beginning of time—making it possibly the oldest pictorial creation narrative in North America.

Unlike previous scholars who have viewed Pecos rock art as random and indecipherable, Boyd demonstrates that the White Shaman mural was intentionally composed as a visual narrative, using a graphic vocabulary of images to communicate multiple levels of meaning and function. Drawing on twenty-five years of archaeological research and analysis, as well as insights from ethnohistory and art history, Boyd identifies patterns in the imagery that equate, in stunning detail, to the mythologies of Uto-Aztecan speaking peoples, including the ancient Aztec and the present-day Huichol. This paradigm-shifting identification of core Mesoamerican beliefs in the Pecos rock art reveals that a shared ideological universe was already firmly established among foragers living in the Lower Pecos region as long as four thousand years ago.

Conference Guided Tours: Two guided bus tours are scheduled for Wednesday, October 24, 2018. Weather in San Antonio will be pleasant and likely warm, so please plan to dress appropriately.

The all-day tour will be to the Gault Site. The bus will promptly leave the La Quinta at 7:00 a.m. and return to the hotel at approximately 5:00 p.m. Tours of the site will be given by Dr. Michael Collins and Clark Wernecke and the Gault Site staff. The trip includes water and a lunch. Please wear outdoor clothing and shoes.

A half-day tour to Mission San Jose and Mission San Juan and the Mission San Juan acequia system is also planned. The tour will be led by San Antonio Missions National Historical Park archaeologist Susan Snow. The bus will leave the La Quinta at 12:30 p.m. and return to the hotel at approximately 5:00 p.m. Please wear outdoor clothing and shoes.

PRESENTATION SCHEDULE

THURSDAY MORNING, OCTOBER 25, 2018

Session 1, Crockett East Room
General Session: *Historical Archaeology*
Danny Walker, Moderator

9:00-9:20	William Billeck, Kendra McCabe: *pXRF Analysis of Opacifiers Used in White Drawn Glass Beads in the 17th to 19th century in the Plains and Midwest*
9:20-9:40	Mark Howe: *Smeltertown: A Community lost to Time along the U.S – Mexico Border.*
9:40-10:00	Danny Walker, Carolyn Buff, Rory Becker, Patrick Walker: *The Continuing Search to Preserve a Lost Indian Wars Mass Grave in Central Wyoming.*
10:00-10:20	Mark Howe, Casey Hanson: *Falcon Reservoir: Efforts to Preserve an Endangered Landscape.*
10:20-10:40	**Break**
10:40-11:00	Tricia Waggoner: *From Mission to Museum: Recent Investigations at the Kaw Mission State Historic Site (14MO368)*
11:00-11:20	Michael Jordan: *Tracing Connections Between Nineteenth Century Southern Cheyenne Drawings: Expanding the Unit of Analysis in the Study of Plains Indian Ledger Art*
11:20-11:40	Josh Collins: *A Survey of Arched Stone Cellars in Eastern Kansas*
11:40-12:00	Kent Buehler, Angela Berg, Carlos Zambrano: *What's the Strangest Case We've Ever Done? This One. Definitely.*

Session 2, Crockett West Room
Symposium: *Student Poster Award Competition*
Cherie Haury-Artz and Michael Fosha, Moderators
9:00-11:00

A. Dakota Larrick, Leland Bement: *Modelling Landscape Use at the Bull Creek Paleoindian Site*

B. Danielle Soza, Evelyn Pickering, François Lanoë, María Nieves Zedeño: *Four Horns Lake: Physical and Historical Interactions*

C. Marie Taylor, Amber Czubernat, Alyssa Axe: *The Final Chapter at the Fossil Creek Site (5LR13041), Larimer County, Colorado: Investigation of Hearth-centered Activity Areas*

D. Paul Buckner, Madeline Kunkel, Jessica McCaig: *A Second Chance for Archaeology: Measures for the Stabilization, Preservation, and Study of a Disturbed Rock Shelter, Larimer County, Colorado*

E. Raymond Sumner: *Folsom Point Diggings: The Quest to Rediscover the T. Russell Johnson Site and Its Associated Artifacts in Northern Colorado*

F. Jennifer Lemminger: *North Fork Cave #1 (48PA201): Descriptive Analysis of the Wood from Cultural Levels 6/7*

G. Alaura Hopper, John Johnson, Alexandra Wolberg: *Fear and Loathing Among the Fremont People: A Study of Granaries in Northwestern Colorado*

H. Jason Burris: *Flotation of Disturbed Contexts at the White Cat Village Site, Nebraska*

I. Ashley Eyeington, Ken Lawrence: *Analysis of Four Burned Rock Features from 41PP416 at Palo Pinto State Park, Palo Pinto County, Texas*

J. Matthew Colvin: *Further Evaluation of Shoreline Erosion Rates along the Upper Oahe Reservoir, South Dakota*

K. Margaret Patton: *Magnetometry and Ground Penetrating Radar at the Junction Site (DkPi-2): A Late Prehistoric Campsite on the Northern Plains*

Session 3, Fiesta A Ballroom
Symposium: *Archaeology at the Gault Site, Texas: Digging Deeper*
Clark Wernecke, Organizer

10:00-10:20 D Clark Wernecke: *The Incised Stones from the Gault Site, Central Texas*
10:20-10:40 Sergio Ayala: *Stone Tool Production Behaviors of the Gault Assemblage - Experimental Archaeology & Technological Analysis*
10:40-11:00 Robert Lassen: *The Clovis and Later Paleoindian Components of Area 15 at the Gault Site*
11:00-11:20 Laura Vilsack, Sergio Ayala: *Area 12 - Gault Assemblage - Debitage Analysis*
11:20-11:40 Thomas Williams: *Of Light and Grain: Optically-Stimulated Luminescence ages from Excavation Area 15 of the Gault Archaeological Site*
11:40-12:00 Nancy Velchoff: *The Gault Assemblage: its manufacture and use*

THURSDAY AFTERNOON, OCTOBER 25, 2018

Workshop, Fiesta B Ballroom
Flintknapping Demonstration with Eugene Gryba
Heather Smith, Brendon Asher Organizers
1:00-4:00

Session 4, Fiesta A Ballroom
Symposium: *A Public Archaeology PANdemic? An Introduction to the Florida, Oklahoma, Texas & Utah Public Archaeology Networks*
Bonnie Pitblado, Organizer

1:00-1:20 William Lees: *FPAN: Public Archaeology on the Great (Coastal) Plains*
1:20-1:40 Bonnie L. Pitblado: *An Introduction to the Oklahoma Public Archaeology Network (OKPAN)*

1:40-2:00 Todd Ahlman: *Joining the PANdemic: An Introduction to the Texas Public Archeology Network*

2:00-2:20 Laura Cruzada: *Defining Public Archeology in the Digital Age*

2:20-2:40 Amy Reid: *A Public Archaeology Website for a Texas-Sized Public*

2:40-3:00 Tristan Harrenstein: *Prodigious Public Programming: Useful Trends in the Course of FPAN's Thirteen Years*

3:00-3:20 Meghan Dudley: *PAN-ing for Stewards: Developing a Stewardship Program for Oklahoma*

3:20-3:40 Sarah Luthman: *Investigating a Shelter on the Southern Plains: Using State Standards to Guide Project Archaeology K-12 Curriculum Development*

3:40-4:00 Shawn Lambert: *Making SENSE of Archaeology: Developing Curriculum and Multi-Sensory Experiences for the Visually Impaired*

4:00-4:20 Allison Douglas: *Improving Anthropological Literacy in Oklahoma*

4:20-4:40 Kate Newton: *Social Media and Public Archaeology: An OKPAN Perspective*

4:40-5:00 Amy Clark, Bonnie Pitblado: *Bridging Stakeholders Through Research: Goals and Initial Activities of the Gang of First American Researchers*

Session 5, Crockett West Room
General Poster Session: *Northern and Central Plains*
2:00-4:00

A. Adam Bunger, Laura Peck, Dagny Anderson, Kristine, Carlson, Douglas Bamforth: *Plains Village Excavations at Lynch Nebraska, 25BD1*

B. Margaret Wiebelhaus, Natalie Chouinard Andrew, Kracinski K.C., Carlson, Douglas Bamforth:

Landscape and Geophysical Analysis at the Lynch (25BD1) Nebraska

C. Franklin Conard: *Nemec-Dymacek: A Unique Stone Arched Ceiling Springhouse in Eastern Kansas*

D. Marcel Kornfeld, J.M. Adovasio, Mary Lou Larson: *Northernmost Juniper Sandal and other Perishables from Last Canyon Cave, Montana*

E. Jennifer Banks: *Dismal River Housing: a comparative study of Apache housing structures*

F. Laura L. Scheiber, Mackenzie J. Cory, Emily C. Van Alst: *Heritage and Sustainability in the West: The 2018 Bighorn Archaeology Field School, Park and Fremont Counties, Wyoming*

G. Lawrence Todd, Kyle Wright, John Kappelman, Jack Hofman: *Enigmatic Wooden Structures, Shoshone National Forest, NW Wyoming*

H. Mary Adair, Emily Johnson: *Central Plains tradition plant use: A comparison of Archaeobotanical Remains from three Itskari phase sites*

I. Barbara M. Crable, Jock Hofman, Lawrence C. Todd, Daniel Dalmas: *Stoneworking at Anderson Lodge, Washakie Wilderness, Wyoming*

Session 6, Crockett East Room

Organized Paper Session: *Student Paper Competition*

Laura Scheiber, Organizer

1:00-1:20 Kathryn Cross: *The Archaeology of Late-19th and Early-20th Century African American Life in Dallas, Texas*

1:20-1:40 Travis Jones: *Revisiting Huff Village: Toward Generational Timescales for Plains Villages*

1:40-2:00 Devin Pettigrew: *Results and Effective Protocol of a Naturalistic Projectile Experiment*

2:00-2:20 Amanda Anne Burtt: *Unlikely Allies: Modern Wolves and the Diets of Pre-contact Domestic Dogs*

Session 7, Crockett East Room
General Session: *Zooarchaeology and Archaeobotany*
Jodi Jacobson, Moderator

2:40-3:00 Margaret Patton, Shalcey Dowkes: *Late Prehistoric Period Shell Bead Production at Cluny Fortified Village (EePf-1)*

3:00-3:20 Rob Bozell: *Faunal Remains from the Kraus 1 Site: A Late Woodland (Keith Phase) Bison and Mussel Processing Component in Central Kansas*

3:20-3:40 Jodi Jacobson, Susan Sincerbox: *Grease, Rats, Dogs, and Rivers: Cultural Versus Taphononomic Bone Modifications at a the Late Prehistoric Site 41HM51 in Central Texas*

3:40-4:00 Britt Bousman: *A new calibrated chronology for the introduction of cattle and horses into the Southern Plains*

4:00-4:20 Cody Newton: *Bones and Bullets: 1880s U.S. Cavalry animal consumption at the T-up T-down military camp*

4:20-4:40 Mary J Adair: *A Reconstruction of Late 18th Century Omaha Plant Use: Ethnohistoric Records and Archaeobotanical Remains from Big Village (25DK5)*

FRIDAY MORNING, OCTOBER 26, 2018

Session 8, Fiesta A Ballroom
General Session: *Paleoindian and Archaic*
David Kilby, Moderator

8:20-8:40 George Zeimens, George Frison: *Continued Investigations at the Powars II Paleoindian Red*

Ochre Mine in the Hartville Uplift Range in Wyoming

8:40-9:00 Greg Pierce, Marieka Arksey: *Investigations at the Seminoe Beach site*

9:00-9:20 Brendon Asher, Heather Smith: *Diminutive Projectile Points from Blackwater Draw Locality No. 1, Roosevelt County, New Mexico*

9:20-9:40 Leland Bement, Brian Carter Dakota, Larrick Josh, Davis, Kirsten Tharalson: *Continuing Excavation at the Bull Creek Paleoindian Camp, Oklahoma Panhandle*

9:40-10:00 Marvin Kay, Leland Bement: *Modeling Folsom point utility at the Cooper bison kills, Oklahoma*

10:00-10:20 **Break**

10:20-10:40 Kelton Meyer: *Spatial Considerations for Paleoindian Use of Carey Lake, a High Altitude Locale in Larimer County, CO.*

10:40-11:00 Jason LaBelle, Kelton Meyer: *Kill, Camp, and Repeat: A Return to the Lindenmeier Folsom Site of Northern Colorado*

11:00-11:20 David Kilby, Marcus Hamilton Sean, Farrell: *Bonfire Shelter: New Fieldwork and Old Questions*

11:20-11:40 Ian Taylor, Alan Slade: *Early Paleoindian Fluted Points in London: Two Collections of North American Stone Tools Revisited in the British Museum*

Session 9, Crockett East Room

Symposium: *An Active Environment: Landscapes and Natural Resources on the Plains and Prairie*

Ryan Klataske and Jakob Hanschu, Organizers

9:00-9:20 Jakob Hanschu: *Agencies, Assemblages, and Applications: Theorizing Agricultural Drainage in Iowa*

9:20-9:40 Eric Skov: *Looking Up: Patterns of Sites Distribution on Upland Landscapes in Northeastern Kansas.*

9:40-10:00 Ryan Klataske: *Conservation and Engaged Anthropology in the Great Plains*

10:00-10:20 Amber Campbell: *Climate Change and the Ecological Context of Beef Production in the Great Plains*

10:20-10:40 Robert Hitchcock: *Peoples of the Plains: Communities, Common Property Management, and Economic Change in the Heartland*

Session 10, Crockett West Room
General Poster Session: *Science and Public Outreach*
9:00-11:00

A. Steven Holen, Kathleen Holen: *Use Wear and Breakage Patterns on Cow and Elephant Limb Bone Produced from Anvil Contact During Breakage Experiments*

B. Alyssa Rina, Daniel Dalmas, Kate Breitenstein, Beverly Perkins: *Obsidian Source Filtering: Assessing Multiple XRF Protocols for Geochemical Analysis of NW Wyoming Collections*

C. Steven De Vore, Adam Wiewel: *Search for Fort William Stockade (32WI988) at the Fort Union Trading Post National Historic Site, North Dakota*

D. Rick Weathermon: *Obsidian from a Late Archaic Cave Occupation in the Black Hills of South Dakota*

E. Hope Maunders: *Residual Analysis of Historical Medicine Bottles*

F. Linda Scott Cummings, R. A. Varney, Thomas W. Stafford, Jeff Speakman, Donna C. Roper: *NSF Study of Radiocarbon Dating Charred Food Crust: Request for Samples for Dating*

G. Susan Vehik: *A Fourteenth Century Southern Plains Star Chart*

H. Meghan Dudley, Craig Lee, Tom Origer Todd, Kristensen: *A Pilot Study of Non-Volcanic Natural Glass Hydration Dating*

I. Lawrence Todd, Kierson Crume, Kyle Wright, John Fernandez, Greg Bevenger: *Engaging the next generation and promoting local stewardship: Partnerships in Archaeology*

J. Kaylee Kerns, Jakob Hanschu: *Assessing Public Perceptions of Archaeology in Kansas*

K. Thomas Thompson: *An Extensive Lithic Analysis "in the Rough": Interpretations of Toolstone Material Variability and Utilization at Twenty Phase II Survey Sites within or near the Arkansas River Valley of Oklahoma and Arkansas.*

L. Abigail Fisher, Ian Jorgeson: *Exploring methods by which to quantify confidence in canid species determination*

M. Ryan Mathison: *Excavations at the Humphrey Site*

Student Workshop Luncheon, Bowie West Room
12:00-1:00

FRIDAY AFTERNOON, OCTOBER 26, 2018

Session 11, Fiesta A Ballroom
Symposium: *Geoarchaeology in Cultural Resource Management (CRM): Why We Do It and Its Role and Future in CRM*
Karl Kibler and Ken Lawrence, Organizers

1:00-1:20 James Abbott: *The Role of Geoarcheology in TxDOT's CRM program*

1:20-1:40 Debra Green: *Practice Theory: The Role of Geoarchaeology in Northern Plains Cultural Resources Management*

1:40-2:00 Karl Kibler: *The Right Method for the Right Landform: Applying Geoarcheology to Archeological Survey*

2:00-2:20	Charles Frederick: *Why look? The advantages of archeological sites found in dynamic geomorphic settings.*
2:20-2:40	**Break**
2:40-3:00	Joe Artz: *"It's All Disturbed:" The Role of Geoarchaeology in CRM in Urbanized Landscapes*
3:00-3:20	Arlo McKee: *How Can High-Resolution Survey and Measurement Technologies Be Leveraged to Better Understand Site Condition and Formation Processes?*
3:20-3:40	Ken Lawrence, Charles Frederick: *Geoarchaeological Investigations in Palo Pinto Mountains State Park (PPMSP), North Central Texas*
3:40-4:00	David Yelacic: *A Cross-Section of San Antonio Geoarchaeology*

Session 12, Crockett East Room
General Session: *Southern Plains*
Christopher Lintz, Moderator

1:20-1:40	Dawn Rutecki: *Bands, Tails, and Stripes: Use and Meaning of Raccoons at Spiro Mounds*
1:40-2:00	Roger Boren: *Archaeoastronomy and Rock Art in the Big Bend Region of Texas*
2:00-2:20	Christopher Lintz: *Tentative Cultural Affiliation Based on Cord-marked Ceramic Decorative Motifs from the Connellee Peak, Site (41MY5), A Middle Ceramic Period Geographical Outlier in Motley County, Texas*
2:20-2:40	Bryon Schroeder: *Maize, Baskets, and Atlatls The Radiocarbon Record from Spirit Eye Cave in West Texas*
2:40-3:00	Donald Blakeslee: *Oñate's Necklace: Reconsideration of Aspects of Plains-Southwestern Exchange*

3:00-3:20 Thomas Thompson, Kevin Blackwood: *A Hydrogeological and Archaeological Study of One Cave in the Arbuckle Mountains of South Central Oklahoma*

Session 13, Crockett West Room
General Poster Session: *Paleoindian and Archaic*
2:00-4:00

A. Jonah Buxton, Lawrence Todd, Daniel Dalmas, William Dooley: *Late Archaic Landscapes: Greater Yellowstone Ecosystem, Absaroka Range, Northwest Wyoming*
B. Mary Lou Larson, Marcel, Kornfeld: *Bottoms Up: The Hell Gap Site Paleoindian Deposits*
C. Ryan Breslawski, Brian Andrews David, Meltzer: *The Goodson Shelter Archaeofauna and Archaic Subsistence in Eastern Oklahoma*
D. Carlton Gover, Rachael Shimek, Marcel Kornfeld, Mary Lou, Larson, Justin Garnett: *Hell Gap Site National Historic Landmark: The 2018 Summer Field Season*
E. Heather Smith, Brendon Asher: *Clovis Biface Variability at Blackwater Draw Locality 1: A Geometric Morphometric Analysis*

SATURDAY MORNING, OCTOBER 27, 2018

Session 14, Crockett East Room
General Session: *Northern Plains*
Paul Picha, Moderator

8:40-9:00 David Williams, Cassie Vogt, Kelly Morgan: *Development of a National Register of Historic Places Multiple Property Documentation Form for Stone Circle Sites in South Dakota*

9:00-9:20	James D. Keyser, Linea Sundstrom: *Ambrose Bierce's Indian Inscriptions: Biographic Art Along the Bozeman Trail*
9:20-9:40	Fred Schneider: *Melvin Gilmore: Botanist and Ethnographer*
9:40-10:00	Paul Picha: *Initial Middle Missouri Variant Commodification: Molluscan Remains from Sommers Village (39ST56), Stanley County, South Dakota*
10:00-10:20	**Break**
10:20-10:40	Kenneth L Kvamme: *Geophysical Findings at Molander Village (32OL7), North Dakota*
10:40-11:00	Mark Mitchell, Stephen Perkins: *Design and Construction of Community Fortifications at the Molander Site, Oliver County, North Dakota*
11:00-11:20	Rory Becker: *Virtual Molander: Capturing Archaeology in Virtual Reality*
11:20-11:40	Dennis Toom: *The Government Creek Site and Late Plains Village Trade Relations in the Northern Plains*
11:40-12:00	Maria Zedeno, William Reitze: *A Preliminary Assessment of Prehistoric-Contact Period Blackfoot Camp Demography*

Session 15, Crockett West Room
General Session: *Central Plains*
Nolan Johnson, Moderator

8:20-8:40	Crystal Dozier: *Evidence of feasting in the Southern Plains: Maintenance and reinforcement of the Toyah social field, 1250-1650 CE*
8:40-9:00	Marieka Arksey, Greg Pierce: *Public Outreach and Citizen Science in Wyoming Archaeology*
9:00-9:20	Richard Krause: *The Arikara Medicine Lodge in Middle Missouri Archaeology*
9:20-9:40	Timothy Baugh: *Wichita Ethnogenesis*

9:40-10:00 James Ralston, Lauren Ritterbush: *Search for the Kanza Indian Eastern Treaty Community*

10:00-10:20 **Break**

10:20-10:40 Nolan Johnson: *Ceramics at the Logan Creek Site (25BT3)*

10:40-11:00 Larry Grantham: *Central Plains Tradition SItes in Northwest Missouri: Curernt Information*

11:00-11:20 Brad Logan: *Quixote Feasts: Woodland Period Burned Rock Features in the Kansas City Locality*

11:20-11:40 Douglas Bamforth, Kristen Carlson: *Geophysics and Test Excavations at the Lynch Site (25BD1)*

11:40-12:00 Linda Scott Cummings, R. A. Varney, Thomas W. Stafford, Jr., John Southon, Jeff,Speakman: *Examining Food: Beyond Identification, Calories, and Nutrients - What is the Carbon Content?*

Session 16, Fiesta A Ballroom

Symposium: *Advancing Theory and Methods in Contact Period Archaeology*

Brandi Bethke and Sarah Trabert, Organizers

8:00-8:20 Kacy Hollenback: *Colonialism as Process: A View from the Northern Great Plains*

8:20-8:40 Laura L. Scheiber: *Myths, Memories, and Marginalization: Multidisciplinary Approaches to Culture Contact Archaeology on the Western Plains*

8:40-9:00 Wendi Field Murray: *Finding Coalescence in the Coalescent: A View from Like-A-Fishhook Village, North Dakota*

9:00-9:20 Adam Wiewel: *Arikara Agricultural Production at Fort Clark, North Dakota*

9:20-9:40 Brandi Bethke: *Revisiting the Horse in Blackfoot Culture: Continuity, Change, and Nomadic Pastoralism*

9:40-10:00 Christopher Roos, Kacy Hollenback, Nieves Zedeno, Brandi Bethke: *Pox, Pistols, and Ponies:*

	Indigenous Fire Regime and Bison Hunting Change after "Contact"
10:00-10:20	**Break**
10:20-10:40	Cate Wood: *Landscapes of liminality: Trail of Tears Disbandment Sites in Indian Territory*
10:40-11:00	Deanna Byrd: *The Last Choctaw Removals, 1902-1903*
11:00-11:20	Sarah Trabert: *Reading between the lines of historical documents: The Archaeology of a Wichita Village (34KA3)*
11:20-11:40	Tamra L. Walter: *Reframing the Colonial Experience: Native and Spanish Interactions at San Sabá and Mission San Lorenzo*
11:40-12:00	Samuel Duwe: *Discussant*

SYMPOSIA ABSTRACTS

Archaeology at the Gault Site, Texas: Digging Deeper
Session 3 (*Thursday Morning*)
Organized by D Clark Wernecke (The Gault School of Archaeological Research), Thomas Williams (The Gault School of Archaeological Research)

Since 1999 the Gault School of Archaeological Research has worked on the Gault Archaeological Site in Central Texas. Ten years of excavations looked at ca. 3% of the site and recovered 2.6 million artifacts covering occupations over 16,000 years. Though past looting and collecting damaged and destroyed many areas with evidence of occupation in the last 8,000 years there is still abundant evidence to show use of the site by nearly all prehistoric central Texas cultures. Newly published research focused on excavation Area 15 has also established sound geological context and dating showing significant Clovis era occupation and earlier occupation by a previously unknown culture that adds data to the ongoing search for the first peoples in the Americas.

A Public Archaeology PANdemic? An Introduction to the Florida, Oklahoma, Texas & Utah Public Archaeology Networks; Orga
Session 4 (*Thursday Afternoon*)
Organized by Bonnie L. Pitblado (University of OK & OKPAN)

In 2004, inspired by a long tradition of public archaeology in Arkansas, Louisiana, and the Great Plains, Florida archaeologists worked with the state legislature to create the Florida Public Archaeology Network (FPAN) to promote the stewardship and protection of Florida's archaeological resources. In 2016, Oklahoma archaeologists concluded that their outreach efforts would benefit most from an entity bridging the state's diverse stakeholders: archaeologists from all sectors, avocationals, members of Oklahoma's 39 tribal nations, landowners, and others. This led to OKPAN's unveiling in 2017. At around that time, Texas archaeologists determined that Texas too could benefit from a network that leveraged individual units to be more than the sum of

their parts and founded TxPAN. Finally, about six months ago Utah's Public Archaeologist elected to bring the PAN-approach to Utah stakeholders and began laying the groundwork for UPAN. This symposium introduces all four "PAN" groups, highlights their missions and core initiatives, and invites members of the audience to brainstorm with presenters how the PANs can maximize their value to the people of their states.

An Active Environment: Landscapes and Natural Resources on the Plains and Prairie

Session 9 (*Friday Morning*)

Organized by Ryan Klataske (Kansas State University), Jakob Hanschu (Kansas State University)

Human-environment interaction research has a long history in anthropology and increasingly contributes to a flourishing field of cross-disciplinary research across social and natural sciences aimed at understanding the ways humans and environments act on one another. This research and the unique perspectives of anthropology are vitally important in the face of human-induced global environmental change and societal disruptions of the 21st century. This symposium focuses on human-environment interactions in the Great Plains and prairies of North America, connecting local and regional issues of landscape change, natural resource use, and conservation to global and cross-disciplinary debates about our planet's past, present, and future. It brings together a unique combination of data and approaches from archaeology, ethnography, engaged anthropology, political ecology, history, and environmental and agricultural studies. By discussing diverse topics including agriculture, ranching, water, wildlife, conservation, and policy, this symposium advances conversations about human-environment interactions and the importance of the Plains.

Geoarchaeology in Cultural Resources Management (CRM): Why We Do It and Its Role and Future in CRM Symposium
Session 11 (*Friday Afternoon*)
Organized by Karl Kibler (Raba Kistner Environmental), Charles Frederick (Consulting Geoarchaeologist), Ken Lawrence (SWCA Environmental Consultants), Debra Green (Oklahoma Archeological Survey)

The earth sciences and archaeology have a long interdisciplinary relationship that dates back to at least the late 19th century. The practice of geoarchaeology in CRM however has not been universally applied with standards varying from state to state and between regulatory agencies. We contend that geoarchaeology is a vital component of CRM and should be at the forefront of nearly all phases of investigation. The practice of geoarchaeology, in part, can make CRM more cost effective without sacrificing ethical responsibilities by streamlining surveys that focus on settings of high quality data-yielding sites and aiding in the design of the questions we ask of the archaeological record, all of which is important in climates of budgetary restraint. The papers presented here present critiques and recommendations for regulators, project sponsors, and contractors, as well as offering new and innovated practices, techniques, and analyses for geoarchaeology in CRM.

Advancing Theory and Methods in Contact Period Plains Archaeology
Session 16 (*Saturday Morning*)
Organized by Brandi Bethke (University of Oklahoma), Sarah Trabert (University of Oklahoma)

In the last thirty years, archaeologists have made many advancements towards understanding the complexities of contact situations that occurred in North America following European colonization. More recent work has focused on “decolonizing” our understanding of these experiences, specifically focusing on Indigenous responses to colonialism as opposed to presenting these stories from a Euro-centric worldview. This session brings together researchers working across the Plains to explore the many ways that Plains archaeology is advancing theory and methods for

understanding the multiplicity of Indigenous experiences during the Contact Period.

PAPER & POSTER ABSTRACTS

Abbott, James (Texas Department of Transportation)
Session 11: *The Role of Geoarcheology in TxDOT's CRM program*

Geoarcheology plays an integral role in CRM-focused archeology in Texas, and the Texas Department of Transportation (TxDOT) is a leader in its application. In this paper, I describe the many ways that TxDOT and its consulting partners utilize geoarcheology to make its cultural resource management responsibilities more efficient and effective in all phases of transportation planning, site evaluation, and mitigation of project impacts. To illustrate different aspects of this focus, I present examples drawn from the last 30 years of TxDOT's archeology program.

Adair, Mary J (University of Kansas)
Session 7: *A Reconstruction of Late 18th Century Omaha Plant Use: Ethnohistoric Records and Archaeobotanical Remains from Big Village (25DK5)*

Located along the Missouri River near present day Homer, Nebraska, Big Village (25DK5) represents a principle and permanent occupation of the Omaha Tribe from ca. 1775 – 1819, with possible reoccupations in the 1830s and 1840s. In 1983, The NSHS responded to Highway construction along US Highway 77 in Dakota County, Nebraska by excavating a portion of the Big Village site. Botanical remains were recovered by waterscreening and flotation from the lower portions of seven cache pits. The identified remains are compared to historical data on Omaha plant use compiled by Melvin Gilmore in the early 1900s. The archaeobotanical data are also compared to similar assemblages recovered from other central Plains early historic sites to discuss region wide subsistence change or continuity during a time of European contact and trade.

Adair, Mary (University of Kansas), **Emily Johnson** (Independent Researcher)
Session 5: *Central Plains tradition plant use: A comparison of Archaeobotanical Remains from three Itskari phase sites*

Using archived botanical samples, we examine the role of plant use at Palmer Locality (25NC29), Schmidt (25HW301), and Olsen (25CU23) sites, assigned to the Itskari phase. Although different recovery methods were used in the collection of botanical samples, the preservation of carbonized remains allows for a presence/absence comparison of taxa among the sites. The samples are dominated by maize (Zea mays), with bean (Phaseolus sp.), sunflower (Helianthus annuus), and marshelder (Iva annua) present frequently. Through our analysis, we illustrate how the botanical remains from these assemblages represent subsistence practices comparable with those of other Central Plains Tradition (CPt) sites. There is little evidence from these sites alone to suggest that the occupants maintained a subsistence strategy significantly different from other CPt occupations. Overall, these sites represent a continuation of small-scale regional agriculture, and serve as an additional data set for the continued analysis of plant use in the Central Plains.

Adovasio, J.M., see Kornfeld, Marcel

Ahlman, Todd (Texas State University)
Session 4: *Joining the PANdemic: An Introduction to the Texas Public Archeology Network*

The Texas Public Archaeology Network (TxPAN) is still in its developmental stages and has identified a mission to promote an understanding and appreciation by the public of archaeology. The network is currently a coalition of federal and state agency personnel, university and private sector archaeologists, tribal members, and interested avocational archaeologists who seek to make archaeology more meaningful to Texas. Currently we are creating a network that will serve as a clearinghouse of information and resources so that members can achieve our mission. TxPAN will identify and use existing and new communications, marketing

and educational tools to promote archeology and cultural resources among a wider audience, beyond the traditional archeological community.

Anderson, Dagny, see Bunger, Adam

Andrews, Brian, see Breslawski, Ryan

Arksey, Marieka, see Pierce, Greg

Arksey, Marieka (Office of the Wyoming State Archaeologist), **Greg Pierce** (Office of the Wyoming State Archaeologist)
Session 15: *Public Outreach and Citizen Science in Wyoming Archaeology*

The Office of the Wyoming State Archaeologist (OWSA) has become increasingly focused on implementing public outreach initiatives to more effectively engage Wyoming's citizenry in the work that we do. Archaeological investigations benefit from the inclusion of a wide range of stakeholders in the identification, investigation, interpretation, and preservation of these resources. As a public agency conducting archaeology, it is incumbent upon us to include interested individuals in the archaeological process; more effectively connecting participants to their local history and shared cultural heritage. The active inclusion of a wide range of individuals in the archaeological process serves to make our office, the work we do, and the archaeological record more relevant in today's world. This paper will highlight recent public outreach initiatives undertaken by OWSA and discuss the challenges and benefits of each.

Artz, Joe (Impact7G)
Session 11: *"It's All Disturbed:" The Role of Geoarchaeology in CRM in Urbanized Landscapes*

In CRM, "It's all disturbed" is too often used to justify ruling out the need for archaeological investigations in heavily developed cityscapes. In Iowa, CRM investigations have revealed many instances of well-preserved presettlement soils and

sediments beneath the 21st century town- and cityscapes of Iowa. This is illustrated by recent investigations of the early-settlement and pre-Contact landscapes that underlie Lansing, Iowa. Examples from other Iowa cities including Iowa City, Des Moines, and Fort Madison are also presented. The message geoarchaeologists must forcefully convey to all stakeholders in Section 106 compliance: When SSURGO says "Urban land," don't believe it.

Asher, Brendon (Eastern New Mexico University), **Heather Smith** (Eastern New Mexico University
Session 8: *Diminutive Projectile Points from Blackwater Draw Locality No. 1, Roosevelt County, New Mexico*

Chipped stone projectile points of unusually small sizes are occasionally noted from Paleoindian contexts. These points fall well below the mean linear length of other chipped stone projectiles classified within the same artifact typology. Here, a sample of diminutive Clovis projectile points from Blackwater Draw Locality 1 is considered. These examples, some of which were found in direct association with mammoth remains, run counter to the argument that prey size influences projectile point size and suggests that projectile point size must be interpreted and addressed at the site level within the behavioral context of Paleoindian mobility and planning depth. Various production agents are discussed, including exhaustive reworking of much larger points, recycling of broken point fragments, original production on small-size flakes or bifaces, and size-limiting factors due to the nature of the toolstone.

Asher, Brendon, see Smith, Heather

Axe, Alyssa, see Taylor, Marie

Ayala, Sergio (Sergio J Ayala)
Session 3: *Stone Tool Production Behaviors of the Gault Assemblage - Experimental Archaeology & Technological Analysis*

The Gault Assemblage is associated with the geologic unit below the Clovis horizon in Areas 12 and 15 at the Gault Site (41BL323), and primarily consists of fragmentary artifacts and a few whole specimens. Lithic analysis of the Gault Assemblage within these two areas provided a working set of reference parameters to begin experimental productions. This report outlines the strategies and techniques associated with the Gault Assemblage morphologies and flake scar signatures to discern both the macroscopic and artisan level production behaviors. The author will provide the principles behind the Gault Assemblage bifacial tool manufacturing, highlight the cultural elements/traits that differ from Clovis production behaviors, and discuss the relationships between material procurement, tool production, and tool type and function.

Ayala, Sergio, see Vilsack, Laura

Bamforth, Douglas (University of Colorado Boulder), **Kristen Carlson** (Augustana University)
Session 15: *Geophysics and Test Excavations at the Lynch Site (25BD1)*

Past archaeological work in northeastern Nebraska at the Lynch site identified one of the largest Plains Village sites known. This work indicates that people occupied the site in the 13th and 14th centuries. Ceramic evidence shows links to both Plains Tradition and Oneota occupations. The site represents an important period of social transformation in the history of people in the region, including the Arikara and Pawnee tribes, but it remains largely unpublished and little work has been conducted since the 1950s. In collaboration with the National Park Service/Midwest Archaeological Research Center, we obtained geophysical data on over 40 acres of the site and identified roughly 1300 archaeological anomalies. We excavated four of these, opening three bell-shaped pits and an amorphous trash pit. We also cored an additional 26 anomalies. Clusters of anomalies likely represent pits contained within houses, which will be the focus of the next phase of excavation.

Bamforth, Douglas, see Bunger, Adam

Bamforth, Douglas, see Wiebelhaus, Margaret

Banks, Jennifer (The University of Iowa)
Session 5: *Dismal River Housing: a comparative study of Apache housing structures*

Ancestral Apache sites located in the eastern Central Plains of Kansas and Nebraska date to AD 1500-1800, and are frequently associated with small, circular wickiup house structures. A number of these localities have a high degree of preservation that allows for a detailed study of the architecture and construction techniques of these people. This poster will use previously published data and the results from recent fieldwork to analyze household size and structure of the Dismal River Aspect. This study will allow us to compare data from new finds to data from previously excavated sites. Because the presence of Apache groups on the central Great Plains is part of a larger migration involving many different groups, we hope that the study of ancient household architecture can tell us something about past social landscapes.

Baugh, Timothy (Wichita Tribal History Center)
Session 15: *Wichita Ethnogenesis*

The term ethnogenesis refers to the formation of an ethnic group, in this case we will be discussing the construction of Wichita identity. Based on the archaeological evidence, the Wichita lived on the southern Plains from at least the Formative or Woodland period and perhaps earlier. Both Wissler and Kroeber placed the Caddoan speaking groups in the Southeast before moving onto the Plains. The linguist, Edward Sapir, seemed to support this position when he noted the correlation between Caddoan and Iroquoian language families. The archaeological and ethnographical position of Southeastern origin is supported by Hudson, but in relation to the Wichita, Kichai, Tawakoni, and Waco little verification is provided. This paper will examine the evidence between the Plains and Southeast as well as the Northeast. I will then provide potential routes of movement. The

intent of this paper is not to emphasize the route, but rather to understand social origins and identity.

Becker, Rory (EOU)
Session 14: *Virtual Molander: Capturing Archaeology in Virtual Reality*

The Nokia OZO camera uses eight lenses to capture 360-degree stereoscopic video and audio. These eight streams of video can then be stitched together to create a full virtual reality experience of the captured footage. Through the use of a VR headset, the processed footage is not just viewed in the traditional sense but can be experienced through both the audio and visual senses as if the person were present during filming. The OZO camera was used to capture VR footage during the 2018 excavations at the Molander site in North Dakota. The intent is to create a VR station at the North Dakota Heritage Center & State Museum which allows members of the general public who cannot visit the archaeological excavation in reality, to visit the site and see the excavations virtually.

Becker, Rory, see Walker, Danny

Bement, Leland (Oklahoma Archeological Survey), **Brian Carter** (Oklahoma State University), **Dakota Larrick** (Oklahoma Archeological Survey), **Josh Davis** (University of Oklahoma), **Kirsten Tharalson** (Oklahoma Department of Transportation)
Session 8: *Continuing Excavation at the Bull Creek Paleoindian Camp, Oklahoma Panhandle*

The 2018 field season at the Bull Creek Paleoindian camp in Beaver County, Oklahoma, uncovered the highest lithic concentration yet found at the site. The debitage concentration was dominated by quartzite biface reduction flakes but also contained Alibates biface thinning flakes. The broken ear from a lanceolate projectile point suggests at least some of the knapping was directed at projectile point refurbishing and manufacture. Also uncovered was a stone anvil and hammer stone set surrounded by shattered bison bones that is interpreted to be the residue from marrow

extraction. Other tools include an ovate uniface and several end and side scrapers, suggesting that hide working was likely performed. A line of four post holes, projecting into unexcavated areas, suggests the presence of a structure wall or wind break. Radiocarbon assays on charcoal and bison bone place these activities between 10,230 and 10,290 cal BP.

Bement, Leland, see Kay, Marvin

Bement, Leland, see Larrick, Dakota

Berg, Angela, see Buehler, Kent

Bethke, Brandi (University of Oklahoma)
Session 16: *Revisiting the Horse in Blackfoot Culture: Continuity, Change, and Nomadic Pastoralism*

While the work of John Ewers and others has provided a context for characterizing the transformations in Blackfoot culture that occurred as a result of the horse, there has been little research undertaken in terms of modeling this processes within a broader theoretical framework. Instead, observed "changes" are described as a "result" of the horse (e.g., the horse made the Blackfoot more mobile). In this paper, new modes of analysis are implemented in order to move beyond description of observed impacts of the horse on Blackfoot culture and towards a broader discussion of what these impacts mean in terms of culture change and continuity. Drawing from models of human interaction developed from world pastoralist studies, this work presents a conceptual framework for understanding the immediate and lasting impacts that the horse had on the Blackfoot people in terms of their own cultural logic.

Bethke, Brandi (University of Oklahoma), **Sarah Trabert** (University of Oklahoma)
Session 16: *Advancing Theory and Methods in Contact Period Plains Archaeology*

In the last thirty years, archaeologists have made many advancements towards understanding the complexities of contact

situations that occurred in North America following European colonization. More recent work has focused on "decolonizing" our understanding of these experiences, specifically focusing on Indigenous responses to colonialism as opposed to presenting these stories from a Euro-centric worldview. This session brings together researchers working across the Plains to explore the many ways that Plains archaeology is advancing theory and methods for understanding the multiplicity of Indigenous experiences during the Contact Period.

Bethke, Brandi, see Roos, Christopher

Bevenger, Greg, see Todd, Lawrence

Billeck, William (Smithsonian), **Kendra McCabe**
Session 1: *pXRF Analysis of Opacifiers Used in White Drawn Glass Beads in the 17th to 19th century in the Plains and Midwest*

White drawn beads are common in historic period archaeological assemblages and show very limited stylistic variation. A pXRF study of 490 beads from 14 sites, dating from the early 17th century to the late 19th century, demonstrates that while these white beads look highly similar, their chemical composition changes over time due to the use of different opacifiers. A lead-tin calx opacifier is limited to the early 16th century, calcium antimonate dominates from the late 17th to the end of the 18th century, and lead antimonate occurs only in larger drawn beads in the mid-18th and 19th centuries. Lead arsenate begins to be used in the 19th century and then becomes the predominant opacifier later in the century. pXRF is a nondestructive method that can assist in dating the ubiquitous white drawn beads that occur in most North American glass bead assemblages.

Blackwood, Kevin, see Thompson, Thomas

Blakeslee, Donald (Wichita State University)
Session 12: *Oñate's Necklace: Reconsideration of Aspects of Plains-Southwestern Exchange*

A review of Southwestern goods found in archaeological sites on the Great Plains suggests that many of the exchanges took place in ritual contexts rather than a simple economic exchanges. The obsidian, glaze wares, and turquoise found in Great Bend sites all had ritual significance in the Southwest. The literature there regarding marine shell is not as clear, but a wide review suggests that it also had symbolic significance. The Southwestern points of origin for obsidian and the glaze ware ceramics make clear that something other than simple economic trade was operating.

Boren, Roger (Center for Big Bend Studies, Sul Ross State University)
Session 12: *Archaeoastronomy and Rock Art in the Big Bend Region of Texas*

Recent findings, recognized in the rock art of the Black Hills of Brewster County, reveal cultural manifestations that serve to mark the seasons through observations of the summer and winter solstice sunrises. The discovery has led to similar revelations at a second rock art site also located in the Black Hills. The recent finding involves the interplay of light and shadow upon a petroglyphic two-ring concentric circle along with imagery resulting from the interaction. We suggest that this interaction functions as a summer solstice solar marker denoting the approach of the warm season. The strong similarity of this solar-related image to distinctive petroglyphs found in the Black Hills point to associations outside the immediate Big Bend region. These findings may offer suggestions as to the culture(s) involved in creating the predominantly abstract Black Hills rock art.

Bousman, Britt (Texas State Univeristy)
Session 7: *A new calibrated chronology for the introduction of cattle and horses into the Southern Plains*

New calibrations of radiocarbon dates from the Longhorn, Headstream, Lubbock Lake, Nash and Mustang Springs sites

provide the most reliable archaeological age estimates for the introduction of horses and cattle into early Protohistoric societies in the Southern Plains. The uncalibrated dates suggested a general 17th century and later occurrence, but the exact timing of the introduction is not clear. This is important because the 1680 Pueblo Revolt is believed to represent one of the earliest and the largest releases of domestic stock into the Southern Plains, and it is important to know if the Athabaskan acquisition of cattle and horses predated or post-dated this event. The calibrated dates indicate a probable mid 17th century introduction suggesting the earliest presence of cattle and horses predates the Pueblo Revolt. The direct radiocarbon dating of actual cattle and horse skeletal elements should be undertaken to improve our evidence of this culturally important event.

Bozell, Rob (History Nebraska)
Session 7: *Faunal Remains from the Kraus 1 Site: A Late Woodland (Keith Phase) Bison and Mussel Processing Component in Central Kansas*

Near the twilight of Woodland occupation on the Central Plains (1000-1200 CE), a group of Keith Phase people established a camp along Big Creek-a major Smoky Hill River tributary. The site (Kraus 1) was partially excavated in 2015 by the Kansas Archeology Training Program under the sponsorship of the Kansas Historical Society and the Kansas Anthropological Society. Most sediment was screened through 1/4- or 1/16-inch mesh. Recovered site data indicates Kraus 1 was a short-term hunting and processing camp. The feature and artifact inventories are neither rich nor diverse. The bulk of the recovered material is processed bison bone and mussel shell. Prior to the Kraus 1 investigation, most Keith phase archeology was focused on mortuary and semi-permanent habitation components. This sample fills a void in the Keith archeological record at least with respect to subsistence operations.

Breslawski, Ryan (Southern Methodist University), **Brian Andrews** (Rogers State University), **David Meltzer** (Southern Methodist University)
Session 13: *The Goodson Shelter Archaeofauna and Archaic Subsistence in Eastern Oklahoma*

In 2012-2015, Rogers State University lead excavations that recovered lithic and faunal materials from Goodson Shelter, an apparent Archaic camp in Craig County, Oklahoma. Radiocarbon and OSL dates indicate that cultural deposits date to as early as 6440 cal BP and span several millennia. The archaeofauna contains evidence for the exploitation of deer, rabbits, and freshwater mussels. Osteometics suggest a mixture of white-tailed and mule deer, the latter of which are rare in Holocene contexts east of 97 degrees W. These deer specimens show evidence for marrow extraction and burning. Goodson Shelter was also home to burrowing animals and carnivores that have disturbed the surrounding sediment and modified the assemblage through gnawing. Unfortunately, this bioturbation has probably obscured vertical trends that correspond to temporal variation in human subsistence. Regardless, Goodson Shelter provides a rare snapshot of the resources used by Archaic foragers on the eastern margins of the Great Plains.

Breitenstein, Kate, see Rina, Alyssa

Buckner, Paul (Colorado State University), **Madeline Kunkel** (Colorado State University), **Jessica McCaig** (Colorado State University)
Session 2: *A Second Chance for Archaeology: Measures for the Stabilization, Preservation, and Study of a Disturbed Rock Shelter, Larimer County, Colorado*

Second Chance Shelter (SCS) is a multi-component prehistoric rock shelter site located on private land in Larimer County, Colorado. Prior to documentation, SCS was heavily disturbed by a relic hunter's uncontrolled excavation. Analysis of cultural materials found in and around the shelter suggest initial occupation during the Folsom era, or some 12,000 years ago.

Colorado State University's Archaeological Field School recorded the site in the summer of 2018 to assess the existing damage, stabilize the intact deposits, map the shelter, and survey the surrounding area. Intact deposits were identified within the shelter, and they were then stabilized to prevent further damage. Students systematically surveyed and sampled the surrounding landscape, discovering two Folsom point preforms and a probable channel flake. To better document the site, photogrammetry was used to create a 3D model of the interior while an aerial drone map was generated to contextualize the shelter within the greater landscape. The materials and data collected by the field school are part of an ongoing effort to study the shelter and ensure its continued preservation.

Buehler, Kent (CSARG, LLC), **Angela Berg** (Oklahoma Office of the Chief Medical Examiner), **Carlos Zambrano** (Oklahoma Office of the Chief Medical Examiner)
Session 1: *What's the Strangest Case We've Ever Done? This One. Definitely.*

I am frequently asked "What is the strangest case you've ever been involved with?". Until recently, my answer was to reference the most recent strange case we'd done. However, in September 2015 our team was involved in a case that immediately attained "number one status" and has remained there since. The case involved the recovery of human remains from a context that, so far as we know, is unique in the annals of American forensic archaeology. The circumstances of the case are presented but the interpretation of the scene unfortunately remains elusive. NOTE: This presentation includes images of human skeletal remains. Discretion is advised.

Buff, Carolyn, see Walker, Danny

Bunger, Adam (Augustana University), **Laura Peck** (Augustana University), **Dagny Anderson** (Augustana University), **Kristine Carlson** (Augustana University), **Douglas Bamforth** (University of Colorado Boulder)

Session 5: *Plains Village Excavations at Lynch Nebraska, 25BD1*

The Lynch Site (25BD1) is located between Ponca and Whiskey Creeks, just south of the Missouri River, in north central Nebraska. The single occupation Plains Village site spans approximately one square mile and was inhabited during the 1200's - 1300's. Prior excavations, in the 1930's and 1950's, recovered pottery from both the Oneota and Central Plains Traditions. Distributed across the site are also pottery exhibiting combinations of ceramic styles made on local materials, potentially indicating cooperation between groups on the site. The purpose of this poster will be to provide an overview of the findings of the most recent excavations in June 2018 as well as excavations from the 30's and 50's.

Burris, Jason (University of Oklahoma)
Session 2: *Flotation of Disturbed Contexts at the White Cat Village Site, Nebraska*

Recent excavations at White Cat Village (25HN37), an ancestral Plains Apache site near the Harlan Reservoir in Alma, Nebraska showed that areas of the site had been disturbed by recent camping. This poster summarizes past investigations, discusses the damaging effects of recent disturbances, and covers flotation methods used on a sample of sediments from the site. Some goals of this research included: 1. What is the extent of the recent disturbances to the site? 2. What other outside forces have threatened or are threatening this site? 3. Is there any salvageable data on the Apache occupation? And 4. What insights can we gather from the floated material, if any? In answering these four questions, we can gain a better understanding of the factors impacting the site and how they influence our interpretations of previous occupations

Burtt, Amanda Anne (Indiana University)
Session 6: *Unlikely Allies: Modern Wolves and the Diets of Pre-contact Domestic Dogs*

This project investigates the dietary behavior of Late Prehistoric domestic dogs via dental microwear data or features on

the tooth surface that indicate types of food consumed. In order to understand the array of possible domestic dog dietary behavior, their diets are compared to their unmodified wild progenitor, the grey wolf. The use of three-dimensional tooth surface data coupled with scale sensitive fractal analysis allows for an unbiased interpretation of these surfaces. A robust baseline of wolf dietary behavior via their microwear has been collected from a large collection of modern wolves housed at the Draper Natural History Museum. Curated domestic dogs from archaeological sites located on the North American Plains and Rocky Mountain foothills are evaluated to interpret feeding practices employed by their human caregivers to contribute to a better understanding of human-to-canine provisioning strategies in the past.

Buxton, Jonah (GRSLE Inc), **Lawrence Todd** (GRSLE Inc), **Daniel Dalmas** (Iowa State University), **William Dooley** (GRSLE Inc)
Session 13: *Late Archaic Landscapes: Greater Yellowstone Ecosystem, Absaroka Range, Northwest Wyoming*

As part of a long-term research project focused on high elevations (>2500m) in Wyoming's Absaroka Mountains, locations of 286 projectile points have been recorded and assigned to a Late Archaic age based on morphological cross-dating. Spatial patterns in these artifacts, in comparison to other materials (ranging in age from Paleoindian to Protohistoric in age) provide hints of Late Archaic mountain landuse. Comparison of this extensive surface sample with collections from near-by excavated sites (Mummy Cave, 48PA201 and Pagoda Creek, 48PA853) provides further insights into distinctive features of montane and alpine settlement systems. Several localities recorded during the 2018 field season from elevations ranging from 2700-3200m are presented as examples of variation in the region's high elevation Late Archaic assemblages.

Byrd, Deanna (Choctaw Nation of Oklahoma)
Session 16: *The Last Choctaw Removals, 1902-1903*

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 removals with the hope of honoring our ancestors and to contribute to the family history of Choctaw people today.

Campbell, Amber (Kansas State University)
Session 9: *Climate Change and the Ecological Context of Beef Production in the Great Plains*

Beef production is a major part of the economy and culture of the Southern Great Plains (SGP). The industry is both vulnerable to the effects of increasing climate variability and part of a global discourse around the environmental impacts of livestock production. This paper draws on research with producers focused on increasing resilience of the industry to climate change in the SGP. In a 2016 survey of beef cattle industry professionals in the SGP, the majority expressed support for efforts to adapt to climate variability regardless of their causal beliefs about climate change. In-depth interviews indicated producers are actively seeking and implementing practices that give them greater flexibility in response to uncertainty in future conditions. This research also suggests that greater attention is needed to the ecological context of cattle production, especially given the prominent global debate about the environmental impacts of beef, natural resource use, and conservation.

Carlson, K.C., see Wiebelhaus, Margaret

Carlson, Kristen, see Bamforth, Douglas

Carlson, Kristine, see Bunger, Adam

Carter, Brian, see Bement, Leland

Chouinard, Natalie, see Wiebelhaus, Margaret

Clark, Amy (University of Oklahoma), **Bonnie Pitblado** (University of Oklahoma)
Session 4: *Bridging Stakeholders Through Research: Goals and Initial Activities of the Gang of First American Researchers*

Public Archaeology endeavors not only to disseminate and spread the fruits of archaeological research, but to invite all stakeholders to the table at the inception of a project. As for GOFAR, we have narrowed down our time period and regional focus – the Paleoindian period in Eastern Oklahoma – based principally on its resource-rich ecotone setting and understudied early-human record. The specific objectives of our research, however, will be molded not only by the founding members of the "gang" but by other current and future members, such as avocational archaeologists, members of Oklahoma's tribal nations, ethical artifact collectors, land owners, and interdisciplinary professionals. We aim to create a maximally inclusive group of interested parties, whose individual involvement will vary by time and inclination, but will be actively cultivated at all stages of our research, from the development of research questions, through the publication and dissemination of information back to GOFAR's diverse stakeholders.

Collins, Josh (University of Kansas)
Session 1: *A Survey of Arched Stone Cellars in Eastern Kansas*

Cellars were a necessity for plains settlers prior to refrigeration. Some early cellars were constructed of stone, and a subtype of these includes those with arched ceilings. Dating from

the mid-19th to the early 20th century, these cellars were commonly built using a variety of construction methods and styles. Distinctive attributes and construction techniques varied depending on the ethnic backgrounds of the builders and availability of materials. Our current project is locating and documenting these arched stone cellars within Douglas County, Kansas, with the goal of finding patterns and comparison to cellars located in the Blue Hills and Flint Hills regions. Issues addressed include cellar location, trait analysis, history of use, and proper documentation of these structures. Further, properly documenting these endangered and rapidly disappearing structures will facilitate analysis and comparison of early historic sites throughout the region.

Colvin, Matthew (University of Georgia)
Session 2: *Further Evaluation of Shoreline Erosion Rates along the Upper Oahe Reservoir, South Dakota*

This research offers an aerial reassessment of two Upper Oahe Reservoir archaeological sites, Jake White Bull (39CO6) and Jones Village (39CA3), located in northern South Dakota. More recent work in 2006 identified significant losses at each site and both remained at high risk for shoreline erosion; a trend analogous to other sites in the region. By compiling and layering arrays of biennial satellite images over the past decade, I examine the rate of shoreline erosion at Jake White Bull and Jones Village independently to evaluate the effectiveness and sustainability of shoreline stabilization efforts of the Army Corps of Engineers (USACE).

Conard, Franklin (University of Kansas)
Session 5: *Nemec-Dymacek: A Unique Stone Arched Ceiling Springhouse in Eastern Kansas*

Douglas County, Kansas is home to many of the important structures pertaining to American westward expansion. One structure type which is commonly overlooked is the stone-arched cellar (known colloquially as “caves”). Built between 1850-1915 these caves vary considerably in construction, size, and features. Despite these differences they share the same general functions.

The Nemec-Dymacek Cave stands out from the others due to multiple distinctive characteristics. Nemec-Dymacek was built with unique construction, has a distinctive entrance superstructure, spring access, and was excavated into bedrock. This poster will highlight the specific aspects of the Nemec-Dymacek cave that make it unique, compare it to other caves, and investigate its history and significance in the settlement of the Central Plains.

Cory, Mackenzie J., see Scheiber, Laura L.

Crable, Barbara M , **Jack L. Hofman**, **Lawrence C. Todd**, **Daniel Dalmas**
Session 5: *Stoneworking at Anderson Lodge, Washakie Wilderness, Wyoming*

This study documents a chipped-stone lithic concentration along Vic Creek at the Anderson Lodge site (48PA250) in the Washakie Wilderness, Park County, Wyoming. The area has limited high quality lithic resources, and this unusual occurrence of material may represent a dump of lithic waste from a flint knapping production episode and/or an insurance cache. Materials found within a one meter area potentially represent a single chert nodule. In this study we focus on the technological and refitting analyses of the nodule. The production of a biface, core and flake blanks is evident with only a few flake tools present. Several pieces of chalcedony and quartzite were also near this chert concentration but their association is uncertain.

Crume, Kierson, see Todd, Lawrence

Cross, Kathryn (Southern Methodist University)
Session 6: *The Archaeology of Late-19th and Early-20th Century African American Life in Dallas, Texas*

By the end of the 20th century, historical archaeologists recognized the need for an archaeology that included groups with silenced histories. While this led to inclusion of the historically disenfranchised, archaeologists continued to overlook late-19th and early-20th century sites of lower socioeconomic groups. This

is particularly true for Post-Emancipation African American life. In Dallas, many Postbellum African American settlements, including Freedman's Towns, and their collective memory have been rendered invisible due to processes of city growth, gentrification, and displacement. This makes archaeology and oral history key to understanding the lives and experiences of African Americans living in Dallas in the past and today. In this paper, I explore historical analyses, archaeological work, and oral histories to identify gaps in our knowledge.

Cruzada, Laura (Texas Department of Transportation)
Session 4: *Defining Public Archeology in the Digital Age*

There is an inherent public interest in archeology, and there is no single approach for delivering information to public audiences. In Texas, outreach in archaeology includes public lectures, technical reports, brochures, articles and hands on field work. Texas' professional and avocational archaeological community can do more by developing a public outreach and marketing campaign that utilizes community events, advertising and social media to reach broader public audiences and underserved communities. This presentation will discuss 1) How Texas Public Archaeology Network (TxPAN) identified new audiences through quantitative and qualitative research; 2) A case study on collaboration for an archaeology poster for the public; 3) Plans to amplify stories of Texas' past through unique public outreach in unique ways; and 4) Plans to train/inform professional archaeologists on the science of communication.

Czubernat, Amber, see Taylor, Marie

Dalmas, Daniel, see Buxton, Jonah

Dalmas, Daniel, see Crable, Barbara M

Dalmas, Daniel, see Rina, Alyssa

Davis, Josh, see Bement, Leland

De Vore, Steven (National Park Service), **Adam Wiewel** (National Park Service)
Session 10: *Search for Fort William Stockade (32WI988) at the Fort Union Trading Post National Historic Site, North Dakota*

Dr. John Weymouth conducted the first proton magnetometer survey at the Fort Union and the Fort William sites in 1977. Since then several magnetic surveys have been conducted at the park including magnetic surveys for water lines and for other compliance projects between 2002 and 2017 in order to have a more complete understanding of the buried archaeological resources on the terrace associated with the trading post. The 2018 geophysical investigations focused on the Fort William stockade. Originally an opposition trading post, the American Fur Company bought the trading post from Sublet and Campbell in the 1830s for additional housing and storage at Fort Union. In addition to the original magnetic survey, soil resistance, conductivity, magnetic susceptibility, and high density magnetic surveys were conducted at the Fort William site. The geophysical data clearly identified the fort palisade outline, as well as other interior features.

Dooley, William, see Buxton, Jonah

Douglas, Allison (University of Oklahoma)
Session 4: *Improving Anthropological Literacy in Oklahoma*

This presentation explores and seeks feedback regarding ways that OKPAN can nurture a more anthropologically literate Oklahoma for the benefit of not just Oklahoma archaeology, but the state's future. Multiple stakeholder communities in Oklahoma archaeology, in particular K-12 teachers and students, avocational archaeologists, and the general public, can benefit from attaining a higher degree of literacy in archaeological concepts. Embedding anthropological literacy into the K-12 public education system may lead to a more informed citizenry. Furthermore, after the launch of the Oklahoma Public Archaeology Network's (OKPAN's) Archaeological Skills Workshop Series program, it has become evident that some avocational workshop attendees are not always

prepared for some of the workshop content due to lack of formal education in archaeological and anthropological concepts. Finally, greater public literacy in concepts central to both archaeology and holistic anthropology has the potential to promote not only archaeological knowledge, but better interpersonal relationships through cross-cultural understanding.

Dowkes, Shalcey, see Patton, Margaret

Dozier, Crystal (Wichita State University)
Session 12: *Evidence of feasting in the Southern Plains: Maintenance and reinforcement of the Toyah social field, 1250-1650 CE*

Feasting is an important socio-economic system adopted by diverse groups worldwide. Feasting traditions among mobile groups, however, have been difficult to recognize archaeologically. Using regional data of cooking features, trade, and ethnohistorical accounts, I argue that such a change in socio-economic systems can be recognized though the exploration of the Toyah archaeological culture in central and south Texas on the Southern Plains, 1250-1650 CE. During this period, cooking features large enough to accommodate large groups drastically increase while inter-regional trade also intensifies, consistent with the expectations for a feasting system. Ethnohistorical accounts of feasts, which the Spanish called mitotes, complement the archaeological assessment of a feasting society. These mitotes became important social mechanisms for crucial intergroup meetings for trade as well as political, marriage, and spiritual negotiations.

Dudley, Meghan (University of Oklahoma)
Session 4: *PAN-ing for Stewards: Developing a Stewardship Program for Oklahoma*

For several decades, stewardship programs have proven to be a successful way to engage citizen scientists in the preservation of the archaeological record. From California to Florida, archaeologists have trained members of the public who are

passionate about preserving the past to monitor sites, document private collections, and assist at public education events. In Oklahoma, heritage sites suffer from erosion, looting, and other threats, so the Oklahoma Public Archaeology Network has initiated a three-year process to develop our own stewardship program. As we begin our first year of development, we are assessing other programs as potential models and surveying key partners and members of the public to identify the unique needs of the people and heritage in our state. We present our methods and initial feedback in our paper today.

Dudley, Meghan (University of Oklahoma), **Craig Lee** (Metcalf Archaeological Consultants, Inc., and INSTAAR), **Tom Origer** (Origer's Obsidian Lab), **Todd Kristensen** (Historic Resources Management Branch, Government of Alberta)
Session 10: *A Pilot Study of Non-Volcanic Natural Glass Hydration Dating*

The Powder River Basin of southeastern Montana and northeastern Wyoming is rich in knappable materials produced by the interaction of burning coal-seams and shale. Although porcellanite is the most abundant, other materials, such as non-volcanic natural glass (NVNG), are also present. Because NVNG is a glass—like obsidian—we speculated that hydration rinds on artifacts made from this material might provide approximate ages for them. Here, we present the results of our study that induced hydration on flakes knapped from geological samples of sourced NVNG along with standards used for obsidian hydration. We then compare the newly-established rates to hydration measurements made on NVNG artifacts from archaeological contexts. Our results suggest that NVNG does hydrate and can be used with caution to date lithic assemblages in the region and that the technique might also be useful for other non-volcanic glass materials on the Plains and beyond.

Duwe, Samuel (University of Oklahoma)
Session 16: *Discussant*

Eyeington, Ashley (SWCA Environmental, Texas Parks and Wildlife Department, and Texas State University), **Ken Lawrence** (SWCA Environmental, and Texas Parks and Wildlife Department)
Session 2: *Analysis of Four Burned Rock Features from 41PP416 at Palo Pinto State Park, Palo Pinto County, Texas*

On behalf of the Texas Parks and Wildlife Department, SWCA conducted an intensive cultural resources survey of portions of Palo Pinto Mountains State Park, located in Palo Pinto and Stephens Counties, Texas. During the multi-year project, site 41PP416 was encountered along Palo Pinto Creek that exhibited deeply buried cultural materials and burned rock features.

Recently, significance test excavations were conducted at site 41PP416 that found the site to be a stratified Archaic campsite containing at least five occupational zones and four associated burned rock features. Despite the low quantity of lithic artifacts, the four distinct hot rock cooking features provided valuable information about the site's age and utilization. This poster summarizes the results and preliminary interpretations of the significance test excavations at site 41PP416 with a focus on the four distinct burned rock features.

Farrell, Sean, see Kilby, David

Fernandez, John, see Todd, Lawrence

Fisher, Abigail (Southern Methodist University), **Ian Jorgeson** (Southern Methodist University)
Session 10: *Exploring methods by which to quantify confidence in canid species determination*

Due to their ubiquity across North America, dogs have the potential to inform on a variety of human behaviors. Dog skeletal remains, however, are particularly difficult to identify in Plains assemblages due to their fragmentary nature (a product of life history and taphonomic processes) and similarity in morphology and size to wild canids such as coyotes and wolves. This poster presents ongoing research using geometric morphometrics to betterclassify canid remains. While most methods of species

differentiation result in an absolutist identification, we are developing a probabilistic model relating morphological variation to species likelihood. As a probabilistic model, our approach will both identify the most likely species represented by a sample, and quantify the uncertainty of that classification.

Frederick, Charles (consulting geoarchaeologist, Dublin, Tx)
Session 11: *Why look? The advantages of archeological sites found in dynamic geomorphic settings.*

Searching for archeological sites buried within dynamic geomorphic environments can be a tedious endeavor. Beyond the legal rationale that mandates searching for sites destroyed by development projects, the discovery of sites in such settings provide a number of clear advantages over sites found on the surface by pedestrian surveys. This presentation discusses the archeological advantages such sites hold and the challenge of finding them and assessing them.

Frederick, Charles, see Kibler, Karl

Frederick, Charles, see Lawrence, Ken

Frison, Geoge, see Zeimens, George

Garnett, Justin, see Gover, Carlton

Gover, Carlton (University of Colorado Boulder & Pawnee Nation of Oklahoma), **Rachael Shimek** (Wyoming State Historic Preservation Office), **Marcel Kornfeld** (University of Wyoming Department of Anthropology), **Mary Lou Larson** (University of Wyoming Department of Anthropology), **Justin Garnett**
Session 13: *Hell Gap Site National Historic Landmark: The 2018 Summer Field Season*

During the 2018 field season we continued excavating the south and east sides of the witness block at Hell Gap Locality I. In 2018, excavations began in stratum E1 (the Goshen component) and ended in the underlying strata D2 or still in E1. Very few

artifacts were recovered this season, presumably because we were excavating near the bottom and below the cultural strata and into culturally sterile Late Pleistocene sediments. This is the first opportunity during the present project to examine the entire Hell Gap stratigraphic profile and its content across more than one excavation unit (1 x 1 m). In addition to the witness block excavations, several artifacts were recovered from the surface of Locality IV. A new test unit in this area of the site yielded over 1,000 artifacts, possibly of Paleoindian age. The witness block excavations and Locality IV artifacts are presented.

Grantham, Larry (Gauss Archaeology LLC)Session 15: *Central Plains Tradition SItes in Northwest Missouri: Curernt Information*

It became apparent to me that the "black hole" in information on Central Plains Tradition sites was Northwest Missouri. Subsequently, I have examined the Archaeological Survey of Missouri files to see what information there was. There appears to be a fairly consistent distribution of Nebraska phase sites in Missouri, principally at the entrances of rivers and streams into the Missouri River floodplain, as well as in all major river valleys. Nebraska phase sites represent between 17% and 30% of all sites recorded in the four northwestern counties.

Green, Debra (University of Oklahoma - Oklahoma Archeological Survey)
Session 11: *Practice Theory: The Role of Geoarchaeology in Northern Plains Cultural Resources Management*

The practice of geoarchaeology has been an important component in CRM on the Northern Plains. The vital role of geoarchaeology first emerged in the 1970s when Clayton, Bickley, and Stone Jr., documented 24 Knife River flint (KRF) quarry sites and mapped the landscape distribution of KRF sources in Dunn and Mercer counties, North Dakota. This tradition was expanded with interdisciplinary CRM investigations conducted at Lake IIo and Alkali Creek led by Stanley Ahler. With the increase in CRM projects over the past decade, geoarchaeology has taken the forefront in the development of a KRF Quarry District Predictive

Landscape Model. This model was created by an interdisciplinary team of archaeologists and geoarchaeologists with Metcalf Archaeological Consultants and LaRamie Soils under the direction of the North Dakota of Department of Transportation (NDDOT). This presentation discusses the history of geoarchaeological CRM research on the Northern Plains with emphasis on the KRF Quarry District.

Green, Debra, see Kibler, Karl

Hamilton, Marcus, see Kilby, David

Hanschu, Jakob (Kansas State University Department of Sociology, Anthropology, and Social Work)
Session 9: *Agencies, Assemblages, and Applications: Theorizing Agricultural Drainage in Iowa*

In the 21st century, many anthropologists and other scholars have written and theorized about the agency of nonhumans. This cross-disciplinary paper takes a similar but extended approach focused on agricultural drainage in Iowa. Iowa drainage and its environmental effects involve an entanglement of agencies and histories, extending across multiple scales. The pre-settlement Iowa landscape was mostly wet prairies and wetlands, but intensive alteration of the prairie pothole ecosystem through the installation of drainage systems has made the state one of the most agriculturally productive and profitable areas in the world. However, drainage has recently come under question for polluting Iowa's waters and increasing the hypoxic zone in the Gulf of Mexico. This paper aims first to situate the agricultural drainage and its effects as assemblages of human and nonhuman agencies. Second, it discusses the practical and political implications of theorizing drainage from this perspective.

Hanschu, Jakob, see Kerns, Kaylee

Hanschu, Jakob, see Klataske, Ryan

Hanson, Casey, see Howe, Mark

Harrenstein, Tristan (Florida Public Archaeology Network)
Session 4: *Prodigious Public Programming: Useful Trends in the Course of FPAN's Thirteen Years*

Over its Thirteen years of existence, the Florida Public Archaeology Network (FPAN) has developed a vast amount of programming. They number so large, in fact, that looking at them all together is a daunting task. This is complicated further because distinguishing one program from another, beyond superficial details, is challenging. Fortunately, identifying the objectives of the different programs is a useful way of understanding organizational trends within FPAN's interpretive suite. This paper talks about these goals and how others might apply this experience.

Hitchcock, Robert (University of New Mexico)
Session 9: *Peoples of the Plains: Communities, Common Property Management, and Economic Change in the Heartland*

This paper considers people, common property management, and economic change in two regions: the Great Plains of North America, specifically Nebraska, and the Kalahari Desert region of southern Africa. These two areas face similar challenges, from climate change to economic expansions and downturns and oscillations. There are substantial similarities between the two areas: both are savannas where rainfall is a driving variable. Droughts are common in both regions which have affected human, wildlife, livestock, and agriculture. Both areas have seen initiatives to promote innovative conservation and development programs. The adaptability, resilience, and sustainability of the peoples in the Plains and the Kalahari regions are discussed as are the diverse policies that have been implemented.

Hofman, Jack, see Todd, Lawrence

Hofman, Jack L., see Crable, Barbara M

Holen, Kathleen, see Holen, Steven

Holen, Steven (Center for American Paleolithic Research),

Kathleen Holen (Center for American Paleolithic Research)
Session 10: *Use Wear and Breakage Patterns on Cow and Elephant Limb Bone Produced from Anvil Contact During Breakage Experiments*

Patterns of use wear and distinctive breakage are caused when a bone is broken on an anvil surface. The use wear on cortical bone surfaces consists of high polish and linear striations. Breakage patterns can include negative cones of percussion, cone flakes, rebound flakes removed from the cortical surface and V-shaped or U-shaped projections. In sites where there is only evidence of bone processing these features, and other distinctive breakage patterns, can help identify human activities in the absence of chipped stone tools.

Hollenback, Kacy (Southern Methodist University)
Session 16: *Colonialism as Process: A View from the Northern Great Plains*

Globally, "contact" with Europeans was followed by colonization of native nations. The goal was replacement of non-Western language and culture through acculturation and forced assimilation. This over-simplified narrative, however, obscures the complexities of cultural change and persistence for indigenous peoples. Colonialism is a process. It begins with contact, but is often followed by a "peri-colonial" period, and eventually colonial policies and lifeways. The timing and character of this process, varies widely, especially in North America. In the northern North American Great Plains, I would argue that contact, which happened relatively late, was rapidly followed by a "peri-colonial" dynamic during the Fur Trade. Colonialism for local populations began only after the Civil War, with the expansion of the military west and the establishment of Reservations. It is this later period that is essential for archaeologists to study if we want to contribute to better models of native "survivance."

Hollenback, Kacy, see Roos, Christopher

Hopper, Alaura (Colorado State University), **John Johnson** (Colorado State University), **Alexaandra Wolberg** (Colorado State University)
Session 2: *Fear and Loathing Among the Fremont People: A Study of Granaries in Northwestern Colorado*

Granaries are among the most visually spectacular features known from the Fremont culture of northwestern Colorado. The Fremont (CE 550-1300) were semi-sedentary farmers, and the granaries served to store crops for either seasonal surplus and/or to protect crops from raiding neighbors. For the past several years, the Colorado State University (CSU) Archaeology Field School conducted survey, surface collection, and site re-visits to Fremont sites in Moffat County, Colorado. This area is located at the physiographic intersection of the Western Plains, the Great Basin, and the Southern Rocky Mountains, and probably served as a cultural crossroads between the various regions during prehistoric times. Our CSU research specifically focused on the Skull Creek and Willow Creek Wilderness Study Areas, two rugged and arid canyon systems containing abundant granaries near the southern boundary of Dinosaur National Monument. Our goals were to investigate Fremont granary size and function, recover perishables and botanical remains for dating, visually assess the "hidden" locations of the granaries, and complete condition assessments for the sites, which included creation of photogrammetric 3d models. We documented nine granaries during our 2018 work and our highlights are presented in this poster.

Howe, Mark (International Boundary and Water Commission, US Section), **Casey Hanson** (Texas Historical Commission, Archeology Division)
Session 1: *Falcon Reservoir: Efforts to Preserve an Endangered Landscape.*

The cultural landscape of the Falcon Reservoir in Zapata County, Texas is defined by 1000s of years of occupation along the

Rio Grande River. Although some of the most enduring features of this cultural landscape can be traced to the Spanish Colonial period, the archaeological sites dating to this period are also the most endangered at the reservoir. The resources continue to be impacted due to the reservoir's function as both the international boundary and a flood control reservoir. In this paper we report on a 2018 Environmental Assessment survey at Falcon Reservoir when the USIBWC and THC observed impacts at historic sites with roots in the Spanish Colonial period and other historic and prehistoric sites. The results suggest that erosion, looting, and development continue to impact the cultural landscape, and in this paper, we contextualize these processes to trace their roots and identify potential partnerships to mitigate future impacts.

Howe, Mark (USIBWC)
Session 1: *Smeltertown: A Community lost to Time along the U.S – Mexico Border.*

In the late 1880s in El Paso, Texas, the establishment of a copper and lead smelter on the Rio Grande later brought about the rise of a community called Smeltertown. This community of workers, families and Mexican nationals from across the border established a thriving community. Located on the Rio Grande at the convergence of Texas, New Mexico and the Country of Mexico, this location was instrumental in its location as a demarcation of Mexican and U.S. History. In 2017, re-construction to the American Canal on the western edge of Smeltertown unearthed features, artifacts and foundations. This presentation will show how Smeltertown was a thriving community, until leveled in 1972 due to lead contamination in Smeltertown and environs. This will examine the artifacts that comprise culture from both sides of the border and predicts what will be found, as Smeltertown is still there – buried, even if the people are not.

Jacobson, Jodi (Center for Archaeological Studies, Texas State University), **Susan Sincerbox** (Center for Archaeological Studies, Texas State University)
Session 7: *Grease, Rats, Dogs, and Rivers: Cultural Versus Taphononomic Bone Modifications at a the Late Prehistoric Site 41HM51 in Central Texas*

Previous analysis of faunal material from a Late Prehistoric Site (41HM51) in Central Texas focused on the potential for marrow and bone grease extraction of artiodactyl bones, but results were conflicting. Jacobson (2018) reviewed the previous investigations and suggested potential avenues to identify whether bone fragmentation was due to human, carnivore, alluvial, or other taphonomic factors and suggested solid indicators for identifying bone grease processing based on seasonality and variations in animal fat stores, longevity of marrow and grease storage given seasonal temperature thresholds in Texas, larger scale versus smaller scale bone grease use and consumption, etc.. The Center for Archaeological Studies (CAS) was enlisted by Amaterra and TxDOT to reanalyze all vertebrate faunal material from the site and pursue additional avenues of investigations. Preliminary results of the re-analysis and methodology for identifying bone grease processing at macro and micro level are presented.

Johnson, Emily, see Adair, Mary

Johnson, John, see Hopper, Alaura

Johnson, Nolan (History Nebraska)
Session 15: *Ceramics at the Logan Creek Site (25BT3)*

The Logan Creek Site (25BT3) in northeast Nebraska has, and is well known for having, several buried and distinct archaic components. There is, however, a woodland occupation located stratigraphically above the archaic zones. This paper will address the woodland ceramics found at the site. In this paper I build on data generated by the late Gayle Carlson. A 40 plus year veteran of the Nebraska State Historical Society Gayle, took up work on 25BT3 at a few different times during his career. The last time was

in the late 1990's. The ceramic collection is small and fairly homogeneous, and the analysis is mostly descriptive in nature. However, the ceramic collection, especially its vertical distribution, does offer some insights that can be used in interpreting the archaic components of 25BT3 moving forward.

Jones, Travis (University of Georgia, Center for Applied Isotope Studies)
Session 6: *Revisiting Huff Village: Toward Generational Timescales for Plains Villages*

Huff village (32MO11) is a large, fortified late prehistoric Plains village located in North Dakota, within the Middle Missouri subregion of the Northern Plains. Here, I present a new high-resolution site chronology for Huff incorporating 20 extant and 17 new radiocarbon assays. Since the 1940s, multiple attempts have been made to resolve the village's occupational history with its absolute temporal placement. While archaeological data suggest a one-to-two generation occupation, previous absolute dating attempts have only been able to achieve temporal resolutions at the century level, ranging from the AD 1300s to the1500s. The analysis presented here utilizes recent methodological advancements in both bone collagen pretreatment and AMS radiocarbon dating that, when coupled with statistical modeling, is able to constrain Huff's occupation to within one-to-two generations during the mid-1400s.

Jordan, Michael (Texas Tech University)
Session 1: *Tracing Connections Between Nineteenth Century Southern Cheyenne Drawings: Expanding the Unit of Analysis in the Study of Plains Indian Ledger Art*

The Western National Parks Association recently commissioned research on nineteenth century Southern Cheyenne drawings to support the development of new interpretive programming at Washita Battlefield National Historic Site. While previous studies of Plains Indian drawings have tended to take as their unit of analysis a single book of drawings, the current project focuses on connections between sets of Cheyenne drawings.

Preliminary results have revealed links between collections at several institutions. For example, depictions of the same war deeds may appear in two or more sets of drawings. The research has already identified three illustrations of an episode from the Battle of the Washita, one at the Field Museum, another at the National Anthropological Archives, and a third at the Sam Noble Museum. The study promises to reveal a more complex picture of artistic production in reservation era Cheyenne society and to illuminate the relationship between art and historical memory.

Jorgeson, Ian, see Fisher, Abigail

Kappelman, John, see Todd, Lawrence

Kay, Marvin (University of Arkansas), **Leland Bement** (Oklahoma Archeological Survey)
Session 8: *Modeling Folsom point utility at the Cooper bison kills, Oklahoma*

We describe two complementary strategies to Ahler and Geib's (2000) model of Folsom point utility. The first, and seemingly more frequent, is a "size-matters" approach in which use of the largest Folsom points occurred before the steps they outlined; the second is an ad hoc strategy that occurred either at the end of their sequence or shortly thereafter where still serviceable but broken point tips were repaired, remounted in foreshafts and further employed as projectile heads. Taken as a whole these approaches balanced toolstone scarcity with anticipated point breakage and repair when hunting bison.

Kerns, Kaylee (Kansas State University), **Jakob Hanschu** (Kansas State University)
Session 10: *Assessing Public Perceptions of Archaeology in Kansas*

The goal of this study is to understand whether and why archaeology is valued by Kansans and its role in creating meaning, place, or identity in their lives. To gain an understanding of perceptions of archaeology among the public, the research team

from Kansas State University conducted interviews and surveys of members of the public. Participants of the Kansas Archaeological Training Program and members of the public present at the Hillsboro Arts and Crafts Fair were included in the study. It serves as a pilot study for assessing Kansans' attitudes towards archaeology. Perceptions of archaeology among the public could prove to be invaluable to professional archaeologists and resource managers looking to stimulate public awareness and preservation of the finite and fragile archaeological record of past societies.

Keyser, James D. (Oregon Archaeological Society), **Linea Sundstrom** (Day Star Research)
Session 14: *Ambrose Bierce's Indian Inscriptions: Biographic Art Along the Bozeman Trail*

In 1866 Ambrose Bierce accompanied the Hazen expedition whose tour inspected military outposts in the Department of the Platte. During cartographic work, Bierce recorded two "Indian inscriptions," one petroglyph on the Powder River near Ft. Reno, and an arborglyph on the Yellowstone River upstream from Pompey's Pillar. His recordings are detailed enough that we can decipher these narrative drawings. The petroglyph shows the aftermath of an attack on a lumber wagon, while the arborglyph shows two war expeditions, one against a Mackinaw boat on the Yellowstone River and the other against a group of Metis and their Red River cart.

Kibler, Karl (Raba Kistner Environmental, Inc.)
Session 11: *The Right Method for the Right Landform: Applying Geoarcheology to Archeological Survey*

Landscapes consist of different landforms each with their own depositional, erosional, and soil formation histories, all of which influences the context, preservation, and visibility of the archeological record. Thus, a "one-size fits all" survey methodology that some project sponsors and reviewers typically advocate, can inadvertently overlook significant sites and bias the efforts towards settings with low integrity and marginal data. A landform-based survey methodology focuses efforts on settings

with greater potentials to yield sites with integrity, while less effort is conducted on landforms with little to no potential. Implementation of such a methodology is accomplished by using search methods tailored to the landform investigated, which not only can be more successful in terms of the number and quality of sites encountered, but potentially more cost-effective too.

Kibler, Karl (Raba Kistner Environmental), **Charles Frederick** (Consulting Geoarchaeologist), **Ken Lawrence** (SWCA Environmental Consultants), **Debra Green** (Oklahoma Archeological Survey)
Session 11: *Geoarchaeology in Cultural Resource Management (CRM): Why We Do It and Its Role and Future in CRM*

Organizers: Karl W. Kibler, Charles D. Frederick, Ken L. Lawrence, and Debra K. Green

The earth sciences and archaeology have a long interdisciplinary relationship that dates back to at least the late 19th century. The practice of geoarchaeology in CRM however has not been universally applied with standards varying from state to state and between regulatory agencies. We contend that geoarchaeology is a vital component of CRM and should be at the forefront of nearly all phases of investigation. The practice of geoarchaeology, in part, can make CRM more cost effective without sacrificing ethical responsibilities by streamlining surveys that focus on settings of high quality data-yielding sites and aiding in the design of the questions we ask of the archaeological record, all of which is important in climates of budgetary restraint. The papers presented here present critiques and recommendations for regulators, project sponsors, and contractors, as well as offering new and innovated practices, techniques, and analyses for geoarchaeology in CRM.

Kilby, David (Texas State University), **Marcus Hamilton** (University of Texas-San Antonio), **Sean Farrell** (Texas State University)
Session 8: *Bonfire Shelter: New Fieldwork and Old Questions*

The Ancient Southwest Texas Project (ASWT) at Texas State University began a new fieldwork initiative at Bonfire

Shelter in 2017. The site is compelling for two primary reasons. First, it may preserve evidence of the oldest and southernmost "bison jump" in North America; however, there is disagreement as to whether a 12,000-year-old layer of bones represents one or as many as three hunting events, and whether or not they truly represent bison jumps. Second, a lower layer includes remains of mammoth and other Pleistocene megafauna of ambiguous origin. Previous researchers have argued that these 14,600 year old remains also reflect human activity, but this has never been verified. Renewed investigations at Bonfire Shelter include reopening previous excavations along with limited new excavation, and are oriented toward verifying the site's use as a bison jump, evaluating the evidence for human activity among the oldest deposits, and stabilizing the site.

Klataske, Ryan (Kansas State University)
Session 9: *Conservation and Engaged Anthropology in the Great Plains*

The history of human-grassland interactions is an important part of our story as a species. Unfortunately, the current chapter foreshadows a bleak future for grasslands in many parts of the world, including the Great Plains, along with the people and other species that depend upon them. Despite rapidly vanishing prairie and wildlife in the Plains, there are many individuals and organizations working to advance conservation, advocate for the stewardship of wildlife, habitat, and resources, as well as resist the loss of grassland landscapes and livelihoods. This paper draws on years of anthropological engagement with a nonprofit conservation organization to discuss current issues and efforts in the Great Plains, with a focus on Kansas and Nebraska. It also highlights the urgent need for anthropological and interdisciplinary research, engagement, and attention to the region, suggesting a path toward a more robust anthropology of grasslands and the Great Plains.

Klataske, Ryan (Kansas State University), **Jakob Hanschu** (Kansas State University)
Session 9: *An Active Environment: Landscapes and Natural Resources on the Plains and Prairie*

Human-environment interaction research has a long history in anthropology and increasingly contributes to a flourishing field of cross-disciplinary research across social and natural sciences aimed at understanding the ways humans and environments act on one another. This research and the unique perspectives of anthropology are vitally important in the face of human-induced global environmental change and societal disruptions of the 21st century. This symposium focuses on human-environment interactions in the Great Plains and prairies of North America, connecting local and regional issues of landscape change, natural resource use, and conservation to global and cross-disciplinary debates about our planet's past, present, and future. It brings together a unique combination of data and approaches from archaeology, ethnography, engaged anthropology, political ecology, history, and environmental and agricultural studies. By discussing diverse topics including agriculture, ranching, water, wildlife, conservation, and policy, this symposium advances conversations about human-environment interactions and the importance of the Plains.

Kornfeld, Marcel (PiRL-UW), **Marcel Kornfeld** (PiRL-UW), **J.M. Adovasio** (SMU-), **Mary Lou Larson** (University of Wyoming)
Session 5: *Northernmost Juniper Sandal and other Perishables from Last Canyon Cave, Montana*

Last Canyon Cave is a small, indistinct rockshelter at the southwestern edge of the Pryor Mountains, in southcentral Montana. The shelter was looted prior to the initial recording in the 1970s and suspected looting activity was again noted in the early 2000s. To evaluate the state of the shelter we carried on a 10-year project at the site. During removal of the current, surface, uncompacted pack rat midden, a clump of recovered juniper fibers was saved for analysis in the lab. After cleaning the juniper fiber

clump, clear manufactured patterning (plaiting) appeared, but the fragmentary nature of the object precluded identification. Photographs sent to the co-author James Adovasio immediately resulted in identification of the object as a juniper bark sandal. Additionally we recovered a piece of cordage. In this presentation we describe these objects and discuss their implications for Rocky Mountain prehistory.

Kornfeld, Marcel, see Gover, Carlton

Kornfeld, Marcel, see Kornfeld, Marcel

Kornfeld, Marcel, see Larson, Mary Lou

Kracinski, Andrew, see Wiebelhaus, Margaret

Krause, Richard (TVAR)
Session 15: *The Arikara Medicine Lodge in Middle Missouri Archaeology*

The evidence used to identify Arikara Medicine Lodge ruins includes: (1) A large settlement interior earthlodge, (2) An earthen altar cut from the native soil or built of puddled clay mixed with grass, (3) An altar opposite the lodge entryway, (4) A prepared clay floor, and (5) A large, deep, lodge central fire-place. A single Medicine Lodge per settlement, in multiple contemporaneous settlements, seems to be the 18th Century pattern, multiple Medicine Lodges in the same settlement the hallmark of an early 19th century pattern and a single Medicine Lodge per settlement the mark of a late 19th and early 20th Century Medicine Lodge pattern. The evidence for this patterning will be presented and its implications discussed.

Kristensen, Todd, see Dudley, Meghan

Kunkel, Madeline, see Buckner, Paul

Kvamme, Kenneth L (University of Arkansas)
Session 14: *Geophysical Findings at Molander Village (32OL7), North Dakota*

Geophysical surveys were carried out at Molander Village in 2017-2018, a poorly understood ancestral site of the Hidatsa located in central North Dakota. Surface evidence of the village is confined to defensive ditches, associated bastions, a few surface depressions pointing to house locations, and an historic occupation. Owing to a dense distribution of metallic debris and a plowed surface from the historic occupation, houses were not discernible by magnetic gradiometry surveys. Nevertheless, numerous "point" anomalies associated with storage pits and hearths were revealed and excavated. Ground conditions were too dry for productive results by electrical resistivity or EM methods. House locations were revealed by subtle topographic indications in a digital surface model yielded by a photogrammetric drone survey, however. These indications were then used to guide GPR surveys to several houses that better revealed their outlines and interior details.

LaBelle, Jason (Colorado State University), **Kelton Meyer** (Colorado State University)
Session 8: *Kill, Camp, and Repeat: A Return to the Lindenmeier Folsom Site of Northern Colorado*

Paleoindians of the Plains are often generalized as highly mobile bison hunters that moved in response to migrating bison. The Lindenmeier (5LR13) Folsom site of Colorado might be a notable exception to the high mobility model, as it contains hundreds of Folsom tools, animal bone, chipping debris, and decorated artifacts spread over 800 meters of buried deposits. Approximately 9 to 12 dense artifact concentrations are documented here, and questions remain as to what these clusters represent – discrete living floors, middens, or palimpsests? Resolving the nature of these deposits is key to integrating Lindenmeier into broader land use models. This presentation summarizes the poorly known locales in the eastern portion of Lindenmeier. The first discoveries were made here in the 1920s, and the Smithsonian excavated a bison bone bed nearby shortly

thereafter. Backed by 10 years of systematic artifact mapping, our paper examines what these eastern clusters represent in terms of function, and how these particular occupations mirrored or were instead quite different from the many other Folsom visits to the site.

Lambert, Shawn (Utah Division of State History)
Session 4: *Making SENSE of Archaeology: Developing Curriculum and Multi-Sensory Experiences for the Visually Impaired*

The Utah Public Archaeology Network (UPAN) has partnered with the Utah School for the Blind, Utah STEM Action Center, and the Utah Blind Institute to develop the first fully multi-sensory, 3D printed archaeology exhibit specifically tailored for people with visual impairments. The development of the exhibit centers on the accessibility needs of the Blind community using tactile objects, texture, Braille, scents, and special lighting components. Accessibility needs to be the foundation on which we construct educational experiences, curriculum, and as a primary framework to increase the knowledge-making capacity of archaeological materials. Hopefully, this exhibit will normalize the use of a broader range of accessibility resources so that multi-sensory experiences are available to everyone.

Lanoë, François, see Soza, Danielle

Larrick, Dakota (University of Oklahoma, Oklahoma Archeological Survey), **Leland Bement** (Oklahoma Archeological Survey)
Session 2: *Modelling Landscape Use at the Bull Creek Paleoindian Site*

This poster builds upon prior results of stable isotopic analyses in bison teeth recovered from the nearby Bull Creek and Ravenscroft Paleoindian sites with results on the sourcing of all lithic materials recovered there, to construct an image of how the sites' inhabitants might have moved within the surrounding landscape circa 10,230 cal BP. Predominant lithic materials in the site's assemblage consist of non-local Dakota (or Ogallala)

formation Quartzite, Alibates and Edwards chert, suggesting most likely a range of movement that spanned at least 190 kilometers to the west and southwest. Analyses of isotopes in the bison teeth indicate that such movement was likely interwoven with annual seasonality and the timing of bison herd migrations.

Larrick, Dakota, see Bement, Leland

Larson, Mary Lou (University of Wyoming), **Mary Lou Larson** (University of Wyoming), **Marcel Kornfeld** (PiRL-UW)
Session 13: *Bottoms Up: The Hell Gap Site Paleoindian Deposits*

Twenty-five years after staring our investigations at the Hell Gap site, we have reinvestigated the collections recovered by the Harvard/Peabody/Wyoming teams (1959-1966) and begun new work focusing on Locality I. The foremost question we had from the start was "What natural and cultural formation processes created the site?" Understanding the structure and formation of Hell Gap Locality I deposits involves consideration of the relationship of stratigraphy and archaeological deposits. This presentation looks at what the distribution of stone, bone, charcoal, and ochre tells us about Paleoindian occupations and activities through time (about 7500-13,000 years ago). Our understanding of stratigraphy has given us a clearer view of how the deposits (sediments and cultural material) have formed.

Larson, Mary Lou, see Gover, Carlton

Larson, Mary Lou, see Kornfeld, Marcel

Larson, Mary Lou, see Larson, Mary Lou

Lassen, Robert (Texas State University)
Session 3: *The Clovis and Later Paleoindian Components of Area 15 at the Gault Site*

The Gault site is renowned as a large, well-stratified Paleoindian site with an extensive Clovis component. Hundreds of thousands of Clovis artifacts have been recovered from its 15

excavation Areas, with the most well-known being Area 8, which yielded over 67,000 artifacts on its own. The latest excavation, Area 15, contained comparatively fewer Clovis artifacts. Like the overlying Late Paleoindian occupations, Area 15's Clovis component appears to have been a habitation area rather than a lithic workshop. The Clovis component spans 40 centimeters and contains numerous bifaces and blades, as well as one finished point and a blade core. The Late Paleoindian component spans 60 centimeters in Area 15 and consists of Dalton, St. Mary's Hall, and Angostura. This study compares the artifacts' counts and metrics from the Clovis and Late Paleoindian components of Area 15 to determine whether the area's occupants engaged in similar activities across the Pleistocene/Holocene transition.

Lawrence, Ken (SWCA), **Charles Frederick** (Consulting Geoarchaeologist-Geologist)
Session 11: *Geoarchaeological Investigations in Palo Pinto Mountains State Park (PPMSP), North Central Texas*

In collaboration with the Texas Parks and Wildlife Department (TPWD), SWCA Environmental Consultants (SWCA) conducted archaeological investigations within the recently formed Palo Pinto Mountains State Park (PPMSP). These investigations, which included archival research, extensive pedestrian survey, and archaeological significance test excavations encountered habitation and activities in the 4,395-acre park covering the last 8,000 years.

This presentation, in part, discusses the results of these investigations including a site containing a stratified prehistoric campsite with five occupational zones and four associated burned rock features. The presentation will also review the preliminary depositional model for Palo Pinto Creek within PPMSP constructed from these investigations.

Lawrence, Ken, see Eyeington, Ashley

Lawrence, Ken, see Kibler, Karl

Lee, Craig, see Dudley, Meghan

Lees, William (University of West Florida)
Session 4: *FPAN: Public Archaeology on the Great (Coastal) Plains*

In 2004 the Florida Legislature created the Florida Public Archaeology Network at the University of West Florida, followed by funding in 2005. FPAN was inspired by successful local public archaeology programs in Pensacola, St. Augustine, and Tampa, and by state-level programs in Arkansas, Louisiana, and in several Great Plains states. Through partnerships with Flagler College, Florida Atlantic University, and the University of South Florida, robust programming is delivered by permanent staff at eight public archaeology centers, and address our key program areas of public outreach, assistance to local government, and assistance to the Florida Department of Historical Resources. Our overall goal is to enhance preservation by raising public awareness of the importance of Florida archaeology. Now in our 14th year, this paper focuses on FPAN's origins and evolution in response to experiences and challenges. A companion paper will address FPAN's programming.

Lemminger, Jennifer (University of Wyoming)
Session 2: *North Fork Cave #1 (48PA201): Descriptive Analysis of the Wood from Cultural Levels 6/7*

In 2018, the University of Wyoming Department of Anthropology was offered the unique opportunity to conduct research on the perishable materials from the North Fork Cave #1 assemblage. To take advantage of this opportunity I investigated the questions: what types of wood tools are seen in cultural levels 6 and 7; how do these wood tools compare with similar artifacts found in other cultural levels; and what cultural modifications are visible on artifacts from cultural levels 6 and 7 that are not formal tools? To investigate these, I took a sample of 35 artifacts from cultural levels 6 and 7 that date to the McKean complex. I found that cultural modifications included green breaks and charring, and much of the worked wood and potentially worked wood were discards from manufacturing. From looking at the formal tools I

found that variation could be seen between cultural levels in fire-making implements, and within cultural levels in digging stick morphology and material type.

Lintz, Christopher (Texas State University)
Session 12: *Tentative Cultural Affiliation Based on Cord-marked Ceramic Decorative Motifs from the Connellee Peak, Site (41MY5), A Middle Ceramic Period Geographical Outlier in Motley County, Texas*

Connellee Peak is an isolated mesa in the Middle Pease River drainage, located some 75 km south of the southern-most published Antelope Creek phase hamlet in the lower Texas panhandle. Extensive vandalism conducted atop the mesa between 1947 through 1993, has contributed to lore that no intact cultural deposits remain, even though the extent of disturbance remains unknown. Projectile points from early collections indicate that the site was mainly occupied from Late Archaic through Early and Middle Ceramic periods.

A collection of 1,531 cord-marked and plain potsherds recovered during the vandalism period was studied in an effort to determine the cultural affiliations of the Middle Ceramic Period occupations. Nearly two dozen kinds of decorations were noted on mostly cord-marked sherds. The kinds of decorations suggest strong similarities with ceramic assemblages from the Buried City of the northwestern Texas panhandle and the, Pratt, Wilmore and Bluff Creek complexes of south-central Kansas.

Logan, Brad (Kansas State University)
Session 15: *Quixote Feasts: Woodland Period Burned Rock Features in the Kansas City Locality*

Burned limestone or fire-cracked rock concentrations at Woodland sites in the Kansas City locality are commonly attributed to roasting activities or subsequent discard, but can more be inferred from these remains? Stimulated by two burned rock pit features uncovered at the Late Woodland Quixote site in the Delaware River drainage of northeastern Kansas, I review possible interpretations of these features and inferences that can be derived

from them in the context of Middle and Late Woodland period occupation of the Central Plains. The Quixote site features provide radiocarbon, descriptive, botanical, and lipid data for inferring age, construction, and function. Comparison with other burned rock features at regional sites reveals patterns that may reflect periodic feasting events. In contrast, similar features are rare or absent from Late Prehistoric sites in the region. This may reflect changing patterns of social interaction, potentially related to expansion of farming and sedentism.

Luthman, Sarah (University of Oklahoma)
Session 4: *Investigating a Shelter on the Southern Plains: Using State Standards to Guide Project Archaeology K-12 Curriculum Development*

Although all Project Archaeology lessons have been aligned to national standards, public school curricula are actually created at the state level, and teachers are far more likely to consider using a pre-packaged lesson if they can quickly determine how it aligns with the state standards on which their students will be tested. It is up to public archaeologists to also review these standards before, during, and after we create supplemental lesson plans for teachers. The Oklahoma Public Archaeology Network (OKPAN) has partnered with Oklahoma school teachers, tribal leaders, the BLM, and Plains archaeologists to interpret an Oklahoma site and match archaeological activities to state standards for our teachers. By beginning with the end in mind, we create better activities that teach what it is that we really want our students to know about the prehistory of people who lived on the Southern Plains.

Mathison, Ryan (University of Nebraska-Lincoln)
Session 10: *Excavations at the Humphrey Site*

The Humphrey site is an archaeological property deep in the Sandhills of west-central Nebraska. It is a Dismal River Complex site, dating to the 1600s. This past summer, the University of Nebraska-Lincoln field school, alongside History Nebraska, with contingents from University of Iowa and

University of Oklahoma, continued excavations at the site that had been started in the summer of 2017. Our goal this year was to uncover a full cross section of one of the three known houses at the site, while also testing extramural anomalies which had been identified by geophysical survey. All feature fill was water-screened and the investigation succeeded in gathering important new data which will provide a sharper understanding of architecture, technology, chronology and subsistence.

Maunders, Hope (Augustana University)
Session 10: *Residual Analysis of Historical Medicine Bottles*

During the repair of the historic Fremont Street retaining wall project in Deadwood, S.D., a Harper's Headache Medicine bottle (Washington, D.C.) containing dark solid residue and brown transparent liquid along with a Kirk G. Phillips (Deadwood SoDak) medicine bottle about half full of colorless liquid and white solid were discovered. Harper's medicine was developed by Robert N. Harper in the late 1880s, with the main ingredient being acetanilide due to its painkilling and anti-inflammatory effects, with other ingredients including antipyrine, caffeine, sodium/potassium bromide, and alcohol. The label on the Phillips bottle refers to a pharmacy under the ownership of Kirk Phillips amongst his wholesale drug houses in the Black Hills in the early 1900s, so the nature of the contents is unknown. The following instrumentation/methods were used for identification of the components : X-ray fluorescence, FT-Infrared Spectroscopy, Proton NMR, Raman spectroscopy, and an inorganic qualitative testing scheme.

McCabe, Kendra, see Billeck, William

McCaig, Jessica, see Buckner, Paul

McKee, Arlo (Texas Historical Commission)
Session 11: *How Can High-Resolution Survey and Measurement Technologies Be Leveraged to Better Understand Site Condition and Formation Processes?*

Geoarchaeological studies are most often employed to help understand the landform and landscape conditions that affect the preservation of archeological sites. Most open-air site investigations employ various geological and soil geomorphological techniques for interpreting site deposits. However, very high-resolution spatial data can now be collected through lidar, drone and ground photogrammetry and these technologies have enabled site formation processes to be inferred from scales that were not easily obtainable previously. This paper will discuss an overview of how these new technologies are being used for CRM projects in both Texas and North Dakota. Specific examples will include drone-based mapping and feature detection of Mandan/Hidatsa villages in North Dakota, and erosion modeling of Caddo mound and village sites in Texas using both drone and artifact laser scanning of ceramic sherds.

Meltzer, David, see Breslawski, Ryan

Meyer, Kelton (Center for Mountain and Plains Archaeology, Colorado State University)
Session 8: *Spatial Considerations for Paleoindian Use of Carey Lake, a High Altitude Locale in Larimer County, CO.*

Late Paleoindian occupations at the highest altitudes in Colorado are predominantly limited to isolated finds or small sites, comprised of low-frequency assemblages from surface contexts. Yet a small number of late Paleoindian sites excavated along Colorado's Front Range (Caribou Lake (5GA22) and Fourth of July Valley (5BL120)) and the Mosquito Range (5PA158) provide an important means to address aspects of site structure, function, and the occupational intensity of hunter-gatherers operating at high-altitudes during the Early Holocene. This paper examines the surface assemblage of the Carey Lake site (5LR230), a prehistoric lithic scatter with an Allen component located in the Rawah Wilderness. Colorado State University has investigated Carey Lake since the early 1970's, and recent fieldwork by CSU's Center for Mountain and Plains Archaeology recorded key spatial data

necessary to approach questions related to site structure and the nature of occupations by later period prehistoric groups.

Meyer, Kelton, see LaBelle, Jason

Mitchell, Mark (Paleocultural Research Group), **Stephen Perkins** (Oklahoma State University)
Session 14: *Design and Construction of Community Fortifications at the Molander Site, Oliver County, North Dakota*

Ditch-and-palisade fortifications represent an enormous investment of labor. They also require complex planning and coordination to select an appropriate design, to gather required materials, and to manage the work effort. The well-preserved defensive system at the Molander site, an eighteenth-century Hidatsa community, offers a unique opportunity to investigate fortification design and planning and to quantify the construction effort required. Data on the design of Molander's fortification also offers new insights into the nature of eighteenth-century warfare and community mobility in the northern Middle Missouri.

Morgan, Kelly, see Williams, David

Murray, Wendi Field (State Historical Society of North Dakota)
Session 16: *Finding Coalescence in the Coalescent: A View from Like-A-Fishhook Village, North Dakota*

In Lehmer's (1971) groundbreaking taxonomy for the Middle Missouri River subarea, the Coalescent Tradition (A.D. 1400-1862) originally referred to a "blending" of Central Plains tradition and Middle Missouri tradition traits. Subsequent research cast doubt on Lehmer's underlying assumptions, though Plains scholars still use the term for the sake of continuity. But the persistent and prescriptive use of the term "coalescent" in Middle Missouri taxonomy neutralizes its analytical value, and conflates material outcome with social process. Drawing from the results of a space syntax analysis of Like-A-Fishhook Village in North Dakota, this paper demonstrates that coalescence is not an inevitable journey toward cultural homogeneity. Rather, it is a

settlement strategy that can facilitate the maintenance of cultural distinctions, and finds expression in the quotidian human interactions that comprise community space.

Newton, Kate (Oklahoma Public Archaeology Network)
Session 4: *Social Media and Public Archaeology: An OKPAN Perspective*

It could be argued that outreach is the single most important component of public archaeology. Indeed, the necessity and value of public participation and interest cannot be overstated. It is this interest, after all, that ultimately serves to protect the underlying ethical and moral tenets at the heart of good archaeology: to preserve, protect, and interpret the material past. Social media is certainly a mixed bag, but beyond the fake news, baby photos, and selfies is an undeniably powerful tool. In short, social media gives us the means not only to foster interest in archaeology, but to build a sense of community and connection. It serves as an entry point for the curious and a sounding board and respite for the seasoned community. OKPAN has recently revamped its social media platforms with great results, and we would like to share our story and strategies with you.

Newton, Cody (SWCA Environmental Consultants)
Session 7: *Bones and Bullets: 1880s U.S. Cavalry animal consumption at the T-up T-down military camp*

The T-up T-down military camp is a small, temporary camp of instruction or training camp occupied in the mid-1880s (ca. 1885) and located approximately seven miles south-southwest of Fort McKinney (1878–1894) in the western Powder River Basin of Wyoming. Limited excavations within one of the features at the site have produced a robust assemblage of butchered bone from a variety of domesticated and wild animals. This presentation will discuss these findings and what they tell us about the provisioning and food consumption of cavalry soldiers on exercise during this period.

Origer, Tom, see Dudley, Meghan

Patton, Margaret (University of Calgary), **Shalcey Dowkes** (University of Calgary)
Session 7: *Late Prehistoric Period Shell Bead Production at Cluny Fortified Village (EePf-1)*

Beads in many forms were used as decorative items on the Great Plains in the historic and prehistoric periods. The Cluny Fortified Village (EePf-1) on the Northwestern Plains is a unique Late Prehistoric Period site where excavations have revealed over 1,450 shell artifacts including shell beads, shell bead "blanks," and waste from shell bead production. Shell artifacts from the site provide insight into prehistoric bead production using local bivalve species: Fat Mucket and White Heel Splitter. Experimental drilling on shell produced distinctive stepping and striation patterns that identify the method of drilling – either holding the drill in the hand or mounting the drill on a shaft. Most beads from the site exhibit patterns indicative of mounted drill use. Distributions of shell at the site also indicate bead production areas as well as a cache of finished and unfinished beads.

Patton, Margaret (University of Calgary)
Session 2: *Magnetometry and Ground Penetrating Radar at the Junction Site (DkPi-2): A Late Prehistoric Campsite on the Northern Plains*

Magnetometry and ground penetrating radar results at the Junction Site (DkPi-2) indicate a complex suite of activities that extend across large areas of the site. Junction contains multiple Late Prehistoric Period occupations that include bison kills, processing camps, and winter campsites. The multiple occupations date between 300 BP and 1000 BP, indicating continuity of use by Old Women's Phase peoples. Geophysical surveys in 2017 and 2018 surveyed 7.7 hectares of magnetometry and 1 hectare of ground penetrating radar, revealing a broad spatial distribution of anomalies. Excavations in 2017 and 2018 confirmed several of these anomalies as archaeological, revealing hearths, roasting pits, piles of FBR, and other archaeological features. Preliminary analysis of spatial patterning indicates anomaly clusters, linear

groups, and arrangements of anomalies in squares and semicircles. These patterns hint at the spatial organization of the site and provide clues to the use of space in winter campsites and processing camps.

Peck, Laura, see Bunger, Adam

Perkins, Beverly, see Rina, Alyssa

Perkins, Stephen, see Mitchell, Mark

Pettigrew, Devin (University of Colorado, Boulder)
Session 6: *Results and Effective Protocol of a Naturalistic Projectile Experiment*

This paper reports on an experiment firing arrows and atlatl darts at a 220 pound hog carcass. Naturalistic experiments often lack control to isolate variables of interest, while controlled experiments don't capture situational realism. This project consolidates the strengths of both by capturing slow-motion video of impacts and velocity of projectiles. Arrows were fired from a replica Catawba bow and darts of various make and size were thrown by practiced atlatlists. The results have implications regarding the design of knapped weapon heads, hafting strategies, and weapon performance. I compare momentum, kinetic energy, ballistic design and penetration depth of the experimental projectiles with penetration specifications of modern hunting arrows for prey animals of various size. These data are useful, but further experiments that follow similar protocols will strengthen the available database.

Picha, Paul (State Historical Society of North Dakota)
Session 15: *Initial Middle Missouri Variant Commodification: Molluscan Remains from Sommers Village (39ST56), Stanley County, South Dakota*

Sommers Village (39ST56) is a large Initial Middle Missouri variant (IMMV) site excavated by River Basin Surveys-Smithsonian Institution parties in 1964 and 1965. A calibrated

calendrical date of AD 1022 has been reported (Ahler et al. 2007:72-73). The molluscan assemblage comprises an array of exotic marine shell and local freshwater bivalve species. Whelk columellae stock-material and other modified marine shell items are significant components of the assemblage. The recovered molluscan remains support IMMV commodification within transaction center networks moving exotics regionally at AD 1050-1200. Tiffany (2007), Ahler (2007), and recently others (Kozuch, Walker, and Marquardt 2017) have promoted insightful commentary on the cultural processes involved with regional exchange.

Pickering, Evelyn, see Soza, Danielle

Pierce, Greg (Wyoming State Archaeologist), **Marieka Arksey** (Wyoming State Archaeologist)
Session 8: *Investigations at the Seminoe Beach site*

The Seminoe Beach site is located on Seminoe Reservoir in central Wyoming. The site was first identified during survey of the reservoir in the 1980s, and investigations revealed a Hell Gap component. Reservoir waters inundated the site, burying it for 30 years. In 2016 exposed archaeological materials were identified by a local avocational archaeologist. Portions of the site were being exposed by aeolian erosion. Artifact collecting and recreational use of the reservoir were negatively impacting exposed archaeological features. In 2017 the Office of the Wyoming State Archaeologist returned to the site to resurvey the area, identify visible archaeological resources, and salvage at risk features. These investigations identified numerous previously unrecorded features and artifacts. Analysis of these data revealed repeated use of this location from the Paleoindian through the Late Prehistoric period. This paper will provide background on the original and recent investigations and present the cumulative results of this work.

Pierce, Greg, see Arksey, Marieka

Pitblado, Bonnie L. (University of OK & OKPAN)
Session 4: *An Introduction to the Oklahoma Public Archaeology Network (OKPAN)*

After several years of planning, archaeologists "hard-launched" the Oklahoma Public Archaeology Network with the 2nd biennial meeting of the Oklahoma Archaeology Conference (OAC) in March 2018. In this paper, I introduce the impetus for founding OKPAN and overview its mission, structure, and personnel. I also introduce OKPAN's core initiatives and the goals of each for bridging the many Oklahoma stakeholders with an interest in the past. Other presenters in this symposium will expand on some of those initiatives, and I will flesh out a few others, including the founding of OAC and Oklahoma Archaeology Month (OAM, held, fittingly, each October), production of our annual OAM poster, and maintenance of a Speakers Bureau.

Pitblado, Bonnie, see Clark, Amy

Ralston, James (Kansas State University), **Lauren Ritterbush** (Kansas State University)
Session 15: *Search for the Kanza Indian Eastern Treaty Community*

Following the 1825 treaty between the U.S. government and Kanza, an agency was established along the Kansas River as an interface between the Kanza and federal government. Indian trader Frederick Chouteau, Kanza Chief White Plume, and others settled nearby. We refer to this aggregate as the Eastern Treaty Community (ETC), in contrast to the contemporaneous Western and later Southern Treaty Communities. These individuals, their families, and employees interacted frequently, forming a cultural and economic web. The ETC agency was active 1827-1834, then became part of the Western Treaty Community, which included villages of Fool Chief, Hard Chief, and American Chief. Our goals are to relocate the different components of the ETC and understand the community. This on-going research employs historical analyses utilizing multiple eyewitness accounts, descriptions of the

ruins, and GLO surveys and field inspections, providing initial clues to possible physical remains of related structures.

Reid, Amy (Center for Archaeological Studies, Texas State University)
Session 4: *A Public Archaeology Website for a Texas-Sized Public*
Texas Public Archaeology Network is a program with a mission to promote public appreciation of and participation in archaeology throughout the state of Texas. The shared goal of the network is to use the science of archaeology to create meaningful connections between Texans and our State's rich cultural heritage. TxPAN aims to achieve this mission by serving as a collaborative and inclusive resource for Texas' professional and avocational archaeological community. TxPAN seeks to provide this community with existing and new communications, marketing and educational tools to effectively promote archaeology and cultural resources among wider public audiences. A functional website is critical to achieving this mission as it is the most efficient way to compile and disseminate information to archaeologists and organizations interested in engaging a Texas-sized public in their work. Join us for the first presentation of the new TxPAN website. This presentation will showcase various elements and content chosen for the website and attendees will be encouraged to offer feedback and discuss what it is a Public Archaeology Network website should comprise.

Reitze, William, see Zedeno, Maria

Rina, Alyssa (American Museum of Natural History), **Daniel Dalmas** (Iowa State University), **Kate Breitenstein, Beverly Perkins** (Buffalo Bill Center of the West)
Session 10: *Obsidian Source Filtering: Assessing Multiple XRF Protocols for Geochemical Analysis of NW Wyoming Collections*
Greybull River Sustainable Landscape Ecology (GRSLE) archaeology's Shoshone National Forest, Wyoming project has had source analysis completed for 1087 specimens by Geochemical Research Laboratory (GRL). Roughly 66% (N=721) are attributed

to Obsidian Cliff. The Buffalo Bill Center of the West, Conservation Department provided a Bruker Tracer III-SD portable XRF spectrometer for this regional source analysis program. While in-house identification of the full spectrum of potential obsidian sources is not feasible for the project, use of the Bruker to record elemental intensity values using a sample of 238 previously sourced pieces builds a baseline for assessing the utility of a multi-protocol approach. Samples are initially scanned and analyzed to develop a binary source assignation – Obsidian Cliff or "other." To differentiate Obsidian Cliff from other obsidian sources, a logistic regression model is constructed using a modified backwards stepwise selection procedure. Results of this filtering are used to more effectively select samples for submission for full GRL quantitative analysis.

Ritterbush, Lauren, see Ralston, James

Roos, Christopher (Southern Methodist University), **Kacy Hollenback** (Southern Methodist University), **Nieves Zedeno** (University of Arizona), **Brandi Bethke** (University of Oklahoma)
Session 16: *Pox, Pistols, and Ponies: Indigenous Fire Regime and Bison Hunting Change after "Contact"*

For six centuries prior to European "contact" northwestern Plains hunters used fire to manipulate grassland patches and lure bison to landscape-scale drivelines for mass harvesting. A successful strategy, these cultural burning practices ceased by the late 17th century. Here, we explore possible drivers of this regime change in the context of historic period processes. The introduction of European technologies supported a transformation from pedestrian to equestrian bison hunting. Yet in Montana horses and guns appeared later than the cessation of intensive landscape engineering through the use of fire. We suggest that as yet undocumented epidemics impacted indigenous groups, not just reducing population sizes necessary to support anthropogenic fire and hunting regimes, but also removing key knowledge holders and ritual practitioners. The introduction of horses and guns into this post-epidemic environment simply supported cascading

changes that resulted in different human-supported fire regimes on the plains in the 18th and 19th centuries.

Roper, Donna C., see Scott Cummings, Linda

Rutecki, Dawn (Grand Valley State University)
Session 12: *Bands, Tails, and Stripes: Use and Meaning of Raccoons at Spiro Mounds*

Animals identified from faunal remains and depicted in iconography at Spiro Mounds, OK, range from small fish species to bison. However, raccoons present an interesting divergence from many of the animals found at Spiro. By considering placement of independent raccoon motifs in iconographic scenes, as well as raccoon motifs associated with figures, I identify use patterns of raccoon imagery. Their incorporation in certain positions on key figures in engraved shell materials suggests that raccoons may be associated with not only the Middle World, but also other parts of the cosmos. Taking into account ethnographic and narrative information, this paper examines how raccoons may be involved in or linked to transgression of worldly boundaries and power.

Scheiber, Laura L. (Indiana University)
Session 16: *Myths, Memories, and Marginalization: Multidisciplinary Approaches to Culture Contact Archaeology on the Western Plains*

The study of the social and material effects of European colonization on indigenous inhabitants has been a regular topic of archaeological discourse in the United States for the last twenty years, with strong publication records in the Southeast, Southwest, and California. A generation of recent scholars embraced a redefinition of prehistoric and historic archaeology in the 1990s. Archaeology of the contact period in the Plains and Rocky Mountains also has deep roots in the field, with massive data collection occurring during the River Basin surveys. Contemporary research often remains in a liminal state, however, due to both methodological and theoretical shortcomings. In practice the divide between the prehistoric and historic remains

strong, and the use of the ambiguous term Protohistoric continues despite its inherent flaws. In this presentation, I will discuss my research exploring contact-period sites in northwestern Wyoming, vis-à-vis wider continental and contemporary issues in North American archaeology.

Scheiber, Laura L. (Indiana University), **Mackenzie J. Cory** (Indiana University), **Emily C. Van Alst** (Indiana University)
Session 5: *Heritage and Sustainability in the West: The 2018 Bighorn Archaeology Field School, Park and Fremont Counties, Wyoming*

In this presentation, we highlight archaeological research undertaken by the Indiana University Bighorn Archaeology field school in its fourteenth year. Centered in the Bighorn Basin and Absaroka Mountains of northwestern Wyoming, activities include documentation of Native residential campsites (stone circles) at Heart Mountain, photogrammetry of drive lines on the Southfork of the Shoshone, and post-fire inventory and site monitoring in the Washakie Wilderness. Highlights of 2018 include re-creating historic photographs, introducing fiction in the class, participating in a pipe ceremony, going on field trips to rock art sites, and recording a new high elevation site with dozens of pieces of Intermountain Ware ceramics. Using different methodologies, Bighorn Archaeology's research goals remain focused on exploring historical and social landscapes of the Greater Yellowstone Ecosystem. Collaboration with local partners such as the Nature Conservancy and Shoshone National Forest is a critical component to the long-term success of this project.

Schneider, Fred (University of North Dakota (retired))
Session 14: *Melvin Gilmore: Botanist and Ethnographer*

Gilmore is highly regarded for his botanical work, his development of the Ethnobotanical Laboratory at the University of Michigan and his mentoring of several prominent ethnobotanists. Perhaps what may not be appreciated is that he was also an accomplished ethnographer, one with an outstanding record, and one who would be the envy of many Plains anthropologists.

Demonstration of his ethnographic skills and success are made through the examination of his field studies of the Arikara Tribe of North Dakota. In fact, of the 18 publications which were the direct result of his Arikara work there are 7 which at first glance appear to be primarily cultural rather than botanical, and are the most substantive of the 18 publications! Examples will be examined.

Schroeder, Bryon (Center For Big Bend Studies)
Session 12: *Maize, Baskets, and Atlatls The Radiocarbon Record from Spirit Eye Cave in West Texas*

Two seasons of fieldwork and the assessment of private collections at Spirit Eye Cave in West Texas focus current research interests on: (1) the duration of maize use on the Big Bend of the Rio Grande and (2) the extent and spread of perishable industries across the Southwest and Trans-Pecos regions. Maize use along the Big Bend is considered to have occurred late and to be associated only with villagers, but the results from Spirit Eye Cave indicate a longer time depth that may help explain trophic patterns seen in carbon isotopes of Late Archaic populations. The overall time-depth of perishable technologies from the Trans-Pecos region is unknown, the results discussed in this talk bracket the mid-Holocene to A.D. 1000 and include baskets and atlatl weaponry with distributions outside of the Big Bend region. The talk concludes with the implications of these results and the goals of future research

Scott Cummings, Linda (PaleoResearch Institute), **R. A. Varney** (PaleoResearch Institute), **Thomas W. Stafford** (Stafford Research Laboratories, Inc.), **Jeff Speakman** (CAIS, University of Georgia), **Donna C. Roper** (deceased)
Session 10: *NSF Study of Radiocarbon Dating Charred Food Crust: Request for Samples for Dating*

Our NSF study was to develop a chemical pretreatment method that would produce congruent dates on paired charred food crust and annual samples. In our final grant year we need to obtain more paired samples and to find more vessels containing charred food crust that may be sampled in multiple locations. We are

studying dates produced on charred food obtained from rim vs. body sherds from the same vessel. Pairing that vessel with an annual from the same context allows us to confirm which dates are congruent. We combine our knowledge of archaeology, food chemistry, lab chemistry, and radiocarbon dating with a healthy dose of curiosity to produce recommendations and methods that will yield more accurate dates on charred food crust, as well as identify when the food cooked in the vessel just cannot yield an accurate date. We show the pitfalls of attempting a freshwater reservoir correction factor.

Scott Cummings, Linda (PaleoResearch Institute), **R. A. Varney** (PaleoResearch Institute), **Thomas W. Stafford, Jr.** (Stafford Research Laboratories, Inc.), **John Southon** (Keck Carbon Cycling Facility, UCI), **Jeff Speakman** (CAIS, University of Georgia)
Session 15: *Examining Food: Beyond Identification, Calories, and Nutrients - What is the Carbon Content?*

Food is essential to life, and is an important and integral part of the archaeological record. Archaeology facilitates examination of ancient food, using those results to define our understanding of culture and chronology. Radiocarbon dating charred food crust presents challenges. We need your help for an NSF project - help us solve the mystery - send samples! We have mastered issues of recovery and lab treatment, but archaeology retains assumptions about food being a simple representation of the past. Now we ask, are these records all they appear to be and only what they appear to be? From one Oneota (Blood Run) vessel sampled in three locations we obtained three radiocarbon dates including two that are congruent and one discrepant, pointing to the importance of understanding your sample of charred material. Multiple paired charred food crust and annual samples from southeastern Iowa show the effectiveness of chemical pretreatment to obtain congruent dates.

Shimek, Rachael, see Gover, Carlton

Sincerbox, Susan, see Jacobson, Jodi

Skov, Eric (KSHS)
Session 9: *Looking Up: Patterns of Sites Distribution on Upland Landscapes in Northeastern Kansas.*

Five years of broad-acre, post-burn upland surveys on Fort Riley have provided a unique dataset for assessing site distribution within upland areas of the northern Flint Hills. These surveys are notable for their rigorous methodology, extensive coverage, consistency of personnel and land-use history, and excellent ground visibility. These controls enable a detailed analysis of site location, size, and type in relation to the natural environment. Drawing on landscape archeological theory, I present a heuristic model for prehistoric upland use in this area that reveals factors influencing site choice and ultimately subsistence and mobility strategies.

Slade, Alan, see Taylor, Ian

Smith, Heather (Eastern New Mexico University), **Brendon Asher** (Eastern New Mexico University)
Session 13: *Clovis Biface Variability at Blackwater Draw Locality 1: A Geometric Morphometric Analysis*

The lithic materials present in the artifact collections from Blackwater Draw Locality 1 (BWD) suggest that the area served as a crossroads between the Southern High Plains and the Southwest. In addition to toolstone movement through the regions, morphological and technological attributes from BWD's bifacial chipped-stone artifacts allow researchers to identify relationships across the landscape informing on Paleoindian mobility and technological organization. Today, BWD's lithic assemblages reside at institutions across the country and, as a result, analysis of the biface assemblage has not been completed in entirety. The research presented here is an introduction to the morphological variability in the bifacial projectile points from BWD curated at Eastern New Mexico University using Geometric Morphometrics. It is part of an ongoing project to create a virtual collection of the

entire artifact assemblage and gain a more comprehensive understanding of BWD's role in Paleoindian behavioral systems during the late Pleistocene.

Smith, Heather, see Asher, Brendon

Southon, John, see Scott Cummings, Linda

Soza, Danielle (University of Arizona), **Evelyn Pickering** (University of Arizona), **François Lanoë** (University of Arizona), **María Nieves Zedeño** (University of Arizona)
Session 2: *Four Horns Lake: Physical and Historical Interactions*

Four Horns Lake, located on the southern end of the Blackfeet Indian Reservation in Montana, was surveyed in July 2018 as part of the expansion and rehabilitation project for the Four Horns Dam. Built in the early 1900s, current focus on this dam has induced action to record resources that may be impacted by development. The sacredness of Four Horns Lake to the Blackfeet people is demonstrated by the multitude of associated archaeological sites, stories, and cultural practices. Tipi rings and cairns surround the lake, as do culturally-significant plants and other natural resources. Additionally, the lake is known for being a collection area for Iniskim (ammonites) and the home of Soyeitaapiks (water spirits). This poster will provide an overview of the use and occupation of this area through an archaeological and cultural perspective to comprehensively contextualize and demonstrate the complex culture history of this place concerning pending development.

Speakman, Jeff, see Scott Cummings, Linda

Stafford, Jr., Thomas W., see Scott Cummings, Linda

Stafford, Thomas W., see Scott Cummings, Linda

Sumner, Raymond (Colorado State University)
Session 2: *Folsom Point Diggings: The Quest to Rediscover the T. Russell Johnson Site and Its Associated Artifacts in Northern Colorado*

The Johnson site near Livermore, Colorado is a Folsom campsite identified in 1936 by local collector, T. Russell Johnson. The site hosted multiple investigations by a "who's who" of famous archaeologists such as Marie Wormington, Cynthia Irwin-Williams, and George Agogino, yet the site remains unrecorded with the Office of Archaeology and Historic Preservation despite being labelled on the USGS 7.5' map. Fieldnotes from this past work are evidently lost and for nearly sixty-years the site's artifacts were too. However, recent genealogical research provided a clue that led to the discovery of Johnson's artifacts hidden within the collections of the Fort Collins Museum of Discovery. Recent re-survey of the site by the CSU Archaeology Field School was augmented by repeat photography to identify the old excavation units. This demonstrated a need for officially recording the site and proposing future research including drone-mapping and geoarchaeology to better understand the site and its relationship to other Folsom sites in the county.

Sundstrom, Linea, see Keyser, James D.

Taylor, Ian (British Museum), **Alan Slade** (University of Southampton)
Session 8: *Early Paleoindian Fluted Points in London: Two Collections of North American Stone Tools Revisited in the British Museum*

In reserve storage the British Museum holds two collections of North American stone tools. The Thomas C. Kelly collection of stone implements in the Department of Britain Europe and Prehistory contains a number of Clovis fluted points from the south and mid-west U.S.A. The Department of Africa, Oceania, and the Americas holds a geographically and culturally wide-ranging collection of pre-contact archaeology acquired for the most part during the 19th Century. Within these collections a

number of Paleoindian artefacts, closely matching technological characteristics of Clovis points, were identified.

This paper presents a brief history of the collections, the background of acquisition and a detailed analysis of the Clovis points. The authors believe that the current study of these collections outside North America is an important addition to the knowledge of Clovis fluted point occurrences, their distribution, and also provides scholars outside the United States the opportunity to research the collection.

Taylor, Marie (Colorado State University), **Amber Czubernat** (Colorado State University), **Alyssa Axe** (Colorado State University)
Session 2: *The Final Chapter at the Fossil Creek Site (5LR13041), Larimer County, Colorado: Investigation of Hearth-centered Activity Areas*

The Fossil Creek Site is located along the Front Range of northern Colorado within a protected natural area. Artifacts from the site span from the Late Pleistocene to Late Holocene, with the site dominated by materials from the Early Ceramic or Plains Woodland era (CE 150-1150). The Center for Mountain and Plains Archaeology and the Colorado State University Field School performed survey, remote sensing, shovel testing, and excavation at the site between 2011-2018. For the past three seasons, the field school conducted extensive block excavations (over 70 m2) in an east-facing hillslope above the creek. Excavations have revealed over fifteen thermal features, with the block excavation focused on recording the site's hearth-centered activity areas. This poster summarizes excavated data retrieved from the 2018 CSU field school, especially discussing artifact types and their spatial relationship to known thermal features. This is significant as it adds to the regional understanding of Early Ceramic occupation along the Front Range in northern Colorado.

Tharalson, Kirsten, see Bement, Leland

Thompson, Thomas (Open Range Archaeology LLC), **Kevin Blackwood** (Arbuckle Karst Research Institute)
Session 12: *A Hydrogeological and Archaeological Study of One Cave in the Arbuckle Mountains of South Central Oklahoma*

The Arbuckle Mountains Geologic Province encompasses an area of about 2600 sq kilometers in southern Oklahoma and contains numerous cave springs. Rock art found within one cave in Pontotoc County suggests a possibility of human utilization of these caves since the Archaic Period. The extent of interaction past populations had with the caves is not known, but a diagnostic artifact (projectile point) found within another cave in this region suggests that Pre-Contact Period populations may have utilized these caves as temporary shelters. Based on data recovered from an underwater survey of the cave, it is unlikely the artifact was introduced to the system by fluvial processes. Also, the geomorphology upstream of this artifact's location was found to be unfavorable for the mobilization of material larger than coarse sand. A description of the features within this cave system indicates the unlikelihood of hydrologic deposition of this artifact within this cave.

Thompson, Thomas (Open Range Archaeology LLC)
Session 10: *An Extensive Lithic Analysis "in the Rough": Interpretations of Toolstone Material Variability and Utilization at Twenty Phase II Survey Sites within or near the Arkansas River Valley of Oklahoma and Arkansas.*

This poster includes the results of two-year long cultural resources mitigation and analysis project conducted by staff archaeologists from Open Range Archaeology LLC with assistance from students with the University of Oklahoma Anthropology Department and One Member of the Arbuckle Karst Research Institute. This analytical focus reflected the situation that most of the cultural resources collected from this project included lithic artifacts. A database for this research was designed to include several qualitative and quantitative attributes of over 16,400 lithic artifacts. This was to facilitate the collecting of data significant to the understanding of the choices made during the lithic material

procurement, lithic material preparation, and lithic tool production processes.

Todd, Lawrence (GRSLE), **Kierson Crume** (BLM), **Kyle Wright** (USDA Forest Service), **John Fernandez** (Meeteetse Recreation District), **Greg Bevenger**
Session 10: *Engaging the next generation and promoting local stewardship: Partnerships in Archaeology*

Although K-12 archaeology events are not rare, often these involve simulated excavations or artifact show-and-tell displays that provide examples of archaeological materials, but seldom try to explain how such examples are incorporated into research programs. We have undertaken a variety of archaeology events for young participants that emphasize cooperative engagement in question-driven field exercises that focus on experiential learning about the research process and collection of primary archaeological field data. Examples of student participant projects include 1) recording surface artifacts (glass beads) to evaluate hypotheses about how archaeological assemblage of unknown age was created; 2) learning about thermal fracture properties and stone boiling as introduction for documenting and interpreting spatial patterns of prehistoric fire cracked rock scatters; 3) investigating the role of non-human agents (harvester ants) in assessing site formation and long-term landscape dynamics. An underlying goal has been to highlight humans as complex participatory components of ecological systems.

Todd, Lawrence (GRSLE), **Kyle Wright** (Shoshone National Forest), **John Kappelman** (University of Texas, Austin), **Jack Hofman** (University of Kansas)
Session 5: *Enigmatic Wooden Structures, Shoshone National Forest, NW Wyoming*

Sheeptraps, wikiups, and culturally modified trees are not uncommon types archaeological features in high elevation montane settings. Other combinations of wooden walls, stone alignments, and peeled trees provide much less clear-cut interpretive designations. Field work by the Park County Historic

Preservation Commission, Shoshone National Forest, and GRSLE archaeology in 2017-2018 at several such localities (48PA258, 48PA1318, 48PA1319, 48PA1320, and 48PA3352) provides a good deal of additional basic descriptive data, but little in the way of interpretive clarity. Examples of the documentation protocols used for two of these, Stockade Lake (48PA258) and Cow Creek (48PA3352) are presented and possible uses of the wooden walled structures are reviewed. While the role these perishable features played in mountain landscapes is still uncertain, they are unique, high visibility evidences of the diversity of human uses of high elevations that are the focus considerable public interest and merit preservation and additional investigation.

Todd, Lawrence C., see Crable, Barbara M

Todd, Lawrence, see Buxton, Jonah

Toom, Dennis (University of North Dakota)
Session 14: *The Government Creek Site and Late Plains Village Trade Relations in the Northern Plains*

The Government Creek site (32BI135) was a small, moderate-density artifact scatter located on the eastern edge of Little Missouri Badlands in western North Dakota. The single component site consisted mainly of lithic and ceramic artifacts and animal bone debris. Diagnostic artifacts and radiocarbon dates indicate a terminal prehistoric or early protohistoric period, Plains Village tradition occupation dating to the A.D. 1500s or early 1600s. Of particular note was the presence of a high percentage of exotic tool stone, namely Spanish Diggings orthoquartzite and Hartville Uplift dendritic chert, apparently from the Spanish Diggings quarries in southeastern Wyoming. It is speculated that the site was occupied by a small group of Hidatsas or Crows who were returning from a trade rendezvous in northeastern Wyoming to their residential base in western North Dakota, presumably one of the Hidatsa villages on Missouri River to the east.

Trabert, Sarah (University of Oklahoma)
Session 16: *Reading between the lines of historical documents: The Archaeology of a Wichita Village (34KA3)*

The Deer Creek site is an 18th-century fortified Wichita village in Oklahoma. The site is featured in dozens of historical accounts and publications yet was not excavated until 2016. This article summarizes documents on Deer Creek and other fortified villages and describes results from recent excavations of the site. Selective use of historical documents in the interpretation of these fortified sites is critical for understanding their complex construction and use. The Deer Creek site was just one of many villages in the region where Indigenous peoples regularly negotiated with European travelers, actively choosing which practices could change to accommodate new relationships.

Trabert, Sarah, see Bethke, Brandi

Van Alst, Emily C., see Scheiber, Laura L.

Varney, R. A., see Scott Cummings, Linda

Varney, R. A., see Scott Cummings, Linda

Vehik, Susan (University of Oklahoma)
Session 10: *A Fourteenth Century Southern Plains Star Chart*

In 1978 excavations in the first of four houses at the Uncas site (34KA172) produced several pieces of a burned clay panel carrying multiple finger tip impressions. Uncas is a late fourteenth century site north of Ponca City, Oklahoma and south of Arkansas City, Kansas overlooking the Arkansas River. Several pieces of this panel were reassembled at that time, and the impressions seemed to be in a pattern, but the exact pattern was unclear. No suggestions were made as to what the panel represented or what its purpose was. The Uncas collections were reanalyzed in 2015 and attempts were once again made to reassemble the panel. With recent archaeological interest in belief systems the possibility was recognized that this panel might be a

star chart. Further consultation with amateur astronomers reinforced this idea. The purpose of this poster is to demonstrate the close similarity between the pattern of finger tip impressions and a specific arrangement of the Pleiades, Hyades, and other nearby stars. Also discussed will be possible purposes for the chart.

Velchoff, Nancy (Gault School of Archaeological Research & Texas State Univ.)
Session 3: *The Gault Assemblage: Its Manufacture and Use*

Excavations in Area 15 recovered a substantial assemblage of stone tools from the lowest deposits (Strata 1 and 2). These oldest materials are referred to as the Gault Assemblage. This assemblage is comprised of over 150,000 artifacts of mostly flakes and debitage. So far, over 200+ tools including artifacts directly related to the manufacture and/or maintenance of expedient and formal tools have been identified and provide significant evidence of subsistence activities of the earliest known prehistoric humans at the Gault Site. Analysis of these tools and associated cultural materials is ongoing, and some current archaeological interpretations are subject to future refinement. Results from preliminary analyses of these items from below-the-known Clovis strata in Area 15 are presented as discussions and updates on the more exceptional pieces in this tool assemblage.

Vilsack, Laura (Prehistory Research Project/Gault School of Archaeological Research), **Sergio Ayala** (Prehistory Research Project/Gault School of Archaeological Research)
Session 3: *Area 12 - Gault Assemblage - Debitage Analysis*

A lithic assemblage dating to 15,000 years and older is being explored at the Gault site. This assemblage is present in excavation Area 12 spanning 125 centimeters in eight unit-levels. While the depth and breadth of the assemblage restricts the empirical adequacy of various kinds of analysis (e.g., spatial, thermal, and use-wear), these avenues were nonetheless explored. A small glimpse of stone tool production and assemblage is

examined in Area 12 and the technological behaviors expanded upon in this report.

Vogt, Cassie, see Williams, David

Waggoner, Tricia (Kansas Historical Society)
Session 1: *From Mission to Museum: Recent Investigations at the Kaw Mission State Historic Site (14MO368)*

Recent archeological investigations, including metal detection survey, geophysical survey, and excavations, at the Kaw Mission State Historic Site (14MO368) have shed light on the life of the Mission property from the time it was first constructed in 1851 to its current use as a museum. Some of these uses, such as a private residence, were previously known. Others, such as a Civil War era camp, are newly discovered. This work will answer questions about what role the Mission played with the Santa Fe Trail, with the Kaw community, and with early Euro-American settlers in Council Grove. The findings of these investigations will be used to reinterpret the museum in 2020.

Walker, Danny (University of Wyoming), **Carolyn Buff** (Wyoming Archaeological Society), **Rory Becker** (Eastern Oregon University), **Patrick Walker** (Wyoming Bureau of Land Management)
Session 1: *The Continuing Search to Preserve a Lost Indian Wars Mass Grave in Central Wyoming.*

What happened in June 1865 during a battle between 20 United States soldiers and 2-3000 Sioux, Cheyenne and Arapaho warriors at what has become known as the Battle of Red Buttes? The search for the location of the Battle of Red Buttes began in the 1920s. A reevalutation of the battle including additional archaeological field and archive research has been ongoing since 2005 but has not located the mass grave of the twenty soldiers killed. Twenty-five hectares were surveyed with Bartington magnetometers in 2012 and 2016. While a four hour battle may have an ephemeral archaeological footprint, it is still visible magnetically because of the battle activities (i.e., artifact

distributions, burned wagon parts). Field studies in 2016 yielded the best evidence to date for the battle location. In 2018, the landscape was preserved from development with the help of The Conservation Fund and Wyoming Bureau of Land Management.

Walker, Patrick, see Walker, Danny

Walter, Tamra L. (Texas Tech University)
Session 16: *Reframing the Colonial Experience: Native and Spanish Interactions at San Sabá and Mission San Lorenzo*

Colonial encounters have often been approached from European perspectives that at best, minimize the role of indigenous peoples and at worst, deny Native actors agency. To confront the issue, archaeologists are attempting to decolonize thediscourse through various means intended to correct these biases. Archaeological investigations at Presidio San Sabá and Mission San Lorenzo afford an opportunity to reexamine Native and Spanish interactions by refocusing the lens through which these experiences are viewed. In so doing, changes in both methodological and theoretical approaches are necessary to confront the traditional narratives that so often dominate archaeological discussions of New World cultural exchanges.

Weathermon, Rick (University of Wyoming)
Session 10: *Obsidian from a Late Archaic Cave Occupation in the Black Hills of South Dakota*

Analysis by XRF of 148 obsidian artifacts from Crystal Cave in the Black Hills of South Dakota indicate three different sources, all more than 550 kilometers to the west. The sourced obsidian represents less than 15% of the total obsidian artifacts recovered from the site. The majority of other lithic artifacts are derived from locally available cherts and quartzites. Also present are highly curated items of non-local Knife River Flint and Badlands Plate Chalcedony originating from the northeast and east. Dating to ca. 2500 rcybp and associated with large numbers of perishable artifacts, some of the obsidian exhibits weathered rinds

indicating cobbles or blocks were transported to the site and further reduced. Technologically, the obsidian was treated similarly to locally available lithics, resulting in large numbers of unutilized flakes and blades. An east-west trade network predating the Hopewell Interaction Sphere is supported by this site and other locations.

Wernecke, D Clark (The Gault School of Archaeological Research)
Session 3: *The Incised Stones from the Gault Site, Central Texas*

Since the Gault Site was initially brought to the attention of archaeologists in 1929 incised stones were known to have been found there. The Gault School of Archaeological Research has, to date, recorded 142 stones with designs or partial designs on them from provenienced excavations, surface collections and collections in private hands. The oldest provenienced examples are reliably dated to Paleoindian cultures making them representative of the earliest art in the Americas while the youngest are Late Prehistoric. Previous publications have described the oldest artifacts but not the bulk of the collection. This paper will summarize how we have defined, detected and classified these incised stones.

Wernecke, D Clark (The Gault School of Archaeological Research), **Thomas Williams** (The Gault School of Archaeological Research)
Session 3: *The Gault School of Archaeolog*

Since 1999 the Gault School of Archaeological Research has worked on the Gault Archaeological Site in Central Texas. Ten years of excavations looked at ca. 3% of the site and recovered 2.6 million artifacts covering occupations over 16,000 years. Though past looting and collecting damaged and destroyed many areas with evidence of occupation in the last 8,000 years there is still abundant evidence to show use of the site by nearly all prehistoric central Texas cultures. Newly published research focused on excavation Area 15 has also established sound geological context and dating showing significant Clovis era occupation and earlier

occupation by a previously unknown culture that adds data to the ongoing search for the first peoples in the Americas.

Wiebelhaus, Margaret (Augustana University), **Natalie Chouinard** (Augustana University), **Andrew Kracinski** (University of Illionis Chicago), **K.C. Carlson** (Augustana University), **Douglas Bamforth** (University of Colorado Boulder)
Session 5: *Landscape and Geophysical Analysis at the Lynch (25BD1) Nebraska*

A Magnetic Gradiometry Survey conducted by Adam Wiewel with the Midwest Archeological Center at the Lynch site (25BD1) resulted in a coverage area of 42.5 acres and recovered 1,386 magnetic anomalies. The excavations of the summer 2018 field school focused on identifying the anomalies and differentiating between anomaly types to better focus future excavations on structures such as house floors. This poster will combine the geophysical data with excavation results to better represent our understanding of the spatial distribution of anomalies at the site.

Wiewel, Adam (National Park Service, Midwest Archeological Center)
Session 16: *Arikara Agricultural Production at Fort Clark, North Dakota*

Historical documents and remote sensing data suggest the Arikara, who occupied a village next to the American Fur Company's Fort Clark, produced large quantities of maize during the mid-nineteenth century. This level of production, which in part was driven by the changing demands of the Euroamerican fur trade, occurred despite numerous challenges introduced by those same traders, including epidemic disease. My perspective on the circumstances of this period are best summarized by Neal Ferris's notion of "changed continuities," which counters the conventional narrative of Native cultural change during colonial times. In this paper, I discuss relevant historical information concerning agricultural production among the Arikara at Fort Clark. Although sparse in number, these documents support inferences I draw from

remote sensing data and statistical analyses of storage pit volumes at the site. I relate these findings to Ferris's changed continuities concept.

Wiewel, Adam, see De Vore, Steven

Williams, David (South Dakota State Historical Society Archaeological Research Center), **Cassie Vogt** (South Dakota State Historical Society Archaeological Research Center), **Kelly Morgan** (Lakota Consulting, LLC)
Session 14: *Development of a National Register of Historic Places Multiple Property Documentation Form for Stone Circle Sites in South Dakota*

Stone circles appear across South Dakota and the Northern Plains in nearly every location where stones of a manageable size were available. Numerous arguments have been made throughout the past decades regarding the nature and function of stone circle sites on the Plains. Evidence indicates that stone circles had numerous functions, though some of them are lost to us today. The primary goal of this project is to develop a set of criteria by which stone circle sites in South Dakota can be accurately evaluated for National Register listing. The final product, a Multiple Property Documentation Form, will be prepared, establishing these criteria for the documentation of stone circle sites in South Dakota. Discussions with American Indian tribes will help to expand and elucidate these property types and elements of significance. We hope to consider stone circles sites of South Dakota from both an archaeological and American Indian ethnographic perspective.

Williams, Thomas (The Gault School of Archaeological Research/Texas State University)
Session 3: *Of Light and Grain: Optically-Stimulated Luminescence ages from Excavation Area 15 of the Gault Archaeological Site*

Optically-stimulated Luminescence (OSL) ages have been obtained from the entire stratigraphic sequence in excavation area 15 of the Gault Site. Area 15 yielded a near-complete regional prehistoric sequence from the earliest cultural manifestation,

known as the Gault Assemblage, through Clovis, Later Paleoindian, and the Archaic. Over the course of archaeological testing and excavation, three independent labs have been used to obtain and test samples. These ages are in excellent agreement with the cultural components down to the Clovis component and provide an age-range for the Gault Assemblage, stratigraphically beneath this. These data confirm the presence of an Upper Palaeolithic occupation of Central Texas by around at least 16,000 years ago.

Williams, Thomas, see Wernecke, D Clark

Wolberg, Alexaandra, see Hopper, Alaura

Wood, Cate (Oklahoma Historic Preservation Office)
Session 16: *Landscapes of liminality: Trail of Tears Disbandment Sites in Indian Territory*

During the 19th century, the U.S. government enacted a program of forced removal of Native Americans from their eastern and southern homelands to an area west of the Mississippi River known as Indian Territory. The end points of the migration trails were known as Disbandment Sites where the tribes temporarily camped and received supplies before dispersing throughout the region. These sites were often associated with other contemporaneous occupations such as military forts and farmsteads as well as subsequent events affiliated with tribal government and religion and thus occupy a liminal space within material culture studies and are often interpreted by their landscape setting. The goal is to understand the Native American diaspora of the 19th century by deciphering how past fieldwork and research has influenced our understanding of these ephemeral sites and their connection to the events, movement and identity of people in the Southern Plains region during this time.

Wright, Kyle, see Todd, Lawrence

Yelacic, David (Terracon Consultants, Inc.)
Session 11: *A Cross-Section of San Antonio Geoarchaeology*

The physical geography and cultural heritage of San Antonio make it a unique place among Texas cities (and beyond). In addition to the National Historic Preservation Act and the Antiquities Code of Texas, the city's development code provides yet another level of codified protections to the cultural resources of San Antonio, and as a result, many varied archaeological investigations including geoarchaeological components have been conducted across the city. From the Edwards Plateau to the Blackland Prairies and across prehistory through European settlement, this presentation is a cross-section of geoarchaeology in Cultural Resources Management projects in San Antonio, as understood through a survey of literature and peppered with personal experiences.

Zambrano, Carlos, see Buehler, Kent

Zedeno, Maria (The University of Arizona), **William Reitze** (National Park Service)
Session 14: *A Preliminary Assessment of Prehistoric-Contact Period Blackfoot Camp Demography*

The weakest link in reconstructing patterns of organizational complexity among late prehistoric Blackfoot ancestors known archaeologically as the Old Women's Phase (1000-250 BP) is the dearth of population estimates. Despite the large number of domestic stone architecture (rings, ancillary features), little is known about population dynamics of prehistoric camps along the Rocky Mountain foothills. A great part of the problem is the difficulty in establishing contemporaneity among structures in campsites. Yet, contact period accounts of camp composition and size provide a solid foundation to analyze the spatial structure of late prehistoric camps and aggregation processes. We present an assessment of camp aggregation in the Kutoyis Complex, located along the Two Medicine River in the Blackfeet Indian Reservation, Montana, to find new lines of evidence for estimating population and spatial arrangement of

large camps, and to suggest future avenues for securing precise radiocarbon dates to aid in reconstruction of camp demography.

Zedeño, María Nieves, see Soza, Danielle

Zedeno, Nieves, see Roos, Christopher

Zeimens, George (Western Plains Historic Preservation Association), **George Frison** (University of Wyoming)
Session 8: *Continued Investigations at the Powars II Paleoindian Red Ochre Mine in the Hartville Uplift Range in Wyoming*

The Powars II Paleoindian Red Ochre Mine in east central Wyoming is a large complex of archeological phenomena. Various facies of the site include the ochre mine, toolstone quarries that contain previously unknown varieties of chert and quartzite, rich and deeply stratified prehistoric deposits beneath historic mine deposits, and large stone circles that are apparently related to processing iron ore to obtain red ochre. The site is large and rare and offers the potential to produce unique information concerning Paleo activities such as red ochre procurement, ochre uses and concomitant ritual practices.

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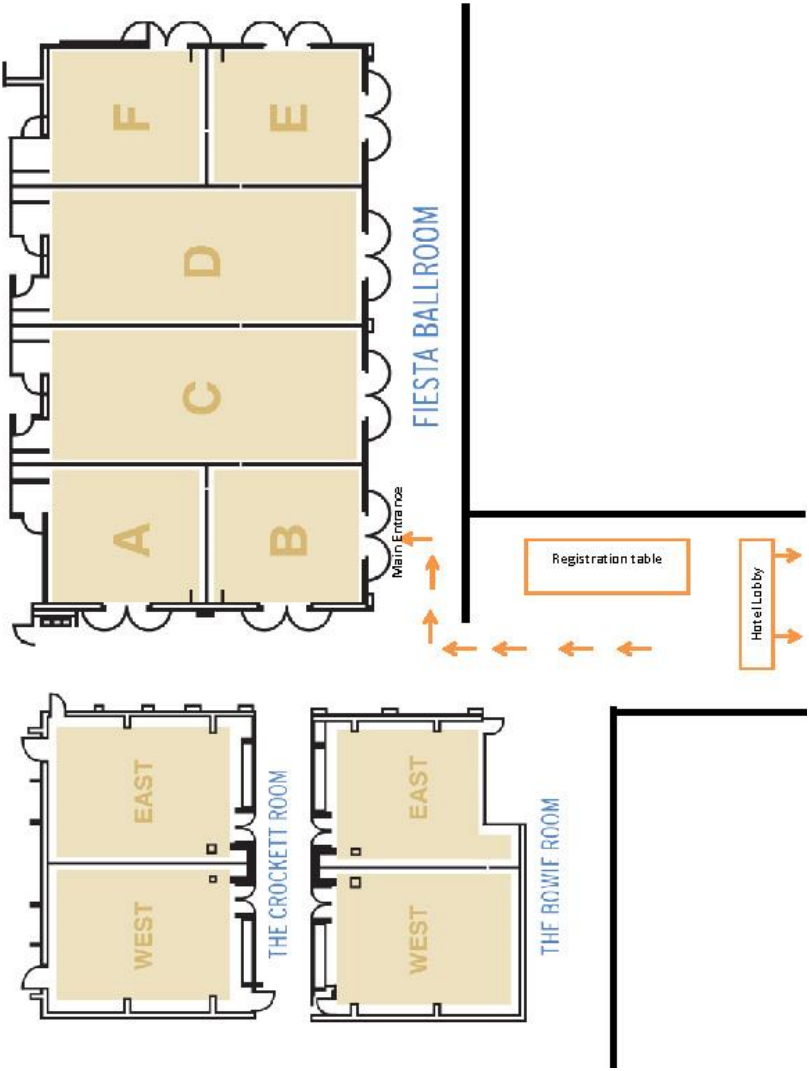

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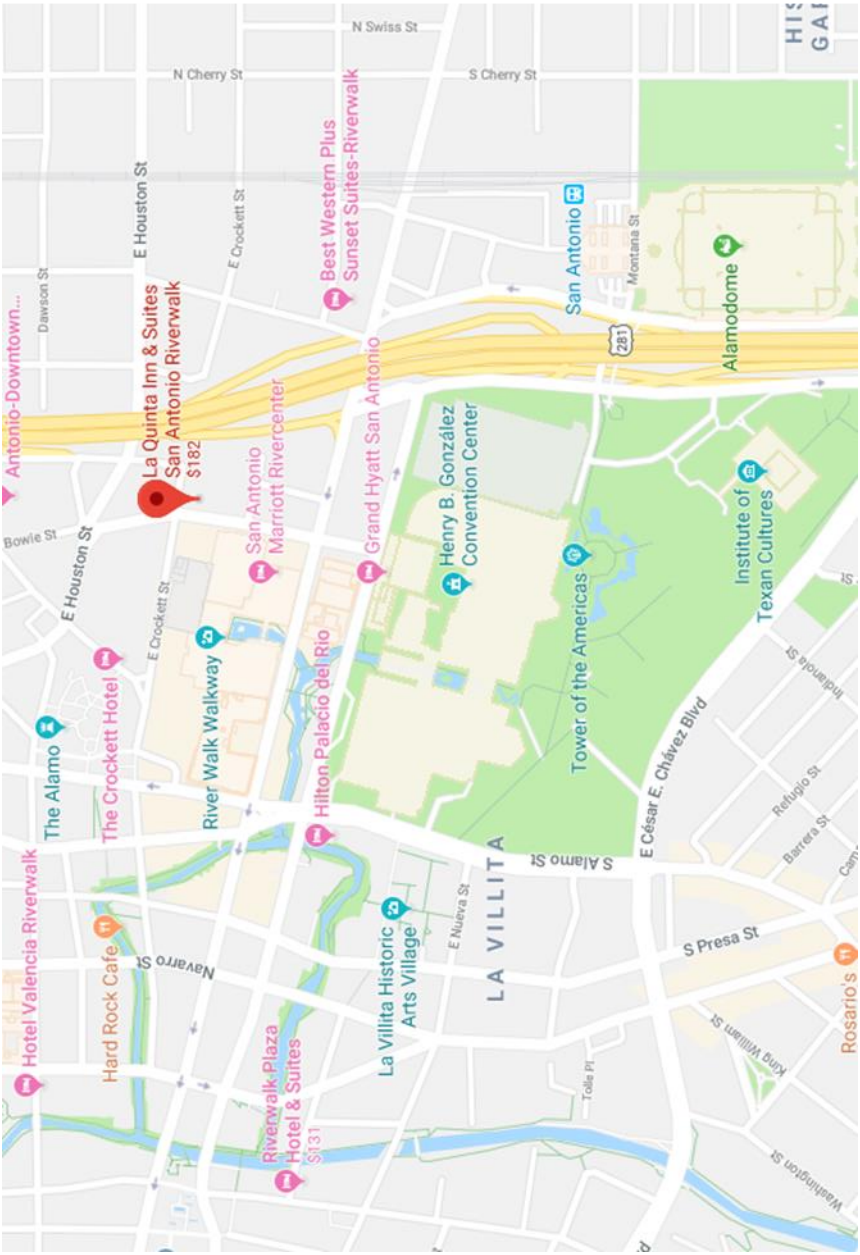

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