

PALEOAMERICAN
ODYSSEY

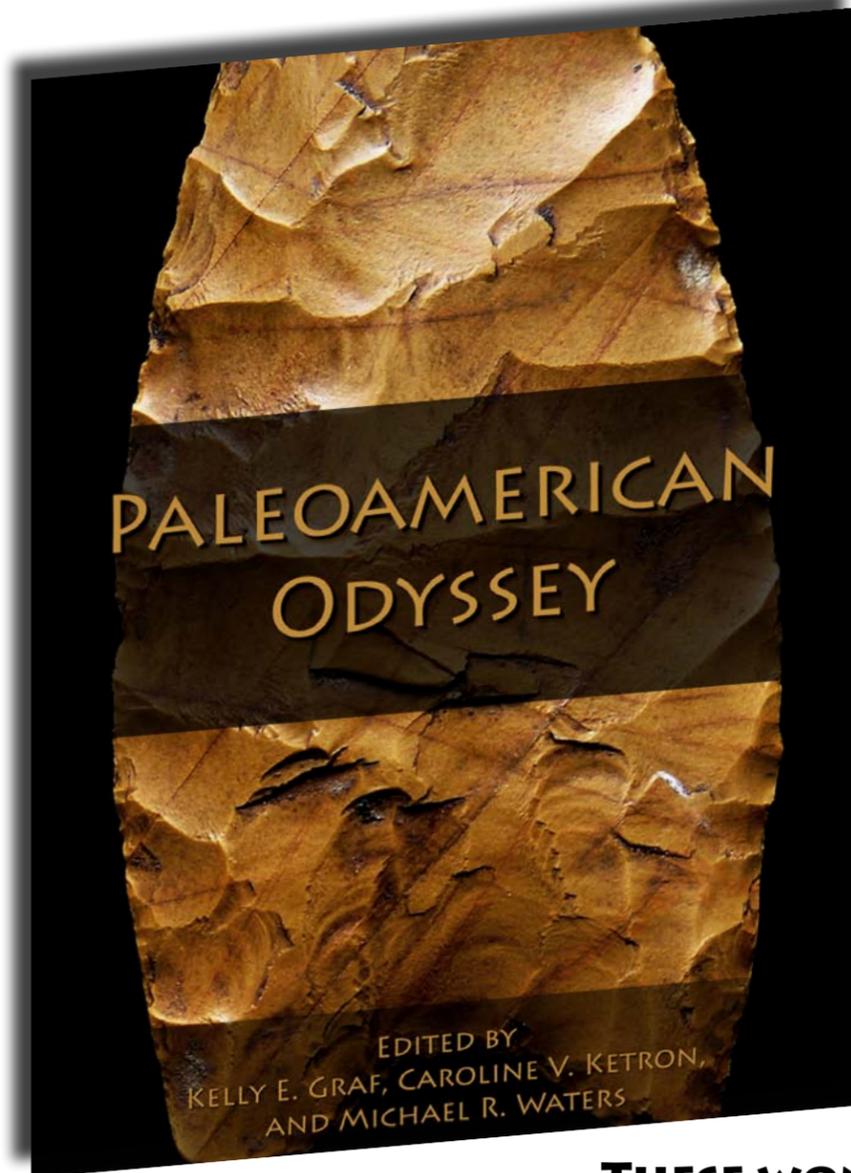
PROGRAM AND ABSTRACTS

SANTA FE, NEW MEXICO
OCTOBER 16-19, 2013

CONFERENCE VOLUME

Expanded versions of conference lectures are presented in the new book *Paleoamerican Odyssey*, edited by Kelly Graf, Caroline Ketron, and Michael Waters. The book is available for purchase at the conference registration desk, for a special price of \$55. After the conference, the regular price will be \$70 plus shipping, with CSFA members receiving a 20% discount.

After the conference, the book will be on sale via CSFA's web site (www.centerfirstamericans.org). It includes 31 peer-reviewed chapters by conference speakers, totalling 582 pages. *Paleoamerican Odyssey* was published by the Center for the Study of the First Americans in 2013. Make room in your suitcase for this one and save!



**THESE WON'T LAST.
BUY YOURS TODAY!**



PROGRAM & ABSTRACTS

OCTOBER 16-19, 2013

SANTA FE COMMUNITY CONVENTION CENTER

SANTA FE, NEW MEXICO

Welcome to the Paleoamerican Odyssey conference in beautiful Santa Fe, New Mexico!

In 1999, the Center for the Study of the First Americans, Smithsonian Institution, and Forrest Fenn, under the direction of Dr. Rob Bonnicksen, presented the Clovis and Beyond conference. Clovis and Beyond signaled an abrupt turn in peopling of the Americas research, with participants witnessing expansion of the scientific dialog to consider not just archaeological sites predating Clovis by a thousand years or more but also evidence from Asia, the Arctic, and Latin America. In time and space, Clovis and Beyond expanded the debate regarding the origins of the first Americans during the Ice Age. In many ways the outcomes of Clovis and Beyond mirrored the objectives of Bonnicksen’s Center. The conference created an opportunity for scientists studying the origins of the first Americans to convene and share new research results. The conference was also open to the public, expanding the dialog to include avocationalists and other people with an interest in science, natural history, and the history of humanity.

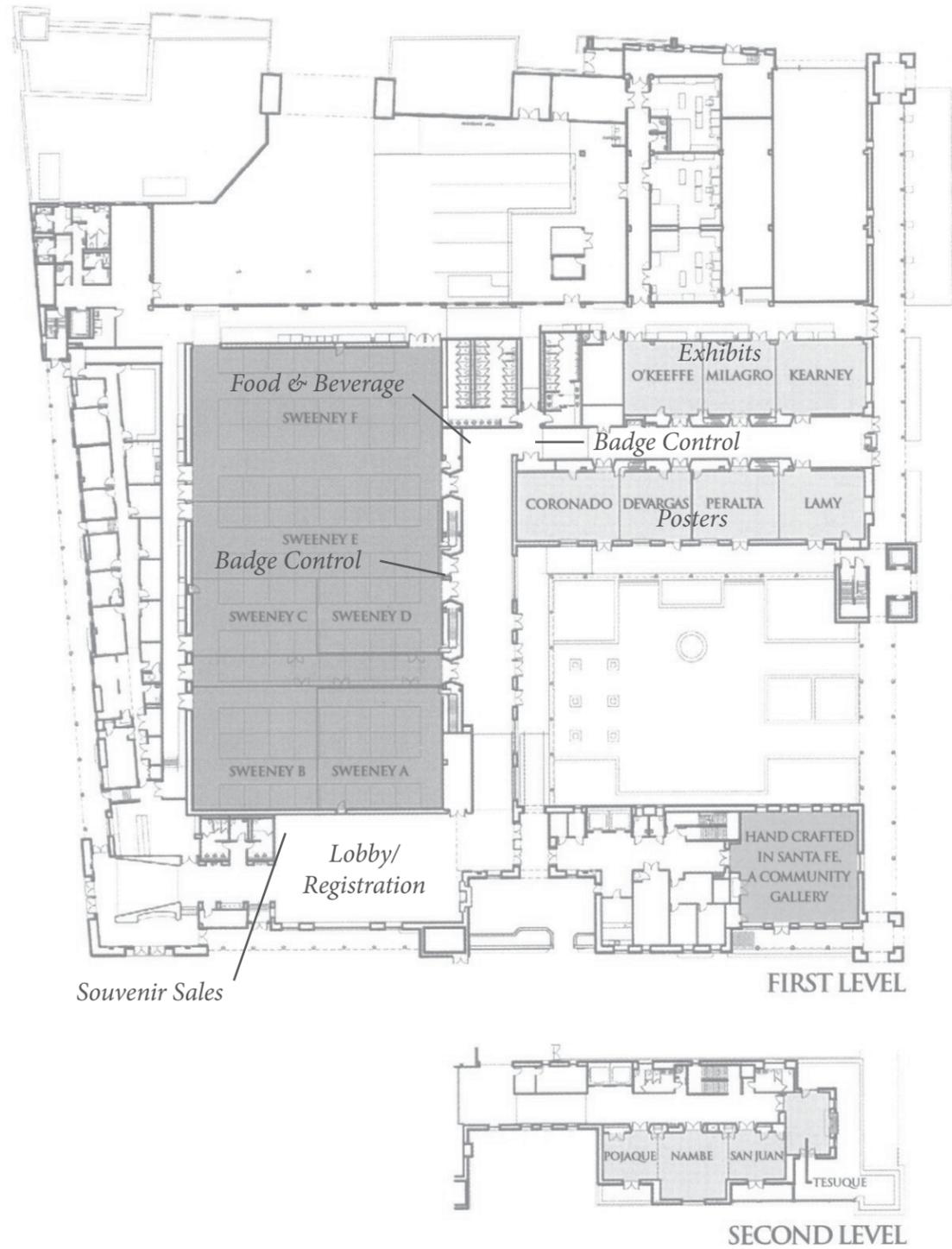
Now, fourteen years later, we meet again in Santa Fe, to continue the discussion. Again we do it in a public forum. Our goals are not so different from the original Clovis and Beyond conference. First, our intent has been to create a meeting place for scientists to share results of new research with their professional peers. Second, we wanted to include the public in our discussions, using the conference as an opportunity to inform non-professionals about the current state of our science. Third, we wanted to continue expansion of the peopling of the Americas dialog—to include scientists from beyond temperate North America and beyond archaeology. Certainly North American archaeology is still the dominant aspect of the presentations to be given at the conference, but we have taken care to include the records from northeast Asia, Alaska, and Latin America, and to include the rapidly evolving field of molecular genetics in the agenda.

We are excited to present to you the conference program. Let the Odyssey begin!

Michael Waters, Ted Goebel and Kelly Graf
Paleoamerican Odyssey Organizing Committee

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SANTA FE CONVENTION CENTER MAP



CONFERENCE ORGANIZERS

Organizing Committee

Michael R. Waters
 Ted Goebel
 Kelly Graf
 Tom Pertierra

Advisory Committee

Leslie Pfeiffer, Chair
 Robert Engle
 Elmer A. Guerri
 Steve Kohntopp
 Greg Moore
 Mark H. Mullins
 Marshall Payn
 Bob Rotstan
 Roy J. Shlemon
 William M. Wheless III
 Robert Wilson
 Sharon Wilson

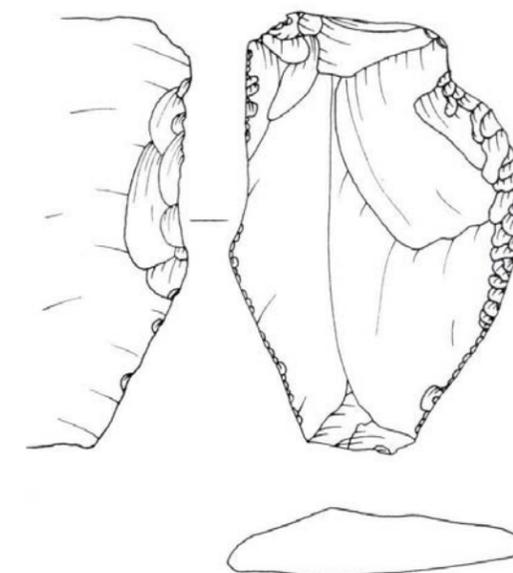
Staff

Christel Cooper, Registrar
 Rebekah Luza, Business Manager
 Cynthia Hurt, Co-Registrar
 Heather Smith, Webmaster and Graphic Artist

Joshua Keene, Graphic Artist

Student Volunteers

Beth Bell
 John Blong
 Marion Coe
 Lauren Cook
 Julie Crisafulli
 Frank Gonzales
 Angela Gore
 Myra Gracia
 Josh Keene
 Caroline Ketron
 Joshua Lynch
 Annie Melton
 Melissa Mueller
 Jessica Phillips
 Neil Puckett
 Erika Shofner
 Morgan Smith
 Jesse Tune
 Danny Welch
 Alex Yarnell
 Angela Younie



Host Institutions

Paleoamerican Odyssey is brought to you by the Center for the Study of the First Americans (Department of Anthropology, Texas A&M University) and the Southeastern Paleoamerican Survey DSO, in consultation with the National Museum of Natural History, Smithsonian Institution.

Major Contributors

Robert and Sharon Wilson
College of Liberal Arts, Texas A&M University
Bob Rotstan

Sponsors

Beta Analytic, Inc.
Far Western Anthropological Research Group, Inc.
The Louis Berger Group, Inc.
R. Christopher Goodwin & Associates, Inc.
Western Cultural Resource Management, Inc.

Acknowledgments

Many people contributed to the Paleoamerican Odyssey conference's organization and delivery.

CSFA's advisory board met annually for the past three years to discuss the conference's organization. All helped make important decisions, from when and where to hold the conference to details regarding its agenda. Elmer Guerri was especially helpful every step of the way--designing conference souvenirs, advertising the conference in avocational newsletters, magazines, and journals, and regularly beating the drum for conference registrants. Robert and Sharon Wilson also provided much needed financial support early on in the planning of the conference. Without their generosity we may have never gotten off the

ground. Similarly, Bob Rotstan provided financial support for marketing, ensuring that we could advertise the conference in some important venues.

Christel Cooper managed registration, and Rebekah Luza organized and maintained the financial system for the conference. Heather Smith designed and maintained the conference web site; she and Josh Keene developed the artwork and logo used in the conference's various materials. Laurie Lind was also active in the early organization of the conference, until her retirement from Texas A&M University in January 2013. Jim and Char Chandler formatted advertisements and announcements about the conference in *The Mammoth Trumpet*, and they created the page proofs and index for the conference's companion volume. Caroline Ketron also provided invaluable assistance in the editing of the book. Eighteen graduate and undergraduate students from Texas A&M University provided on-site assistance in registration, AV management, and security, as did Cynthia Hurt. Funding for the students' travel to the conference was graciously provided by the College of Liberal Arts at Texas A&M University.

Randy Daniel, Daron Duke, Joe Gingerich, Jessi Haligan, Mark Hubbe, Tom Jennings, Kathryn Krasinski, Bonnie Pitblado, Ashley Smallwood and Brian Wygal were instrumental in organizing poster symposia. We thank them warmly.

Finally, we owe special thanks to Tom Pertierra, who was instrumental in the early organization of the conference. Tom's energy and excitement for Paleoamerican Odyssey carried us through the last stages of conference planning and production.



Center for the Study of
the First Americans



What to Wear

Conference attire is casual. Santa Fe in mid-October can be cool, so consider bringing a sweater or light jacket.

No Smoking Policy

The Santa Fe Community Convention Center is a smoke-free environment. No smoking is allowed anywhere on SFCCC property.

Registration Desk

The conference registration desk is in the entrance lobby of the convention center.

Registration Desk Hours

Wednesday, October 16	Noon-6 p.m.
Thursday, October 17	7 a.m.-6 p.m.
Friday, October 18	7 a.m.-6 p.m.
Saturday, October 19	7 a.m.-6 p.m.

Badges

Please wear your conference badge to all scheduled events. Your badge is your entrance ticket. No one can be admitted without a conference badge.

Cell Phones and PDAs

Please turn off your cell phones before entering a session to prevent disturbing others and interrupting presentations.

Photography

Photographs are not allowed in lecture rooms; however, conference attendees can take photos in hallways, artifact rooms, and poster rooms, with permission of individual exhibitors.

Conference Rules

No food or drink is permitted in the Sweeney auditorium during presentations, or in exhibit and poster rooms. Please eat and drink in hallways, lobby, outside courtyard and other designated areas.

No audio or visual recordings of presentations are allowed.

No display of artifacts or other materials is allowed without prior approval of conference staff.

No artifacts are to be bought or sold at the conference. In addition, no solicitations or sales of any kind are allowed without prior approval of conference staff, and no signs or exhibits are allowed unless approved by SFCCC and the conference staff.

No demonstrations, public speeches, performances or exhibits are allowed on SFCCC property without prior approval from SFCCC and the conference staff.

No concealed weapons are allowed on convention center property.

Foot Traffic

To maintain good flow in and out of presentation rooms, please do not clog up doorways.

Conference Souvenir Booth

The souvenir booth is located in the lobby of the convention center, across from the registration table. Hours include (until all merchandise has been sold):

Wednesday, October 16	Noon-6 p.m.
Thursday, October 17	7 a.m.-3:30 p.m.
Friday, October 18	7 a.m.-3:30 p.m.
Saturday, October 19	7 a.m.-3:30 p.m.

Wi-Fi Access

Attendees can find free wi-fi access for their smart phones, pads, or laptops.

Exhibit Hall Hours

Thursday, October 17	7 a.m.-7 p.m.
Friday, October 18	7 a.m.-7 p.m.
Saturday, October 19	7 a.m.-4 p.m.

Food and Beverages

Coffee, water and other beverages as well as lunch foods are for sale on site by Cowgirl Cafe, located in the hallway corner between the Sweeney auditorium and poster/artifact display rooms.

SPECIAL EVENTS

Opening Reception

An opening reception will be held in the outside mezzanine on the second floor of the convention center, from 6:00-8:00 p.m. on Wednesday evening, compliments of the Santa Fe Community Convention Center. The reception is an excellent opportunity to meet and greet colleagues, old friends and new friends.

Banquet and Awards

The conference banquet will be held from 7:00-10:00 p.m., Saturday evening, at the La Fonda Hotel in downtown Santa Fe. Tickets cost \$75. Pre-conference ticket purchasers can find their tickets in their registration packet. If still available, tickets can be purchased at registration before 6:00 p.m. on Thursday. The La Fonda's dining room will open its doors at 7:00 p.m., the plated meal will be served at 7:30 p.m., and dessert will be served at 8:30 p.m.

During dinner several awards will be announced, and during dessert, Dr. Peter Hiscock will present the banquet lecture on the Ice Age peopling of Australia.

James and Charlene Chandler will receive a special recognition award for their devoted and outstanding work as editors of *The Mammoth Trumpet* and other CSFA publications since 2000.

Joseph and Ruth Cramer will receive a special recognition award for their lifelong and generous support to the study of the first Americans.

Ruth Gruhn will receive a special recognition award for her long support of the Center for the Study of the First Americans and her lifelong role in the search for the first Americans.

Tom Pertierra will receive a special recognition award for his invaluable assistance in the organization of the Paleoamerican Odyssey conference and his support of archaeological research and preservation.

Roy Shlemon will receive a special recognition award for his generous support of student research at the Center for the Study of the First Americans.

Robert and Sharon Wilson will receive a special recognition award for their strong support of the Paleoamerican Odyssey conference and the Center for the Study of the First Americans.

Opening and Closing Blessings

Mr. Jose Lucero, a Tewa Elder of the White Corn Family and Winter Clan, will present both the opening and closing blessings of the conference. Mr. Lucero is a member and full-time resident of Santa Clara Pueblo, member of the Traditional Circle of Elders of the American Indian Institute, and member of the Traditional Elders Circle of the Indigenous Elders of the Western Hemisphere. He is well-known as an advocate for Native agriculture, the environment, and water conservation.

Lectures

For many conference attendees the formal lectures in the main convention center auditorium will be the highlight of the conference. Leaders in the field of peopling of the Americas research will present on a variety of topics, from the archaeology of Japan to the analysis of ancient DNA from prehistoric skeletal remains. The convention center auditorium seats an audience of about 1000 people; conference attendees should nonetheless arrive early to get a good seat up front and near the speaker's podium.

Posters

During the conference, 195 posters will be presented, chiefly by professionals and students. For each scheduled poster session, posters will be hung for 5.5 hours, either in the morning or afternoon. Poster presenters are expected to be at their posters during scheduled periods to greet conference attendees and answer their questions. Poster sessions will take place in the Coronado/DeVargas and Peralta/Lamy meeting rooms, across the hall from the artifact display rooms.

SPECIAL EVENTS (CONT.)

Evening Oral Sessions

Fifteen 15-minute oral presentations will be delivered on Thursday and Friday evenings, October 17-18 (starting at 7:00 p.m.). These will be presented in the Sweeney auditorium at the convention center.

Evening Round-Table Discussions

On the evenings of Thursday and Friday, October 17 and 18, all are welcome to participate in round-table discussions on special themes. Thursday evening's discussion focuses on modeling the Clovis adaptation, while two discussions on Friday evening focus on (1) early chert quarries and workshop sites and (2) the "Clovis Comet" debate. Discussions start at 7:00 p.m.; seating space is limited and first-come, first-serve, so arrive early. These will be held in the meeting rooms on the second floor of the convention center.

Artifacts on Display

Collections of artifacts from more than 40 archaeological sites are on display in the O'Keefe/Milagro/Kearny meeting rooms, across the hall from the poster presentations. These include Paleolithic materials from Japan and Alaska; Clovis materials from Pennsylvania, Virginia, Iowa, Oklahoma, Texas, New

Mexico, Wyoming, and Oregon; Folsom material from Oklahoma; Western Stemmed material from Idaho, Nevada, and Oregon; late Paleoindian material from Tennessee; and pre-Clovis material from South Carolina, Pennsylvania, Tennessee, Wisconsin, Texas, Kansas, Chesapeake Bay area, Oregon, Washington, and Brazil. Security guards will be present in these rooms at all times, and video surveillance and recording will monitor all activities.

Book Tables

Attendees can find books for sale in two places. First, Texas A&M University Press has a table near registration in the convention center lobby. Second, University of Utah Press and Archaeology Press of Simon Fraser University have tables in the artifact exhibit room. The companion conference volume, *Paleoamerican Odyssey*, is for sale at the registration desk in the main lobby of the convention center.

Also in the exhibit room there will be exhibits where you can learn about the Site Steward Foundation, Inc., of New Mexico; the Center for Applied Isotope Studies, University of Georgia; *American Archaeology* magazine; and use-wear analysis at the Center for the Study of the First Americans.



PRESENTER INFORMATION

Oral Presenters

Day-time lectures are scheduled for 30 minutes, with discussion periods scheduled for sets of successive lectures. Evening lectures are scheduled for 15 minutes; there is no scheduled time for questions. Time will be kept by session moderators.

All slides must be presented as Powerpoint files for PC. If you are using another program, please convert your presentation to Powerpoint (.ppt) and check that your presentation works properly.

Speakers should provide Jesse Tune, the conference A/V liaison, with their Powerpoint presentation at least the day before their session (no later than 6 p.m. daily). Jesse can be found at the convention center throughout each day of the conference and at the speakers' hotel.

Poster Presenters

Poster boards are 4 feet tall by 8 feet wide (tackable surfaces are slightly smaller than those dimensions); presenters should prepare posters to fit within these dimensions. Push pins will be provided. Poster spaces will be numbered, and it is expected that presenters will find their assigned space for their poster (please refer to the program below).

Presenters should display their posters for the duration of scheduled sessions, and they are encouraged to be present at their posters during coffee and meal breaks. Morning presenters should set up their posters at 7:00 am, taking them down at 12:30 p.m.; afternoon presenters should set up by 1:00 p.m. and take down at 6:30 p.m. Presenters should expect the most traffic before and after oral sessions in the Sweeney auditorium, and during coffee breaks.

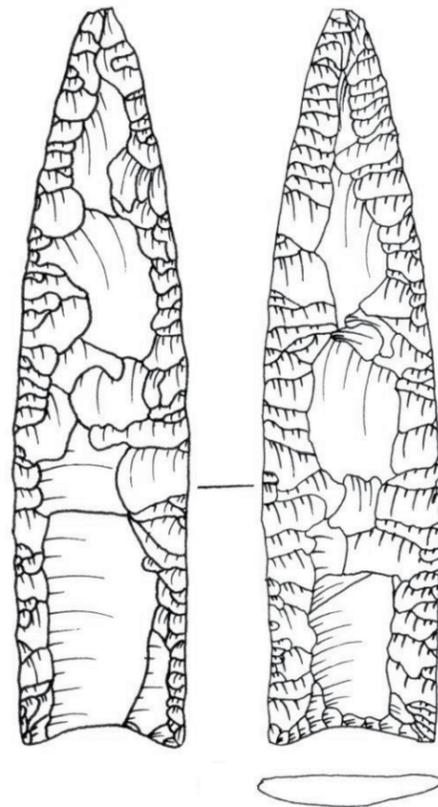
Artifact Exhibitors

Upon arriving with a collection, artifact presenters must fill out a registration card and make time to have their collection inventoried and photographed. The artifact display room will be open and available

for set up starting at 9:00 a.m. on Wednesday, October 16, and the room will remain open until 9:00 p.m. on that day. On Thursday, October 17, the room will reopen and artifact registration will resume at 7:00 a.m. Exhibitors will be assigned table spaces on site during the artifact registration period.

The exhibit rooms containing artifact collections and other exhibits will be open to conference-goers from 7 a.m. to 7 p.m. on Thursday and Friday, and from 7 a.m. to 4 p.m. on Saturday. Doors will be locked nightly from 7:00 p.m. to 7:00 a.m. Security guards will be in the room at all times, 24 hours/day. These rooms will also be under video surveillance and recording throughout the conference.

The artifact exhibition room will close for good at 4:00 p.m. on Saturday, October 19. Collections will be checked out between then and 6:30 p.m., and then again between 7:00 and 10:00 a.m. on Sunday, October 20.



GETTING AROUND SANTA FE



LEGEND (P) City of Santa Fe Parking (P) Public Parking (X) Public Restrooms (I) Visitor Information

- | | |
|---|---|
| 1 Bataan Memorial | 32 Santa Fe Community Convention Center |
| 2 Bataan Museum | 33 Santa Fe Country Club |
| 3 Cathedral Basilica of St. Francis of Assisi | 34 Santa Fe Outlets |
| 4 Center for Contemporary Arts | 35 Santa Fe Place Mall |
| 5 Chamber of Commerce | 36 Santa Fe University of Art and Design |
| 6 Children's Museum | 37 Santa Fe Visitor Center/Santa Fe Southern Railway/New Mexico Rail Runner |
| 7 Christ St. Vincent Hospital | 38 Santuario de Guadalupe |
| 8 City Bus Station | 39 SITE Santa Fe |
| 9 City Hall | 40 St. John's College |
| 10 Cristo Rey Church | 41 State Capitol |
| 11 Cross of the Martyrs | |
| 12 DeVargas Center Mall | |
| 13 Dog Park | |
| 14 Farmers Market | |
| 15 Federal Courthouse | |
| 16 Federal Post Office | |
| 17 Fort Marcy Complex | |
| 18 Genoveva Chavez Community Center | |
| 19 Georgia O'Keeffe Museum | |
| 20 Lensic Performing Arts Center | |
| 21 Loretto Chapel | |
| 22 Museum of Contemporary Native Arts | |
| 23 Museum Hill - Indian Arts & Culture, Folk Art, Spanish Colonial Art, Wheelwright | |
| 24 New Mexico Museum of Art | |
| 25 New Mexico Tourism Department | |
| 26 Oldest House | |
| 27 Palace of the Governors/New Mexico History Museum | |
| 28 Public Library | |
| 29 Rodeo Grounds | |
| 30 San Miguel Mission | |
| 31 Santa Fe Community College | |

DOWNTOWN SANTA FE



Santa fe
**SANTA FE CONVENTION
 AND VISITORS BUREAU**
 — SantaFe.org —

The oldest capital in the United States, Santa Fe is one of the most beautiful cities of the American Southwest, and it has many attractions that draw tourists from around the world, not to mention archaeologists on “busman’s holiday”.

There are plenty of things to do and see within walking distance of the Santa Fe Convention Center.

For starters, take a stroll around the Santa Fe Plaza, the heart of the city with historic sites, museums, shops, and restaurants. Don’t miss the local artisans selling their wares along the front of the Palace of the Governors, and if you have a few hours to spare, visit the newly opened New Mexico History Museum, which has permanent and rotating exhibits highlighting the heritage of the region.

Not far from the plaza are more museums. The Georgia O’Keeffe Museum is just two blocks away in a Pueblo Revival-style building. Its current exhibit is “Modern Nature: Georgia O’Keeffe and Lake George”. The Institute of American Indian Art, a block east of the plaza, contains a museum dedicated to contemporary American Indian Art. Museum Hill, located about two miles from the plaza, is home to four more museums: Museum of International Folk Art, Museum of Indian Arts and Culture, Museum of Spanish Colonial Art, and Wheelwright Museum of the American Indian. All have excellent exhibits; the Wheelwright Museum in particular is in an octagonal-shaped building designed after a traditional Navajo *hogan*.

Santa Fe is a top-ten U.S. city for historic preservation. Besides soaking up that history by walking around town, consider visiting the Palace of the Governors, on the plaza; San Miguel Mission, the old-



est church in the U.S., built in 1626; or El Rancho de las Golondrinas, a living history museum a few miles south of Santa Fe.

Further afield, with a car, check out the region’s archaeological/historical sites. Pecos National Historic Park, 25 miles east of Santa Fe, has self-guided tours of Pecos pueblo and historic mission ruins. Also, on Fridays there are guided tours of Arrowhead Ruin, and on Saturdays, guided tours of the Glorieta Pass Civil War battlefield. Bandelier National Monument is located only 45 minutes away. It not only has one of New Mexico’s most important archaeological sites, but also is a prime place to enjoy the region’s naturally beautiful landscape. Kasha-Katuwe Tent Rocks National Monument is nearby, too, just 40 miles southwest of Santa Fe. This is a natural recreation area of badlands and hoodoos, with paved and unpaved hiking trails.

Expect to do some shopping while in town? Try the shops at the town’s various museums, or visit Canyon Road, home to more than 100 galleries, boutiques, and restaurants, all along one-half mile of the road. On Friday and Saturday during the Paleoamerican Odyssey conference, Canyon Road will be hosting their Sixth Annual Historic Paint Out, with more than 100 artists showing off their works along the street “en plein air”.

Several Pueblo communities can be visited in the Santa Fe region, and many of them have museums, shops, and other tourist sites. Try the Poeh Cultural Center and Museum at Pojoaque Pueblo, or the museum and trading posts at San Ildefonso Pueblo. At Santa Clara Pueblo you can take a self-guided or guided tour of spectacular Puye Cliff Dwellings. All of these pueblos are less than 30 miles north of town.

Peter Hiscock

Occupying New Lands: Global Migrations and Cultural Diversification with Particular Reference to Australia

7:00-10:00 p.m., La Fonda Hotel

Abstract: The colonization by *Homo sapiens* of previously empty lands provides archaeologists with unique information. The evidence from Australia is congruent with archaeological findings from other landscapes occupied by modern humans. Regional differentiation, experimentation and adaptation characterize these occupational events, showing that the global dispersion of *Homo sapiens* was not a singular process governed and guided by persistent traditions. Normative and static images of social and economic organization cannot explain the diversity of cultural evidence associated with the dispersion. This paper reviews the evidence for a dynamic process of social, economic and technological diversification associated with the spread of humans and their adaptation to new social and physical environments. Evidence can be read in a radically new way: it is not that ‘tradition’ is the explanation for global human migrations but rather that the dispersal of people created the foundations for subsequent cultural patterns.

Biography: Dr. Peter Hiscock holds the Tom Austen Brown Chair in Australian Archaeology at the University of Sydney, Australia. He has a Ph.D. from Queensland University and a D.Sc. from the Australian National University. He is a Fellow of the Australian Academy of the Humanities and a Fellow of the Society of Antiquaries. Dr. Hiscock has projects in desert, temperate and tropical Australia. This work reconstructs sequences of technological change and the articulation of technology to occupational strategies and environment. He also has a current project in South Africa examining the Middle Stone Age occupation of inland areas of the Western Cape. Previous projects include analyses of lithic technology in North Africa and western Europe. Dr. Hiscock spent two years analyzing the Neanderthal assem-



blages from Combe Grenal in France. He has presented a synthesis of Australian prehistory and is now examining the implications of Australian evidence for stories of global human colonization. His publications include more than 5 books and 140 articles in refereed journals or edited volumes. His books cover topics such as desert occupation, quarrying activities and lithic assemblage variation in Australia. His book *Archaeology of Ancient Australia*, published by Routledge, won the Mulvaney Book Award.

Related Publications:

Hiscock, P., C. Clarkson and A. Mackay 2011 Big debates over little tools: ongoing disputes over micro-liths on three continents. *World Archaeology* 43:653-664.
 Hiscock, P., and C. Clarkson 2007 Retouched notches at Combe Grenal (France) and the reduction hypothesis. *American Antiquity* 72:176-190.
 Hiscock, P., and S. O’Connor 2006 An Australian perspective on modern behaviour and artefact assemblages. *Before Farming* [online] 2006/2, article 4.

WEDNESDAY, OCTOBER 16

Registration
Noon-6:00 p.m.
Convention Center Lobby

Reception
6:00-8:00 p.m.
Convention Center Mezzanine/Balcony

THURSDAY MORNING, OCTOBER 17

WELCOME
Sweeney Ballroom

8:00 a.m. INTRODUCTORY REMARKS: Michael Waters

8:15 a.m. WELCOMING BLESSING: Mr. Jose Lucero

ORAL SYMPOSIUM 1: GREATER BERINGIA
Chair: Kelly Graf
Sweeney Ballroom

8:30 a.m. Kelly Graf: *Late Pleistocene Siberia: Setting the Stage for the Peopling of the Americas*

9:00 a.m. Masami Izuho: *Human Technological and Behavioral Adaptation to Landscape Changes before, during, and after the Last Glacial Maximum in Japan*

9:30 a.m. Vladimir Pitulko, Pavel Nikolskiy, Aleksandr Basilyan, Elena Pavlova: *Yana RHS Site, Earliest Occupation of Beringia*

10:00 a.m. BREAK

10:30 a.m. Ben Potter, Chuck Holmes, David Yesner: *Technology and Economy among the Earliest Prehistoric Foragers in Interior Eastern Beringia*

11:00 a.m. Heather Smith, Jeff Rasic, Ted Goebel: *Biface Traditions in Northern Alaska and Their Role in the Peopling of the Americas*

11:30 a.m. DISCUSSION

12:00 p.m. END OF MORNING SESSION

POSTER SYMPOSIUM 1: PALEOINDIANS OF THE GREAT PLAINS

Organizers: Tom Jennings, Bonnie Pitblado
Coronado/DeVargas Meeting Room
7:00 a.m.-12:30 p.m. [presenters at posters during morning and lunch breaks]

1-1 Richard Anderson: *Paleoindian Archaeology in the Badlands: Preliminary Results of New Investigations on the Little Missouri National Grasslands, North Dakota*

1-2 Brendon P. Asher, Jack L. Hofman: *Testing Clovis and Folsom Ubiquity from the Continental Divide to the Plains/Woodland Border*

1-3 Stacey Bennett and George T. Crawford: *A Bison Trap at the Clovis Site, Blackwater Locality 1*

1-4 Joshua Boyd: *Folsom Endsrapers and Raw Material Diversity in the Great Plains and Rocky Mountains*

1-5 Kristen Carlson, Leland Bement: *Changing Clovis Hunting Adaptations through Stable Isotope Analysis*

1-6 Carlos Cordova, Ernest Lundelius, William Johnson, Jason Joines: *Climate and Vegetation Change from 17,550 to 2000 Cal Years BP in South-Central Texas: The Hall's Cave Record during Pre-Clovis and Clovis Times*

1-7 George T. Crawford and Stacey Bennett: *The Clovis Site: Inheriting 80 Years of Research*

1-8 George T. Crawford and Stacey Bennett: *Back to Basics, Analyzing the Paleoindian Assemblage at the Clovis Site*

1-9 Leslie B. Davis, Christopher L. Hill, Kathryn Krasinski: *Evidence for Pre-Clovis Human Activity Associated with a Mammoth in Late Pleistocene Eastern Montana*

1-10 Andrew Gourd: *Radiation and Regionalization: Late Paleoamerican Projectile Point Diversification in Oklahoma*

1-11 Matthew G. Hill, Thomas J. Loebel, David W. May: *The Carlisle Clovis Cache: Land Use, Technological Organization, and Faunal Exploitation in the Midcontinent*

1-12 Thomas Jennings: *The Golondrina Assemblage from the Debra L. Friedkin Site, Texas*

1-13 David Kilby, Anthony Aliano, Sarah Griffith, Jordan Taher, Ethan Ortega: *Postcards from the Pleistocene: A New Look at Ancient Environments Encountered by the First Explorers of the Southern High Plains*

1-14 Jason M. LaBelle and Christopher M. Johnston: *The Long Shot and the Close-Up: Evaluating the Visual Landscape of the Lindenmeier Folsom Site in Northern Colorado*

1-15 Neal Lopinot, Jack Ray: *Pre-Clovis Evidence from the Big Eddy Site*

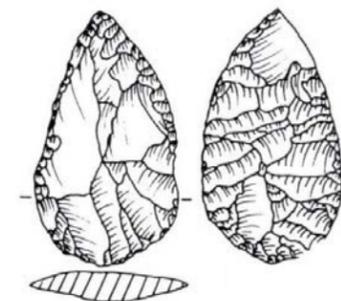
1-16 Maxine McBrinn, Craig Lee, Steve Holen, Nathan Boyless, E. James Dixon: *The Lamb Spring Archaeological Preserve: Past, Present and Future*

1-17 Kenny Resser: *Projectile Points and Knives of the Central Great Plains*

1-18 John Taylor-Montoya: *The Entangled Bank: Can We Detect Cultural Lineages in Lithic Technology and What, if Anything, does that Tell Us about the Paleoamerican Odyssey?*

1-19 Tom Westfall, Gayson Westfall, Rick Miller: *Evidence of Clovis Occupation in the South Platte River Valley in Eastern Colorado*

1-20 Don Wyckoff, Nick Czaplewski, Brian Carter: *Investigating Mid-Wisconsinan Deposits in Oklahoma: the Burnham and Powell Farm Sites*



POSTER SYMPOSIUM 2: PALEOINDIANS OF THE GREAT BASIN AND FAR WEST

Organizer: Daron Duke
Lamy/Peralta Meeting Room
7:00 a.m.-12:30 p.m. [presenters at posters during morning and lunch breaks]

2-1 Jesse Adams, Zach Scribner: *Paleoarchaic Occupations in the Eastern Great Basin: Results of GIS Predictive Modeling for Identifying Paleoarchaic Sites in Southern Nevada*

2-2 Mark E. Basgall: *Late Pleistocene/Early Holocene Archaeology of the Lake China Basin*

2-3 Fred E. Budinger, Jr., Theodore M. Oberlander, James L. Bischoff, Lewis A. Owen: *The Calico Site: Age, Context, and the Artifact/Geofact Issue*

2-4 Thomas Connolly, Dennis L. Jenkins, Catherine S. Fowler, Pat Barker, Eugene M. Hattori, William J.

Cannon: *Boundaries in Space and Time: Paleo-Period Textiles in the Northern and Western Great Basin*

2-5 Julie Crisafulli, Kelly E. Graf: *Sediment and Paleo-environment at Bonneville Estates Rockshelter, Nevada, during the Pleistocene-Holocene Transition*

2-6 Jennifer DeGraffenried, Joshua Trammell: *Analysis of 42TO3974 Rattler Ridge: An Upland Fluted Site in the Cedar Mountains, Utah*

2-7 Jaime Dexter: *Paleoethnobotanical Analysis at the Paisley Caves: An Evaluation of Late-Pleistocene/Early-Holocene Plant Use in Cave 2*

2-8 Daron Duke, D. Craig Young: *Haskett Points of the Old River Bed Delta, Utah: Early Western Stemmed Tradition Spear Weaponry*

2-9 Jerry Galm, Stan Gough, Fred Nials, Kari M. Mentzer, Tiffany Fulkerson: *Paleoindian-Late Paleoindian Point Complexes in the Intermountain West: Western Stemmed-Windust Revisited*

2-10 John Johnson, Thomas W. Stafford, Jr., G. James West, Thomas K. Rockwell, Don P. Morris: *Six Field Seasons at Arlington Springs: An Investigation of Paleoenvironmental Change on Santa Rosa Island, California*

2-11 Joshua Keene, Mayra Gracia: *Preliminary Lithic and Spatial Analysis of the Adams Gravel Source Haskett Site (10BT1227)*

2-12 Philippe LeTourneau: *Recent Paleoindian Finds in Western Washington*

2-13 Katelyn McDonough, Mark E. Swisher, Dennis L. Jenkins, Patrick W. O'Grady, Edward B. Davis: *An Analysis of Artifact, Bone, and Coprolite Distributions in Paisley Caves Younger Dryas (Botanical Lens) and Underlying Pleistocene Deposits*

2-14 Daniel Meatte: *A Use-wear Analysis of Beveled Bone Rods from the East Wenatchee Site (45DO432), Douglas County, Washington, USA*

2-15 David Rhode, Allise Rhode, Alvin McLane: *Western Fluted and Clovis Blades: An Intriguing Assemblage from Western Nevada*

2-16 Torben Rick, Courtney Hofman, Andreanna Welch, Jon Erlandson, Jesus Maldonado, Robert Fleischer: *Marine Mammals, Ancient DNA, and Paleo-coastal Subsistence on California's Northern Channel Islands*

2-17 Michael F. Rondeau, John Pryor, Roger La Junesse: *Clovis Technology at the Skyrocket Site, California*

2-18 Chantel Saban: *Palynological Perspectives on Late Pleistocene to Early Holocene Human Ecology at Paisley Caves (35LK3400), Cave 2*

2-19 Zach Scribner, Nathan Nelson: *Reconstructing the Hydrological System of a Paleoarchaic Complex in Central Western Utah*

2-20 Scott Thomas, Mike Rondeau, Patrick O'Grady: *Filling the Void: Clovis Spear Points and Diagnostic Artifacts in the Far Northern Great Basin*

2-21 Alexander Yarnell, Danny Welch, Ted Goebel: *Obsidian Transport to Bonneville Estates Rockshelter, Nevada: Implications for Mobility*

2-22 Robert M. Yohe II, Jill K. Gardner, Christopher A. Duran, Beau DeBoer: *Lake China Revisited: An Assessment of the Recent Discovery of a Cluster of Clovis Points in Indian Wells Valley on the Naval Air Weapons Station, Southeastern California*

2-23 David Zeanah, Robert G. Elston, Brian F. Codding: *Resource Use, Patch Residence Time and the Sexual Division of Labor among Great Basin Foragers during the Pleistocene-Holocene Transition*

THURSDAY AFTERNOON, OCTOBER 17

ORAL SYMPOSIUM 2: ROUTES AND PROCESS OF DISPERSAL
Chair: Leslie Pfeiffer
Sweeney Ballroom

1:30 p.m. John W. Ives, Duane Froese: *Vectors, Vestiges and Valhallas? Rethinking the Corridor*

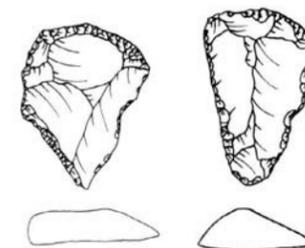
2:00 p.m. Jon M. Erlandson: *After Clovis-First Collapsed: Reimagining the Peopling of the Americas*

2:30 p.m. Quentin Mackie, Loren G. Davis, Daryl Fedje, Duncan McLaren, Amy E. Gusick: *Searching for Pleistocene-Aged Submerged Archaeological Sites along Western North America's Pacific Coast: Current Research and Future Needs*

3:00 p.m. Dennis Stanford, Darrin Lowery, Margaret Jodry, Bruce Bradley, Marvin Kay, Robert J. Speakman: *The Chesapeake Bifaces: Evidence for an LGM Occupation of the Mid-Atlantic Region of North America?*

3:30 p.m. BREAK

4:00 p.m. Connie Mulligan, Andrew Kitchen: *Three Stage Colonization Model for the Peopling of the Americas*



4:30 p.m. Eske Willerslev: *Ancient Genetics as Means for Understanding Early Peopling of the Americas*

5:00 p.m. David G. Anderson, Thaddeus G. Bissett, Stephen J. Yerka: *The Late Pleistocene Human Settlement of Interior North America: The Role of Physiography and Sea Level Change*

5:30 p.m. DISCUSSION

6:00 p.m. END OF AFTERNOON SESSION/
CLOSING ANNOUNCEMENTS

POSTER SYMPOSIUM 3: GREATER BERINGIA
Organizer: Brian Wygal
Coronado/DeVargas Meeting Room
1:00 p.m.-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

3-1 John Blong, Frank Gonzalez: *Human Colonization of the Central Alaska Range*

3-2 Ian Buvit, Karisa Terry, Masami Izuho: *Nomads of the Archipelago: Paleolithic Japan and the Pleistocene Peopling of the Americas*

3-3 Risa Carlson, James F. Baichtal: *Raised Marine Beach Predictive Model Results in New Early Holocene Sites in Southeast Alaska*

3-4 Sam Coffman, Jeffrey T. Rasic: *Rhyolite Sourcing in Eastern Beringia*

3-5 John P. Cook, Tom Gillispie: *Healy Lake Village Site: New Data and Analysis*

3-6 Kelly M. Derr, Philip E. Higuera: *Human-Environmental Interactions during the Late Pleistocene-Early Holocene Transition: A Multi-proxy Approach in the Alaskan Arctic*

3-7 Lyndsay M. DiPietro, Steven G. Driese, Kelly Graf, Ted Goebel: *The Dry Creek Site: A Geological*

Perspective on Site Formation and Stratigraphic Integrity in Central Alaska

3-8 Norman Easton, Michael Grooms, Jordan Handley, Rudy Reimer, Vance Hutchinson, David Yesner: *Analytical Approaches to Interpreting the Little John Site (KdVo6), a Late Pleistocene Occupation in Yukon's Beringia*

3-9 Philip Fisher: *Human Response to Regional Younger Dryas Climatic and Environmental Variability in Alaska*

3-10 Yan Axel Gomez Coutouly: *The Yukon River Hypothesis: a Possible Migration Route from Alaska to British Columbia for Microblade-bearing Populations of Beringia*

3-11 Angela K. Gore, Kelly E. Graf: *A Diachronic Investigation of Technological Activities at the Owl Ridge Site, Central Alaska*

3-12 Jun Hashizume: *Study of Bifacial Point Breakages to Reconstruct Hunting Behavior in Terminal Pleistocene Eastern Japan*

3-13 Charles Holmes: *The Early Archaeological Sequence at Swan Point, Central Alaska*

3-14 Akira Iwase: *Use-Wear Analysis of Chipped Stone Tools from Microblade Assemblages with Wedge-shaped Microblade Cores in Japan*

3-15 Michael Kunz: *On the Origins of Terminal Pleistocene Lithic Assemblages in Eastern Beringia: Who Was Where When and Where Did They Come From?*

3-16 Joshua Lynch: *Experimental Testing of Composite Projectile Points*

3-17 Pavel Nikolskiy, Vladimir Pitulko: *And Yet They Hunted Mammoths: Evidence from the Yana Palaeolithic Site*

3-18 Vladimir Pitulko, Elena Pavlova: *Environmental Changes in Western Beringia during the LGM as Human Habitation Factor*

3-19 Heather L. Smith: *An Analysis of Fluted-Point Technology at Serpentine Hot Springs, Alaska*

3-20 Aleksei V. Tetenkin
Transition from Pleistocene to Holocene on Lower Vitim (Baikalian Siberia, Russia): Coexistence of Ethnic Groups or Combination of Different Adaptive Strategies?

3-21 Brian T. Wygal: *By Land or Sea? Human Colonization of Southern Alaska*

3-22 Kate Yeske and Julie Esdale
Paleogeography and Early Archaeology of the Tanana Flats, Central Alaska

3-23 David Yesner: *Changes in Faunal Exploitation Patterns across the Younger Dryas Boundary, Eastern Beringia*

3-24 Angela Younie, Thomas Gillispie, Lyndsay DiPietro, Christine Fik: *Lithic Technologies and Adaptations to Beringian Environments at the Linda's Point Site, Healy Lake, Alaska*

POSTER SYMPOSIUM 4A: LATIN AMERICA: EARLY PREHISTORY AND PALEOENVIRONMENTS

Lamy Meeting Room

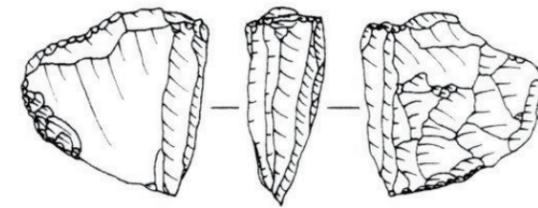
1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

4-1 Guillermo Acosta-Ochoa, Laura Beramendi, Galia González, Iran Rivera and Patricia Pérez: *Chronology, Technology and Environmental Context of Early Settlement in Southeastern México*

4-2 Ciprian Ardelean: *Hunter-Gatherer Archaeology, the Pleistocene-Holocene Transition and the First Human Occupation in Northeastern Zacatecas, Mexico*

4-3 Eric Boëda, María Farías Gluchy: *Approximation to the Technical Diversity of the Systems of Production of the Catalán Chico's Site*

4-4 Aleksander Borejsza, Arthur A. Joyce, Charles D. Frederick: *Locating Deeply Buried Sites of Pleistocene and Early Holocene Age in the Mexican Highlands: Insights from Barranca Surveys in Tlaxcala and the Mixteca Alta*



4-5 Gianfranco Cassiano, Ana Maria Alvarez Palma: *Clovis and Plainview Occupations in Central Mexico*

4-6 Manuel Enrique Cueto: *Lithic Technology and Initial Ways of Working during Early Occupation of Patagonian Extreme South*

4-7 Nicholas Felstead, Silvia Gonzalez, Sarah Metcalfe, David Huddart, Stephen Noble, Dirk Hoffman, Melanie Leng, Alistair Pike, Arturo Gonzalez-Gonzalez, José Concepción Jiménez-López: *Holocene-aged Footprints from the Cuatrociénegas Basin, NE Mexico*

4-8 Nora Viviana Franco, George Brook, Pablo Ambrústolo, María Viginia Mancini: *Early Peopling of the Southern Part of the Deseado Massif: Evidence from La Gruta and Viuda Areas, Quenzana Patagonia*

4-9 José Jiménez, Meggan Bullock, Eva Salas: *A Multiple Burial from 7233 BP*

4-10 Christelle Lahaye, Eric Boëda, Michel Fontugne, Gisele F. Daltrini, Antoine Lourdeau, Anne-Marie

Pessis, Niède Guidon, Sirlei Hoeltz, Marina Pagli, Sibelvi Viana, Amélie Da Costa, Mario Pino: *"Oldies but Goodies": A Chronological Approach to the Pleistocene Occupations in the Serra da Capivara, Piauí, Brazil*

4-11 Greg Maggard: *Fishtail and Early Paiján: Perspectives on the Early Settlement of Western South America*

4-12 Kary Stackelbeck: *Domestic Architecture of the Terminal Pleistocene to Early Holocene in the Central Andes*

4-13 Charles Stern, Alfredo Prieto, Jordi Estévez: *The Peopling by Littoral Hunter-Gatherers of the Fuego-Patagonian Fjords*

4-14 Emma Toole, Silvia Gonzalez, David Huddart, Alex Brasier, Darren Mark: *Humans, Megafauna and Quaternary Environmental Change, Tequiquiac, Northern Basin of Mexico*

POSTER SYMPOSIUM 4B: BIOLOGICAL PERSPECTIVES ON THE FIRST AMERICANS

Organizer: Mark Hubbe

Peralta Meeting Room

1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

4-15 Alessandro Achilli, Ugo A. Perego, Hovirag Lancioni, Anna Olivieri, Francesca Gandini, Baharak Hooshar Kashani, Vincenza Battaglia, Viola Grugni, Norman Angerhofer, Mary P. Rogers, Rene J. Herrera, Scott R. Woodward, Damian Labuda, David Glenn Smith, Jerome S. Cybulski, Ornella Semino, Ripan S. Malhi, Antonio Torroni: *Reconciling Migration Models to the Americas with the Variation of North American Native Mitogenomes*

4-16 Benjamin Auerbach: *Thinking Broadly about Colonization: Phenotypes of the Early Holocene and the Peopling of North America*

4-17 Pedro Da-Gloria, Clark Spencer Larsen: *Health and Lifestyle of Paleoamericans from a Tropical Perspective: The Case of Lagoa Santa, Brazil*

4-18 David Echeverry, Beatrix Dudzik, Frankie Pack: *Revisiting Population History for the Eva Site: A Combined Craniometric and Ancient DNA Approach*

4-19 Brianne Herrera, Kanya Godde, Tsunehiko Hanihara: *Concordance of Skeletal and Molecular Data and Their Applications toward Peopling of the New World*

4-20 Susan Kuzminsky: *Craniofacial Variation among Pacific Rim Populations: A Test of the Coastal Migration Hypothesis Using 3D Laser Scanning and Geometric Morphometric Methods*

4-21 Barbara O'Connell, James L. Jones, Jr., Bruce Thomas: *The Minnesota Ancients: Browns Valley and Pelican Rapids*

4-22 Karl Reinhard, Adauto Araujo, Elizabeth Racz, Scott L. Gardner: *Paleoamerican Parasitism: Infections that Signal the Origin and Route of Migration*

4-23 Andre Strauss, Pedro Da-Gloria, Rodrigo De-Oliveira, Danilo Bernardo, Domingo Carlos Salazar Garcia, Caroline Wilkinson, Sue Black, Sahra Talamo, Philipp Gunz, Mike Richards, Mark Hubbe, Astolfo Araujo, Renato Kipnis, Jean-Jacques Hublin, Walter Neves: *The Oldest Case of Decapitation in the New World*

4-24 Alejandro Terrazas Mata, Martha E. Benavente, Arturo H. González González and Wolfgang Stinnesbeck: *Human Remains of Late Pleistocene-Early Holocene Age from Submerged Caves of the Yucatan Peninsula (State of Quintana Roo, Mexico): Preliminary Dental Analysis and Implications for the Settlement of the Americas*

THURSDAY EVENING, OCTOBER 17

EVENING SYMPOSIUM 1

Chair: John Blong
Sweeney Ballroom

7:00 p.m. Theodore G. Schurr: *Tracing Human Movements across Siberia and into the Americas: New Insights from Mitochondrial DNA and Y-Chromosome Data*

7:15 p.m. Linda Scott Cummings, R. A. Varney: *Climate Reconstruction: Modeling Examples of Rapid Vacillations for the Pre-Clovis and Clovis Eras*

7:30 p.m. Silvia Gonzalez, David Huddart, Isabel Israde Alcantara, Gabriela Dominguez Vazquez, James Bischoff: *Paleoindian Sites in the Basin of Mexico: Stratigraphy, Tephrochronology and Radiocarbon Dating during the Late Pleistocene/Early Holocene Transition*

7:45 p.m. German Dziel: *The Demographic Isolation of Amerindians and Back Migrations to the Old World in the Late Pleistocene/Early Holocene: From the History of Ideas to Contemporary Scientific Realities*

8:00 p.m. Astolfo Araujo, André M. Strauss, James K. Feathers, Julio César Paisani, Thomas J. Schrage: *The South American Paleoindian Record Viewed from a Theoretical Standpoint: Cultural Transmission Theory and the Variability of the Lithic Industries*

8:15 p.m. Luis Hurtado de Mendoza: *Early Preceramic Lithic Industries in Northern Costa Rica*

8:30 p.m. Marta Lucía Chávez Montoya: *A Paleoindian Site (10,450 to 10,040 B.C.), Limón, Costa Rica*

ROUND-TABLE DISCUSSION 1

Nambe Meeting Room
7:00-9:00 p.m. *Using Serious Game Design to Build a Clovis Adaptation Knowledge Model*, organized and chaired by E. S. Lohse, D. Sammons, C. Schou, K. Weber

FRIDAY MORNING OCTOBER 18

ORAL SYMPOSIUM 3: CLOVIS

Chair: Nicole Waguespack
Sweeney Ballroom

7:55 a.m. OPENING ANNOUNCEMENTS

8:00 a.m. Vance T. Holliday, Shane Miller: *Clovis Across the Continent: Distribution, Chronology, and Climate*

8:30 a.m. Bruce A. Bradley, Michael B. Collins: *Imagining Clovis as a Cultural Revitalization Movement*

9:00 a.m. Gary Haynes: *Clovis-Era Subsistence: Continental Patterning and Regional Variability*

9:30 a.m. BREAK

10:00 a.m. David Kilby, Bruce Huckell: *Clovis Caches: An Update and Consideration of Their Role in the Colonization of New Lands*

10:30 a.m. James P. Kennett, Allen West, Ted Bunch, Wendy Wolbach: *The Younger Dryas Boundary (YDB) Cosmic Impact Hypothesis, 12.9 ka: A Review*

11:00 a.m. Nicole M. Waguespack: *Pleistocene Extinctions: The State of Evidence and the Structure of Debate*

11:30 a.m. DISCUSSION

12:00 p.m. END OF MORNING SESSION

POSTER SYMPOSIUM 5A: PALEOINDIANS OF THE AMERICAN SOUTHEAST

Organizers: Ashley Smallwood, Randy Daniel
Coronado Meeting Room
7:00 a.m.-12:30 p.m. [presenters at posters during morning and lunch breaks]

5-1 Derek Anderson: *Lithic Refitting at the Topper Site: Spatial, Technological, and Geoarchaeological Interpretations*

5-2 John Broster, Mark Norton: *Paleoindian Studies in Tennessee*

5-3 Philip J. Carr, Gregory A. Waselkov: *Paleoindians in the Tennessee Valley: Applying an Organization of Technology Model*

5-4 I. Randolph Daniel, Jr., Albert C. Goodyear: *Clovis Macrobands in the Carolinas*

5-5 James S. Dunbar
Mental Templates and a Revised Typology for Florida Paleoindian Points

5-6 Michael Johnson, William A. Childress: *Beyond Cactus Hill*

5-7 Christopher R. Moore, Mark J. Brooks, Larry R. Kimball, Margaret Newman, Brian P. Kooyman: *Use-wear and Protein Residue Analysis of an In-situ Clovis Assemblage from a Carolina Bay in the Coastal Plain of South Carolina*

5-8 Charlotte Pevny, William Barse, R. Christopher Goodwin: *Late Pleistocene-Early Human Adaptation in Northern Florida*

5-9 Erika Shofner, Meg Gaillard, Helena Ferguson, Tom Pertierra: *Presenting Paleo: Sharing Our Past*

5-10 Ashley Smallwood, Albert C. Goodyear, Derek T. Anderson, D. Shane Miller, Sarah Walters: *Dating*

*the Hillside Clovis Occupation of the Topper Site, Al-
lendale County, South Carolina*

5-11 Dennis Stanford, Darrin Lowery, Bruce Bradley,
Marvin Kay, Robert J. Speakman, Margaret Jodry,
Thomas Stafford: *The Cinmar Discovery: Evidence for
an Ice Age Occupation of the Middle Atlantic Outer
Continental Shelf*

5-12 Jesse Tune, Judith A. Melton: *Interpreting Activi-
ty Areas and Cumberland Lithic Technology at the Phil
Stratton Site, Kentucky*

**POSTER SYMPOSIUM 5B: GEOLOGY, GEO-
CHRONOLOGY AND PALEOENVIRONMENTS
OF THE FIRST AMERICANS**

DeVargas Meeting Room

7:00 a.m.-12:30 p.m. [presenters at posters during
morning and lunch breaks]

5-13 Thomas Amorosi, Michael Waters, Thomas Staf-
ford: *New AMS Dates, Ground Sloths Dens and Horse
Meals at Fell's Cave and Pali Aike Rockshelter, from the
Magallanes of Southern Chile*

5-14 Joshua Feinberg, Marcy Nadel, Michael Waters,
Albert C. Goodyear III: *The Rock Magnetic Record
across the 12.9 ka Younger Dryas Boundary: Evidence
for Impact?*

5-15 John Ferguson, Terry Ferguson, Emily Hinz,
Michael Waters: *Geophysics and the Geoarchaeological
Characterization of the Topper Site, South Carolina*

5-16 Edward Herrmann, G. William Monaghan: *Geo-
archaeology of Paleoindian-aged Landforms: Geomor-
phological Influences from the Midcontinent*

5-17 Isabel Israde-Alcantara, Silvia Gonzalez,
James L. Bischoff, Allen West, Gabriela Domín-
guez-Vazquez, Richard B. Firestone, Ted E. Bunch,
James Kennett, Wendy Wolbach: *Extraterrestrial Im-*

*act in Mexico at the Onset of the Younger Dryas (YD)
and Its Effects on the Environment*

5-18 Lionel Jackson, Laurence D. Andriashek, Fred
Phillips: *Multiple and Successive Ice-Free Corridors
during Middle Pleistocene Glaciations in the Interior
Plains of Southern and Central Alberta and Adjacent
Areas*

5-19 Michael Kolb, Daniel Joyce: *Late Pleistocene
Landscape History and Site Formation Processes at the
Schaefer-Hebior Locality, Southeastern Wisconsin*

5-20 Brian Kooyman, Michael R. Waters, L. V. Hills,
Thomas W. Stafford, Jr.: *Refined Dating of the Horse
and Camel Kills at the Wally's Beach Site, Canada*

5-21 Kelly Monteleone, Andrew Wickert: *Investigat-
ing the Potential for Archaeological Sites on the Sub-
merged Southern Beringian Archipelago*

5-22 Irina Panyushkina, Steven W. Leavitt
*Abrupt Changes in Moisture Variability in the Great
Lakes Region at ca. 13.7 ka, 12 ka, 11.5 ka and 8.2 ka:
A New Perspective from Subfossil Tree Rings*

5-23 Mark E. Swisher, Dennis L. Jenkins, Lionel E.
Jackson, Jr., Fred M. Phillips: *A Reassessment of the
Role of the Canadian Ice-Free Corridor in Light of New
Geological Evidence*

5-24 Sarah Walters, Sean Cary von Gunter, Albert
C. Goodyear III: *The Secret Life of Carbonized Plant
Remains: A Guide to Dating in the Age of Clovis*

**POSTER SYMPOSIUM 6A: PALEOINDIANS
OF THE AMERICAN NORTHEAST**

Organizer: Joseph Gingerich

Lamy Meeting Room

7:00 a.m.-12:30 p.m. [presenters at posters during
morning and lunch breaks]

6-1 Richard Boisvert, Heather Rockwell, Bruce Rus-
ch: *Settling into the Late Pleistocene Landscape: The
Potter Site, a Multicomponent Paleoindian Site in New
Hampshire*

6-2 Nigel Brush, P. Nick Kardulias: *The Rich Record of
Paleoindian Activity in Coshocton and Holmes Coun-
ties in North Central Ohio*

6-3 Kurt Carr: *An Update on Research at the Shoop
Site (36Da20) Including the Results of XRF Analysis*

6-4 Joseph Gingerich, Harry Iceland: *Evidence of Pa-
leoindian Social Organization at Shawnee-Minisink*

6-5 Robert Goodby: *Paleoindian Household Organiza-
tion at the Tenant Swamp Site (27CH187), Keene, New
Hampshire*

6-6 Brian Jones: *A New Collection from the DEDIC
Site, Deerfield, Massachusetts*

6-7 Nathaniel Kitchel: *After the Ice: Colonization Be-
havior and Process in the Recently Deglaciated North-
east*

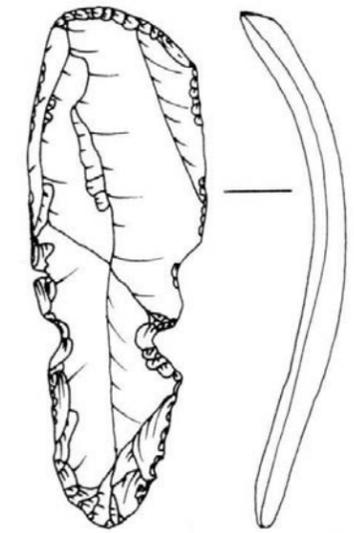
6-8 Thomas Loebel: *Exploring Early Paleoindian Ad-
aptations through Microwear Analysis*

6-9 Jonathan Lothrop, Graydon Ballard: *Green-Paul-
er: Two Probable Paleoindian Caches in the Upper
Susquehanna Valley, New York*

6-10 Brian S. Robinson: *Large and Highly Structured:
Refining Spatial Patterns at Bull Brook*

6-11 Francis "Jess" Robinson, John G. Crock, Weth-
erbe Dorshow: *Through the Mountains to the Sea: An
Analysis of Champlain Sea Shorelines, Site Patterning,
and Travel Corridors in the Eastern Champlain Basin*

6-12 Heather Rockwell, Richard Boisvert, Bruce Rus-
ch: *Settling into the Late Pleistocene Landscape: The*



*Potter Site, a Multicomponent Paleoindian Site in New
Hampshire*

6-13 Mark Seeman, Garry Summers: *The Fluted
Points from Nobles Pond, an Early Paleoindian Site in
Northeastern Ohio: Manufacturing and Typological
Considerations*

6-14 Zachary Singer: *Ohomowauke: An Early Paleo-
indian Site in Southeastern Connecticut*

**POSTER SYMPOSIUM 6B: PALEOINDIANS
OF THE AMERICAN SOUTHWEST**

Peralta Meeting Room

7:00 a.m.-12:30 pm [presenters at posters during
morning and lunch breaks]

6-15 Jesse Ballenger, Mary Prasciunas: *Arizona Pa-
leoindian Projectile Point Survey*

6-16 Robert Dello-Russo: *The Water Canyon Paleo-
indian Site - A Multi-Component Site at a Focal Wetland
Resource in West-Central New Mexico*

6-17 James Hartley: *Environmental Causes of the
Extinction of the Pleistocene Megafauna in the Desert
Southwest*

6-18 Guadalupe Sanchez, Vance Holliday, Joaquin Arroyo, Natalia Martinez, John Carpenter: *El Fin del Mundo, Sonora, Mexico: Where Clovis People Hunted Gomphotheres*

6-19 Jeffrey Saunders, Gennady Baryshnikov, Kevin Seymour: *Evolution of an Arizona Paleoindian Landscape*

6-20 Steven Shackley: *The Secondary Distribution of Archaeological Obsidian in Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Paleoamerican Procurement and the Age of Sediments*

6-21 Anastasia Steffen, Heather R. Evans, Jeremy Decker: *Discovering the Earliest Prehistory of the Valles Caldera*

6-22 Jacob Tumerlaire, Francis E. Smiley, William Reitze, Meghan M. Vance and Cole B. Wandler: *The Rainbow Forest Site: A Clovis and Folsom Locality on the Southern Colorado Plateau*

FRIDAY AFTERNOON, OCTOBER 18

ORAL SYMPOSIUM 4: CLOVIS CONTEMPORARIES

Chair: Mark Hubbe
Sweeney Ballroom

1:30 p.m. Charlotte Beck, George T. Jones: *The Increasing Complexity of the Colonization Process: A View from the North American West*

2:00 p.m. Douglas W. Owsley: *Bioarchaeological Biographies of Ancient Americans*

2:30 p.m. Arturo H. Gonzalez Gonzalez, A. Terrazas, W. Stinnesbeck, M. Benavente, J. Avilés, C. Rojas, J. M. Padilla, A. Velasquez, E. Acevez, E. Frey: *The First Humans in the Yucatan Peninsula Found in Drowned*

Caves: The Days of the Late Pleistocene-Early Holocene in a Changing Tropic

3:00 p.m. BREAK

3:30 p.m. Nora Flegenheimer, Laura Miotti, Natalia Mazzia: *Rethinking Early Objects and Landscapes in the Southern Cone*

4:00 p.m. Tom D. Dillehay: *Late Pleistocene Economic and Cultural Diversity in North Peru*

4:30 p.m. Adriana Schmidt Dias, Lucas Bueno: *The First Colonization of South America Eastern Lowlands: Brazilian Archaeological Contributions to Settlement of America Models*

5:00 p.m. Mark Hubbe, Walter Neves, Danilo Bernardo, André Strauss, Astolfo Araujo, Renato Kipnis: *Early Human Occupation of Lagoa Santa, Central Brazil: Implications for the Dispersion and Adaptation of Early Human Groups in South America*

5:30 p.m. DISCUSSION

6:00 P.M. END OF SESSION/CLOSING ANNOUNCEMENTS

POSTER SYMPOSIUM 7A: TAPHONOMIC PERSPECTIVES ON THE FIRST AMERICANS

Organizer: Kathryn Krasinski
Coronado Meeting Room

1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

7-1 Joaquin Arroyo-Cabrales, Eileen Johnson: *Megacarnivores, Large Carnivores, and People in the North American Late Pleistocene*

7-2 Joaquin Arroyo-Cabrales, Ramón Viñas-Vallverdú, Irán I. Rivera-González, Xosé Pedro Rodríguez: *Recent Findings in the Chazumba Locality, Oaxaca, Mexico*

7-3 Chrissina Burke: *Bison Bonebeds and Carnivore Use of Carrion: Implications for Human-Carnivore Interactions*

7-4 Kathleen Hohen: *Bone Notches: Differentiating Dynamic and Static Loading on Large Prey Animal Limb Bones*

7-5 Kathryn E. Krasinski, Gary Haynes: *Understanding Taphonomic Histories of Proboscidean Remains through Bone Breakage Analyses*

7-6 Fabiana María Martín: *Early Human Occupation in Southern Chile: Recent Results*

7-7 Lauren Milideo, Russell Graham: *Taphonomic and Spatial Analysis of a Modern Wolf Den*

7-8 Melissa Mueller: *Taphonomic Interpretations of Burned Bones from the Susitna River Basin, Alaska*

7-9 Chelsea Reedy: *Practice Makes Paleo*

7-10 Óscar Torres-Solís, Patricia Ochoa-Castillo, Michael R. Waters, Joaquín Arroyo-Cabrales: *Recent Findings in the Hueyatenco Site, Puebla, México*

POSTER SYMPOSIUM 7B: SUBMERGED PALEOINDIAN LANDSCAPES: PRESERVATION, PALEOENVIRONMENTS, POTENTIAL

Organizer: Jessi Halligan
DeVargas Meeting Room

1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

7-11 Olguin Aviles and Eugenio Aceves: *Sixteen Years of Archaeological Research inside Underwater Caves in Mexico with Evidence of Humans, Flora and Fauna from the Late Pleistocene to the Early Holocene*

7-12 Diego Carabias, Isabel Cartajena, Patricio López, Renato Simonetti, Carla Morales, Antonio Maldona-

do, Cristina Ortega, Valentina Figueroa: *GNL Quintero 1 (GNLQ1): First Evidences from the Pacific Coast of South America of a Final-Pleistocene Drowned Terrestrial Site*

7-13 Jorie Clark, Jerry Mitrovica, Jay Alder: *Regional Variability in Latest Pleistocene and Holocene Sea-Level Rise across the Oregon-Washington and Bering Sea Continental Shelves*

7-14 Lauren Cook, Neil Puckett: *Sourcing Redeposited Projectile Points at McFaddin Beach, TX*

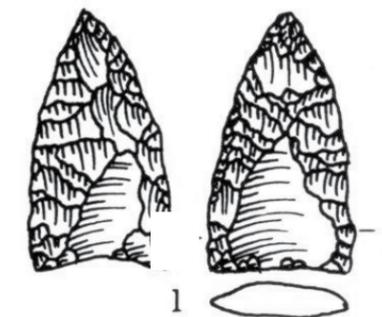
7-15 Loren G. Davis, Alex J. Nyers: *Reconstructing Paleolandscapes and Potential Submerged Site Locations on the Pacific Outer Continental Shelf from the Last Glacial Maximum to 10,000 RYBP*

7-16 Jessi Halligan, James S. Dunbar, Brendan Fentery, Ed Green: *Submerged Paleoindian Sites in the Aucilla River of Northwestern Florida: New Geoarchaeological and Archaeological Research*

7-17 Jacob Hooge, Jon C. Lohse, Frederick H. Hanselmann: *Underwater Geoarchaeological Research at Spring Lake, San Marcos, Texas*

7-18 Robert Legg, John B. Anderton: *Developing an Environmentally-Based Site Location Model of Paleo-Indian Settlement in the Northern Great Lakes*

7-19 Ashley K. Lemke, John M. O'Shea, Elisabeth Sonnenburg: *Late Paleoindian and Early Archaic Caribou Hunters underneath Lake Huron*



7-20 Darrin L. Lowery, Dennis Stanford: *Paleo-Americans on the Coastal Plain: A Perspective from the Middle Atlantic and the Delmarva Peninsula*

7-21 Morgan Smith, David Selmo, Steve Cushman: *A Pre-Project Overview of the Wakulla 3 Project: An Archaeological Survey of a Spring and Deep Underwater Cave*

7-22 Andrew D. Wickert, Kelly R. Monteleone, Jerry X. Mitrovica, Robert S. Anderson: *Reconstructing the Paleogeography of Beringia*

POSTER SYMPOSIUM 8A: PALEOINDIAN TECHNOLOGY

Lamy Meeting Room

1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

8-1 Jacob Adams, Tyler Retherford: *What about the Cracks? An Examination of Cultural and Natural Fracture Patterns on Brittle Solids*

8-2 Metin Eren, Robert J. Patten, Michael J. O'Brien, David J. Meltzer: *Refuting the Technological Cornerstone of the Ice Age Atlantic Crossing Hypothesis*

8-3 Richard Michael Gramly, Dennis Vesper, O. Kirk Spurr: *The Prismatic Blade Industry of the Middle Stage Cumberland Tradition Phil Stratton Site*

8-4 Robert Lassen: *Exploring Typological and Technological Variability in Folsom-Age Projectile Points: A Comprehensive Perspective*

8-5 C. R. "Bob" Lewis: *Mammoth Molar Tools from 18,000 Years Ago in Texas*

8-6 Tyler Retherford, William Andrefsky, Jr.: *Using Lithic Debitage to Distinguish between Geofacts and Artifacts: An Experimental Approach*

8-7 Andrew Richard: *Clovis in a Kiln: A Projectile Point Use-Breakage Study*

8-8 Alan Slade: *Clovis: What's the Point? Can Clovis Projectiles be Defined by Type?*

8-9 Charles Speer: *Source Determination of Edwards Plateau Chert Using LA-ICP-MS*

8-10 Robin Gay Wakeland: *Iberian Peninsula Lithics, 19,000-13,250 B.P., from Spanish Museum Collections*

8-11 Kristina Wiggins, William Andrefsky, Jr.: *Analyzing Population Data to Recognize Human and Natural Fracture Properties in Brittle Solids*

8-12 Justin Williams, William Andrefsky, Jr.: *An Image is Worth 1000 Measurements: Using Images to Analyze Paleo-Period Artifacts*

POSTER SYMPOSIUM 8B: NEW PERSPECTIVES ON THE PEOPLING OF THE AMERICAS
Peralta Meeting Room

1:00-6:30 p.m. [presenters at posters during afternoon and dinner breaks]

8-13 David G. Anderson, Thaddeus G. Bissett, David Echeverry, D. Shane Miller, Douglas A. Sain, David K. Thulman, Stephen J. Yerka, Ashley M. Smallwood: *PIDBA (Paleoindian Database of the Americas): Site and Artifact Distributions in Late Pleistocene North America*

8-14 Amina Boutellis, Rezak Drali, Mario A. Rivera, Kosta Y. Mumcuoglu, Didier Raoult: *Evidence of Sympatry of Clade A and Clade B Head Lice in a Pre-Columbian Chilean Mummy from Camarones*

4-15 LaVerne Dutton, George Larson: *Horn Shelter: Paleoamerican Site*

8-16 J. Christopher Gillam: *Paleoamerican Origins and Migration: A Cultural and Bio-Physical Geographic Perspective*

8-17 Alvah Hicks: *Interpreting Archaeological Signatures before Clovis*

8-18 John W. Ives, B. Sunday Eiselt: *Paleoindian Social Landscapes: Thought Models for Kinship in Unique Demographic Settings*

8-19 Margaret Jodry: *All My Relations, Paleoamerican Spiritual Connections in Hunting and Healing*

8-20 Lucy Johnson: *Archaeological Theory and the Peopling of the Americas*

8-21 Jessica Metcalfe, Fred Longstaffe: *Seasonal Dietary Variations of North American Pro-boscideans*

8-22 Jessica Phillips: *Fingerprinting Our Past: A Dermatoglyphic Study at the Topper Site (38AL23)*

8-23 Douglas Sain: *A Model for Paleoamerican Coastal Zone Preference for the Atlantic Slope of Eastern North America since the Last Glacial Maximum*

8-24 David Thulman, Michael Faught: *How Long did Clovis Last? A Re-assessment of the Clovis and Other Paleoindian Occupations Using Bayesian Statistics*

**FRIDAY EVENING,
OCTOBER 18**

EVENING SYMPOSIUM 2

Chair: Jesse Tune
Sweeney Ballroom

7:00 p.m. E. James Dixon, Kelly Monteleone, Mark R. Williams: *New Evidence Supports the North Pacific Rim Migration Hypothesis*

7:15 p.m. George Frison, Marcel Kornfeld, Dennis Stanford, George Zeimens, Danny Walker: *Blade Cores, Blades, Blade Tools, and Clovis Points from the Powars II Paleoindian Red Ochre Quarry 48PL330, Platte County, Southeast Wyoming*

7:30 p.m. Juliet E. Morrow, Stuart Fiedel: *The Anzick Clovis Burial, a Single-Depositional Event*

7:45 p.m. Janice Bernadette Wood, Patrick Warren O'Grady: *Tephra Traps and Projectile Points: An Exploration of Volcaniclastic and Cultural Chronologies at Rimrock Draw Rockshelter (35HA3855), Harney County, Oregon*

8:00 p.m. Susan C. Mulholland, Stephen L. Mulholland: *Early Paleoindians in Northeastern Minnesota*

8:15 p.m. L. Suzann Henrikson, Robert M. Yohe II, Gene L. Titmus, James C. Woods: *The Resurrection of Owl Cave: Recent Investigations Regarding the Association of Fluted Points and Mammoth Remains*

8:30 p.m. Wilson W. Crook III, Thomas E. Williams: *The Presence of Gault-Ft. Hood Chert at the Brush Creek Clovis Site (41HU74), Hunt County, Texas*

8:45 p.m. Stuart J. Fiedel: *Pre-Clovis and Big Foot—the Searches Converge*

ROUND-TABLE DISCUSSION 2

Nambe Meeting Room

7:00-9:00 p.m. *Searching for the Earliest Americans at Ancient Chert Quarry/Workshop Sites*, organized and chaired by Barbara A. Purdy and H. Blaine Ensor

ROUND-TABLE DISCUSSION 3

San Juan Meeting Room
7:00-9:00 p.m. *The Great "Clovis Comet" Debate*, organized and chaired by Vance T. Holliday

**SATURDAY MORNING,
OCTOBER 19****ORAL SYMPOSIUM 5: ARCHAEOLOGY OF
PRE-CLOVIS I**

Chair: Dennis L. Jenkins
Sweeney Ballroom

7:55 a.m. OPENING ANNOUNCEMENTS

8:00 a.m. Daniel J. Joyce: *Adaptations along the Ice Margin: Analysis, Interpretation and Implications of Four Pre-Clovis Megafauna Butchery Sites in the Western Great Lakes Region*

8:30 a.m. Dennis L. Jenkins: *Paisley Caves: 14,500 Years of Human Occupations in the Northern Great Basin*

9:00 a.m. Michael Waters: *In Search of the First Americans—What the Friedkin Site, Texas, Manis Site, Washington, and Others Tell us About the First Americans*

9:30 a.m. BREAK

10:00 a.m. J. M. Adovasio, D. R. Pedler: *The Ones that Still Won't Go Away*

10:30 a.m. Albert C. Goodyear, Douglas A. Sain, Megan Hoak King, Derek T. Anderson, M. Scott Harris: *Topper, An Early Paleoamerican Site in South Carolina*

11:00 a.m. Steven R. Holen, Kathleen Holen: *The Mammoth Steppe Hypothesis: The Mid Wisconsin (OIS 3) Peopling of the Americas*

11:30 a.m. DISCUSSION

12:00 P.M. END OF MORNING SESSION

**POSTER SYMPOSIUM 9. PALEOINDIAN AR-
CHAEOLOGY IN THE ROCKY MOUNTAINS**

Organizers: Bonnie Pitblado, Tom Jennings
Coronado Meeting Room
7:00 a.m.-12:30 p.m. [presenters at posters during morning and lunch breaks]

9-1 Jared Beeton, Steve Holen
Soils, Stratigraphy, and the Search for Early Humans at the Scott Miller and Villa Grove Mammoth Sites, San Luis Valley, Colorado

9-2 Cody Dalpra, Bonnie Pitblado, Carol Dehler:
Geoarchaeological Results of Petrographic Analysis on Quartzite Sources in the Gunnison Basin, Colorado

9-3 Marcel Kornfeld, Mackenzie Cory, Mary Lou Larson:
Are They Clovis? Two Central Rockies Caches

9-4 Jason M. LaBelle, Halston F. C. Meeker: *An Afternoon at Benedict's Rock (5BL232), a Small Scottsbluff Site in the Colorado Mountains*

9-5 Bill McConnell, Craig M. Lee: *Replication and Use of a 10,400-year-old Cody-Age Foreshaft from a Rocky Mountain Ice Patch*

9-6 Michael McFaul, Michael D. Metcalf, Dante Knapp: *A Post Younger Dryas Early Holocene Soil Forming and Alluvial Interval ~10,575 to ~8510 cal yr BP: Colorado Plateaus, Great Plains, Southern Rocky Mountains and Wyoming Basin*

9-7 Brooke Morgan, Brian Andrews: *Mountaineer: A Folsom Residential Occupation in the Rocky Mountains*

9-8 Bonnie L. Pitblado, Holly Andrew, Ben Fowler, Richard Shipley: *Paleoindian Occupation of Southeastern Idaho and Northern Utah*

9-9 Linda Scott Cummings, R. A. Varney
What You See is What You Get, or is It?

9-10 Fred Sellet, Robert Brunswig, Rolfe Mandel:
The Paleoenvironmental and Archaeological Context of the Late Pleistocene-Early Holocene Transition at the KibRidge site

**SATURDAY AFTERNOON,
OCTOBER 19****ORAL SYMPOSIUM 6: ARCHAEOLOGY OF
PRE-CLOVIS II**

Chair: William Andrefsky, Jr.
Sweeney Ballroom

1:30 p.m. Eric Boëda: *The Pleistocene Human Occupation of Piauí: An Unacceptable Reality? And Nevertheless They are Old!*

2:00 p.m. Michael B. Collins, Dennis J. Stanford, Darrin L. Lowery: *North America before Clovis: Variance in Temporal/Spatial Cultural Patterns, 24,000 to 13,000 BP*

2:30 p.m. William Andrefsky, Jr.: *Fingerprinting Stone Tool Production Processes: Towards an Identification of Human Artifact Characteristics*

3:00 p.m. Rolfe D. Mandel: *A Geoarchaeological Approach to the Search for Pre-Clovis Sites in North America: An Example from the Central Plains*

3:30 p.m. Thomas W. Stafford, Jr.: *Geochronology, Stratigraphy and Taphonomy as the Foundations for Pre-Clovis Research*

4:00 p.m. PANEL DISCUSSION: *Luis A. Borrero, Robert L. Kelly, Dennis H. O'Rourke, Bonnie Pitblado*

5:30 p.m. CLOSING STATEMENTS: Michael Waters

5:45 p.m. CLOSING BLESSING: Mr. Jose Lucero

**SATURDAY EVENING,
OCTOBER 19****CONFERENCE BANQUET**

7:00 p.m. La Fonda Hotel on the Plaza

BANQUET LECTURE

8:30 p.m. Peter Hiscock: *Occupying New Lands: Global Migrations and Cultural Diversification with Particular Reference to Australia*



EXHIBITORS

BERINGIA & ASIA

- *Mesa site*, Alaska: Michael Kunz (University of Alaska)
- *On Your Knees Cave*, Alaska: E. James Dixon (University of New Mexico & Maxwell Museum of Anthropology)
- *Serpentine Hot Springs*, Alaska: Ted Goebel (Center for the Study of the First Americans, Texas A&M University)
- *Owl Ridge*, Alaska: Kelly Graf (Center for the Study of the First Americans, Texas A&M University)
- *Dry Creek*, Alaska: Kelly Graf (Center for the Study of the First Americans, Texas A&M University)
- *Kamihoronai-Moi, Ogachikato-2, Shimaki, Rubenosawa, Obarubetso-2*, Japan: Masami Izuho (Tokyo Metropolitan University)

CLOVIS

- *Mockingbird Gap*, New Mexico: Bruce B. Huckell (University of New Mexico & Maxwell Museum of Anthropology)
- *Shawnee-Minisink*, Maryland and *Fluted Points from the Northeastern U.S.*: Joseph Gingerich (Smithsonian Institution)
- *Carlisle Clovis Cache*, Iowa: Matthew G. Hill (Iowa State University)
- *Rutz Clovis Point*, Washington: John Mark Clark (Tennessee)
- *Little River Clovis Complex*, Kentucky: Carl Yahnig (Kentucky)
- *Eckles Clovis Site*, Kansas: Dick and Carol Eckles (Nebraska Archaeological Society)
- *Carson-Conn-Short and other Clovis sites*, Tennessee: John B. Broster and Mark R. Norton (Tennessee Division of Archaeology)
- *Powars II, Red Ochre Quarry*, Wyoming: George Frison (University of Wyoming)
- *Crook County Cache*, Wyoming: Mark Mullins (Colorado)
- *DeGraffenreid Cache*, Texas: Mark Mullins (Colorado)
- *Fenn Cache*, Plains: Mark Mullins (Colorado)
- *Hogeye Cache*, Texas: Lee and Cindy Jones (Texas)

- *CW Clovis Biface Cache*, Colorado: (Tom Westfall, Grayson Westfall, and Rick Miller (Loveland Archaeological Society & Prehistoric American Magazine)
- *Fox site*, Colorado: (Tom Westfall, Grayson Westfall, and Rick Miller (Loveland Archaeological Society & Prehistoric American Magazine)
- *Johnson*, Tennessee: Dennis Stanford (Smithsonian Institution)
- *Jefferson Island*, Maryland: Dennis Stanford (Smithsonian Institution)
- *Mochorn Island*, Maryland: Dennis Stanford (Smithsonian Institution)
- *Vero Beach site*, Florida: C. Andrew Hemmings (Mercyhurst University & Old Vero Ice Age Sites Committee)
- *Simon Cache*, Idaho: Ernest Lohse (Idaho State University) and Steve Kohntopp (CSFA)

CLOVIS AND POST-CLOVIS

- *Jake Bluff, JS Clovis Cache, Cooper, and Badger Hole*, Oklahoma: Leland C. Bement (Oklahoma Archeological Survey, University of Oklahoma)
- *Sulphur River*, Texas: Jim Cox (Oklahoma)
- *Clovis and Folsom artifacts from Oklahoma*
- *Sage Hen Gap, Oregon, Sheep Mountain, and Rimrock Draw Rockshelter*, Oregon: Patrick O-Grady (Museum of Natural and Cultural History, University of Oregon)

OLDER-THAN-CLOVIS

- *Schaefer Mammoth, Hebior Mammoth, Mud Lake Mammoth*, Wisconsin: Dan Joyce (Kenosha Public Museums)
- *Meadowcroft Rockshelter*, Pennsylvania: James M. Adovasio (Mercyhurst Archaeological Institute, Mercyhurst University)
- *Vale da Pedra*, Brazil: Eric Boëda (Université Paris Ouest)
- *Duewall-Newberry*, Texas: Gentry Steele and David Carlson (Texas A&M University)
- *Manis*, Washington: Carl Gustafson & Michael R. Waters (Center for the Study of the First Americans, Texas A&M University)

EXHIBITORS (CONT.)

- *Coats-Hines*, Tennessee: Jesse Tune (Center for the Study of the First Americans, Texas A&M University) & John B. Broster and Mark R. Norton (Tennessee Division of Archaeology)
- *Miles Point*, Maryland: Dennis Stanford (Smithsonian Institution)
- *Chesapeake and Atlantic Shelf Bifaces (Cinmar) with western European Solutrean bifaces*: Dennis Stanford (Smithsonian Institution)
- *Cactus Hill*, Virginia: Dennis Stanford (Smithsonian Institution)

OLDER-THAN-CLOVIS AND CLOVIS

- *Debra L. Friedkin*, Texas: Michael R. Waters (Center for the Study of the First Americans, Texas A&M University)
- *La Sena, Nebraska, Lovewell, Kansas, and Experimental elephant bone breakage specimens*: Steven Holen (Colorado)
- *Cactus Hill, Rubis-Pearsall, Blueberry Hill*, Virginia: Michael F. Johnson (Exeter University)
- *Topper*, South Carolina: Albert C. Goodyear (South Carolina Institute of Archaeology and Anthropology, University of South Carolina)
- *Gault*, Texas: Michael B. Collins (The Gault School of Archaeological Research, Texas State University)

OLDER-THAN-CLOVIS AND WESTERN STEMMED

- *Paisley Caves*, Oregon: Dennis Jenkins (Museum of Natural and Cultural History, University of Oregon)

WESTERN STEMMED TRADITION

- *Cooper's Ferry*, Idaho: Loren Davis (Oregon State University)
- *Bonneville Estates Rockshelter*, Nevada: Ted Goebel and Kelly Graf (Center for the Study of the First Americans, Texas A&M University)
- *Old River Bed Delta*, Utah: Daron Duke and D. Craig Young (Far Western Anthropological Research Group)

FOLSOM AND LATE PALEOINDIAN

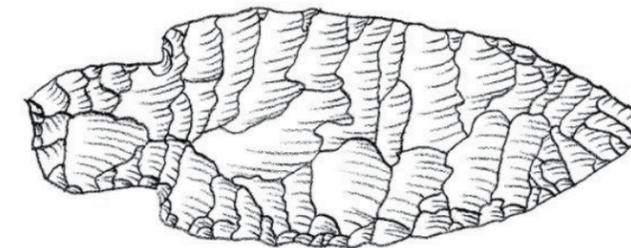
- *Shifting Sands*, Texas: Richard Rose (Midland Archeological Society)
- *Cedar Creek*, Oklahoma: Jim Cox (Oklahoma)
- *Phil Stratton*, Kentucky: Phil Stratton & Jesse Tune (Center for the Study of the First Americans, Texas A&M University)

SOUTH AMERICA

- *El Cayude site and El Jobo and Fishtail Material*, Venezuela: Joshua Ream (Florida)
- *Cerro El Sombrero, Cima*, Argentina: Nora Flegenheimer (CONICET - Area Arqueología y Antropología, Mun. Necochea, Argentina)

EXPERIMENTAL

- *Experimental Clovis Points used on thrusting spears*: Bruce B. Huckell (University of New Mexico & Maxwell Museum of Anthropology)



Alessandro Achilli, Ugo A. Perego, Hovirag Lancioni, Anna Olivieri, Francesca Gandini, Baharak Hooshjar Kashani, Vincenza Battaglia, Viola Grugni, Norman Angerhofer, Mary P. Rogers, Rene J. Herrera, Scott R. Woodward, Damian Labuda, David Glenn Smith, Jerome S. Cybulski, Ornella Semino, Ripan S. Malhi and Antonio Torroni
Reconciling Migration Models to the Americas with the Variation of North American Native Mitogenomes

We evaluated migration models to the Americas by employing the information contained in A2a and B2a native mitogenomes from North America. In brief, a minimum of three migration waves is needed to explain the native mitogenome diversity of North America. Most of the contemporary mtDNA variation (along the double-continent) stems from the first wave that from Beringia followed the Pacific coast route and was dated to 15-18 thousand years (ka) ago based on the 16 mitogenome founders identified so far. Since our B2a mtDNAs coalesce at about 12-13 ka ago, it is likely that the diagnostic mutational motif of B2a evolved in situ a few millennia after that B2 had already entered and spread along the double continent. The first Pacific wave was accompanied or followed by a second (inland) migratory event, marked by haplogroups X2a and C4c, which affected the ancestral gene pools of modern Amerindian groups of Northern North America, from the Pacific to the Atlantic coasts, including the Na-Dene. Much later, only ~4-7 ka ago, the ancestral A2a carriers spread from Alaska undertaking a back-migration to Asia, an eastward expansion into the circumpolar regions of Canada and eventually contributing to the formation of the Na-Dene gene pool.

Jacob Adams and Tyler Retherford
What about the Cracks? An Examination of Cultural and Natural Fracture Patterns on Brittle Solids

Differentiating culturally modified artifacts from geofacts modified by natural processes has long been a topic of concern in archaeology. This issue is particularly pertinent for pre-Clovis occupations in the Americas that often have questionable contexts and association that keep pushing the colonization of the New World back in time. In the context of this poster we compare fracture patterns on obsidian cores made in an experimental context that simulates natural fracture to human made cores using multiple reduction techniques in attempt to elucidate the nature of fracture patterns that result from different processes. While the forces creating these fractures in brittle solids have been explored extensively, this poster approaches the issue in an attempt to analyze their utility as a proxy for natural vs. human modification. We attempt to take the many different forms of surface fracture and sort them into types useful for this method of analysis. We hope this methodology, focusing on fracture patterning, provides a way to use cores as an additional line of evidence in answering this contentious archaeological question.

Jesse Adams and Zach Scribner
Paleoarchaic Occupations in the Eastern Great Basin: Results of GIS Predictive Modeling for Identifying Paleoarchaic Sites in Southern Nevada

Within the Great Basin, site locations dating to the Pleistocene-Holocene Transition (PHT) are generally associated with specific geographical features. GIS is a useful tool for identifying geographical features likely to contain sites dating to the PHT period. Guided by previous Late Pleistocene/Early Holocene investigations in the Great Basin, a GIS predictive model combining topographical features likely to have been

favorable for PHT period occupation was developed. Topographical features likely to have implications for PHT occupation included the pluvial lake maximum extents and associated shore features, Holocene deposited alluvial sediments, drainages, predicted marsh zones, and current lake playa extents. These features were mapped and ranked; a sample of high-, medium-, and low-probability areas were then inventoried. Sample inventories were conducted within Delamar Lake Valley, Dry Lake Valley, and Kane Springs Valley, Lincoln County, Nevada, to identify cultural resources associated with the PHT period and test the accuracy of the GIS model. Here we present: 1) the methods used to develop the GIS model and sample inventory, and 2) the results of those inventories. Results indicate that model refinement based on additional environmental, topographical, and geologic inputs enables PHT site identification. Additionally, results may provide more fine-grained information regarding PHT foraging behavior and occupation strategies.

J. M. Adovasio and D. R. Pedler
The Ones that Still Won't Go Away

Since the seminal discoveries at what for all intents and purposes is the Clovis type locality at Blackwater Draw, New Mexico in 1933, more than 500 archaeological sites in North and South America have been claimed to be older than the Clovis horizon now fixed at 13,500-13,000 calendar years ago. As each of these sites was sequentially and often vitriolically debunked and dismissed, the notion that the makers of Clovis fluted points were the first colonizers of the New World was powerfully reinforced. As it slowly passed from a scientific peopling paradigm to pseudo-theological dogma, the Clovis-first model assumed a behavioral dimension as well as maintained a chronological one. Not only were the first inhabitants of the Americas producers of highly distinctive points, they were a veritable "culture" whose spear-wielding members were rapidly moving, highly specialized, big-game focused hunters without parallel in the history of the planet. Beginning in the early 1970s, a series of far-flung discoveries in widely separated parts of the Americas began to systematically unravel the chronological and behavioral underpinnings of Clovis-first. These pivotal loci include Meadowcroft Rockshelter in Pennsylvania, Monte Verde in Chile, Cactus Hill in Virginia, the Nenana Complex sites in Alaska, and, most recently, the Deborah L. Friedkin locality and its "sister" site of Gault in central Texas. Initially greeted with scorn, these sites and others in conjunction with linguistic and genetic data would collectively cause one foreign observer to recently note "Clovis-first ist todt" (Karge 2011)! The salient characteristics of several of these sites is detailed and an assessment of their historical role in the collapse of a venerable paradigm is offered.

Thomas Amorosi, Michael Waters and Thomas Stafford
New AMS Dates, Ground Sloths Dens and Horse Meals at Fell's Cave and Pali Aike Rockshelter, from the Magallanes of Southern Chile

Fell's Cave, Pali Aike, Cerro Sota, and Cañadon Leona were reported as the first known association of late Pleistocene megafauna with artifacts in the Southern Cone of South America. Since the excavation of these sites nearly 60 years ago by Junius Bird, little has been done with the excavated materials which are housed at the American Museum of Natural History. Since 2004, these collections have been under investigation and the analyses are yielding some surprising results. The basal levels of Fell's Cave have been redated using charcoal left over from Bird's original hearth samples. The new AMS dates from the lowest three hearths, associated with Fishtail projectile points, have yielded dates that are slightly younger than the original ages obtained by Bird.

The zooarchaeological and taphonomic examination of materials from the basal levels are also yielding a different view than what Bird first reported. Mylodon, a ground sloth species common to the late Pleistocene levels in these rockshelters was not a dietary item. Rather these caves look to have served as denning caves for sloths and the occasional large sized felids or ursids. The smaller body mass *Onohippidium*, a horse species, demonstrates a contrasting pattern of possible human and carnivore predation.

David G. Anderson, Thaddeus G. Bissett, and Stephen J. Yerka
The Late Pleistocene Human Settlement of Interior North America: The Role of Physiography and Sea Level Change

The colonization of interior North America during the late Pleistocene from ca. 20-10k cal yr BP would have been profoundly shaped by physiographic features early explorers and settlers encountered, such as the location of major river valleys, mountain ranges and deserts, pluvial and periglacial lakes, and ice sheet margins, and in coastal areas by the dramatic changes in sea level that were occurring. An examination of the relationship between changes in sea level and the extent of the Gulf and Atlantic Coastal Plains in the vicinity of the southeastern United States indicates that, because of the uneven topography of the now submerged continental shelf, sea level rise or fall does not closely correspond to the area lost or gained. During some periods, notably MWP-1a, only small areas of the Coastal Plain were lost, while in others, such as during the Younger Dryas and MWP-1b, much larger areas were affected. The widespread appearance of Clovis in the interior of the southeast, and the apparent reduction or reorganization of immediate post-Clovis settlement in the Coastal Plain, and an increase—or at least no evidence for population reduction—further into the interior of the region may be related to these changes in sea level. Evaluating these ideas will require much new fieldwork, and the collection, compilation, and public dissemination of primary archaeological data among the professional community.

David G. Anderson, Thaddeus G. Bissett, David Echeverry, D. Shane Miller, Douglas A. Sain, David K. Thulman, Stephen J. Yerka and Ashley M. Smallwood
PIDBA (Paleoindian Database of the Americas): Site and Artifact Distributions in Late Pleistocene North America

Artifact locational, attribute, and image data from across North America provide a unique perspective from which to examine early settlement, and a source of data open to all, researchers and the general public alike. Since the last major update in 2010, a vast amount of new information has been collected and added into the database, refining our understanding of where artifacts have been found on the landscape, sources of bias, and where more work needs to be done. PIDBA highlights an important and positive aspect of Paleoindian archaeology becoming increasingly common in the 21st century, namely the sharing of primary data, and the examination of settlement at progressively larger geographic scales.

Derek Anderson
Lithic Refitting at the Topper Site: Spatial, Technological, and Geoarchaeological Interpretations

Ongoing excavations at the Topper site in Allendale County, South Carolina, over the past 25 years have produced vast amounts of lithic debitage from the Paleoindian and Early Archaic components. Refitting studies initiated in 2010 involving assemblages from three different

areas of the site (the terrace, hillside, and hilltop) have yielded evidence of hearth-centered activity areas with knapping clusters that have remained relatively undisturbed over time. These largely intact features present an opportunity to examine the behaviors of individual people in the archaeological record, and refit success rates are approaching 30% in some units. These findings have provided unique and otherwise inaccessible insights into spatial patterning, lithic reduction sequences, and site formation processes during the Late Pleistocene and Early Holocene.

Richard Anderson
Paleoindian Archaeology in the Badlands: Preliminary Results of New Investigations on the Little Missouri National Grasslands, North Dakota

A new multi-year, interdisciplinary collaborative project between the USDA-FS Dakota Prairie Grasslands district, the State Historical Society of North Dakota, and Southern Methodist University aims to investigate the Paleoindian-age archaeological, environmental, and geomorphological contexts of the Little Missouri badlands. In summer 2013, we conducted surface survey and subsurface testing at all previously recorded probable and possible Paleoindian localities within the Little Missouri National Grasslands. The purpose of this work was to answer three related questions: 1) What might the archaeological assemblages and geomorphological settings of these sites tell us about the nature and timing of Late Pleistocene-Early Holocene occupation of the study area? 2) What prehistoric and modern anthropogenic and natural factors likely condition the known distribution of sites? 3) Where might we expect additional Paleoindian localities to be found within the Little Missouri badlands? Here I present preliminary results of our field investigations.

William Andrefsky, Jr.
Fingerprinting Stone Tool Production Processes: Towards an Identification of Human Artifact Characteristics

One of the most controversial and difficult aspects of recognizing very early human occupations in the Western Hemisphere deals with our ability to identify chipped stone artifacts made by humans as opposed to other non-human agents. Homogenous, brittle, fine-grained, or microcrystalline rock is a favorite raw material for stone tool makers and users in all times and places. However, these qualities also make such rocks candidates for natural fracture from taphonomic processes such as wind and water erosion, animal trampling, and frost fracturing. Sophisticated formalized tools are easily recognized. Less formalized tools and debitage become points of contention during investigations into early human occupations. What are the qualities found on lithic debitage and tools that allow investigators to determine if a specimen has been modified by intentional human shaping? This study reviews a series of experiments aimed at identification of macroscopic traits common to human-made lithic artifacts. Results show that commonly surmised traits such as conchoidal fracture initiation on objective pieces and detached pieces can be the products of natural processes. However, there are a suite of traits such as striking platform configuration, pattern of flake removal scars on dorsal surfaces, distribution and size of flake removals from nodules that reveal uniquely human processes. This study shows that recognition of such traits can be assessed on both individual specimens and on populations of specimens to discriminate between non-human taphonomic processes and human artifact production processes.

Astolfo Araujo, André M. Strauss, James K. Feathers, Julio César Paisani, Thomas J. Schrage
The South American Paleoindian Record Viewed from a Theoretical Standpoint: Cultural Transmission Theory and the Variability of Lithic Industries

Eastern South America, or what is today Brazilian territory, poses interesting problems about the early human occupation of the Americas. Three totally distinct and contemporaneous lithic technologies, dated between 11,000 and 10,000 radiocarbon years BP, are present in different portions of the country: the southern Umbu tradition, with its formal bifacial industry, with well-retouched scrapers and bifacial points; the central-northern Itaparica tradition, totally unifacial, whose only formal artifacts are limaces; and the “Lagoa Santa” industry, completely lacking any formal artifacts, composed mainly of small quartz flakes. Our data suggests that these differences are not related to subsistence or raw-material constraints, but rather to different cultural norms and transmission of strongly divergent chaînes opératoires. Such diversity in material culture, when viewed from a cultural transmission (CT) theory standpoint, seems at odds with a simple Clovis model as the origin of these three cultural traditions given the time elapsed since the first Clovis ages and the expected population structure of the early South American settlers.”

Ciprian Ardelean
Hunter-Gatherer Archaeology, the Pleistocene-Holocene Transition and the First Human Occupation in Northeastern Zacatecas, Mexico

The investigations conducted between 2010 and 2012 in the northeastern desert of the State of Zacatecas, Mexico, on the Tropic of Cancer (a region never studied before), revealed an intense hunter-gatherer occupation manifested in 35 new archaeological sites, mainly open campsites. The settlements are situated on paleo-beaches, alluvial fans and the heights surrounding an extinct paleo-lake contained by an endorheic basin. The majority date to the last millennium. The research focused on the evaluation of the earliest human occupation there. Preliminary test excavations were realised in four sites. Dunas site yielded interesting flaked stone assemblages on the surface, integrated by a variety of tools made of limestone and basalt, probably from the Pleistocene-Holocene Transition, while Pleistocene stratigraphy was exposed in excavations. The travertine rockshelters at San José de las Grutas revealed a new industry of limestone indented based points in an ancient ephemeral camp. Ojo de Agua is rich in extinct megafauna and yielded important chronostratigraphic markers. The Chiquihuite Cave showed potential old occupation in a still debatable context. The oldest human presence in the area goes back to at least Late Paleoamerican times. The studies also allowed an incipient paleoenvironmental model for the region.

Joaquin Arroyo-Cabrales and Eileen Johnson
Megacarnivores, Large Carnivores, and People in the North American Late Pleistocene

Pleistocene megacarnivores, those mammals weighting over 100 kg, are known from several localities throughout North America. Megacarnivores are composed of ursids and felids. Ursids include brown, shortfaced, and polar bears. Felids consist of sabertooth cats, jaguar, and Pleistocene lion. Canids are among the large Pleistocene North American carnivores, generally weighing between 70 to 100 kg, with dire wolf as the primary contender in this category. Megacarnivores and

large carnivores are contemporaneous for a time with people, before some of these carnivores went extinct. Analysis of mammoth localities on the Plains indicated that the timing of carcass access between people and large carnivores was different. On the Northern Plains, people were competitors in scavenging mammoth carcasses, and dire wolf was the probable main large carnivore competitor. On the Southern Plains, interaction between short-faced bears and people indicated the short-faced bear was a food item and raw material resource rather than a competitor. Nevertheless, a large carnivore scavenged mammoth carcasses after butchering activities by people. At Cedral (México), the presence of both megacarnivores and people was documented, but without any evidence of interactions between them. Competition for the same resource appears to have been structured to avoid direct conflict and minimize danger.

Joaquin Arroyo-Cabrales, Ramón Viñas-Vallverdú, Irán I. Rivera-González, Xosé Pedro Rodriguez
Recent Findings in the Chazumba Locality, Oaxaca, México

For the past seven years, an archaeo-paleontological research has been undertaken in Barranca del Muerto, Santiago Chazumba, Oaxaca, as part of a larger project for studying hunter-gatherers and faunal relationships in México. Four field seasons were completed for about a month each, and animal species numbers have increased with each season. Animals included both megaherbivores (gomphothere, glyptodont, giant ground sloth among others), mesoherbivores (deer, rabbit), and even small mammals (woodrat, Mexican vole). It is important to mention that there are several individuals for some of the megaherbivores. Initial pollen assays show that at some point there was a temperate forest with coniferous trees, as well as an ancient lake with several springs draining to it in the locality; further pollen research is warranted. Associated with megafaunal remains there were some lithic materials, generally poorly-defined bits of carving activities; however, their association with the fauna and the presence of possible anthropic marks on some flat bones could signify the presence of hunter-gatherers along with the extinct fauna. At least one of the bones pertaining to the giant ground sloth show one cut mark and another as possible. Further studies with the overall bone collection are under way.

Brendon P. Asher and Jack L. Hofman
Testing Clovis and Folsom Ubiquity from the Continental Divide to the Plains/Woodland Border

This study examines spatial distributions of Clovis and Folsom projectile points and performs from the Continental Divide of Colorado to the eastern Kansas border. Extensive use is made of private collections and isolated discoveries, data considered essential for understanding artifact patterning at large regional scales. Observed differences in distributions may represent diverse organizational strategies and land use patterns of Clovis and Folsom groups across different physiographic regions, and correspond with reorganization of environments and resources during the Pleistocene-Holocene transition. Multiple factors have influenced these distinctive distributions including behavioral, technological, and organizational responses of Clovis and Folsom peoples to dramatic ecological changes.

Benjamin Auerbach
Thinking Broadly about Colonization: Phenotypes of the Early Holocene and the Peopling of North America

This study uses the skeletal remains of the most complete early Ho-

locene North American males to test models of colonization derived from molecular studies and from archaeological evidence. Osteometric measurements were taken from the entire skeleton. These data present the earliest possible assessment of human morphological variation in North America. Stature, body mass, body breadth, and body proportions are examined in the context of male skeletal samples representing the range of morphological variation in North America in the last two millennia of the Holocene. These are also compared with a global sample. Results indicate that early Holocene males have variable postcranial morphologies, but all share the common trait of wide bodies. This trait, which is retained among all late Holocene indigenous North American groups, is associated with adaptations to cold climates. Peoples from the Americas exhibit wider bodies than other populations sampled globally. This pattern suggests the common ancestral population of all of these indigenous American groups had reduced morphological variation in this trait. Furthermore, this supports Beringia or a similar environment as the location for the genetic isolation of ancestors of the human colonizers of the Americas. Additionally, models of evolutionary processes are assessed against the phenotypic patterns.

Olguin Aviles and Eugenio Aceves
Sixteen Years of Archaeological Research inside Underwater Caves in Mexico with Evidence of Humans, Flora and Fauna from the Late Pleistocene to the Early Holocene

Gathering data scientifically inside underwater caves is not an easy task. It poses a number of difficulties for the specialist. Training in cave diving and technical expertise is required to keep from altering the ultra-fragile and watery context. The evidence is often located far inside the caves, sometimes more than 1500 feet from entrances at depths of 150 feet, forcing divers to breath mixed gases and, during ascents, to stop and decompress for short periods of time. Apart from the physiological risks of nitrogen narcosis, decompression sickness and drowning, there are also physical dangers such as the ceiling, water, darkness and sediments of the cave (some are super fine and once suspended in the water take hours to settle down). Just by exhaling, the ceiling crumbles down with percolation causing visibility to drop. The first diver to approach evidence is the photographer, who shoots frames in crystal clear water. Next is the videographer. They are followed by the rest of the team who gets close enough to perform observations as well as recording necessary data like depth, magnetic north, flow of water, bottom composition, presence or absence of anatomical connection, charcoal and speleothems. The group is limited to four or less depending on the size of the site/cave. Sometimes places are so narrow that already with one or two people it becomes a race against time before conditions deteriorate requiring evacuation. Some of the questions we ask ourselves before going inside are: how much sediment exists over and under the bones? are there any teeth? how big is the site? how big are the bones? is it at risk of vandalism and how imminent is it? We then complete a standardized form, noting site location, distance from nearest entrance, site parameters: (maximum and minimum depth of fresh or salt water, temperature, bottom composition, size of the site, height and width of the cave), cartography (distance and bearings of the guide line towards the site, measurements taken with fiberglass tape and a 2 degree increment compass), archaeological register (type of evidence, amount, anatomical connections, amount of sediment below and above the bone material), methodic search of area for potential findings, archaeological register in high definition underwater videography, and archaeological register in high resolution underwater photography .

Jesse Ballenger and Mary Prasciunas
Arizona Paleoindian Projectile Point Survey

The Arizona Paleoindian Projectile Point Survey is a long-term project to document known occurrences of Paleoindian projectile points throughout Arizona by drawing upon public outreach, voluntary disclosure, and the results of published research. Of interest are public and private artifact collections containing classic Paleoindian types such as Clovis, Folsom, Plainview, Agate Basin, Hell Gap, Scottsbluff, and Frederick-Allen, as well as Paleoarchaic point types such as Lake Mojave, Silver Lake, and San Dieguito. The survey builds upon previous statewide compilations (e.g. Agenbroad 1967; Faught and Freeman 1998; Haynes 2011; Huckell 1982; Pilles and Geib 2001) while employing the methodology and GIS approach of the Paleoindian Database of the Americas (PIDBA). The survey is guided by two interrelated objectives: 1) create and maintain an accessible statewide database of known Paleoindian projectile points and 2) improve the overall resolution of Paleoindian point distributions in the western United States (in conjunction with PIDBA). Visit <http://azpaleosurvey.pidba.org/>

Mark E. Basgall
Late Pleistocene/Early Holocene Archaeology of the Lake China Basin

Survey and excavation in the Lake China Basin, NAWA China Lake, has revealed an astonishing concentration of ancient archaeological deposits containing fluted and stemmed projectile points, crescents, fossil bone deposits, and robust chipped stone assemblages. This poster presentation reviews these materials with respect to geomorphological associations, temporal positioning, and patterns of technological variation. Brief comparisons are made to other significant localities in the Mojave Desert.

Charlotte Beck and George T. Jones
The Increasing Complexity of the Colonization Process: A View from the North American West

The Clovis First hypothesis has been slowly crumbling since reports of Monte Verde began to appear more than two decades ago, but the pace has quickened in recent years due to mounting evidence against it, particularly that from Paisley Caves. Yet archaeologists have not fashioned an equally simple and compelling alternative to Clovis First; instead, the evidence suggests a more complex process of colonization and population spread. In 2010 we argued for evidence of at least two points of entry into North America by colonizing populations, one in the southeast/southern Texas represented by Clovis and the other in the Pacific Northwest. We suggested that these latter colonists may have used corridors like the Columbia River and its tributaries to enter the interior basins of the Intermountain West. As Alan Bryan argued years ago, we believe these western groups carried a distinctive stone tool technology from that of Clovis. In this paper we review our original arguments, evaluating our thesis in light of more recent data. In addition we tackle the question of the affinities between Clovis and Western Stemmed biface technology. Drawing on Western Stemmed biface assemblages numbering more than 1000 items, we compare production techniques with those of Clovis to assess if the two could represent descendent and predecessor as implied by the Clovis First hypothesis.

Jared Beeton and Steve Holen
Soils, Stratigraphy, and the Search for Early Humans at the Scott Miller and Villa Grove Mammoth Sites, San Luis Valley, Colorado

Geoarchaeological investigations were conducted at the Villa Grove and Scott Miller Sites during the summers of 2011 and 2012. At Villa Grove, bones including mammoth, bison, horse, camel, and dire wolf are buried in an alluvial fan dipping eastward from the San Juan Mountains. A paleolandscape buried ~12m beneath the surface is represented by a buried soil that is continuous across alluvial fan sediments, a 20m-wide silty channel fill, and a 1m-wide gravelly gully fill. Radiocarbon ages on a mammoth molar and organic carbon from the channel fill place the site at ~26,000 to ~33,000 rcybp. The geologic story is especially important because flakes produced on mammoth limb bone may indicate the presence of humans at the site. The Scott Miller Site is a multicomponent site with evidence of over 10,000 years of occupation along Spring Creek and associated paleowetlands. Subsurface stratigraphic analysis and radiocarbon dating suggest that the site was first a fluvial system depositing stratified sandy silts. Thick peat deposits overlying these layers represent a localized rising of the water table sometime before ~11,530 rcybp. Woody peats representing boggy, saturated conditions alternate with organic silts representing standing water and marshy environments until sometime after ~9,120 rcybp.

Stacey Bennett and George T. Crawford

A Bison Trap at the Clovis Site, Blackwater Locality 1

Combining recent work with legacy data from the Clovis site, we are now in a position to better understand bison hunting in and around the outflow channel at Blackwater Locality 1. Digitization of previously unpublished maps in addition to current work at the site give us a three-dimensional view of these deeply buried cultural horizons. Tying together the work of the previous excavators in this area allows us to quantify bison utilization at this site.

John Blong and Frank Gonzalez

Human Colonization of the Central Alaska Range

The mountainous uplands of central Alaska play an important role in understanding human colonization of empty landscapes. Humans occupied the Tanana lowlands of central Alaska as early as 14,000 cal BP, possibly as shrub-tundra vegetation spread into the region during the late glacial. The adjacent uplands of the central Alaska Range do not appear to have been occupied until much later, despite deglaciation as early as 16,000 cal BP. Why is there a temporal gap in colonization of the uplands? When did humans first colonize the uplands, and what was the environmental context of initial occupation? What research methods are useful for identifying dispersal patterns into the uplands of central Alaska? This study utilizes geomorphological, paleoecological, archaeological, and GIS modeling data to inform on the timing and nature of human colonization of the uplands of central Alaska.

Eric Boëda

The Pleistocene Human Occupation of Piauí: An Unacceptable Reality? And Nevertheless They are Old!

The presence of humans in South America, prior to 12,000 BP, is an ongoing subject of controversy. Independently of the arguments of each researcher, we note at least two analytical biases. For the first, depending on whether the material recovered is on the “good” or “bad” side of the “barrier”, scientific demonstrations do not have the same order of rigor. The second concerns the way in which the archaeological material is studied, limiting that which is presented to a very limited category of artifacts: points. Our more demanding approach combines technological, taphonomic and experimental approaches. We have

included the study of the site of Boqueiro de Pedra Furada and two new sites in karstic and sandstone position in the Piauí, for which the artifacts come from archaeological assemblages dating to more than 17,000 BP. Taking into account the totality of these artifacts demonstrates technological facies that rely on the use of cobble, which we can identify as entirely classical in comparison with those commonly found in all of the countries in Eastern Asia. Alongside this research, a comparative taphonomic analysis has been systematically carried out, which further confirms the presence of technological facies that are not natural. Thus, the increase in discoveries in various geological contexts confirms the existence of human occupations during the Upper Pleistocene in this region of the world.

Eric Boëda and María Fariás Gluchy

Approximation to the Technical Diversity of the Systems of Production of the Catalán Chico's Site

It is with the discovery of Catalan Chico's site (Departamento de Artigas, República Oriental del Uruguay), realized by Antonio Taddei that Uruguay enters formally the archaeological discussions of the zone of pondo f Plata, as well as Latin America. The place is situated in the northwest of the department of Artigas. By the morphological characteristics of the lithic artefacts and by various geochronological studies, realized in this period, the site is considered as one of the older in the territory; an approximate age of 9,000 A.C has been proposed. Today within the framework of a technological prospect, the first analyses show evidence of a great diversity in the technical knowledge involved in this site. A large number of technical system of production base don various modes of cutting and shaping are highlighted, with for each of these methods the production of a type or several types of support, who will be transformed (or not) into specific tools. The so attested diversity indicates multiple technical behaviors, very certainly ranked organized into a hierarchy.

Richard Boisvert, Heather Rockwell and Bruce Rusch

Settling into the Late Pleistocene Landscape: The Potter Site, a Multi-component Paleoindian Site in New Hampshire

The Potter site, initially discovered in 2003, is a Paleoindian site located in Northern New Hampshire. Extensive excavation and statistical analysis suggest that the site represents multiple reoccupations during both the Early and Middle Paleoindian periods. Microwear analysis performed upon a large sample of the artifacts shows that the site was used primarily as a base camp to manufacture tools. The Potter site holds great potential for contributing to our understanding of how groups settle into the landscape after the initial colonization process.

Aleksander Borejsza, Arthur A. Joyce and Charles D. Frederick

Locating Deeply Buried Sites of Pleistocene and Early Holocene Age in the Mexican Highlands: Insights from Barranca Surveys in Tlaxcala and the Mixteca Alta

The deeply incised stream networks of the Mexican highlands expose large volumes of late Quaternary alluvium, but their potential for the study of extinct faunas, the first human populations, and wider environmental change has barely been tapped. Two recent field projects – one in the state of Tlaxcala, the other in the Mixteca Alta region of the state of Oaxaca – have systematically surveyed cutbanks along low- to medium-order stream reaches. We now have at our disposal a chronological framework based on dozens of radiocarbon dates, and a good grasp of the extent, geometry, and appearance of alluvial deposits, paleosols,

and buried land surfaces of different ages. Paradoxically, those of Paleoamerican age are more common, better preserved, and easier to recognize than those of Archaic age. Many correspond to low-energy depositional environments that paleontological or archaeological excavation should target. Seasonal wet meadows were common throughout the highlands of central and southern Mexico at several moments during deglaciation, especially during the Bolling-Allerød warm period, and the first 1500 years of the Holocene. They offered an attractive environmental niche for large herbivores and humans. Locales with the bone of megafauna are ubiquitous. Human presence before 7500 14C years BP is suggested at three locales.

Amina Boutellis, Rezak Drali, Mario A. Rivera, Kosta Y. Mumcuoglu and Didier Raoult

Evidence of Sympatry of Clade A and Clade B Head Lice in a Pre-Columbian Chilean Mummy from Camarones

Three different lineages of head lice are known to parasitize humans. Clade A, which is currently worldwide in distribution, was previously demonstrated to be present in the Americas before the time of Columbus. The two other types of head lice are geographically restricted to America and Australia for clade B and to Africa and Asia for clade C [1]. In this study, we tested two operculated nits from a 4,000-year-old Chilean mummy of Camarones for the presence of the partial *Cytb* mitochondrial gene (270bp). Our finding shows that clade B head lice were present in America before the arrival of the European colonists.

Joshua Boyd

Folsom Endsrapers and Raw Material Diversity in the Great Plains and Rocky Mountains

In this poster I explore a regional perspective on the lithic raw material variability of endscraper assemblages from ten Folsom sites within the Northern Plains, Southern Plains, and Rocky Mountains. Folsom hunter gatherers are known to have occupied a wide range of habitats and environments extending from the Canadian prairie to Northern Mexico. Prior research traditions infer static patterns of landscape and lithic raw material use with an advanced lithic technological complex designed for high mobility bison hunting. These theories are in a constant need for reevaluation through new analysis and this research is an attempt to do so. This poster endeavors to differentiate regional behavior and infer mobility strategies through the exploration of raw material diversity of one facet of lithic technology associated with processing; endscrapers. In this examination I produce a measure of raw material diversity to test whether differential patterns of raw material composition suggest regional variations in mobility strategies and land use. These conclusions will be utilized to shed light on broad cultural patterns or regional variations of Folsom hunter gatherer behavior in the Great Plains and Rocky Mountains.

Bruce A. Bradley and Michael B. Collins

Imagining Clovis as a Cultural Revitalization Movement

Clovis technology, as known in the durable record, consists of several distinctive flaked-stone reduction strategies as well as the manufacture of a range of bone, ivory, and antler tools. Stone was flaked to produce large flakes from bifacial cores: blades from two core-reduction technologies, and bifaces for varying purposes including the distinctive points known as Clovis. All these were complex technologies, which demanded expert knowledge and significant skill to achieve, even at a basic level. Special characteristics such as the extraordinary selection of

exotic raw materials, production of oversized bifaces for caching, controlled full-face and overshot biface flaking, and flat-backed blade core maintenance are some of the features that indicate “deep” technologies that must have had significant and distinguishable antecedents in the archaeological record. These specific technologies span multiple ecological zones from the sub-arctic to the tropics, indicating an astonishing consistency and a system imposed on environmental factors rather than controlled by them. These features and behaviors are used to propose that Clovis was the product of culture change known as a revitalization movement. This anthropological concept is introduced in detail and then used to suggest that Clovis may not have been a single culture but a disparate set of cultures unified by a technologically coded belief system.

John Broster and Mark Norton

Paleoindian Studies in Tennessee

The Tennessee Paleoindian Archaeological Survey, conducted from 1988 to present has produced data of 4,500 projectile points, and over 100 archaeological sites in the state.

Nigel Brush and P. Nick Kardulias

The Rich Record of Paleoindian Activity in Coshocton and Holmes Counties in North Central Ohio

Because of extensive outcrops of Upper Mercer flint along the Walhonding and Tuscarawas Rivers in central Coshocton County, this area was a regional focal point for Paleoindian activity. Fluted points made out of Upper Mercer flint have been found throughout Ohio, as well as in surrounding states. Over the past 50 years, three archaeologists have done extensive work on Paleoindian sites in Coshocton and Holmes Counties. In the 1960-70s, Olaf Prufer performed a survey of fluted points in the Walhonding and Tuscarawas Valleys. He also conducted excavations at the Welling, McConnell, and Mud Valley sites. In the 1980s Bradley Lepper did a study of Early Paleoindian land use patterns in Coshocton County and Nigel Brush excavated a 12,185 year-old stone-lined firehearth at the Eppley Rockshelter and also recovered a Crowfield Point and several Late Paleoindian lanceolate points from this site. In the 1990s Brush excavated the Martins Creek Mastodon in central Holmes County and recovered flint flakes containing mastodon and deer blood residues. In 2009 he and his associates recovered the base of a Crowfield Point from the Large Rockshelter. Thus, a half-century of fieldwork has revealed a rich tapestry of Paleoindian activity in these two counties.

Fred E. Budinger, Jr., Theodore M. Oberlander, James L. Bischoff, and Lewis A. Owen

The Calico Site: Age, Context, and the Artifact/Geofact Issue

The Calico Site (central Mojave Desert) provides the greatest time depth of evidence of man's activity in the U.S. This poster considers the Site's oldest component: siliceous rock tools, flakes, and angular debitage of the “Calico Lithic Industry.” Younger surface artifacts or those from a nested alluvial inset are not considered. The two foci of investigation and controversy are: (1) the authenticity of the specimens as bona fide artifacts (the “artifact/geofact” issue); and (2) the age and contexts of the host alluvial fan deposits. These are separate issues. Uranium series dating and surface 10Be cosmogenic dating indicate that the host deposits are older than 200,000 years. The alluvial stratigraphy will be discussed. Skeptics have questioned the artifactual character of the Calico artifacts. Natural processes suggested as alternatives to hominid

flintknapping include rock-on-rock percussion in streams and mudflows (i.e., alluvial processes acting as a giant “gravel crusher”), lightning strikes, animal trampling, earthquake liquefaction, and pressure retouch of buried cobbles. These hypotheses are examined and found wanting. Intentional percussion flaking (guided by cognitive evaluation of ever changing geometries, planned percussion removals that facilitate subsequent modification, and knowledge and experience of the specific lithology involved) is suggested as a more viable hypothesis.

Chrissina Burke
Bison Bonebeds and Carnivore Use of Carrion: Implications for Human-Carnivore Interactions

Great Plains bison bonebeds exemplify an important portion of carrion production in North America. Given that carnivores opportunistically scavenge carrion in an effort to reduce energy costs and increase nutrients in times of reduced prey availability, carnivore utilization of bison bonebeds have the potential to illuminate how human hunters impacted carnivore communities in the past. This poster presents the results of data collected on the degree of carnivore-utilized bison carcasses at the Casper, Jones-Miller, and Horner II bison bonebeds. Collecting utilization data and coding the degree to which a carcass has been consumed provides an ecological framework concerning carnivore stress in the past. While most taphonomic studies on Great Plains bison bonebeds have focused on identification of site formation processes, this research shows that carnivore utilization can be implemented as an ecological proxy to create a more holistic understanding of human-carnivore interactions in the past.

Ian Buvit, Karisa Terry and Masami Izuho
Nomads of the Archipelago: Paleolithic Japan and the Pleistocene Peopling of the Americas

Japanese prehistory began around 33,000 14C BP. For most of the Pleistocene, Sakhalin and Hokkaido formed a peninsula joining the Asian continent at the Russian Far East. Honshu, Kyusyu, and Shikoku were a single island last joining Korea 130,000 years ago. These two landmasses, Paleo-SHK Peninsula and Paleo-Honshu, were continuously separated throughout the Pleistocene. The earliest well-dated archaeological sites are in Kyushu and Honshu at 33-30,000 14C BP. The earliest Hokkaido sites with reliable numerical dates are Shimaki, Kashiwada 1, and Kawanishi C at around 21,000 14C BP. Several northern sites such as Wakabonomori, Shukubaisankakuyama, and Kyoei 3, are not well dated, but could be as old as 30,000 14C BP. Rarely is Japan brought up in discussions about Paleoamericans, but the archipelago's Paleolithic database should not be ignored. For one, there is evidence for terrestrially adapted hunter-gatherers at the gateway to western Beringia 21,000 14C BP. Also, blades, bifaces, and microblades, important components of early New World toolkits, were widespread across Japan throughout the Paleolithic. Last, obsidian sourcing implies seafaring capabilities as early as 30,000 14C BP. As such, Japan is a good reference when considering the technological and behavioral changes humans experienced as they first entered the Americas.

Diego Carabias, Isabel Cartajena, Patricio López, Renato Simonetti, Carla Morales, Antonio Maldonado, Cristina Ortega and Valentina Figueroa
GNL Quintero 1 (GNLQ1): First Evidences from the Pacific Coast of South America of a Final-Pleistocene Drowned Terrestrial Site
The results of new research conducted on GNL Quintero 1 (GNLQ1),

a Late Pleistocene paleontological submerged site located in the coast of Central Chile (32°46'S) are presented. GNLQ1 is located in Quintero Bay, 650 m offshore and 13 m above underwater. During the last years, an animal bone assemblage composed by extinct continental fauna has been recovered and analyzed. By combining geological, geomorphological, bathymetrical, sedimentological and paleontological data with a digital simulation model we suggest that by c. 16,000 cal BP a significant part of Quintero Bay was exposed and GNLQ1 would have been located several kilometers inland as the paleoshoreline was farther out on the continental shelf. GNLQ1 provides the first unambiguous evidence that final-Pleistocene sites can be located through underwater investigation, thus offering insight into a submerged paleolandscape viable for human occupation and transit along the Pacific Coast of South America during the Late Pleistocene.

Kristen Carlson and Leland Bement
Changing Clovis Hunting Adaptations through Stable Isotope Analysis

After the extinction of megafauna across North America Clovis hunters quickly adapted to hunting bison, the largest remaining prey animals on the Plains. This analysis focuses on the study of bison remains from the Jake Bluff kill site in northwestern Oklahoma. Jake Bluff is one of the latest accepted Clovis kill sites in North America. Through the use of stable Carbon and Nitrogen isotope and morphometric analysis we demonstrate the changes in bison condition and diet during the transition from the Clovis time period to the Folsom time period at an arroyo trap kill complex on the Southern Plains. Bison body changes have been linked to indicate changes in grassland composition, which are reconstructed by isotopic analysis in this study. In addition, shifts and variances in isotopes can indicate mobility patterns of animals. The compilation of these data enables a broader understanding of the development of mass kills in the form of arroyo traps at the end of the Clovis period by establishing bison condition, movement, and developing Paleoamerican hunting adaptations. Clovis hunters faced with drastic changes in prey species demonstrated efficient adaptability by developing new hunting techniques such as these arroyo trap kills.

Risa Carlson and James F. Baichtal
Raised Marine Beach Predictive Model Results in New Early Holocene Sites in Southeast Alaska

A predictive model to locate Early Holocene archaeological sites in southwestern Southeast Alaska was developed based on a data set of shell-bearing raised marine deposits located throughout Southeast Alaska. Fieldwork included coring of select raised marine strata, measuring their elevations, and radiocarbon dating the associated shell samples within the cores. A subset of the data was used to produce a relative sea level curve spanning the Holocene. The sea level curve and high resolution digital elevation models were utilized to generate paleoshorelines at various elevations. The hypothesized Early Holocene shoreline was then used to predict that archaeological sites between the ages of ca. 9,200 and 7,000 ¹⁴C yr BP would be located between 16 and 21 m above present zero tide. Surveys to test the model found over 70 locations with archaeological material. Eleven of these sites are within the predicted elevations and date from 6,890 to 9,280 ¹⁴C yr BP. Initial investigations indicate the sites are extensive and rich in microblade and pebble tool technology. The new Early Holocene sites imply greater early maritime settlement of Alaska than previously imagined and contribute to our understanding of the movement of people into North America.

Kurt Carr
An Update on Research at the Shoop Site (36Da20) Including the Results of XRF Analysis

The Shoop site is the largest Paleoindian site in Pennsylvania and one of the largest in the Middle Atlantic region. Unlike most Paleoindian sites in the region, it is situated on a ridge top, several kilometers from any high order streams. It covers approximately 15 ha and contains several, although poorly defined, artifact concentrations. The artifact assemblage is characterized by a high ratio of tools to debitage, tool maintenance activities, over 500 endscrapers, and at least 77 projectile points. In 1952, John Witthoft identified 98% of the lithic material as originating from the Diver's Lake Onondaga chert quarries in western New York. This suggests a settlement pattern covering over 350 km. However, this hypothesis has been criticized. Recent testing using x-ray fluorescence (XRF) analysis has also identified the Diver's Lake source. Although the Shoop site is very different from most sites in the Middle Atlantic region, it is similar to sites in the New England-Maritimes and Eastern Great Lakes regions. The implications of the XRF analysis will be explored.

Philip J. Carr and Gregory A. Waselkov
Paleoindians in the Tennessee Valley: Applying an Organization of Technology Model

The concentration of Clovis projectile points in north Alabama has received considerable attention in some models of Clovis migration and settlement. Clovis materials collected from the surface of sites in Lauderdale and Colbert Counties, Alabama in 1986 are examined from an organization of technology perspective. While these collections are limited by a lack of accompanying flake debris, and the multi-component nature of the assemblages, such problems are often faced with surface collected Clovis assemblages. Detailed technological analysis from a uselife perspective in conjunction with a consideration of tool design will be used to make inferences regarding technological strategies. Coupled with a consideration of the environment, additional inferences of mobility and settlement pattern will be offered. These detailed site-specific data will be placed in the broader context of artifact and site distribution in the region. Clovis migration models and settlement will be evaluated in light of these new findings.

Gianfranco Cassiano and Ana Maria Alvarez Palma
Clovis and Plainview Occupations in Central Mexico

In the northeast boundaries of the Mexican Central Plateau, archaeological investigations conducted since 2008 in the states of Hidalgo and Veracruz have revealed a great richness of archaeological sites in the arid and semiarid rim of the plateau. The sites consist of small open areas and a few rock shelters, in some cases associated with rock paintings, containing workshop debris of Clovis and Plainview type, including bifaces, endscrapers, burins, blades and blade cores, drills, hard hammers and more. The Clovis industry used mainly chert, while the Plainview materials are manufactured with obsidian and some with fine grained basalt. The archaeological material come from surface collections and from excavations. We have radiocarbon dated a Plainview workshop site to 10,400 years BP.

Marta Lucía Chávez Montoya
A Paleoindian Site (10,450 to 10,040 B.C.) at Limón, Costa Rica
A sample of burnt wood gave a date of 10450 years before Christ. Arose during an archaeological assessment carried out on land of the

Reventazon hydroelectric project (PHR) - ICE, between dimensions 265 and 120 m in the forest very humid Tropical with high precipitation and a range of temperatures between 20 ° C - 30° C. Areas of irregular topography that connect small terraces showed cultural remains and presented features suitable for human activities. The water resource 100 metres is the Sibón stream, descends into the Canyon of the Río Reventazón. The island site: The archaeological exploration revealed a panorama of ancient groups activities. Stratigraphically evidence stood: ceramic between 20 - 75cm. A lithic rock with foraminifera set overlaps with the ceramic between 50-80 cm. Another lithic set of silicified shale was revealed between 80 and 160cm identifying slices reafilamiento, slimming, unifaciales and bifacial artifacts (scrapers, scrapers, knives, preform and waste products of size); associated with this was the radiometric dating. The evidence in these depths indicates interspersed with two stone complexes; of shale never gets to share the space occupied by ceramics, pointing out the result of C14 existed people inhabiting the region at least eight millennia before people who used the ceramic complex located in the first layers. Opens the picture with respect to the first human groups, now needing more in-depth studies to make partnerships with other parts of the continent or otherwise indicate a native tradition in the region.

Jorie Clark, Jerry Mitrovica and Jay Alder
Regional Variability in Latest Pleistocene and Holocene Sea-Level Rise across the Oregon-Washington and Bering Sea Continental Shelves

Sea-level rise during the last deglaciation was influenced by isostatic, gravitational, and rotational effects that led to significant regional departures from eustasy. Sea-level rise across the Oregon-Washington and Bering Sea continental shelf would have been particularly variable spatially in response to the near-field effects of the collapsing Cordilleran and Laurentide Ice Sheets as well as far-field effects related to melting of the other global ice sheets. Such regional variability is important when investigating paleo-coastal occupation sites and migration pathways used by early Native Americans. An improved understanding of regional sea-level rise may also be used for predictive modeling of the location of potential archaeological sites that are now submerged. Here we predict relative sea-level (RSL) change across the Oregon-Washington and Bering Sea continental shelves using a state-of-the-art theory that incorporates viscoelastic deformation of the Earth, time-varying shoreline geometries and the feedback of perturbations in Earth rotation into sea level (Kendall et al., 2005). The calculations are performed using a pseudo-spectral algorithm with a truncation at spherical harmonic degree and order 256. The predictions are based on the ICE-5G ice model. Our results clearly demonstrate that deglacial sea-level rise across the Oregon-Washington and Bering Sea continental shelves was highly non-uniform spatially.

Sam Coffman and Jeffrey T. Rasic
Rhyolite Sourcing in Eastern Beringia

Lithic provenance analyses are an untapped resource in Beringia. Fine grained volcanic rocks are often common in lithic assemblages in interior Alaska, and are quite amenable to geochemical characterization using a variety of sourcing techniques. This study focused on rhyolite with the intent of identifying and delineating “source” clusters, while constructing a database. Portable X-ray Fluorescence (PXRF) technology was used to analyze 500 rhyolite artifacts from 56 sites in interior Alaska. These sites range in age from the late Pleistocene through the late Holocene. Preliminary results indicate three distinct geochemical

groups (likely sources). While these sources have not yet been identified on the landscape, it is believed that two of the three “sources” are located in the Alaska Range, likely around the Nenana River Valley, and the third in the Talkeetna Mountains. These data provide another means to address raw material procurement and understand landuse strategies among early and late foragers in eastern Beringia.

Michael B. Collins, Dennis J. Stanford, and Darrin L. Lowery
North America before Clovis: Variance in Temporal/Spatial Cultural Patterns, 24,000 to 13,000 BP.

A wide range of contrasting cultural patterns occur across North America during various portions of the time period between ~24,000 and 13,000 BP. Each of these is represented by multiple sites and tends to occur in distinctive environmental settings. The extent and variance of this rich archaeological fabric indicates a complex process of peopling the Western Hemisphere, multiple cultural origins, and a long period of human presence prior to the advent of the distinctive Clovis manifestation.

Thomas Connolly, Dennis L. Jenkins, Catherine S. Fowler, Pat Barker, Eugene M. Hattori and William J. Cannon
Boundaries in Space and Time: Paleo-Period Textiles in the Northern and Western Great Basin

Paleoindian research has focused on lithic technologies. Though representing a small portion of material culture, lithics are most likely to survive in the archaeological record. Over the past fifteen years the Great Basin Textile Dating Project (a cooperative venture among several institutions, agencies, and individuals) has directly dated a great variety of fiber artifacts from the northern and western Great Basin, including sandals, bags, mats, baskets, and cordage. These dates include over 60 perishable artifacts that date as older than 8,000 years (calibrated). We focus on fiber artifacts from Paisley Caves in southeast Oregon, as well as additional early sites in the northwestern Great Basin, where associated cultural assemblages are best documented, and consider these materials in the context of dated fiber artifacts from throughout the region to examine distributions in space and time.

John P. Cook and Tom Gillispie
Healy Lake Village: New Data and Analysis

Healy Lake Village: New data and analysis John P. Cook and T.E. Gillispie The last two decades have seen the formulation of numerous competing models for the peopling of the Americas out of Northeast Asia, for which the archaeological record of Beringia provides temporal constraints. Several variants hypothesize multiple migration events, including dispersal via the Ice Free Corridor. The terminal Pleistocene archaeology of eastern Beringia remains vital to evaluation of these models. Here we present new data and analyses from the Village, a multicomponent human occupation with basal radiocarbon ages circa 13.5 ka, located in the Tanana River Valley, Alaska. This information is drawn from the original excavation records and collections made between 1967 - 1970, the majority previously unpublished. New contextual data includes improved stratigraphic and spatial reconstructions, and new radiocarbon dates. Within this framework, we are building improved models of association among Chindadn-era lithic technologies, features, and occupation intervals. These may in turn improve constraints on migration models, and subsequent in-place ethno-genesis of northern Athapaska.

Lauren Cook and Neil Puckett
Sourcing Redeposited Projectile Points at McFaddin Beach, TX
For over 50 years projectile points have been found and collected along McFaddin Beach in Jefferson County, Texas. These archeological artifacts range in age from the Late Pleistocene to the mid to late Holocene. While most of the points have been picked up by collectors, these individuals have recorded provenience data for a significant number of the artifacts. In addition to the provenience, sediment models, historical analysis and point collection dates, geographic and bathymetric information, and forces such as wave action and longshore drift allow for the prediction of potential artifact origins. This study uses GIS analyses to recognize spatial pattern of projectile point distribution. These analyses will in turn enable the creation of a GIS model to identify the most likely offshore locations from which the artifacts are originating. The results of this research will allow archaeologists to target these areas for future survey and/or excavation. This poster presents research methodology, data sources, maps, and results. Based on the success of future site identifications this methodology should prove valuable for later site location modeling and identification.

Carlos Cordova, Ernest Lundelius, William Johnson and Jason Joines
Climate and Vegetation Change from 17,550 to 2000 Cal BP in South-Central Texas: The Hall's Cave Record during Pre-Clovis and Clovis Times

The high-resolution sedimentary sequence in Hall's Cave, Kerr County, Texas, has been the subject of several paleoclimatic reconstructions based on faunal remains, strontium isotopes, and magnetic susceptibility extracted from its sediments. The cave's sediments have attracted many paleoecological specialists because the sedimentation rate has been uniform. Human presence in the cave is not evident until the middle Holocene. Therefore, the sedimentary record for the Terminal Pleistocene and Pleistocene-Holocene transition has little disturbance. We have produced a record of pollen, spores (e.g., Sporormiella), phytoliths, microscopic charcoal, and $\delta^{13}C$ values from the cave's sediments encompassing the period 17,550 - 2000 cal BP. These proxies of paleovegetation indicate that between 17,555 and 15,500 cal BP the cave area was dominated by a steppe environment of sedges and Stipeae grasses. After ca. 15,500 cal BP the arboreal component increased, although with marked fluctuations, and attained a peak around 13,000 cal BP. The Younger Dryas is marked by a decrease in the frequencies of most tree and grass pollen and an increase in frequencies of some riparian and aquatic pollen taxa.

George Crawford and Stacey Bennett
Back to Basics, Analyzing the Paleoindian Assemblage at the Clovis Site

Although there have been many publications concerning small portions of the Blackwater Draw artifact assemblage, there has not been an over-arching, synthetic look at the assemblage in its entirety. Archaeologists and students are often wildly misinformed and surprised at the nature of the collection, and what this tells us of the early human occupants on the Plains. In the last five years, we have begun to remedy this through analyzing the major unquantified segment of the collection. This endeavor is not an attempt to answer all the possible questions there may be concerning Paleoindians at this site, but a springboard to publicize the collections and inspire further, better-guided research.

George Crawford and Stacey Bennett
The Clovis Site, Inheriting 80 Years of Research
This poster addresses the issues and problems of inheriting site research of radically disparate natures. Work at the Clovis site, one of the largest, and potentially most informative Paleoindian sites on the North America Plains, is largely unpublished. Although much has been returned, collections are still scattered across the nation, field notes are of various quality, missing, or even withheld, and we have recovered tens of thousands of uncataloged photos. Despite the overwhelming deluge of hindrances, we continue to learn and move forward.

Julie Crisafulli and Kelly E. Graf
Sediment and Paleoenvironment at Bonneville Estates Rockshelter, Eastern Nevada, during the Pleistocene-Holocene Transition
Bonneville Estates Rockshelter is situated on the western edge of the Bonneville Basin and provides one of the longest and best-preserved stratigraphic sequences of human occupation in the Great Basin (13 ka to present). Preservation in the terminal Pleistocene-early Holocene deposits is excellent with hearth features, lithic reduction areas, faunal remains, and perishables such as bone needles, beads, and textiles found in numerous cultural occupations. In this poster, we present the stratigraphy, radiocarbon dates, and results of sedimentological analyses of deposits dating to 13-6 ka. We consider how these results inform on past environmental change during the first 7000 years of human occupation of the region.

Wilson W. Crook, III and Thomas E. Williams
The Presence of Gault-Ft. Hood Chert at the Brush Creek Clovis Site (41HU74), Hunt County, Texas
Ongoing investigations at the Brushy Creek Clovis site (41HU74) in Hunt County, Texas have recovered a total of 78 tools among which are 2 Clovis points, a fluted preform, 9 large curved blades, 10 small (<70 mm) bladelets, and a number of bifaces, end scrapers, and other tools. Recent finds over the last two years have added the broken bit end of a chert adze, a possible burin, a burin spall and an engraved piece of *Inoceramus* sp. shell. The latter displays an extensive cross-hatched pattern on both faces and is similar to an engraved *Inoceramus* shell from the Kincaid rock Shelter. Many of the artifacts from the site have the same coloration and UV response as chert from known central Texas Clovis locations such as the Gault site (41BL323). To test the possibility of interaction between the inhabitants of Brushy Creek and central Texas, all of the chert artifacts have been subjected to analysis using X-Ray Fluorescence (XRF), with select artifacts also analyzed by Inductively Coupled Plasma Mass Spectrometry – Laser Ablation or ICP-MS-LA. Both analytical methods confirmed the presence of Gault chert at Brushy Creek. This presentation summarizes the results of the XRF and ICP-MS-LA analysis and discusses the implications for Clovis people interaction and movement across north central Texas.

Manuel Enrique Cueto
Lithic Technology and Initial Ways of Working during Early Occupation of Patagonia's Extreme South
This paper presents a synthesis of studies concerning the lithic technology of the first settlements in the Central Plateau of Santa Cruz, Patagonia, Argentina. We studied archaeological sites Casa del Minero 1, Cueva Tunel, Cerro Tres Tetos 1 and Los Toldos 3, all of them chronologically calibrated to the late Pleistocene. These sites belong to a landscape where lithic resources are highly available between others.

The aim of this research is to evaluate artifact production processes and ancient ways of work to which those artifacts were destined, in relation to human group mobility, natural resource exploitation, functionality of sites and ways of structuring the intra and intersite. The study combines a technological and morphological approach, with use-wear analysis. It is a comparative approach that provides information about technological strategies in terms of manufacturing, use of artifacts and initial ways of work developed by the hunter-gatherers who inhabited the region during a period of great changes in respect to the availability and kind of resources. Various lithic artifact production and consumption strategies may be seen, involving different labor investment levels related to tasks fulfilled, availability of raw material and the particular role of each site.

Pedro Da-Gloria and Clark Spencer Larsen
Health and Lifestyle of Paleoamericans from a Tropical Perspective: The Case of Lagoa Santa, Brazil
The Lagoa Santa skeletal series from Central Brazil contains 195 human skeletal individuals dating to the early Holocene (ca. 10,000-7,000 yBP), allowing a rare opportunity to document Paleoamerican health and lifestyle. Paleoamericans are traditionally depicted as small and highly mobile bands having protein-rich diets based on exploitation of large game animals. Recently, new evidence coming from archaeological data show instead a diversity of strategies used for these first populations, ranging from marine economies to broad-based subsistence. In this study, we test the null hypothesis that prevalence of osteological markers of health and lifestyle in Lagoa Santa are similar to general patterns identified in foragers from the Western Hemisphere Project (WHP) database (n=6,733) obtained from 36 populations across the Americas. The results point to a significant reliance on a high-carbohydrate diet in Lagoa Santa, based on caries and abscess prevalence. In addition, Lagoa Santa skeletons show relatively high levels of physical activity with few accidental injuries, high exposition to infections, low mobility and stature, and substantial evidence of violent traumas in the head. These results are inconsistent with the traditional model of Paleoamerican lifestyle. Instead, Lagoa Santa skeletons reveal a population expressing an early adaptation to a tropical setting.

Cody Dalpra, Bonnie Pitblado and Carol Dehler
Geoarchaeological Results of Petrographic Analysis on Quartzite Sources in the Gunnison Basin, Colorado
For the past six years, archaeologists and geologists have collaborated to develop a protocol for “fingerprinting” quartzite sources in the quartzite-rich Gunnison Basin, Colorado, where most chipped stone assemblages consist of 95 percent or more quartzite. Two techniques used in tandem offer the most robust results: geochemical characterization via LA-ICP-MS and petrographic (microscopic) analysis. This poster focuses on the petrographic results that separate quartzite sources identified in the Gunnison Basin, Colorado into consistent discrete groupings. We illustrate how petrographic analysis of samples can refine the results of geochemical trace-element analysis to yield the best discriminatory results. Our ultimate goal in developing a quartzite-sourcing protocol for the Gunnison Basin is to enable “matching” cultural chipped stone assemblages to the likeliest sources of the raw materials. This will permit researchers to reconstruct land-use strategies of prehistoric foragers including but not exclusively Paleoindians of the Gunnison Basin with more precision than has been possible in the past.

I. Randolph Daniel, Jr., and Albert C. Goodyear
Clovis Macrobands in the Carolinas

The recognition of Clovis in the Carolinas has largely come from statewide fluted point surveys. Studies have focused on style, raw materials, and geographic distributions. Raw material patterns suggest a single macroband centered on the fine-grained metavolcanic stone of the Uwharrie Mountains in the Piedmont. To the south, raw material distributions suggest another macroband centered on the Allendale cherts along the Central Savannah River. Presumably, metavolcanic Clovis points observed in South Carolina represent the southern extent of movement away from the Uwharries. Evidence for two probable Clovis macrobands is presented with the Saluda-Congree-Santee being something of a major physiographic boundary.

Leslie B. Davis, Christopher L. Hill and Kathryn Krasinski
Evidence for Pre-Clovis Human Activity Associated with a Mammoth in Late Pleistocene Eastern Montana

The nearly complete skeleton of a mature bull Columbian mammoth was recovered in an upland north of the Yellowstone River, in eastern Montana. Found embedded in silts and below a buried soil A-horizon, radiocarbon measurements indicate the mammoth is older than 12,000 RCYBP and possibly closer to 12,500 RCYBP, demonstrating it is older than Clovis. Cutmarks on rib and calcaneus bones are inferred to be the result of a lance-based projectile or other lithic cutting tool, although it was not discarded in the bonebed. It is also possible that the mammoth remains reflect scavenging. In the silts and associated with the mammoth are seven quartzite fragments. These underlie the mandible, tusk, vertebral column, and humerus, or are between the humerus and a tusk. Human use of the carcass is reflected by green bone damage of a humerus, possibly to enable marrow extraction. Stacking of one femur atop the other, overlying thoracic vertebrae, and rearrangement of other skeletal parts (mandible pointing 80 degrees away from face of skull) may also represent human activity. The radiocarbon age, marks on bones, green bone damage, stacking, and patterned quartzite rock distribution provide evidence in support of pre-Clovis human activity associated with the mammoth.

Loren G. Davis and Alex J. Nyers
Reconstructing Paleolandscapes and Potential Submerged Site Locations on the Pacific Outer Continental Shelf from the Last Glacial Maximum to 10,000 RYBP

Despite the interest in the Pacific coast as a potential migratory route of initial human entry into the Americas, we lack high resolution digital models that reconstruct past coastal landscapes as a means of exploring issues of potential site preservation and the paleoenvironmental context of early coastal foragers. As part of research conducted for the US Bureau of Ocean Energy Management, we present a geographic information systems model of coastal paleolandscapes, changing shorelines, and offer a predictive model of potential site locations on the submerged Pacific Outer Continental Shelf bordering Washington, Oregon and California. We describe issues of paleolandscape form, rates and patterns of coastal landscape change, and their ecological implications for early coastal peoples.

Jennifer DeGraffenried and Joshua Trammell
Analysis of 42TO3974 Rattler Ridge: An Upland Fluted Site in the Cedar Mountains, Utah

Over the past decade a variety of previously unknown Paleoindian sites

have been documented in the eastern Great Basin. These discoveries are changing our understanding of Paleoindian land use patterns, subsistence, lithic procurement and projectile point chronology. In October of 2009 an upland fluted site was found in the Cedar Mountains, Dugway Proving Ground, Utah. This paper summarizes the results of the recordation and several levels of analysis on site 42To3974; a possible Paleoindian bison intercept kill site in the Cedar Mountains of western Utah.

Robert Dello-Russo
The Water Canyon Paleoindian Site - A Multi-Component Site at a Focal Wetland Resource in West-Central New Mexico

Black mat, paleoclimatic, paleoenvironmental, terminal Pleistocene, early Holocene, Bison antiquus, Late Paleoindian, Clovis Since 2008, interdisciplinary research at the Water Canyon Paleoindian site in west-central New Mexico has generated not only archaeological materials from Clovis, Late Paleoindian, and possibly late Folsom uses of the site, but identifiable activity areas. Excavations have recovered butchered Bison antiquus bones and tooth enamel, well over 30 radiocarbon and OSL dates, a robust pollen record and other proxy paleoenvironmental and paleoclimatic data that are not found – as a package – elsewhere in this region of the Southwest. The site occurs at the location of a fossil wet meadow which is represented by a spatially extensive black mat deposit. The data archive at this site provides critical research potential for understanding how wetlands may have conditioned regional Paleoindian settlement and mobility during the terminal Pleistocene – early Holocene.

Kelly M. Derr and Philip E. Higuera
Human-Environmental Interactions during the Late Pleistocene-Early Holocene Transition: A Multi-proxy Approach in the Alaskan Arctic

What role, if any, did humans play in shaping Arctic vegetation and megafaunal populations during the Late Pleistocene/Early Holocene transition? A variety of factors shaped Arctic environments during this period, including changing climate, vegetation shifts, and human impacts on megafaunal populations. Existing environmental records depict shifting vegetation communities around the time of archaeologically-dated human arrival into North American Arctic, ca. 13,500 cal. yr BP. In Northern Alaska, lake sediment record increased Betula pollen with simultaneous decreases in Cyperaceae, Poaceae, and Salix pollen between ca. 12,500-13,500 cal BP, indicating a distinct shift from herb-dominated to shrub-dominated tundra. Increased charcoal in lake sediments over this same time period highlights a shift in fire regimes, also coincident with human arrival and a decline in native megafauna. Our research pairs multiple lines of paleoecological evidence, including pollen, charcoal, and Sporormiella spores from lake sediments with over 600 radiocarbon dates from archaeological and faunal contexts to clarify the spatio-temporal pattern of human arrival in Alaska and coincident ecological changes. Overall, this research contributes to the larger discussion of initial human arrival in uninhabited ecosystems and highlights the utility of using multi-proxy records in addressing this subject.

Jaime Dexter
Paleoethnobotanical Analysis at the Paisley Caves: An Evaluation of Late-Pleistocene/Early-Holocene Plant Use in Cave 2

The late Pleistocene/early Holocene deposits at Oregon's Paisley Caves

(35LK3400) contain key information on the peopling of North America due to the rich record of human occupations dated as early as 14,290 cal BP. The antiquity of cultural deposits and the fine resolution of the micro-stratigraphy at the Paisley Caves provide a unique opportunity to reconstruct a record of anthropogenic plant use in the northern Great Basin during the terminal Pleistocene and early Holocene (cf. 14,000-7,600 cal BP). Macrobotanical plant data from LP/EH cultural deposits in Cave 2 document the overall contribution of plant resources in diet breadth and the quantification of botanical remains demonstrate the relative importance of various plants in cultural practices. In this study, I use morphological seed characteristics and statistical analyses to distinguish seeds and charcoal deposited by humans from those deposited by nonhuman predators and scavengers. Results are analyzed within a framework of known global climate oscillations, along with a local pollen record, in order to better understand human-environmental interactions during this time.

Tom D. Dillehay
Late Pleistocene Economic and Cultural Diversity in North Peru

This paper considers the earliest evidence for people along the coast and on the nearby western Andean slopes of northern Peru from 14000-10000 calibrated years ago. Synthesized and related here are both new and published data generated by three decades of archaeological and paleoecological interdisciplinary research at more than 380 sites that represent the early Huaca Prieta, Fishtail, Paijan and unifacial cultures. The end of this time span was characterized by the appearance of domesticated plants, incipient social differentiation, a semi-sedentary to sedentary lifeway, and population aggregation, all of which formed a palimpsest of ever changing social and economic conditions across many different environments of the study area and set the stage for more complex developments.

Lyndsay M. DiPietro, Steven G. Driese, Kelly Graf and Ted Goebel
The Dry Creek Site: A Geological Perspective on Site Formation and Stratigraphic Integrity in Central Alaska

The Dry Creek archaeological site has been considered one of the most important Upper Paleolithic sites in central Alaska. A type locality for the Nenana complex, the site factors heavily into debates regarding the origin of lithic assemblage variability in the region. Four archaeological components have been identified at the site, two of which date to the Late Pleistocene. Component I, dated to ~13.1 ka, is characterized by the presence of teardrop shaped points and absence of microblades and has been assigned to the Nenana complex. Component II, separated from component I by a thin, discontinuous sand and dated to 12.5 ka, is marked by the presence of microblades and microblade cores and has been assigned to the Denali Complex. Alternative interpretations of the archaeological record at the site have been proposed, however, and call into question the depositional model and stratigraphic integrity of Dry Creek. This study employs soil micromorphology, particle size analysis, and bulk geochemistry and mineralogy to better understand the depositional and pedological history of the sediments at Dry Creek, particularly loess units 2 and 3 and the origin of the sand layer separating the two, as well as to assess the stratigraphic integrity of the site.

E. James Dixon, Kelly Monteleone and Mark R. Williams
New Evidence Supports the North Pacific Rim Migration Hypothesis

Widespread Clovis and Folsom age human occupation along the Northwest Coast of North America is documented by reliably dated

archeological sites characterized by distinctive leaf-shape and stemmed lithic projectile points, maritime subsistence economy, bear hunting at hibernacula, and inferential evidence indicating the use of watercraft. Post-Pleistocene sea level rise, forebulge height and collapse, and isostatic rebound in relation to local geography are now being applied to extend archeological survey for late Pleistocene age archeological sites to new areas above and below modern sea level. Archeological survey of submerged Pleistocene refugia on the continental shelf of Southeast Alaska's Alexander Archipelago, and ancient shorelines located at and above modern sea level, will continue through the summer of 2014. Preliminary survey has resulted in new discoveries important to understanding the timing and character of late Pleistocene occupation of the Northwest Coast.

Daron Duke and D. Craig Young
Haskett Points of the Old River Bed Delta, Utah: Early Western Stemmed Tradition Spear Weaponry

Recent finds on the Old River Bed delta are providing new evidence about the nature and distribution of Haskett technology. The Haskett type is arguably the oldest representative of the Western Stemmed Tradition series of projectile points, with a group of dates on black mat organics at the locality indicating ages greater than 10,200 14C BP. In this poster, we present images and technological attributes for the collection, including one 22.7-cm showpiece that may be the largest complete Haskett specimen yet documented archaeologically. The technological evidence supports the interpretation of Haskett points as sophisticated throwing/thrusting spear tips.

James S. Dunbar
Mental Templates and a Revised Typology for Florida Paleoindian Points

Lanceolate points were being manufactured in Florida and the adjacent Southeast by Paleoindians who lived among the greatest diversity and populations of Pleistocene fauna and flora available for human exploitation in North America. Until recently, assembling a typology for these early stone tools was stymied by inadequate sample size, a problem solved by a number of recent datasets. This analysis considers morphology, finishing and post-production maintenance, structural considerations, and the identification of a type or subtype's mental template of manufacture. Together these aspects of analysis are used to revise the Florida Paleoindian point typology.

LaVerne Dutton and George Larson
Horn Shelter: Paleoamerican Site

The Horn Shelter is a 150 foot long rock shelter overlooking the Brazos River in the southeastern corner of Bosque County, eleven nautical miles below the Whitney Dam. Evidence of man living in the shelter can be found as far back as twelve thousand years ago. Eleven thousand years ago the shelter served as home for a small band of Paleoamericans. The skeletal remains of two of these early Americans were discovered in 1970, along with an array of burial goods, by avocational archeologists Albert Redder and Frank Watt. Archeologists consider this important find to be extremely rare. While there are a number of Paleoamerican sites in America, there are only a few with skeletal remains or burial goods. The burial goods found at the Horn Shelter are considered to be most unique.

Research on the skeletal remains in ongoing and is being conducted at the Smithsonian Institution. Valuable information such as the probable cause of death and the sex of the juvenile has only recently been determined. With the advancement of DNA testing it is hoped that we will learn more about this unique discovery.

German Dziebel

The Demographic Isolation of Amerindians and Back Migrations to the Old World in the Late Pleistocene/Early Holocene: From the History of Ideas to Contemporary Scientific Realities

At a time when archaeologists are increasingly seeking to define the pre-Clovis horizon (Dziebel 2000; Waters et al. 2011; Gugliotta 2013), the paper revisits early-to-mid 20th century ideas about human origins in the Americas (Florentino Ameghino) and back migrations from the Americas to the Old World across the Bering Strait (e.g., Franz Boas). Although these speculations have long receded to the fringes of science, the rapid accumulation of paleobiological, genetic, linguistic and ethnological data pertaining to the origins of modern humans in the past 20 years (see Dziebel 2007) asks for the reassessment of the role of the Americas not only as a recipient of modern human populations but also as a source of admixture in the Old World. The discovery of very low genetic diversity among Denisovans - the phenomenon only observed among Amerindians, among living human populations - casts the new light on Pleistocene demographics in Siberia. Mitochondrial DNA furnished evidence for the presence of some Amerindian markers (hgs A2, C1) in Siberia and Northern Europe (Der Sarkissian 2011). Autosomal DNA studies (Patterson et al. 2012) have identified “Amerindian admixture” in Western European populations. Americanoid skulls have apparently survived in South Siberia and Central Asia into the Bronze Age (Okunev, Sopka, Chandman/Xiongnu) (Kozintsev et al. 1999; Schurr & Pipes 2011). Coupled with unusually high levels of linguistic diversity in the Americas (Campbell 1997) and some of the most conservative patterns of linguistic structure (Nichols 1992) and kinship organization (Dziebel 2007), this new multidisciplinary data suggests that archaeological research in the Americas and beyond can benefit from a more complex population exchange and isolation model connecting human populations on both sides of the Bering Strait throughout the Late Pleistocene and the early Holocene.

Norman Easton, Michael Grooms, Jordan Handley, Rudy Reimer, Vance Hutchinson and David Yesner

Analytical Approaches to Interpreting the Little John Site (KdV06), a Late Pleistocene Occupation in Yukon's Beringia

The Little John site contains evidence of human occupation from the most recent past back to the late Pleistocene and holds components representing every major archaeological culture in the region from the Chindadn complex to the Historic period. Located north of Beaver Creek Yukon on the upper Tanana River watershed, ten years of excavation has exposed over 200 square meters of this large site and recovered thousands of artifacts and well preserved Pleistocene fauna, including bison, wapiti, caribou, small mammals and birds, and fish. Calibrated Pleistocene AMS dates on fauna and charcoal indicate heavy occupation of the site 10-12 ka, with less dense occupations at 13 and 14 ka. These dates are congruent with occupations documented further downstream the valley at Gerstle River, Upward Sun River, Healy Lake, Broken Mammoth, Mead, and Swan Point. Several analytical projects are being pursued to develop further our understanding of the site, including exploring its geomorphology (Grooms), XRF analysis of a

variety of lithic materials (Handley and Reimer), identification and microscopic examination of faunal remains (Hutchinson and Yesner), and distributional analysis of faunal and lithic components (Easton). This poster will present some of the methods and results of these efforts.

David Echeverry, Beatrix Dudzik and Frankie Pack
Revisiting Population History for the Eva Site: A Combined Cranio-metric and Ancient DNA Approach

This study focuses on the skeletal collection from the Eva site (40BN12), a stratified Archaic shell midden from the western Tennessee River Valley. A total of 177 human burials were recovered from the site, representing three major occupational components, Eva I-III. Based on stylistic similarities of lithic assemblages and recent AMS radiocarbon dates reported by Bissett (2011) for Eva II (Three Mile phase), the site represents an earlier occupation than previously thought, covering significant temporal span from the early Middle Archaic to the Late Archaic period. Combining genetic information obtained through a non-destructive ancient DNA extraction method (Bolnick et al. 2012) and craniometrics, this study addresses questions regarding population continuity both at the local scale (within the three occupational periods at the Eva Site), and at a larger regional scale, when compared craniometrically to other Early and Middle Holocene samples and to mitochondrial haplotype frequencies of North American samples. Thus, this study combines identification of morphological changes in the cranium as well as mitochondrial haplotype frequencies over time to determine population history at the Eva site and relatedness to other North American Early and Middle Holocene samples.

Metin Eren, Robert J. Patten, Michael J. O'Brien and David J. Meltzer

Refuting the Technological Cornerstone of the Ice Age Atlantic Crossing Hypothesis

The “North Atlantic Ice-Edge Corridor” hypothesis proposes that sometime during the Last Glacial Maximum, roughly 26,500–19,000 years ago, human populations from southern France and the Iberian Peninsula made their way across the North Atlantic and colonized North America. The hypothesis, which finds little or no support in archaeological and non-archaeological data, is based primarily on the apparent similarity between stone-tool-production techniques of Solutrean peoples of Western Europe and Clovis and purportedly pre-Clovis peoples of eastern North America. The common element is the supposed intentional use of “controlled overshot flaking,” a technique for thinning a bifacial stone tool during manufacture. Overshot flakes, struck from prepared edges of the tool, travel across the face and remove part of the opposite margin. Experimental and archaeological data demonstrate, however, that the most parsimonious explanation for the production of overshot flakes is that they are accidental products created incidentally and inconsistently as knappers attempt to thin bifaces. Thus, instead of representing historical divergence, overshot flakes in Clovis and Solutrean assemblages mark convergence in the use of the same simple solution for thinning bifaces that happened to produce analogous detritus.

Jon M. Erlandson

After Clovis-First Collapsed: Reimagining the Peopling of the Americas

From the ruins of the Clovis-First paradigm, which dominated 20th century American archaeology, archaeologists have proposed a variety of alternative models for the peopling of the Americas. Coastal and

maritime perspectives now play a substantially more important role in such colonization models, buttressed by some recent archaeological, genetic, and paleoecological data. With increasingly robust genetic data suggesting that the Americas were first colonized by humans migrating out of northeast Asia and Beringia between ~20,000 and 14,000 years ago, archaeologists must construct viable models from a very sparse pre-Clovis archaeological record. I believe the very scarcity of pre-Clovis sites is significant—suggesting that we may be missing an important part of the record. Small and highly mobile populations may explain the scarcity of early sites in some regions, but rising postglacial sea levels and the inundation of vast areas of the continental shelves are also a major problem. From these sparse records, we must reevaluate Paleoindian settlement chronologies using principles of chronological hygiene, reexamine key sites long dismissed by Clovis-First proponents, and reimagine the peopling of the New World.

Joshua Feinberg, Marcy Nadel, Michael Waters and Albert C. Good-year III

The Rock Magnetic Record across the 12.9 ka Younger Dryas Boundary: Evidence for Impact?

The cause/s of the onset of the Younger Dryas (YD) climactic event at 12.9 ka and the corresponding extinction of Pleistocene megafauna and changes in human subsistence patterns in the Americas remain a geologic mystery. Firestone et al. (2007) proposed a bolide impact on the Laurentide ice sheet to explain these dramatic environmental changes, citing an increase in the concentration of magnetic spherules and magnetic grains, among several other parameters. Here, we present complete rock magnetic analyses across the YD at two well-dated archaeological sites (Friedkin Site, TX and Topper Site, SC). These measurements were conducted on bulk, unprocessed soil samples collected continuously across the YD boundary. Rock magnetic techniques are one of the most sensitive means for detecting subtle changes in sediment source, grain size variation, and pedogenic development. Our goal was to test whether there are any changes in sedimentation or pedogenesis at these sites consistent with a large bolide impact or airburst. There is no evidence at either site of any magnetic change coincident with the YD boundary. Magnetic extracts were also prepared following the methods of previous investigators, allowing us to demonstrate that certain magnetic minerals were preferentially sampled in these earlier studies.

Nicholas Felstead, Silvia Gonzalez, Sarah Metcalfe, David Huddart, Stephen Noble, Dirk Hoffman, Melanie Leng, Alistair Pike, Arturo Gonzalez-Gonzalez and José Concepción Jiménez-López

Holocene-aged Footprints from the Cuatrociénegas Basin, NE Mexico

In 1961, during the construction of the Mex-30 highway between the towns of Cuatro Ciénegas and Torreon, two well preserved human footprints preserved in tufa deposits were discovered in the Cuatrociénegas Basin (CCB), NE Mexico. The approximate location of these footprints was described by locals and this information led to a search of the region for additional prints, culminating in the discovery in 2006 of a 10 m in situ human footprint trackway preserved in tufa. Gonzalez et al. (2007, 2009) described the footprints in detail, proposing that the Tierra Blanca quarry footprint site was the same location as the 1961 Highway finds. Here we present their U-series dates of 10.55 ± 0.06 ka BP and 7.24 ± 0.13 ka BP, showing that the two localities must represent two different stratigraphic horizons in the CCB. The former are the oldest known footprints in Mexico. Oxygen and carbon isotope data

from the sediments suggests the in situ footprints were formed during a transition to a wetter (less arid) period, while pollen evidence indicates the presence of *Carya* and *Salix* sp., both indicators of wetter (humid) conditions. These footprints confirm the presence of nomadic hunter-gatherer groups, which persisted until the eighteenth century.

John Ferguson, Terry Ferguson, Emily Hinz and Michael Waters
Geophysics and the Geoarchaeological Characterization of the Topper Site, South Carolina

Geoarchaeological investigations in general and geophysical investigations in particular were employed to characterize the Cenozoic geologic context, but especially the Pleistocene and Holocene natural site formation processes at the Topper site (38AL23), South Carolina. To characterize the subsurface terrace geology, geophysical profiles were collected using seismic refraction and ground penetrating radar (GPR) in 2000 and 2001. These investigations were subsequently compared to excavated archaeological units and shallow trenches to correlate the geologic stratigraphy with geophysical property models. The geophysical investigations identified the underlying Eocene “bedrock” and a series of overlying alluvial, and colluvial deposits. The seismic method mapped older geologic units too deep to be seen in the GPR data below the excavations. Combined geophysical and geologic mapping resolved areas of ambiguity and delineated the continuity of unconformable stratigraphic contacts, multiple stream channels and the site’s buried chert deposit. This study has demonstrated the utility of shallow seismic refraction employed in conjunction with GPR to define the geological context of late Quaternary archaeological sites. Geophysical investigations like those employed in this study require experienced interpretation and careful calibration, but their potential to non-invasively discover and map buried sites should not be underestimated

Stuart J. Fiedel

Pre-Clovis and Bigfoot—The Searches Converge

The quest for hard evidence of cryptic early Homo in the Americas—Pre-Clovis humans—increasingly resembles the long, fruitless and often comical search for that other cryptic American hominid, Bigfoot. In view of the paucity of indubitable stone tools from secure pre-13,500 cal BP contexts, perhaps it is not surprising that footprints and feces have become as crucial for pre-Clovis advocates as they are for Bigfoot believers. I will critically examine the ostensibly human footprints from Valsequillo (now formally retracted) and Monte Verde (still widely accepted) and the Paisley Caves human (?) coprolites. In view of recent evidence of the survival of pre-sapiens hominins (“Hobbits” and Denisovans) into the late Pleistocene of East Asia, is a pre-sapiens presence in the Americas too absurd to contemplate?

Philip Fisher

Human Response to Regional Younger Dryas Climatic and Environmental Variability in Alaska

Human response to climatic and environmental change can result in technological, subsistence, and landscape-use re-organization. The onset of the Younger Dryas in Alaska, during the terminal Pleistocene, dates to around 12,800 cal BP. This climatic reversal would have resulted in conditions similar to the Last Glacial Maximum (LGM). Recent paleoclimatic and paleoenvironmental research indicates that the Younger Dryas had a much more localized regional effect, rather than that previous thought of on a global or near global scale. Beringia

is no exception and the evidence from Alaska is variable on a South to North gradation. Evidence indicates a colder wetter Younger Dryas in Southern Alaska while temperatures from the interior and Northern Alaska were equivalent or warmer than present. This data can be used to compare both spatial and temporal archaeological data bracketing the start of the Younger Dryas to specifically look for changes in lithic technological organization that might be the result of environmental change related to the onset of the Younger Dryas. This poster explores technological relationships between Denali, Nenana, Mesa, and Sluiceway complexes with specific emphasis placed upon microblade technology as an adaptive strategy to environmental perturbations.

Nora Flegenheimer, Laura Miotti and Natalia Mazzia
Rethinking Early Objects and Landscapes in the Southern Cone
The Southern Cone exhibits a variety of early contexts with unique features, including isolated sites, such as Monte Verde, or groups of related sites, as the Puna contexts. Yet, the single feature with most widespread geographical distribution is the Fishtail or Fell 1 projectile point. It is found in a variety of contexts and environments throughout South America; specifically in the Southern Cone, in Uruguay, Chile and Argentina. Its typical design and technical traits, such as fluting, are shared in different regions and have been used in proposals about exchange, social identity and migration routes. This presentation will update information and focus on two localities with concentrations of Fishtail points, one in the pampas and the other in Patagonia. Localities Cerro El Sombrero and Los Dos Amigos exhibit similar features regarding objects and landscapes. Both hilltops were chosen to discard broken Fishtail points as well as other artifacts, including discoidal stones and small spheres. Based on the assumption that past selections of objects and landscape, were socially significant, we propose that people living in both regions in the Southern Cone during the Pleistocene/Holocene transition were sharing meanings and had more in common than technical knowledge and designs.

Nora Viviana Franco, George Brook, Pablo Ambrústolo and María Virginia Mancini
Early Peopling of the Southern Part of the Deseado Massif: Evidence from La Gruta and Viuda Quenzana Areas, Patagonia
La Gruta and Viuda Quenzana, in the southern part of the Deseado Massif, have different environmental characteristics. The area of La Gruta is dominated by lagoons whose level depends on rainfall, while Viuda Quenzana is largely a fluvial environment with seasonal streams and springs. The areas also differ in the availability of rock shelters and siliceous raw materials of high quality with abundant shelters at Viuda Quenzana and few in the area near La Gruta. Climate fluctuations in the past impacted the availability of water in these two areas resulting in changes in lagoon levels and vegetation that we have documented by studying lagoon sediments and pollen evidence. Here we present information related to early human peopling of the southern part of the Deseado Masif, dated to ca. 12,600 cal BP. We also discuss evidence suggesting discontinuous occupation of some areas and similarities and differences between the two areas under study in terms of both occupation and environmental change.

George Frison, Marcel Kornfeld, Dennis Stanford, George Zeimens and Danny Walker
Blade Cores, Blades, Blade Tools, and Clovis Points from the Powar's II, Paleoindian Red Ochre Quarry 48PL330, Platte County, Southeast Wyoming
The Powar's II Paleoindian Red Ochre Quarry produced all Paleoindian projectile point types found at the nearby Hell Gap site 48G0305 plus at least five Clovis points. Recent (2013) analysis of materials recovered by the University of Wyoming in 1986 revealed blade cores and blades. The latter were ap rently used to loosen the red ochre in the procurement process and provide evidence of aspecialized Clovis tool kit.

Jerry Galm, Stan Gough, Fred Nials, Kari M. Mentzer and Tiffany Fulkerson
Paleoindian-Late Paleoindian Point Complexes in the Intermountain West: Western Stemmed-Windust Revisited
In the Intermountain West named stemmed point complexes now known to span the Pleistocene-Holocene Boundary have assumed new significance in the expanding dialog on the peopling of the Western Hemisphere. Two stylistic groupings of stemmed points, referenced as "Western Stemmed" or "Windust" forms, predominate across this region. Points associated with both complexes exhibit a surprising range of diversity in stylistic attributes, proposed functions, and even technology of manufacture. Indeed, the degree of diversity represented in the combined collections reveals no connections to Clovis/fluted point complexes. But equally important, this degree of diversity represented in these samples can be interpreted as the likely signature of a mosaic of Intermountain West cultural adaptations that pre-date the Clovis expansion and persist well into the Early Holocene. This paper re-examines the variability present in these complexes, their temporal distributions, and possible relationships to paleoenvironmental changes that mark the Pleistocene-Holocene transition across the region.

J. Christopher Gillam
Paleoamerican Origins and Migration: A Cultural and Bio-Physical Geographic Perspective
Recent hypotheses regarding the origins and timing of Pleistocene migrations into the Americas have radically altered archaeological perceptions of the "First Americans." Although the search for Clovis' cultural forebears' have largely failed in East Asia, perhaps investigators have been looking for the wrong cultural markers, i.e. lithic technology. This research explores the cultural origins and pathways of Pleistocene migrations from a bio-physical geographic perspective at continental scales-of-analysis for the Northern Hemisphere and South America. The high degree of cultural diversity in late Pleistocene East Asia set the stage for migration to the Americas. Pottery, beginning around 16,000 BP, suggests a shift toward relatively sedentary foragers throughout the area. This likely led to regional territoriality that pressured the lifeway of traditional, highly mobile fisher-hunter-gatherers, i.e. an incentive to migrate northeast along the coast toward the Americas. Bio-physical geographic models highlight the most likely origins of these migratory populations. In addition, geographic analyses indicate that Meso-america also played a significant, yet largely unrecognized, role in the peopling of the Americas. Previously recognized as a passage for the peopling of South America from the north, the Isthmus of Tehuantepec was more likely an early pathway for the peopling of eastern North and South America from the Pacific Coast. The significance of this region

to the initial peopling of the Americas is highlighted further as Paleo-american studies lend growing support for an early coastal migration from East Asia.

Joseph Gingerich and Harry Iceland
Evidence of Paleoindian Social Organization at Shawnee-Minisink
This poster presents the preliminary results of a spatial analysis and refitting study of the Shawnee-Minisink lithic assemblage. The Shawnee-Minisink site is one of the best dated and most spatially intact Clovis sites in the Americas. Excavations at the site, which total 400 m2, provide the opportunity to examine hearth centered activity areas, as well as discrete knapping and tool use loci. Lithic refitting not only confirms the site's spatial integrity, but helps identify patterns of tool use, manufacture, and rejuvenation. The site structure identified within the Clovis level at Shawnee-Minisink allows us to examine Paleoindian social organization and compare these results to other Late Pleistocene sites. We conclude this poster by summarizing the specific behavioral patterns present at Shawnee-Minisink, which can be evaluated against other Paleoindian sites in North America.

Yan Axel Gomez Coutouly
The Yukon River Hypothesis: A Possible Migration Route from Alaska to British Columbia for Microblade-bearing Populations of Beringia
The peopling of the New World is the result of various migratory waves, one of which is represented by microblade-bearing sites (Dyuktai Complex in Siberia, Denali Complex in Alaska and Moresby Tradition in Haida Gwaii). To our knowledge, there are few indications on the migratory routes of these prehistoric groups which used pressure microblades. In Northeast Asia, we can simply observe the eastward advancement of this technology, from the Far East to Siberia and up to their arrival in Alaska. But many gaps remain, especially in Chukotka and in Kamchatka where data are scarce. In northern North America however, there are some hints which allow us to propose a more specific migration route going from Alaska to British Columbia. Our hypothesis is that the Yukon River was a major communication axis for microblade-bearing populations. This assumption is based on the location of microblade sites and on the technological analysis of the lithic industry of these occupations, but also on topography, hydrography, extension of glaciers during Prehistory, access to raw material sources, etc. This hypothesis suggests a migration along the Yukon River which would explain the early coastal settlements of southeast Alaska and British Columbia.

Silvia Gonzalez, David Huddart, Isabel Israde Alcantara, Gabriela Dominguez Vazquez and James Bischoff
Paleoindian Sites in the Basin of Mexico: Stratigraphy, Tephrochronology and Radiocarbon Dating during the Late Pleistocene/Early Holocene Transition
We present here the integration of 16 years of excavation and dating in some of the most important Paleoindian sites from the Basin of Mexico. All the radiocarbon dates quoted here are uncalibrated. The sites include: the Santa Isabel Iztapan Mammoths I and II with lithics associated with mammoth kill sites; the Tocuila mammoths associated with lahar deposits (volcanic mudflows); and the Peñon Woman III, the oldest directly radiocarbon dated human with an age of 10,755 ± 75 years BP. Our results indicate that there are 3 main volcanic ash (tephra) markers during the Late Pleistocene—Early Holocene: 1) the Great Basaltic Ash (GBA) with dates of 28,600 years BP; 2) the Pumice with Andesite

(PWA) with an age of 14,600 years BP; and the Upper Toluca Pumice (UTP) with an age of 10,500 years BP. From our stratigraphy we can conclude that the Santa Isabel Iztapan mammoths kill sites are just below the Pumice with Andesite (PWA) tephra marker, with radiocarbon dates of 14,600 years BP. The lithics associated are intriguing because they include Lerma points, Scottsbluff points and obsidian prismatic blades. So far no Clovis Points have been found in the Basin of Mexico. Several Paleoindian sites are associated with the cold climatic interval known as Younger Dryas with dates between 10,900 to 9,800 years BP. In the Tocuila mammoths site we also find evidence for the meteorite impact layer reported for the SW of the USA, Canada, Europe, Syria, etc. In Tocuila we find a layer of 10 cm with large amounts of charcoal, magnetic spherules, and melted quartz, with a date of 10,800 ± 50 years BP, but not in association with a black mat deposit.

Arturo H. Gonzalez Gonzalez, A. Terrazas, W. Stinnesbeck, M. Benavente, J. Avilés, C. Rojas, J. M. Padilla, A. Velasquez, E. Acevez, and E. Frey
The First Humans in the Yucatan Peninsula Found in Drowned Caves: The Days of the Late Pleistocene-Early Holocene in a Changing Tropic
Prehistoric evidence from submerged caves and sinkholes (cenotes) on the Yucatan peninsula give evidence for the emerging view of a pre-Clovis human settlement in southern Mexico. During our ongoing palaeoanthropological research work we already documented five well preserved human skeletons as old as 13 and 9 ky from drowned caves in Quintana Roo. The finds are associated with fire sites and a diverse megafaunal assemblage of latest Pleistocene age, most of which is yet unreported. With the gathered information since 1999, we have a first view of this first Americans which left the evidence of funerary rituals that took place in special chambers located more than 500 meters from the entrance to inside the caves. We know this humans were well adapted to the environment and the life expectancy were long lived, in some cases more than 55 years. At this moment we will highlight the enormous preservational potential of the cenote assemblage with special reference to human settlers and associated fauna, taphonomy and discussion of palaeobiogeographical links with adjacent coeval evidence from North- and South America. We will also calibrate prehistoric evidence chronostratigraphically, using 14C and U/Th dating on bones, teeth and charcoal, and we will analyse stalagmites, cave sediments, fossil water levels and palaeobotanical evidence (palynomorphs, charcoal) for palaeoecological signals. Isotopes and DNA will be analysed from fossil teeth and bones. With these multidisciplinary sets of data at hand we will be able to model the origin, mobility and environmental context of the first settlers on the Yucatan peninsula and reconstruct the regional palaeoenvironmental changes across the Pleistocene/Holocene boundary. Due to their evidently pre-Clovian age the human finds, which are assembled with mammals that were on the brim of extinction at the beginning of the Clovis age, our project will shed new light on the development of the human settlement throughout the Yucatan peninsula and their environment in Central America.

Robert Goodby
Paleoindian Household Organization at the Tenant Swamp Site (27CH187), Keene, New Hampshire
Four well-defined oval artifact concentrations representing house floors from a Paleoindian occupation radiocarbon dated to 12,500 B.P. were excavated at the Tenant Swamp site in Keene, New Hampshire. Artifact

distributions reveal the size and internal organization of these houses, where work areas were clustered around a central hearth, with sleeping areas along the perimeter. Use-wear analysis indicated hide-working was the predominant activity during what was likely a wintertime occupation. Lithic assemblages were dominated by processing tools, including scrapers, graters, and pieces esquilles, with very few bifacial tools and little evidence for stone tool manufacture. The Tenant Swamp loci are strongly similar to loci from the Bull Brook site associated with women's activities, an observation with important implications for understanding of social organization and gender in Paleoindian society.

Albert C. Goodyear, Douglas A. Sain, Megan Hoak King, Derek T. Anderson, and M. Scott Harris

Topper, An Early Paleoamerican Site in South Carolina

The Topper site (38AL23) is a multicomponent prehistoric site located on the Savannah River in western Allendale County, South Carolina. A quality chert source is present at the eroding escarpment and in the present river bed. Annual excavations for the past 15 years have revealed an extensive Clovis, Archaic and Woodland record spanning the past 13,000 years. The site has received intensive geological study resulting in a basic chrono-stratigraphic framework spanning at least the past 50,000 years. Artifacts are found on the upland hillside, the escarpment chert quarry, and on the terrace bordering the river. On the terrace, Clovis artifacts are found buried in colluvial sands OSL dated to about 13,000 years. OSL dates on colluvium below Clovis date from 14 to 15,000 years. Below the colluvium lies a Pleistocene age alluvial terrace with two distinct depositional units each bearing lithic artifacts. Non Clovis type flaked stone artifacts are thought to be in both units created by bipolar reduction. The assemblage consists of cores and choppers and flake tools formed by unifacial retouch and by bend breaking. Some prismatic blades are also present. Radiocarbon dates indicate the lower unit is at least 20,000 years old and as much as 50,000 years or more. Presently, Topper is unique in the western hemisphere for its technology and dating.

Angela K. Gore and Kelly E. Graf

A Diachronic Investigation of Technological Activities at the Owl Ridge Site, Central Alaska

The Owl Ridge site is a multicomponent site located in the Teklanika River valley in central Alaska. Humans occupied the site from the late Pleistocene to the middle Holocene, evidenced by three stratigraphically separated cultural components dating to 13, 12, and 4.5 ka. Recently, analysis of artifacts from all cultural components was conducted to determine the technological variability present in each occupation at Owl Ridge. This poster provides results of the lithic analysis, and examines technological activities and organization to consider site use and mobility. Results indicate that technological activities and the ways in which people were using the landscape changed through time.

Andrew Gourd

Radiation and Regionalization: Late Paleoamerican Projectile Point Diversification in Oklahoma

Many investigations into the presence of Late Paleoamerican activity on the southern Plains have been undertaken. The Late Paleoamerican period is highlighted by the proliferation of lithic projectile point styles. This poster synthesizes evidence from studies in Oklahoma and the surrounding region. Sites that have yielded radiocarbon dates with projectile points, as well as studies conducted on private lithic collec-

tions, demonstrate increased regionalization in contrast to the relative uniformity seen during the Clovis period. I use this data to conclude that the area now known as Oklahoma continues to be a great source of information that provides insight into Late Paleoamerican activities on the Southern Plains.

Kelly Graf

Late Pleistocene Siberia: Setting the Stage for the Peopling of the Americas

Colonization of the Americas was a complex process. Both place of origin and timing of this event are hotly debated. Based on genetics, geography, language, and cultural similarities, most researchers consider Siberia the homeland of the first Americans with migration via the Bering Land Bridge. Others, however, argue earliest colonizers originated in Western Europe, arriving via a trans-oceanic voyage. Some hold that this early colonization event took place before the Last Glacial Maximum (LGM), while others contend it happened much more recently during the Late Glacial. In this paper, I address the peopling of the Americas from a Siberian perspective, using archaeological and ancient DNA data. The Siberian record indicates there were two pulses of modern humans into far northeast Asia during the late Pleistocene, one before and one after the LGM. The colonization of Siberia by modern humans was an episodic process, taking over 10,000 years, setting the stage for the initial peopling of the Americas.

Richard Michael Gramly, Dennis Vesper and O. Kirk Spurr

The Prismatic Blade Industry of the Middle Stage Cumberland Tradition Phil Stratton Site

The study combines a technological and morphological approach, with use-wear analysis. It is a comparative approach that provides information about technological strategies in terms of manufacturing, use of artifacts and initial ways of work developed by the hunter-gatherers who inhabited the region during a great changes period respect to the availability and kind of resources. Various lithic artifact production and consumption strategies may be seen, involving different labor investment levels related to the needs of the tasks to fulfill, to the availability of raw material and to each site particular role.

Jessi Halligan, James S. Dunbar, Brendan Fenerty and Ed Green
Submerged Paleoindian Sites in the Aucilla River of Northwestern Florida: New Geoarchaeological and Archaeological Research

Hundreds of Paleoindian artifacts, including diagnostic Clovis and other Paleoindian projectile points and well-preserved osseous artifacts manufactured from the remains of extinct Late Pleistocene mammals, have been recovered from the Aucilla River of northwestern Florida. Most of these artifacts were discovered by avocational archaeologists as isolated finds and were collected from secondary contexts within sinkholes along the river bed. Scientific investigations in, and along the margins of, several mid-river sinkholes have revealed extensive sediment sequences dating to the terminal Pleistocene and earliest Holocene (ca. 45,000-13,000 cal BP). Submerged excavations at two of these localities in particular, the Sloth Hole (8JE121) and Page-Ladson (8JE591) sites, yielded artifacts from Clovis-aged and pre-Clovis aged deposits, respectively. Recent geoarchaeological investigations at these two sites, the nearby Wayne's Sink site (8JE1508/TA280), and terrestrial areas adjacent to these sites provide contextual interpretations of these artifacts and are used to develop a regional geoarchaeological model. This research contributes to an increased understanding of regional

paleoenvironments during the terminal Pleistocene and also supports earlier hypotheses about Paleoindian behavior in the Big Bend area of Florida.

James Hartley

Environmental Causes of the Extinction of the Pleistocene Megafauna in the Desert Southwest

The extinction of the Pleistocene megafauna (mammals more than 45 kg [100 lb] in North America) is still under dispute. There are many theories to explain this extinction event. The debate mostly boils down to overhunting by humans and climate change from the Bolling-Allered (a time of severe drought) to the Younger Dryas (a time of severe cold and high water tables). Mammoths and other proboscideans are among the most common megafauna at Pleistocene North American sites and are thus the most widely studied. This poster focuses on environmental factors of the extinction. It is proposed that climate change had the greater contribution, with overkill finishing the remaining populations. This poster discusses several megafauna fossil sites and Clovis kill sites in the Desert Southwest (i.e., Sonoran and Chihuahuan Deserts), a region with abundant sites and megafauna diversity. This study will compare different taxa and their relative abundance at pre-Clovis-age fossil sites and Clovis kill sites to show which taxa survived to the terminal Pleistocene. It is expected that the megafauna were already declining in the Desert Southwest before Clovis people arrived.

Jun Hashizume

Study of Bifacial Point Breakages to Reconstruct Hunting Behavior in Terminal Pleistocene Eastern Japan

Since the end of the Pleistocene, bifacial points became widespread in the northern Pacific region. The same time in Japan is characterized by assemblages with various bifacial points, including large and wide, narrow, and stemmed points. Although bifacial point typology, production technology, and chronology have been investigated, only a few studies have been conducted on their usage, maintenance, and reshaping in Japan. Macrofracture analysis is the most practical and effective method for studying human hunting behavior. This study analyzes breakage, particularly impact breakage (impact fracture), reshaping, and morphological variation of bifacial points in artifacts from Eastern Honshu Island, Japan. The results revealed fractures, including impact fractures, and evidence of reshaping on several objects with bifacial points. Breakage patterns suggest the usage of bifacial point tips for darts and arrow heads. Furthermore, morphological variations and evidence of reshaping indicate frequent maintenance of the bifacial points. These suggest that bifacial points were frequently used as hunting weapons in terminal Pleistocene Japan.

Gary Haynes

Clovis-Era Subsistence: Continental Patterning and Regional Variability

This presentation is a summary of the evidence about Clovis-era subsistence and the different interpretations found in the literature. Sites with adequate evidence about subsistence and diet are scattered in North America over thousands of kilometers, and cannot possibly be fair indications of a pan-continental Clovis-era "diet." Yet they do suggest large-prey preference. At least 15 sites in the United States and northern Mexico contain fluted points associated with either mammoth, mastodont, or gomphothere bones. Several more sites appear to contain proboscideans that may have been killed/scavenged/butchered

by Clovis-era people, although they lack lithics. The total number of individual proboscideans at these sites is around 60. By comparison, nearly the same number of sites contain Clovis-era features or lithics and associated bones of six large mammal taxa (horse, camel, bison, caribou, bear, deer), representing fewer individual animals (n=46). Another 10 sites may contain utilized remains of 47 small mammals, mostly rodents and rabbits. If Clovis-era people were preferentially selecting the largest animals to kill, and deliberately overlooking smaller species, their choices were rational.

L. Suzann Henrikson, Robert M. Yohe II, Gene L. Titmus and James C. Woods

The Resurrection of Owl Cave: Recent Investigations Regarding the Association of Fluted Points and Mammoth Remains

The excavations at Owl Cave (10BV30), conducted during the 1960s and 70s, produced tantalizing evidence to suggest human exploitation of terminal Pleistocene fauna on the Snake River Plain in southern Idaho. While a synthesis of the excavation data was never published and the locality has since been purged from the roster of sites with an unambiguous association with extinct megafauna, renewed efforts at the site may be warranted. A recent examination of the fluted points recovered from the Owl Cave excavations, in addition to new AMS dates on mammoth bones from the same vertical and horizontal provenience, begs the possibility that a mammoth may have indeed been procured by terminal Pleistocene hunters. The five Folsom points recovered from the lower levels of the cave all exhibit evidence of catastrophic impact and two fragments produced positive reactions to horse and elephant antisera. Although Folsom points are not known to be associated with mammoth kills on the Great Plains, sufficient ambiguity exists regarding the chronology of fluted points in the Desert West to warrant a critical, objective analysis of the archaeological record at Owl Cave. It is clear that the story is far more complex than we have led ourselves to believe, and in light of recent work, the scientific community should be willing to keep an open mind.

Brianne Herrera, Kanya Godde and Tsunehiko Hanihara

Concordance of Skeletal and Molecular Data and Their Applications toward Peopling of the New World

Genetic and craniometric data have previously been shown to be in concordance with one another using world-wide data sets (Relethford 2004). In studies relating to peopling of the New World, however, a difference of opinion is often expressed about whether these differing data types demonstrate the same patterning of migration and influence of evolutionary forces. The purpose of this study is to utilize cranial and dental metrics and nonmetrics, as well as y-chromosome DNA and mtDNA, to determine the degree of similarity or differences seen in microevolutionary patterns across various data types. The cranial and dental data were collected by the third author (TH) and the molecular data was obtained through previously published research. To maximize comparability, the skeletal and molecular data were taken from populations with a shared history or similar geographic region. The populations included are Inuits from Alaska, Asia, Canada, and Greenland, as well as Aleutians. Kinship and R matrices were found, and Mantel tests and Procrustes analyses were performed. These analyses show significant correlations, with some being 90% or higher. A distinct patterning of correlations was seen, with the strongest correlations being between cranial nonmetric data and y-chromosome DNA, and cranial metric data and mtDNA. This suggests either a possible male or female inher-

itance, or similar evolutionary forces influencing the correlated data types. With regard to peopling of the New World, reconciling evidence from multiple data types should be the focus of new research, rather than diminishing their ability to model population affinities.

Edward Herrmann and G. William Monaghan
Geoaerchaeology of Paleoindian-aged Landforms: Geomorphological Influences from the Midcontinent

Drainage-basin level geoaerchaeological research in central Indiana's White River Valley focused on 3D reconstruction of fluvial landforms. Results indicate that Paleoindian-age surfaces are preserved in surface and subsurface context, despite that fact that most of these landforms are within the 100yr flood-pool. Locations of surface and buried sites are geomorphologically predictable and controlled mainly by bedrock and postglacial downcutting rates. Segments of the river where bedrock-controlled channels predominate generally preserve late Pleistocene (outwash) landforms and surficial Paleoindian sites even proximal to the modern channel. These older landforms were preserved because the ancestral White River downcut deeply and rapidly with bedrock-controlled reaches immediately after deglaciation (16-18 kBP), which limited channel meandering and lateral erosion. Conversely, buried Paleoindian-age landforms occur in reaches where channel meandering was not restricted by bedrock. These buried landscapes include subsurface wetlands, oxbows, and paleosols that include Younger Dryas paleoenvironment and climate data now missing in the lower Midwest and are essential to model Paleoindian (or earlier) settlement and site location. Solid micro-to-mesoscale geomorphology is critical for realistic predicative modeling and accurate population and site distribution estimates.

Alvah Hicks
Interpreting Archaeological Signatures before Clovis

Human migration scenarios applied to the Americas can gain insights from the sapient settlement of the Old World. For example, compare the apparent dissemination of early Aurignacian technologies into Chatelperronian/Neandertals with the diffusion of Upper/Late Paleolithic Industries into pre-existing pre-Clovis Amerindian cultures already inhabiting the Americas. Before-Clovis theories could focus on the shared characteristics of earlier and newly discovered pre-Clovis sites, including, for example, Monte Verde levels I and II. Reevaluating Monte Verde II's peat preserved cultural contexts as more than just an initial New World "settlement pattern," can be supplemented when we accept, even theoretically, the significance of the 20,000 years separating it with its older relative, Monte Verde I (dated at 33,000 BP). The significance of Monte Verde II is not as much in its pre-Clovis date as it is in its unique typological profile and should be used as diagnostic to other less-preserved pre-Clovis habitations. It attests to a different system of adaptation that is hard to detect using traditional archaeological methods honed by excavating European Upper Paleolithic sites. An ongoing pattern of habitation distinctly conforming to a prolonged occupation of the area, and the Americas in general will be discussed.

Matthew G. Hill, Thomas J. Loebel and David W. May
The Carlisle Clovis Cache: Land Use, Technological Organization, and Faunal Exploitation in the Midcontinent

Excavated from primary context in 1968, the Carlisle Cache represents one of only several contextually intact Clovis components in the Midcontinent. The cache is a collection of utilitarian gear, including

25 bifaces and 12 large flake-blanks made on Burlington chert, that was stockpiled to back future bison hunting, butchering, and hide processing activities in the central Des Moines River Valley. Though it was designed to satisfy the anticipated, task-specific needs of both men and women, the raison d'être for the cache's contents was not executed. In preparing for extended forays away from prime tool stone sources, greater emphasis was placed on gearing up weaponry components than on butchery and hide-processing tools, in anticipation of a relatively higher rate of point turn-over due to damage or loss in hunting. While the bifaces could have served as a source of small flakes for expedient tools, they are far too small to have served efficiently as bifacial cores. Instead, bifaces and large flake-blanks were made from tabular cores at the tool stone source, with intentions of future conversion into weapon tips and unifacial tools, respectively. This two-fold system of biface and flake production enabled Clovis foragers to prosper off-quarry no matter whether spoor steered them into mapped or unmapped areas. Technological and subsistence confidence was managed by performing early interval biface work at quarry sources, thereby decreasing the chances of off-quarry, late interval (point) manufacturing failures, and by regularly carrying substantial numbers of point and unifacial tool preforms. Such items were occasionally cached in areas where tool kits were prone to rapid depletion based on a history there of kill-butchery events, as well as at previously unvisited locations judged to have good potential for similar activities during anticipated future movements.

Kathleen Holen
Bone Notches: Differentiating Dynamic and Static Loading on Large Prey Animal Limb Bones

This poster demonstrates the use of a measurement system to compare notches on limb bones from three camel and three proboscidean samples. Previous research has employed this method to differentiate dynamic from static loading on small to medium animal bones. The camel bone samples were ca. 15,000, ca. 350,000 and ca. 750,000 years old respectively. One proboscidean sample was created experimentally on modern elephant limb bone, while the others were from two Pleistocene mammoth assemblages. Camel limb bone notch shape in the 15,000 year old sample was measurably different from the two older ones and suggests that dynamic loading likely created the notches in that sample. Notches from all three proboscidean samples were similar in shape indicating that they were all created by dynamic loading. Bone modification evidence that includes notch shape measurement can contribute to the identification of human technology at LGM North American assemblages of large prey animals.

Steven R. Holen and Kathleen Holen
The Mammoth Steppe Hypothesis: The Mid Wisconsin (OIS 3) Peopling of the Americas

A mid-Wisconsin peopling of North America was first proposed by Muller-Beck in the mid-1960s and was later supported by archaeological research in the Yukon that has provided evidence of a mid Wisconsin percussion technology consisting of impacted and flaked bones. We develop the "Mammoth Steppe Hypothesis" using Guthrie's ecological model that identifies a Mammoth Steppe biome present from northern Europe across northern Siberia into Beringia. Recent research in northern Siberia at the Yana Site indicates humans were adapted to the Mammoth Steppe by 27,000 rcybp. We test the Mammoth Steppe Hypothesis using data from several mammoth sites on the North American Great Plains dating between 11,700 and 33,000 rcybp and

from experimental breakage of modern elephant limb bone. Evidence supporting the presence of humans consists of impact notches and flaking on mammoth limb bone, the selective breakage of limb bones and the distribution of bone debitage. Because Canada was completely covered with Last Glacial Maximum ice from ca. 22,000 to 11,500 rcybp, it is hypothesized that humans entered the Great Plains before the Last Glacial Maximum by a route south from Beringia and east of the Rocky Mountains sometime between 22,000 and 40,000 rcybp during Oxygen Isotope Stage 3.

Vance T. Holliday and Shane Miller
Clovis Across the Continent: Distribution, Chronology, and Climate

Clovis is often described as a continent-wide phenomenon based primarily on the broad distribution of stylistically similar projectile points. Moreover, because several of the earliest Clovis discoveries included proboscidean remains, many have argued that these early occupants of North America occupied a relatively narrow ecological niche. The time range for the Clovis artifact style is apparently narrow although the exact duration remains contentious. There also appears to be regional variation in Clovis point technology and "style," though some would argue the differences are subtle. Significant geographical variation in the intensity of Clovis is apparent across the continent, with dense concentrations in the East and a patchier distribution on the West. This pattern may in part reflect modern recovery biases, but Clovis foragers clearly occupied a broad array of landscapes, although evidence for mountain or other high elevation occupations is rare. In the eastern U.S. Clovis artifacts are found in a wide array of lower elevation settings, but in the central and western U.S. and northern Mexico they are more thinly scattered. Relatively few concentrated or intense Clovis occupations are known west of the Mississippi. Clovis period (the post-LGM late Pleistocene) environments across the U.S. were likewise varied and also changing. The continent was in an overall warming trend and was increasingly seasonal, and runoff and water tables were generally higher than in the Holocene, but the direction and magnitude of changes varied significantly at a regional scale.

Charles Holmes
The Early Archaeological Sequence at Swan Point, Central Alaska

The East Beringian tradition at Swan Point is divided into two broad phases: Swan Point Diuktai, CZ-4 (14,200-13,800 cal BP) and Chindadn/Nenana, CZ-3 (12,450-11,550 cal BP). CZ-4 has a strong signature and is dominated by microblade and burin technology and the use of ivory, bone, and antler. Extinct fauna, e.g., horse, elk, and mammoth along with smaller mammals and birds are present in the CZ-4 assemblage. The CZ-3 occupation is defined primarily by a distinct bifacial point/knife technology. Waterfowl, small mammals, and fish are associated with CZ-3 campfires. Reevaluation of the evidence now supports the probability of another component present between CZ-4 and CZ-3 that dates between 13,520 and 13,110 cal BP, just prior to the Younger Dryas. The new component is delineated by radiocarbon dates, stratigraphy, areal pattern, and spatial separation of artifacts from those in CZ-4 and CZ-3. However, this component is difficult to characterize because of the small number of artifacts recovered. Nevertheless, diminutive lanceolate biface forms recovered in this component are dissimilar to the CZ-3 bifaces and may be diagnostic for this geographic region and temporal range.

Jacob Hooge, Jon C. Lohse and Frederick H. Hanselmann
Underwater Geoaerchaeological Research at Spring Lake, San Marcos, Texas

The San Marcos Springs, which form the headwaters of the San Marcos River, present a seemingly complete record of prehistoric human habitation beginning at least in Clovis times in the Late Pleistocene and spanning the entire Holocene. Recently, geoaerchaeological research established a preliminary depositional sequence of alluvial deposits spanning this same period. However, the earliest artifacts recovered in controlled excavations date to only ~8380 cal BP. Unfortunately, the extent of the Paleoindian and early Archaic occurrences are poorly understood as the correlating strata are below water table, and the only underwater excavation did not include a geoaerchaeological assessment nor was it fully published. Recent survey has yielded preserved wood in a stratigraphic context dated to ~13,000 cal BP. Although non-cultural, this find suggests that sediments within the lake likely hold a large assortment of organic materials preserved by the rare environment created by the long-continuously flowing springs. The goal of this project is to achieve a more thorough understanding of the stratigraphic contexts of inundated alluvial deposits in a chronologically controlled framework through geoaerchaeological survey and analysis of inundated sediments.

Mark Hubbe, Walter Neves, Danilo Bernardo, André Strauss, Astolfo Araujo, and Renato Kipnis
Early Human Occupation of Lagoa Santa, Central Brazil: Implications for the Dispersion and Adaptation of Early Human Groups in South America

The presence of human groups in the Americas by the end of the Pleistocene has been demonstrated in numerous archaeological sites in North, Meso and South America. However, the number of early sites associated with human remains is very limited, and to date it is difficult to discuss the processes of the continent's initial occupation in terms of the biological characteristics of early Americans. The Lagoa Santa region, in Central Brazil is a unique region in the Americas, because it presents dozens of early sites, some of which support the evidence for the human presence in the continent by 12 kyr BP. Since its initial excavation, during 19th century, the Lagoa Santa caves and rockshelters generated over two hundred burials that date between 11.0 and 7.0 kyr BP. Here, we present a review of the biological affinities between these groups, as well as their cultural and archaeological context, resulting from our long term project in the region during the past decade. Using multivariate analysis to compare their cranial morphological affinities with other worldwide groups, we demonstrate that the Lagoa Santa remains share the same morphological pattern seen in other early populations in the Americas and other regions of the planet, a pattern that is significantly distinct from the typical morphology observed among Late Holocene Native Americans. We also explore the notion that these populations, despite being strict hunter-gatherers, showed remarkable cultural diversity, especially when burial practices are considered. In conclusion, the biological and cultural contextualization of the Lagoa Santa early human presence sheds light on important aspects of the origin and adaptation of New World populations at the end of the Pleistocene and early Holocene.

Luis Hurtado de Mendoza

Early Preceramic Lithic Industries in Northern Costa Rica

Excavations in the Sarapiquí piedmont yielded evidence of a flake industry associated with tephra dating 6.0 ky BP and older. Artifacts were also recovered at the Gavilan site in the northern lowlands, 6 km from the piedmont sites. Strata in Gavilan attest of a long history of erosional processes including a large scale avalanche (lahar) of Late Pleistocene age, thick flood silt deposits, terrace building by alluvial transport of rocks, and the development of soils. Associated with these were well defined cultural deposits: Level 1 containing ceramics; Level 2 with a lithic assemblage named Toro II of preceramic age; Level 3 of silt sediments with scarce lithics identified as late Paleoindian, related to the bifacial fishtail point tradition; Level 4 with a flake lithic industry, Toro I, the oldest in the relative chronology. At the base, a polymictic lahar is found, regionally recognized by its yellow clayish mud matrix. Lithic artifacts, morphologically and technologically related to those of Level 3, date 12.2 ky BP at La Isla site in the Reventazón region. Deeper strata in La Isla contains Toro I materials, suggesting an older age for this assemblage. Thus far, Toro lithics have been found in similar tropical ecozones in Sarapiquí, Reventazón and Chirripó.

Isabel Israde-Alcantara, Silvia Gonzalez, James L. Bischoff, Allen West, Gabriela Domínguez-Vazquez, Richard B. Firestone, Ted E. Bunch, James Kennett and Wendy Wolbach
Extraterrestrial Impact in Mexico at the Onset of the Younger Dryas (YD) and Its Effects on the Environment

We investigated lacustrine and fluviolacustrine basins from Central Mexico (Cuitzeo, Chapala, Acambay Valley), and Southern Mexico (Chiapas). At these, Paleoindian sites with Pleistocene vertebrates assemblages (mammoth, megatherium) are found associated with a suite of special chemical and mineralogical signatures that are evidence of an extraterrestrial impactor. These signatures include carbon and magnetic microspherules, the latter mainly constituted of Fe and C and the former, glass-like carbon, tektites (silica droplets), charcoal and often nanodiamonds. The exotic materials were deposited 12,900 years ago at the onset of the Younger Dryas cool interval. All sites show the same suite of particles, suggesting that the extent of the impact event was of such magnitude that it covered a wide swath across Mexico including different types of paleoenvironments. We postulate that the spherules are evidence of an impactor with low-nickel composition, such as a comet. Ternary geochemical plots show that the spherules are not anthropogenic, cosmic or volcanic, but produced by the melting of terrestrial materials. We present the environmental effects of an extraterrestrial airburst event on Paleoindian and megafaunal populations at the time. This assemblage of geochemical markers is consistent with evidence found at other sites in the world.

John W. Ives and B. Sunday Eiselt

Paleoindian Social Landscapes: Thought Models for Kinship in Unique Demographic Settings

Archaeologists show little hesitation in developing sophisticated quantitative models to generate hypotheses concerning the Paleoindian era. As a consequence, however, Paleoindian colonization is often simplistically modeled as biological population fissioning or with unwarranted assumptions about social organization and demographic parameters. Correspondingly—and despite the centrality of kin concepts in the development of much anthropological theory—any notion of “Paleoindian kinship” with specific semantic content would be widely regarded

as unknowable. Yet, Paleoindian peoples were undoubtedly aware of critical options for managing the sociogeographic boundary at which marriages could occur where small group sizes and extremely low population densities prevailed. We develop thought models for a common category of kin structures that could quite plausibly have entered the New World. By adopting this perspective, we find that meaningful inferences can be made about Paleoindian kinship, with profound implications for the earliest stages of New World prehistory. Such thought models can serve to stimulate alternative explanations with test implications for enigmatic aspects of the Paleoindian record, including differential demographic success for colonization episodes, shifting modes of colonization, the kin-structuring of economic options, and social dimensions signaled by the spread of fluted point technology.

John W. Ives and Duane Froese

Vectors, Vestiges and Valhallas—Rethinking the Corridor

The notion of an “ice free” or “deglaciating” corridor joining eastern Beringia with the eastern slopes of the Rockies became synonymous with New World colonization, especially that of “Clovis First.” This orthodoxy was often repeated, but seldom investigated: the corridor remains a thinly studied region. Geological evidence from the 1980s along with new models of biological productivity made the corridor yesterday’s news: Late Wisconsinan coalescence clearly took place, and many depicted postglacial landscapes as unremittingly bleak—devoid of a Clovis record or marginal, with late, atypical fluted points. In fact, fluted points occur at moderate densities in the corridor region, with other traces of early Paleoindian technological organization. Bison specimens—useful proxies for human habitability—show that ecesis took place centuries prior to Clovis throughout the corridor. Some postglacial landscapes may have been unusually attractive and some earlier dates for stratified sites in the Corridor need to be revisited. While these findings do not restore the Corridor as a prime route for initial settlement, they do mean the region has a critical bearing on “second order” processes with intriguing social overtones, particularly resumption of contact between eastern Beringian human populations and those south of the Laurentide ice.

Akira Iwase

Use-Wear Analysis of Chipped Stone Tools from Microblade Assemblages with Wedge-Shaped Microblade Cores in Japan

Microblade assemblages with wedge-shaped microblade cores spread mainly to the northeastern Japanese Archipelago during the terminal Pleistocene. These assemblages share technological similarities with Siberia, Northeast Asia, and Northwest America. Based on the results of use-wear studies, this paper examines the functions of chipped stone tools (e.g., endscraper, sidescraper, burin, perforator) of microblade assemblages with wedge-shaped microblade cores recovered from the northeastern Japanese Archipelago. Functional analysis of the microblade assemblage will contribute not only to reconstructing the technological adaptation to the cold and arid environments of the higher latitude of Asia, but also to understanding the peopling of the New World.

Masami Izumi

Human Technological and Behavioral Adaptation to Landscape Changes Before, During, and After the Last Glacial Maximum in Japan

Here I present technological and behavioral adaptations of hunter-gath-

ers to landscape changes before, during, and after the Last Glacial Maximum on the Japanese Islands, which formed two landmasses during the Upper Pleistocene: Paleo-Honshu Island and Paleo-Sakhalin-Hokkaido-Kurile Peninsula connected to the far eastern Asian continent. Through assembling evidence of climate, landscape, flora, and fauna as well as cultural elements chronologically and geographically during periods which provide a high density of detailed data across Japan, I discuss the diversity of human technological and behavioral adaptations in the insular ecosystem between the cool-temperature and arctic zones. Differences in adaptation at the local scale between the insular and continental parts of Asia shed light on the nature of modern human dispersals and formation of cultural diversity in Eurasia and Americas.

Lionel Jackson, Laurence D. Andriashek and Fred Phillips

Multiple and Successive Ice-Free Corridors during Middle Pleistocene Glaciations in the Interior Plains of Southern and Central Alberta and Adjacent Areas

Stacked tills in buried valleys along the Rocky Mountain foothills in south-west Alberta can be related to belts of moraine and glacial limits dated to the LGM by cosmogenic ³⁶Cl exposure dating of erratics on these moraines. They document that the south-west margin of Laurentide Ice Sheets (LIS) was an all-time maximum for late Cenozoic ice sheets as well as the coalescence of glaciers from the Rocky Mountains with the LIS was unique to the LGM. This precludes a LGM ice-free corridor. This brief and unique coalescence event has also been documented in northern, central, and south-central Alberta by radiocarbon dating of organic material in preglacial gravels underlying a single till deposited by the LGM Laurentide Ice Sheet. However, there is ample and robust stratigraphic evidence of a single pre-LGM ice sheet that reached as far west as Taber, in southern Alberta, and at least two pre-LGM ice sheets in the Cold Lake area in east-central Alberta. Multiple glaciations are recorded in the Pleistocene stratigraphy of Saskatchewan. Only one till in Saskatchewan predates the last geomagnetic polarity reversal. This evidence is consonant with multiple ice-free corridors throughout Middle Pleistocene glaciations and should be considered in interpreting Pleistocene biogeography.

Dennis L. Jenkins

Paisley Caves: 14,500 Years of Human Occupations in the Northern Great Basin

Ancient human coprolites (dried feces) directly radiocarbon dated to 14,500 years ago have been recovered from Pleistocene aged deposits containing artifacts and extinct megafaunal remains in the Paisley 5 Mile Point Caves in south central Oregon. Their human origins verified by the extraction of ancient DNA, these are currently the oldest directly dated human remains in the Western Hemisphere. This paper provides an update on the progress of multidisciplinary scientific investigations of this unique site and the many kinds of perishable and nonperishable items preserved there. The evidence indicates the first site occupants were broad-range hunter-gathers well adapted to the Northern Great Basin’s high desert environment of the late Pleistocene.

Thomas Jennings

The Golondrina Assemblage from the Debra L. Friedkin Site, Texas

Golondrina is a late Paleoindian point style that has been linked to both Plainview points in the Plains and Dalton points in the Eastern Woodlands. This poster presents new analyses of the Golondrina assemblage

from the Debra L. Friedkin site in central Texas. The results provide new insights into the origins of Golondrina.

José Jiménez, Meggan Bullock and Eva Salas

A Multiple Burial from 7233 BP

The objective of this project is to present a multiple human burial that was discovered in the Cueva de Texcal (Texcal Cave), which is located in municipality of Texcal in the state of Puebla. This archaeological investigation took place over four seasons, from 1963 to 1966. In the 1964 season, eight human skeletons, forming a multiple burial, were found, and in the 1965 season, the burial of a single individual, in a lateral flexed position with a north-south orientation, was excavated. According to the archaeological report, these burials were located in Layer IV, which has been radiocarbon dated to 7200 BP (García Moll 1977). One potential hypothesis is that by this date, the burial of human bodies in specific locations had been established, as well as perhaps a funerary system for groups in this region. Another possible hypothesis is that this group already inhabited small villages. To verify their antiquity, two of the skeletons were radiocarbon dated and found to date to 7233 ± 36 BP and 7196 ± 36 BP, a difference of only 37 years between burials. These data suggest that this group already inhabited villages in the region and that possibly they had begun to domesticate plants and animals.

Margaret Jodry

All My Relations, Paleoamerican Spiritual Connections in Hunting and Healing

Human beings are living symphonies of mind, body and spirit as expressed in most aspects of life from birth to burial and beyond. Among traditional indigenous peoples world-wide, plant, animal, mineral, celestial, and ancestral realms are understood to be differentially permeated with sentience and power. These spiritual energies are respected and also feared. People honor, supplicate, negotiate, and otherwise deepen their interactions with these creative, spiritual forces by means of prayer and ceremony, including material offerings, song, dance, music, painting, tattooing, and healing. The archeology of Blombos Cave, South Africa provides evidence of deep antiquity of human symbolic behavior in the manufacture of red pigment and the incised marking of red ochre 100,000 years ago. This poster explores spiritual and ceremonial aspects of hunting and healing among Paleoamericans and identifies tools and archeological features related to these activities from Folsom, Hell Gap, Cody, and San Patrice contexts.

John Johnson, Thomas W. Stafford, Jr., G. James West, Thomas K. Rockwell and Don P. Morris

Six Field Seasons at Arlington Springs: An Investigation of Paleoenvironmental Change on Santa Rosa Island, California

Between 1994 and 2008, an interdisciplinary team conducted six field investigations at the Arlington Springs Site (CA-SRI-173). This research has clarified the chronostratigraphy at Arlington Springs in order to understand the geological and paleoenvironmental context for the earliest evidence of humans on the large Late Pleistocene island of Santarosae off the California coast. Excavations in 1994, 2000, and 2001 at the west side wall of Arlington Canyon exposed a section of sediments from the current ground surface to a depth of about twelve meters adjacent to the location where deeply buried human bones (“Arlington Springs Man”) had been discovered by Phil C. Orr in 1959. Following an experiment with ground penetrating radar in 2005, a Giddings rig was trans-

ported to the site in 2006 in order to recover ten deep sediment cores. The last period of fieldwork took place in 2008 in order to investigate the stratum where the Late Pleistocene human bones and tiny chert flakes had been discovered. At present, forty radiocarbon dates have been obtained to date the stratigraphy at Arlington Springs, documenting 16,000 years of sediment accumulation. Sediment layers have been traced through three dimensional space using the data gathered from the cores obtained in 2006.

Lucy Johnson
Archaeological Theory and the Peopling of the Americas

A proposed upper level undergraduate seminar on the peopling of the Americas will use the wide variety of proposed times and routes for this process as springboards to examine various theories and what they say about the attitudes of the Americans who promulgated and promulgate them. Did people first come to the Americas from Asia or Europe? By foot or by boat or by spaceship? According to current scientific thought, the Americas are the land mass most recently populated by humans, while many Native American groups firmly believe they have always lived here; Caleb Atwater thought Mississippian sites were founded by one of the 10 Lost Tribes of Israel, others think sailors from across the Pacific brought civilization to the Americas. These, as well as the current most cogent theories will be illustrated and analyzed and their place in American popular and scientific thought at the time they were proposed will be presented.

Michael Johnson and William A. Childress
Beyond Cactus Hill

Cactus Hill set the stage for focused forays beyond McAvoy (1992), into predicting Clovis and Pre-Clovis age settlement systems in the Nottoway River Valley of Virginia and in the Middle Atlantic Region. The poster will detail two predictive models developed out of Cactus Hill. First, it will detail how one definite Clovis age site (Rubis-Pearsall) and one probable pre-Clovis age site (Blueberry Hill) were predicted and discovered, based on soil and landform data from Cactus Hill. Second, it is evident from the above three sites that the early components at them were not isolated. A macro-band interaction model is proposed for predicting similar age sites in prominent water gaps east of the Blue Ridge Mountains in Virginia and elsewhere. Preliminary data from Smith Mountain Gap, recovered by William A. Childress provides the basis for the model. The premise is that macro-bands must have been in contact for Cactus Hill and Clovis age technologies to have persisted over time and space. The water gaps may have served as transportation funnels connecting macro-bands and/or macro-band meeting areas.

Brian D. Jones
A New Collection from the DEDIC Site, Deerfield, Massachusetts

The DEDIC Paleoindian Site in South Deerfield, Massachusetts has been known to collectors since the 1930s, but it was first professionally evaluated in 1978. At that time, the discovery of eighteen Paleoindian tools and nearly two thousand associated chert flakes from a number of loci resulted in its listing on the National Register of Historic Places and subsequent burial to deter further looting. Recently, thirty-five artifacts likely associated with the site were identified in a local collection. It is believed that these artifacts have never been previously documented and represent a significant addition to the limited assemblage associated with this important site.

Daniel J. Joyce
Adaptations along the Ice Margin: Analysis, Interpretation and Implications of Four Pre-Clovis Megafauna Butchery Sites in the Western Great Lakes Region

Pre-Clovis mammoth and mastodon exploitation sites in Southeast Wisconsin are reviewed and compared with other mammoth butchery sites in North America. The Schaefer (47Kn252), Hebior (47Kn265), Mud Lake (47Kn246) mammoths and the Fenske (47Kn 240) mastodon provide definitive evidence of megafauna exploitation during the pre-Clovis period. These sites span 13,450 - 11,200 14C yr B.P. ending just as the classic Clovis culture is beginning. The environment and timing of this pre-Clovis adaptation to a recently deglaciated environment are explored using environmental data and climatic models. The timing of entry of Paleoamericans into the Western Great Lakes is reviewed and the question of economic adaptation and land use patterns to this landscape is addressed. Comparison to Clovis mammoth site geomorphic settings is made, and the proposed association of these butchery sites with a local lithic complex is analyzed. Evidence from these pre-Clovis sites makes a case for an early megafauna subsistence strategy. Although amended in recent years by more generalized foraging models, mammoth butchery is still a hallmark of some subsequent Clovis sites. Is the Great Lakes Proboscidean exploitation pattern different from others? Finally, a proposed relationship between these pre-Clovis butchered megafauna sites and the subsequent Clovis culture is put forth.

Joshua Keene and Mayra Gracia
Preliminary Lithic and Spatial Analysis of the Adams Gravel Source Haskett site (10BT1227)

Paleoindian habitation of the upper Snake River Plain of southern Idaho is predominantly represented by sites containing large, stemmed, Haskett-style spear points. Recent studies in southern Idaho have suggested that these stemmed-point users, while highly mobile, may have been primarily tethered to wetland and riverine environments. To explore this association, surface survey and collection was performed by a 2012 Texas A&M field school at the Adams Gravel Source site located on the Idaho National Laboratory. This site is an extensive surface lithic scatter containing multiple Haskett-style spear points and other tools and debitage in association with the nearby Big Lost River and adjacent floodplain that potentially supported wetland habitats during the terminal Pleistocene. Spatial analysis of the site combined with lithic analysis of bifacial tool, material preference, reduction stage, intensity of reworking, and fracture pattern are used to determine the intensity and diversity of lithic reduction at the site. Furthermore, we address questions of site function, intensity of occupation, and potential for a logistically mobile wetland adaptation during the terminal Pleistocene/early Holocene.

James P. Kennett, Allen West, Ted Bunch, and Wendy Wolbach
The Younger Dryas Boundary (YDB) Cosmic Impact Hypothesis, 12.9 ka: A Review

The abrupt onset of the Younger Dryas cooling episode at ~12.9 ka was marked by a complex array of rapid and potentially linked changes in the Earth's environmental and biotic systems. Especially intriguing is the close and collective association of North American continental-scale ecological reorganization, megafaunal extinctions, and human adaptive and population shifts. Various hypotheses have been proposed to account for these changes, including the Younger Dryas Bound-

ary (YDB) Cosmic Impact Hypothesis. Our contribution will review the status of this hypothesis, summarizing evidence consistent with atmospheric impact (aerial bursts) including the character, geochemistry, and distribution of nanodiamonds and extreme high-temperature products: impact spherules, melt-glass objects, microtektites; and other proxies. We will also review evidence consistent with the YDB hypothesis, including widespread biomass burning at the YDB (e.g. peaks in charcoal and aciniform soot), hydrographic reorganization, extinctions, biotic adaptations and human cultural change.

David Kilby, Anthony Aliano, Sarah Griffith, Jordan Taher and Ethan Ortega

Postcards from the Pleistocene: A New Look at Ancient Environments Encountered by the First Explorers of the Southern High Plains

For nearly as long as researchers have been trying to piece together the initial human colonization of the New World, it has been recognized that doing so not only requires describing past peoples and their cultures, but also reconstructing the past environments that they occupied. The Southern High Plains of North America in general, and Blackwater Draw Locality 1 (the Clovis site) in particular, have played a crucial role in the history of both of these avenues of research. New research at four localities from this important region is providing a more detailed record of the changing physical environment occupied by Late Pleistocene and Holocene human populations. This poster summarizes new data on pollen, phytoliths, diatoms, ostracods, stable carbon isotopes, and sediments along with new dates on both classic and newly discovered stratigraphy. The results provide a series of detailed snapshots of the prehistoric environment as encountered by the first people to occupy the region and their descendants.

David Kilby and Bruce Huckell
Clovis Caches: An Update and Consideration of Their Role in the Colonization of New Lands

Scattered sporadically across much of the American West are tight clusters of Clovis artifacts identified as prehistoric caches. Clovis caches consist of bifaces, projectile points, blades, flakes, cores, bone and ivory rods, and occasionally other items that appear to have been carefully set aside rather than used and discarded. Caches potentially provide snapshots of working Clovis tool kits rather than discarded and broken items from kill or camp sites. Further, they provide clues to the logistical problems encountered by highly mobile Ice Age peoples, and reflect the strategies for solving them. As the defining attributes of Clovis caches become clearer, caches are recognized and reported with increasing frequency, in the form of new discoveries in the field and among existing collections. This paper provides an overview of currently known Clovis caches, ranging from assemblages discovered as much as 50 years ago to less familiar collections just coming to light, and examines variation in their contents and context. Their geographic distributions, along with geologic origins of the lithic raw materials they contain, provide clues to the roles they played in prehistoric stone tool and subsistence economies and to their role in the process of colonizing the North American continent.

Nathaniel Kitchel
After the Ice: Colonization Behavior and Process in the Recently Deglaciated Northeast

Despite nearly a century of research, many questions remain about how early Paleoindian groups moved into, and acquired knowledge about

the environments and landscapes they came to inhabit. It is also unclear whether the acquisition of this knowledge is archaeologically visible. In this study the presence or absence of various raw materials in early and middle fluted point sites from northeastern North America is used to investigate changes in toolstone use between earlier and later Paleoindian populations. These differences help inform our understanding of the landscape learning process and other phenomenon associated with the colonization of uninhabited landscapes. This study evaluates different models of colonization and how quickly stone quarries and tool stone sources became places of lasting importance throughout prehistory.

Michael Kolb and Daniel Joyce
Late Pleistocene Landscape History and Site Formation Processes at the Schaefer-Hebior Locality, Southeastern Wisconsin

The Schaefer and Hebior Mammoth localities in southeastern Wisconsin, show evidence of putative cut marks on bone, bone piles and non-diagnostic stone tools indicating the butchering of mammoths in the Western great Lakes ca 12,300 - 12,500 14C yrs B.P. At all sites purporting a pre-Clovis age, the Late Pleistocene landscape history and site formation processes must be rigorously investigated. The sites occur in a north-south trending intermorainal valley. Twenty-one Geoprobe cores were taken across the valley and organic material dated. These studies indicate that radiocarbon ages, stratigraphic and geomorphic contexts at the Hebior-Schaefer locality contain in situ evidence for human interaction with mammoths very near the active glacial ice margin in the mid-continent by 12,500 14C yrs B.P. and perhaps as early as 13,500 14C yrs B.P.

Brian Kooyman, Michael R. Waters, L.V. Hills and Thomas W. Stafford, Jr.
Refined Dating of the Horse and Camel Kills at the Wally's Beach Site, Canada

The evidence for late Pleistocene hunting and butchering of horses and a camel at the Wally's Beach site in southwestern Canada is very important for understanding the early peopling of the Americas and human adaptations at that time. We undertook a rigorous AMS 14C dating experiment to determine the site's age. In addition to dating several individual horses, we dated different chemical fractions from each bone to obtain the most accurate geological age for each skeleton and the site overall. These data are used to understand the accuracy of previous age measurements and demonstrate methods needed to understand the archaeology, paleontology, and taphonomy of these rare, late Pleistocene localities.

Marcel Kornfeld, Mackenzie Cory and Mary Lou Larson
Are They Clovis? Two Central Rockies Caches

Two artifact caches from the Central Rocky Mountains exhibit numerous morphological and technological features suggesting Clovis or early Paleoindian affiliation. Neither cache was found in a datable context or a context even remotely suggestive of its cultural affiliation. In this poster we examine both the morphological character of the cached specimens and their technological characteristics. We conclude that one of the caches is likely Clovis based on its morphology and technology in comparison with demonstrated Clovis caches. The other cache, while showing certain Clovis characteristics, is likely from the Late Prehistoric Period. More interestingly, however, are the similarities between the Late Prehistoric and certain early Paleoindian technological manufacturing strategies. We argue that technical requirements of production

of morphologically similar objects are solved by the use of similar techniques of production. Our analysis is further enhanced by the availability of debitage representing all production stages, something rarely if ever encountered at most Early Paleoindian sites.

Kathryn E. Krasinski and Gary Haynes
Understanding Taphonomic Histories of Proboscidean Remains through Bone Breakage Analyses

Numerous processes may break and modify bone, such as rock fall, trampling, carnivore gnawing, sediment compaction, weathering, and cultural activities. A thorough understanding of the ways in which bone responds to natural and cultural modification processes is necessary to establish valid evidence of human modification. This poster describes neotaphonomic research with African elephant and woolly mammoth skeletal remains to identify patterns in cortical bone modifications in Late Pleistocene America. Dynamic impact loading with hammerstones, flaking by percussion, and static loading from carnivore gnawing were examined. Multivariate statistical analyses underscore how multiple variables interact, such as breakage type, depositional history, bone density, and size, and influence the resulting breakage attributes. They also emphasize that single attributes, such as a bulb of percussion or spiral fracture, are insufficient to differentiate the actors that produced bone modifications observed in Late Pleistocene sites.

Michael Kunz
On the Origins of Terminal Pleistocene Lithic Assemblages in Eastern Beringia: Who Was Where When and Where Did They Come From?

While some of the Terminal Pleistocene lithic assemblages in Eastern Beringia (Alaska/Yukon) are obviously derived from Western Beringian (Siberian) antecedents, others are patently North American. Are the latter the result of indigenous development in Eastern Beringia or do they represent “backwash” from the Great Plains via an ice-free corridor along the eastern flank of the Rocky Mountains? First proposed in the early 1930s, the ice-free corridor was once the default route for getting the earliest Eastern Beringian people into temperate North America. However, over the last few decades the corridor’s primacy has been challenged by a route along the continent’s west coast. In fact, initial human movement through the corridor may actually have been south-to-north, introducing Paleoindian lithic assemblage influences into Eastern Beringia rather than a north-to-south movement of Eastern Beringian immigrants into temperate North America. I evaluate the feasibility of this “backwash” hypothesis by examining when the ice-free corridor was ecologically able to support human occupancy and by identifying a chronological marker that can be traced along the length of the corridor that helps to clarify the time and direction of its initial use. By establishing those parameters, a pedigree and chronology for Eastern Beringian lithic assemblages can be described.

Susan Kuzminsky
Craniofacial Variation among Pacific Rim Populations: A Test of the Coastal Migration Hypothesis Using 3D Laser Scanning and Geometric Morphometric Methods

Although the origin of the first Americans has been resolved through genetic research, the routes that early humans traveled from Asia into North and South America are still the subject of intense scholarly debate. Recent genetic and archaeological data suggest that an early migration may have occurred along the Pacific Coast of North and South America. Based on these lines of evidence, it is hypothesized that

Paleoamericans may show morphological affinities to prehistoric skeletons from coastal sites if an early Pacific migration occurred. For this study, Paleoamerican crania (>9000 years BP) are compared to a large sample of crania from coastal and interior sites in North and South America dating between 7,500 and 2,000 years BP. Data on craniofacial variation was obtained from high-resolution digital models created with a 3D laser scanner. Standard cranial landmarks were recorded for each specimen and subjected to 3D geometric morphometric analyses to assess similarities among the coastal and interior groups. The results of this work provide valuable information about the demographic history of the North and South America’s inhabitants from the early to middle Holocene. Moreover, this study demonstrates the advantages of using 3D imaging and morphometric methods to analyze Paleoamerican crania.

Jason M. LaBelle and Halston F. C. Meeker
An Afternoon at Benedict’s Rock (5BL232), a Small Scottsbluff Site in the Colorado Mountains

Benedict’s Rock (5BL232) is a small, single component Scottsbluff site discovered in 1975 and excavated by Colorado State University during the summers of 2010, 2011, and 2013. The site represents a short term occupation by several knappers, at most, who sharpened and discarded a few tools along a high terrace of the St. Vrain River in western Boulder County. Raw materials suggest ties to Middle Park, across the Continental Divide and the mountains to the west. Small sites such as this dominate the archaeological record, but they are rarely excavated given their small assemblage size. This site represents one of the best snapshots we might hope for, in terms of recognizing the day to day operations of a small Paleoindian task group, or perhaps larger group, seasonally moving through the mountain parks, alpine zone, and foothills of the Colorado Front Range. We need more examples of these small sites to better understand larger sites, which are often palimpsests of many complex occupations.

Jason M. LaBelle and Christopher M. Johnston
The Long Shot and the Close-Up: Evaluating the Visual Landscape of the Lindenmeier Folsom Site in Northern Colorado

The Lindenmeier site (5LR13), a National Historic Landmark, is strategically (and purposefully) located along the boundary separating not only the High Plains and the Colorado Piedmont but also the Great Plains and the Southern Rocky Mountains. While prior analyses focused on the site’s rich Folsom lithic industry, our present study examines one of the most salient features of the site: its geographic placement. We argue that the site was occupied (and reoccupied) at a very important place on the landscape – at an ecotone supporting diverse floral and faunal communities, but also as importantly, one with a striking visual landscape. Here we present an analysis of the Lindenmeier site from two spatial scales, that of the local foraging party and the larger regional system. Using field observations and GIS applications, we identify geographic features which may have been important places for Folsom peoples, in terms of foraging, travel, and group aggregation.

Christelle Lahaye, Eric Boëda, Michel Fontugne, Gisele F. Daltrini, Antoine Lourdeau, Anne-Marie Pessis, Niède Guidon, Sirlei Hoeltz, Marina Pagli, Sibeli Viana, Amélie Da Costa and Mario Pino
“Oldies but Goodies”: A Chronological Approach to the Pleistocene Occupations in the Serra da Capivara, Piauí, Brazil

A broad chronological study has been undertaken in order to understand better the timing and the dynamics of the Pleistocene human settlements in South America. Three new archaeological sites have been investigated in particular. They lie in the Serra da Capivara National Park in Piauí, Brazil, and have been investigated since 2009 by a multidisciplinary Franco-Brazilian archaeological team. The luminescence and radiocarbon dating results gave us a good overview of the first occupations in the region. OSL dating allowed us to date the deposition of the quartz grains which constitute the sediments, the radiocarbon let us know the time elapsed since the death of the vegetals that gave the charcoals, and TL dating helped us to date the last heating of some artifacts, that is to say, potentially to date the anthropic activity directly. The Toca da Tira Peia, the Valé da Pedra Furada and the Boqueirão da Pedra Furada have been studied or re-examined from a chronological point of view and they will be presented during the conference.

Robert Lassen
Exploring Typological and Technological Variability in Folsom-Age Projectile Points: A Comprehensive Perspective

Technological and typological variability during the Folsom period has been explored on regional scales, but thus far no research has systematically analyzed projectile point variability across the full geographic extent of Folsom’s occurrence. This research examines Folsom projectile point technology for the following types: Folsom (bifacially fluted), unifacially fluted, Midland, pseudo-fluted, and the miniature forms thereof. The analysis shows significant morphological variation between Folsom and Midland points and suggests they may have been hafted differently. However, analysis of intermediate “hybrid” forms between Folsom and Midland appears to span this gap, complicating this interpretation. Miniaturized versions of these points do not share this morphological distinction. Examining variables related to flintknapping skill reveals significant differences indicating that Folsom points are the most skillfully made, followed by unifacially fluted, Midland, and pseudo-fluted points, respectively. Analysis of raw material variability for each type is currently underway to test whether the non-Folsom types are made increasingly often as raw material supplies decrease.

Robert Legg and John B. Anderton
Developing an Environmentally-Based Site Location Model of Paleo-Indian Settlement in the Northern Great Lakes

In this research we develop a site location model for the Paleo-Indian period based on data available for the Northern Great Lakes. We have adapted a model that has proven highly successful with Archaic Period settlement within the Lake Superior basin. This research applies a site prediction modeling process using locations of previously known Paleo-Indian sites, located on a DEM corrected for glacial processes that date to the close of the Pleistocene and the beginning of the Holocene.

Ashley K. Lemke, John M. O’Shea and Elisabeth Sonnenburg
Late Paleoindian and Early Archaic Caribou Hunters underneath Lake Huron

Scholars have hypothesized that the poorly understood and rarely encountered archaeological sites from the terminal Paleoindian and Archaic periods in the Great Lakes Region (10,000 –7,500 BP) are lost beneath the modern Great Lakes. Underwater investigations on the Alpena-Amberley ridge (AAR), a feature that would have been a dry

land corridor crossing the Lake Huron basin during this time period, reveals the presence of a series of stone features that match, in form and location, structures used for arctic caribou hunting in both prehistoric and ethnographic times. While caribou hunting structures are well known in the circumpolar region, equivalent features are difficult to investigate further south due to significant changes in sea level and subsequent human activity, and the discovery of these hunting structures beneath modern Lake Huron provides a new window into ancient caribou hunting in the mid-latitudes. Our research combines underwater survey, SCUBA and ROV investigations with paleoenvironmental reconstruction and computer simulation to consider both the strategies for hunting caribou and the necessary organizational implications for such activities on the Alpena-Amberley Ridge.

Philippe LeTourneau
Recent Paleoindian Finds in Western Washington

Unlike inland portions of the Pacific Northwest (eastern Washington, Idaho, eastern Oregon), the archaeological record of late Pleistocene-earliest Holocene human occupation west of Washington state’s Cascade Mountains is exceedingly meager. Only one intact, stratified Paleoindian site with lithic artifacts is known; the remainder of the record consists primarily of isolated Paleoindian projectile points from surface or disturbed contexts. A few studies over the past 15 years have focused on fluted points from western Washington. In this poster, I present detailed information on recent finds of Western Stemmed, Clovis, and other Paleoindian points from the region that I have had the opportunity to study. I also examine the distributions of the various point types and discuss possible strategies for locating additional Paleoindian sites in western Washington.

C. R. “Bob” Lewis
Mammoth Molar Tools from 18,000 Years Ago in Texas

The Petronila Creek site in South Texas (41NU246) is an open-air human occupation site dated at 18,000 radiocarbon years before present. The principal site component is a bone bed of primarily small bones which are remains of animals that the people ate while occupying the site, although Pleistocene mega mammals are also well represented. The occupation was beside a river, and fish, turtles, and alligators were also eaten. Raw material for stone tools is scarce on this coastal plain, and lithic material at the site is limited and undiagnostic. There are some tools made from mammoth bone, but the characteristic tool at the site is a kind of pounder/abrador made from fist-sized chunks of mammoth molar. These molar tools are abundant enough, and similar enough, to suggest that they represent an established tool-making tradition. Investigators at other Pleistocene sites should be on the alert for more examples of these tools.

Thomas Loebel
Exploring Early Paleoindian Adaptations through Microwear Analysis

Due to their distinctive and diagnostic nature, fluted points have received the lion’s share of attention from researchers over the past century. As a result of this near obsession with projectile points, relatively little attention has been historically paid to other equally informative components of Paleoindian assemblages such as debitage and unifacial tools. At almost every early Paleoindian site (particularly in the eastern woodlands) the most common tool class is that of the endscraper, which are often recovered in vastly greater numbers than fluted points. Long assumed to be either wood, bone, or hide working tools, I evalu-

ate these untested assumptions through the first large-scale functional analysis (using high-powered microwear) of over 200 endscrapers recovered from a number of fluted point sites that span a large swath of the Eastern Woodlands across the Midwest and Lower Great Lakes. Microwear studies, when coupled with an examination of assemblage composition and patterns of lithic raw material use, adds greatly to our understanding of the organization of early Paleoindian activities across time, space, and gender.

Neal Lopinot and Jack Ray
Pre-Clovis Evidence from the Big Eddy Site

Several possible pre-Clovis-age artifacts have been recovered from the Big Eddy site located along the Sac River in southwest Missouri. Three items are highlighted. These consist of a possible anvilstone, a bone fragment, and a large spall of modified chert found between 3.84 m and 3.87 m below surface. The possible anvilstone was broken and manipulated in such a way that makes a natural explanation dubious. These include a percussion spall that fits between two larger anvil fragments. The bone fragment is a long bone shaft fragment split longitudinally. The fragment appears to be cortical bone from a large mammal, possibly bison. The large chert spall exhibits multiple small flake scars along one side of one edge, and a small segment is lightly rounded and polished from apparent use. The bone and chert spall were found less than 3 m apart and approximately 2-5 cm vertically. Both items were separated from the possible anvilstone by 28 m horizontally and 3-6 cm vertically. Multiple radiocarbon ages obtained from charcoal samples between 3.55 m and 3.86 m in depth yielded a pre-Clovis age range between 12,590 and 11,930 14C BP.

Jonathan Lothrop and Graydon Ballard
Green-Pauler: Two Probable Paleoindian Caches in the Upper Susquehanna Valley, New York

For historically documented foragers in northern latitudes, caching of tools and supplies was a common strategic practice. Dating to the late Pleistocene, early Paleoindian stone tool caches have been widely documented across western North America, and their recent study has led to insights on Clovis colonization, land-use and technology. East of the Mississippi, by contrast, only a handful of early Paleoindian (fluted point-affiliated) artifact caches have been recorded, and all are located in the glaciated Northeast. This poster describes two probable early Paleoindian lithic caches, discovered on a late Pleistocene terrace overlooking the Susquehanna River in eastern New York. The Green-Pauler caches include bifaces, unifaces, and tool blanks. Toolstone is dominated by jasper, perhaps from Reading Prong sources in eastern Pennsylvania. We conclude that these two caches were likely utilitarian in nature, and that Paleoindians may have imported these artifacts during travels north from Pennsylvania into eastern New York. Comparison to late Pleistocene lithic caches elsewhere offers new perspectives on early Paleoindian land-use and technology in New York and the broader glacial Northeast.

Darrin L. Lowery and Dennis Stanford
Paleo-Americans on the Coastal Plain: A Perspective from the Middle Atlantic and the Delmarva Peninsula

Paleo-American adaptations (i.e., high mobility and preferences for high-quality cryptocrystalline materials) have been generalized for most of North America. The Clovis archaeological evidence for the Delmarva Peninsula deviates from this pattern. Considering that the Del-

marva Peninsula represents only a small vestigial remnant of a much larger regional Clovis-age landscape, the extant archaeological record emphasizes an interior upland adaptation. Today, our interpretations of Paleo-American lifestyles in the Middle Atlantic coastal plain are greatly biased by the magnitude of post-LGM marine transgression. Recent investigations at a series of drowned Paleo-American sites provide a better understanding of the natural processes impacting archaeological sites during the transition from a terrestrial environment to a sub-aqueous offshore setting. In sum, our research provides a basis to search for inundated terrestrial sites on the continental shelf.

Joshua Lynch
Experimental Testing of Composite Projectile Points

Across the Beringian Arctic, Paleoindian populations utilized composite osseous technologies from the late Pleistocene through the Holocene. The use of osseous material to produce points implies a technological organization strategy separate from, though often co-occurring with, an organizational strategy focused on lithic bifacial points (Elston and Brantingham 2002; Graf 2010; Rasic and Andrefsky 2001). Composite points produced on slotted antler/bone and inset with microblades are theorized to represent a beneficial and economic hybridization of osseous and lithic materials (Graf 2010; Graf and Goebel 2009; Guthrie 1983); however, these models are often created from inference and are largely without empirical data (i.e., Guthrie 1983) The project is a pilot study designed to experimentally produce quantitative and qualitative data to demonstrate the functionality of composite points, and create novel data sets documenting use-wear patterns on microblades and slotted osseous projectile points utilized in a variety of actualistic scenarios. These artifact types are instrumental in interpretations of inter-site variability in interior Alaska, but these interpretations have never been subjected to rigorous and systematic testing. In addition, the use-wear baselines established in this project have the potential to inform on similar artifacts recovered in late Pleistocene contexts in Siberia and western Europe.

Quentin Mackie, Loren G. Davis, Daryl Fedje, Duncan McLaren and Amy E. Gusick
Searching for Pleistocene-Aged Submerged Archaeological Sites Along Western North America's Pacific Coast: Current Research and Future Needs

Enthusiasm for considering a coastal route of human entry into the Americas during the late Pleistocene has grown during the past few decades, and this has only accelerated by recent reports on early Bison and Mastodon kill/butchery sites in coastal Washington State. Nonetheless, relatively little sustained effort has been directed toward finding and exploring the potential archaeological content of extant Pleistocene-aged terrestrial landscape deposits in submerged contexts. Given the logistical challenges involved in exploring submerged landscapes for early sites, the discovery of late Pleistocene sites on the Pacific outer continental shelf is expected to be technically difficult and expensive. Therefore, we will outline the necessary, careful modeling of environment and cultural behavior within the context of dynamic late Pleistocene marine environments. By reviewing the geoarchaeological context of early submerged and intertidal sites, and recent efforts to reconstruct coastal paleolandscapes and paleoecology along western North America's Pacific coast, we offer a status report on current knowledge and insights into productive directions for future research.

Greg Maggard
Fishtail and Early Paiján: Perspectives on the Early Settlement of Western South America

Fishtail and Early Paiján projectile points represent the two most recognizable Late Pleistocene artifact forms from northern Perú. These points are often encountered on the same sites, which has led to suggestions of direct technological (i.e., descendant) relationships between the two forms. Based on the analysis of raw material use and settlement patterns in the lower Jequetepeque Valley, this poster argues that these two point forms represent distinct technological complexes produced by contemporary regional populations between 13,000-11,300 cal BP. The recognition of distinct, contemporary early complexes has implications for our understanding of the timing and process of colonization in western South America.

Rolfe D. Mandel
A Geoarchaeological Approach to the Search for Pre-Clovis Sites in North America: An Example from the Central Plains

Over the past decade the search for Pre-Clovis sites in North America have involved determining where soils and sedimentary deposits dating to the terminal Pleistocene occur in landscapes. From an archaeological perspective, it is reasonable to assume that sites predating Clovis will be found only where deposits and associated soils old enough to contain them are preserved. A corollary is that where thick deposits post-dating ca. 13 ka are present, evidence of those sites will not be found on the modern land surface. In this paper, I describe a systematic study of late-Quaternary landscape evolution in the Central Plains that documented deeply buried paleosols representing Pre-Clovis-age landscapes. This information is being used to target landform sediment assemblages with high potential for stratified Pre-Clovis cultural deposits. The Coffey site in northeastern Kansas will be presented as a case study. At Coffey, an archaeological component is associated with a buried paleosol developed in the Severance Formation, a lithostatigraphic unit that aggraded between ca. 38 and 18 ka. The geoarchaeological approach presented in this paper has great potential for detecting the elusive Pre-Clovis record of the Central Plains and elsewhere.

Fabiana María Martin
Early Human Occupation in Southern Chile: Recent Results

Recent archaeological findings from both the Pali Aike Lava Field and the Ultima Esperanza regions are presented, including the results of the study of an unpublished collection from Fell Cave, the bone collection from Cueva de los Chingues, and the recent restudy of Cueva del Medio. In Fell Cave and Cueva del Medio—as is also the case for Cueva de los Chingues—the chronology of human occupation approximately between 10,000 and 11,000 14C BP was confirmed. This confirmation is particularly important for Fell Cave, since no radiocarbon dates were published after the seminal work by Junius Bird. The study of the bone collection from Fell Cave offers one of the few evidences for the human exploitation of Mylodon in southern Patagonia. Camelid and Hippidion saldiasi cut-marked bones were recovered at Cueva de los Chingues. On the other hand, the evidence from Cueva del Medio not only clarifies details about human interaction with extinct mammals, but it is also useful to assess intra-site patterns of human settlement. The evidence from Cueva del Medio and several other sites at Ultima Esperanza during the last two years is useful to understand the local ecosystems immediately before the arrival of humans.

Maxine McBrinn, Craig Lee, Steve Holen, Nathan Boyless and E. James Dixon

The Lamb Spring Archaeological Preserve: Past, Present and Future
The Lamb Spring Archaeological Preserve (LSAP) in Douglas County, Colorado is an internationally significant archaeological site containing the bones of extinct Ice Age animals and artifacts from later human occupation. Extinct Ice Age animals found at the site include over 30 Columbian mammoths. In addition to the faunal remains, the site contains evidence of a Cody-age bison kill that occurred between 9,000 and 8,400-years-ago. Artifacts left by humans indicate hunting and camping activities at the spring for at least the past 9,000 years and possibly longer. High precision AMS 14C radiocarbon ages recently obtained by Steve Holen on humanly-modified mammoth bone from the site are consistent with an early Clovis-era occupation (11,225+20; 11,765+30; 11,350+20). In concert with the Archaeological Conservancy and Douglas County, the LSAP Board is working to improve onsite interpretation. This poster summarizes the history of the excavations and highlights the preserve's potential as an educational center for the Rocky Mountain Region.

Bill McConnell and Craig M. Lee
Replication and Use of a 10,400-year-old Cody-Age Foreshaft from a Rocky Mountain Ice Patch

In 2007 a dart foreshaft made from a birch (*Betula* spp.) sapling trimmed of its branches was recovered at a melting ice patch in the Rocky Mountains near Yellowstone National Park. An AMS 14C radiocarbon assay dates the artifact to ca. 10,400 cal BP. Contemporaneous in age with the Cody complex, the 107cm long foreshaft is 3,000 years older than any other wooden foreshaft(s) recovered in North America. Details of the artifact have been published by Lee in various places, including the journals *Antiquity* (2010) and *Arctic* (2012). The tip of the artifact, where a stone projectile point (absent) would have been hafted, is 8.9mm in diameter. The specimen exhibits a 'split end haft' clothespin-like haft 2.7mm wide and 12.6mm deep. The base of the foreshaft tapers symmetrically in diameter from 12.5mm to 3.6mm, presumably to fit a corresponding socket in a fletched shaftment. In 2011 the poster's authors began discussing reconstructions, and McConnell, an accomplished expert in the recreation and use of ancient technologies, developed and tested several replica assemblies. The recreations suggest a foreshaft of this size would have worked well with an Eden variant of Cody. This poster highlights McConnell's process of observation, creation and use.

Katelyn McDonough, Mark E. Swisher, Dennis L. Jenkins, Patrick W. O'Grady and Edward B. Davis
An Analysis of Artifact, Bone, and Coprolite Distributions in Paisley Caves Younger Dryas (Botanical Lens) and Underlying Pleistocene Deposits

The distribution of artifacts, large mammal bones, and coprolites recovered from well-dated contexts at the Paisley Caves was examined to investigate natural and cultural patterns of deposition. Previous analyses of deposits below Mazama tephra produced statistically significant correlations, suggesting that the distributions are not random, and were affected by cultural activity. We examine their distributions through time, using comparative statistical analyses of Pleistocene and Younger Dryas assemblages.

Michael McFaul, Michael D. Metcalf and Dante Knapp
A Post Younger Dryas Early Holocene Soil Forming and Alluvial Interval ~10,575 to ~8510 cal yr BP: Colorado Plateaus, Great Plains, Southern Rocky Mountains and Wyoming Basin

Geographically diverse evidence of early Holocene alluviation and paleosol formation ~10,575 cal yr BP to 8510 cal yr BP is presented. It includes paleo-Mollisols, paleo-Fluvents and alluvial deposits from the Colorado Plateaus, Great Plains, Southern Rocky Mountains, and Wyoming Basin. The ages and characteristics of the paleosols and alluvial sediments suggest correlation with the climatic events responsible for the development of the Brady and Leonard Paleosols. Their ages do not; however indicate their development began in the Bolling-Allerod or Younger Dryas. The climatically induced paleosols and alluviums do provide Paleoamerican researchers with soil and stratigraphic markers for relative age interpretations.

Daniel Meatte
A Use-wear Analysis of Beveled Bone Rods from the East Wenatchee Site (45DO432), Douglas County, Washington, USA

Among the most enigmatic objects in American Archaeology are Clovis-age beveled bone rods. Usually fashioned from bone or ivory, these distinctive tools have been recovered from archaeological contexts that include burials (Anzick), caches (East Wenatchee, Simon), kill sites (Sheriden Cave) and campsites (Blackwater Draw). Researchers posit a variety of theories on the function of these objects as foreshafts, “clothespin” foreshafts, pry bars, pressure flakers, levered hafting wedges, composite ceremonial staffs, points, composite points, and sled runners. With at least nine published explanations for the function of these rods, we must ask: Why should such a simple tool defy explanation? This paper presents results of a use-wear analysis of 12 beveled rods recovered from the East Wenatchee Clovis site in south-central Washington State. These data are used to compare and contrast a second set of Clovis-age beveled rods recovered from the Anzick burial site in southwestern Montana. Results indicate the beveled rods formed compound tools designed to be joined together by scarf joints – a simple, efficient technique for joining long, cylindrical objects together. Implications of this design are presented.

Jessica Metcalfe and Fred Longstaffe
Seasonal Dietary Variations of North American Proboscideans

Mammoths and mastodons became extinct in most of North America by the end of the Pleistocene, coincident with the spread of Clovis people and significant global climate change. We use stable carbon and oxygen isotope analysis of serially-sampled tooth enamel to investigate the seasonal behaviors of mammoths and mastodons in four regions of North America: Arizona, Ontario, Alberta, and the Yukon Territory. These data provide insight into mammoth and mastodon behavior prior to their extinction, Paleoamerican environments, and potential procurement strategies. Mammoth and mastodon oxygen isotope compositions track those of drinking water, and indicate particularly warm and dry conditions in Arizona during the Clovis era. Mammoths in Arizona (directly associated with Clovis, ca. 10,900 14C BP) and mastodons in Ontario (ca. 12,400 to 11,100 14C BP) had highly regular seasonal diets, whereas proboscideans in Alberta and Yukon (>35,500 14C BP) tended to have less seasonal regularity. In Alberta and Yukon, where both mammoths and mastodons were studied, mammoths tended to have smaller seasonal variations in $\delta^{13}C$ and $\delta^{18}O$, which suggest greater migration among habitats. To successfully target proboscideans

as food sources, Paleoamericans would have had to individualize their procurement strategies to accommodate different habitats and seasonal behaviors in different regions.

Lauren Milideo and Russell Graham
Taphonomic and Spatial Analysis of a Modern Wolf Den
 Our understanding of the earliest North American archaeological sites may be enhanced by comparison with modern-derived models. Wolf den bone assemblages can appear superficially similar to zooarchaeological assemblages despite their divergent origins; therefore, accurate taphonomic analysis is a key step in interpreting site origins, particularly when their archaeological origin is debated. We present a taphonomic and spatial analysis of a modern bone assemblage (containing almost exclusively caribou) from a wolf den in Nunavut, Canada. Similar to an archaeological excavation, bones were mapped in the field. Our analysis includes spatial patterns in addition to the types of elements present as well as their weathering patterns and the taphonomic indicators of wolf processing. We obtain a more complete understanding of the den's taphonomic differences from zooarchaeological assemblages by placing taphonomic data in spatial context. Weathering stages vary, possibly reflecting extended or repeated occupation; common markings include toothmarks and fracturing of the bone. In addition to identifying taphonomic and spatial earmarks of this assemblage, we suggest potential means of distinguishing den-derived vs. zooarchaeological bone assemblages.

Kelly Monteleone and Andrew Wickert
Investigating the Potential for Archaeological Sites on the Submerged Southern Beringian Archipelago

The Bering Land Bridge is the most likely route taken by the first Americans, but archaeological confirmation is difficult because it was submerged by post-glacial sea level rise. The southern archipelago of the Beringian continent is a likely route for the first peopling of the American continents. An island archipelago that existed from at least 16,000 BP is investigated using reconstructions of shoreline geometry and sea level of southern Beringia. Environmental variables, including rivers, lakes, and coastal sinuosity will be reconstructed and incorporated into a paleo-land-use model for the archipelago. The paleo-land-use model is similar to Monteleone's dissertation research in southeast Alaska.

Christopher R. Moore, Mark J. Brooks, Larry R. Kimball, Margaret Newman and Brian P. Kooyman

Use-wear and Protein Residue Analysis of an In-situ Clovis Assemblage from a Carolina Bay in the Coastal Plain of South Carolina
 Site 38AK469 is located on a Carolina bay in the Upper Coastal Plain of South Carolina. Carolina bays are oriented, upland ponds on the Atlantic Coastal Plain from Northeast Florida to New Jersey. Ongoing geoarchaeological investigations at Flamingo Bay have revealed the presence of stratigraphically discrete artifacts that are part of an isolated, low-density (probably single occupation) Clovis assemblage. This discovery constitutes one of the few documented Clovis assemblages recovered in buried context in the Southeast, and includes portions of exotic and local raw material Clovis points, blades, unifacial tools with graver spurs, end scrapers, tools with spokeshave notches, and robust hafted side scrapers made on thick blade blanks. Microwear analysis of 20 Clovis and likely Clovis artifacts from Flamingo Bay (including 2 Clovis and 1 reworked fluted point fragment) indicate intensive

hide scraping (both fresh and dry), bone boring/graving/pointing, hafting traces, and residual organic residue. This analysis also suggests intentional snap-fracture or bipolarization of exhausted or broken Clovis points for reuse as hide scrapers. A portion of these tools along with tools recovered more recently, were submitted for immunological testing. This study highlights the importance of inter-disciplinary approaches in Paleoindian research.

Brooke Morgan and Brian Andrews
Mountaineer: A Folsom Residential Occupation in the Rocky Mountains

The Mountaineer site, situated atop a high mesa overlooking the Gunnison River Basin in south-central Colorado, is a spatially extensive Folsom site containing evidence of multiple occupations. At least one occupation episode is characterized by the construction of rock-ringed habitation structures. Four structures, thought to be contemporaneous, have so far been discovered and excavated at the site. A fifth area, thought to represent a separate occupation, has also been excavated. Evidence suggests relatively intact deposits with minimal horizontal mixing, making the site ideal for studying spatial organization within and between household spaces.

Juliet E. Morrow and Stuart Fiedel
The Anzick Clovis Burial, a Single Depositional Event

The infant from the Anzick site near Wilsall, Montana, associated with 115 Clovis lithic and osseous artifacts, is still the only human skeleton attributable to the Clovis culture. As reported at this conference, the skeleton has provided invaluable genetic data for establishing the ancestry of Native Americans. However, the exact date of the burial deposition has been difficult to ascertain. Each of two antler (probably elk) “foreshafts” provided a precise radiocarbon date of ca. 11,040 rcbp (Beta-163832 and Beta-168967), but a date for the child's rib is 10,780+-40 rcbp (Beta-163833). Tom Stafford has run multiple assays on filtered collagen and separated amino acids from the child, obtaining ages ranging from 10,240+-120 (AA-2978) to 10,940+-90 (AA-2981), with a rejected outlier of 11,550+-60 rcbp. He thinks the most accurate date is 10,705+-35 rcbp (CAMS-80538). The disparity between ages of the artifacts and the child has raised the suspicion that the artifacts might be centuries-old heirlooms, or that the child's burial was a later intrusion into the artifact cache. We review eyewitness accounts of the accidental discovery of the deposit to show conclusively that the child lay below the artifact concentration and was not intrusive. The body and the artifacts were deposited in a single ceremonial event and the ostensible age disparity requires some other explanation.

Melissa Mueller
Taphonomic Interpretations of Burned Bones from the Susitna River Basin, Alaska

This presentation provides a report on the zooarchaeological and taphonomic analysis conducted on faunal material from the archaeological sites HEA-455 and HEA-499, located in the upper Susitna River basin, central Alaska Range. Faunal remains include approximately 11,323 faunal specimens; however, only 16 were minimally identifiable to element and taxon. Specimens were each less than 7 mm in size due to heavy fragmentation. The high degree of fragmentation limited attempts to identify these faunal remains, yet a taphonomic analysis on the degree of burning seen in these faunal remains indicates possible human activities and behaviors related to subsistence and site main-

tenance. Based on interpretations from experimental studies in the literature on the effects of burning bones in fires, the bone fragments from these two archaeological sites appear to be burned directly from human site activities. The results presented here provide insight into prehistoric subsistence and site activities in the mountainous Alaska Range, as well as a better understanding of taphonomic processes in play in this environment.

Susan C. Mulholland and Stephen L. Mulholland
Early Paleoindian in Northeastern Minnesota

Prior to the late 1990s, the commonly held belief was that Early Paleoindian occupations could not possibly exist in Northeastern Minnesota because of the presence of glacial ice. Even though a single Gainey point had been found in the Cloquet River drainage, it was rationalized away as a curated point from elsewhere. Subsequent research in the region has documented an in situ Folsom site, at least two Gainey points, possible Clovis style blade technology at two separate locations, and reclassified a point initially identified as Holcombe-like to Gainey. Everything except one of the blade locations occurs within an ice-free area that extends from east central Minnesota northeast toward Canada. This ice-free area is located along the northern edge of the Superior Lobe and south of the Rainy Lobe's Vermilion Moraine. The Cloquet River flows through much of this ice-free area, providing a potential transportation route from the dense concentration of Early Paleoindian localities documented near Pine City, Minnesota. Since three of the five points and all the blades are of materials that are locally available, sustained occupation of Northeastern Minnesota in Early Paleoindian times is suggested as opposed to a southern origin for the points.

Connie Mulligan and Andrew Kitchen
Three Stage Colonization Model for the Peopling of the Americas

We have proposed a three-stage colonization model for the Americas that integrates genetic data with existing archaeological, geological, and paleoecological data. Our results support a recent, rapid expansion into the Americas ~16kya that was preceded by a long period of population stability and genetic diversification in greater Beringia and occurred after divergence from an ancestral Asian population ~40kya. Two areas of discussion have recently emerged with respect to the genetic data. 1) How does choice of a mitochondrial substitution rate influence estimates for an entry date to the Americas and occupation time of Beringia, and which rate is correct? In general, ‘fast’ substitution rates support a post-LGM entry to the Americas and a shorter occupation of Beringia compared to ‘slow’ substitution rates. 2) What is the relationship of founder population size and subsequent levels of migration between Asia and the Americas, and what is the correct balance between the two? In general, large founder population/low rates of migration and small founder population/high rates of migration are comparable in terms of the resultant Native American genetic diversity. Our results, in combination with constraints provided by archaeological, geological and climatological data, support a ‘fast’ substitution rate and large founder population/low rate of migration.

Pavel Nikolskiy and Vladimir Pitulko
And Yet They Hunted Mammoths: Evidence from the Yana Palaeolithic Site

Here we show convincing evidence of mammoth hunting in the Siberian Arctic between 29 000 and 27 000 14C BP. Our data set, from the Yana Upper Palaeolithic site (Siberian Arctic), includes the following:

fragments of lithic points and ivory shaft embedded in two mammoth scapulae; two identical holes made by projectiles in a mammoth scapula and a pelvic bone; mammoth tongue bones found in the cultural layer far away from the main mammoth bone accumulation, indicating the consumption of fresh mammoth meat; and a narrow mammoth bone size distribution, implying hunting selection based on animal size. The data suggest that humans hunted mammoths sporadically, presumably when ivory was needed for making tools. Such hunting pressure would not be fatal to a sustainable mammoth population, but after the Last Glacial Maximum, when mammoth habitat shrank due to climate changes, such an impact could have become the “last straw” that led to the final extinction of the mammoth.

Barbara O’Connell, James L. Jones, Jr. and Bruce Thomas
The Minnesota Ancients: Browns Valley and Pelican Rapids

Two of the oldest, early Holocene (10,000-8,500 BP), skeletons from the North American mid-continent are from Minnesota. These include the Browns Valley and Pelican Rapids skeletons. Both skeletons were accidentally unearthed in the 1930s. Detailed descriptive monographs were published by Albert E. Jenks in the mid-1930s. After rediscovery of the “lost” Browns Valley skeleton in the late-1980s, AMS dating confirmed the early Holocene dates and initiated their restudy on the cusp of the passage of NAGPRA. Six years later, the recovery of the Kennewick Man skeleton refocused the discourse of the study of ancient skeletons in North America around race and ownership, creating an adversarial relationship between American Indian tribes and scientists. The objective of this presentation is to summarize the results of the past 25 years of continued study of the Minnesota Ancient skeletons as part of a collaborative relationship with the Minnesota Indian Affairs Council (MIAC). This includes study both before and after repatriation of the skeletons to a consortium of tribes in Minnesota and the Dakotas who claimed an ancestral relationship and reburied these skeletons in 1999. Restudy includes the following: AMS dating, cranial metric biodistance statistics by multiple researchers, aDNA haplotypes and forensic/sculpture facial reconstructions.

Douglas Owsley
Bioarchaeological Biographies of Ancient Americans

This overview will highlight what the bones reveal about Paleoamericans from the western half of the United States. Complete and partial skeletons of approximately 30 individuals dated 8000 RC yr. BP and older have been examined including the Spirit Cave Mummy from Nevada, the Horn Shelter No.2 burials from Texas, San Miguel Man from California, and Kennewick Man from Washington. Detailed information on preservation and taphonomy, demography, bone and dental pathology, and cranial and postcranial measurements have been compiled and analyzed to document the occurrence of traumatic injuries, infections, arthritic conditions, oral health, diet, activity patterns and behavior, and population origins and relationships. Although the sample is limited and derived from diverse localities, it provides a foundation for reflecting upon the lives of ancient Americans.

Irina Panyushkina and Steven W. Leavitt
Abrupt Changes in Moisture Variability in the Great Lakes Region at ca. 13.7 ka, 12 ka, 11.5 ka and 8.2 ka: A New Perspective from Subfossil Tree Rings

Modern El Niño-Southern Oscillation (ENSO) variance links to At-

lantic Multidecadal Oscillation, implying global-scale climate modes. Weakened ENSO is responsible for anomalously high precipitation in the Midwest and strengthened ENSO conveys dry conditions across the Great Lakes region. Emerging highprecision pollen records from the region indicate high moisture variability during the transition from Late Pleistocene to the Holocene. Now even higher resolution climate proxies are being developed with tree rings. We observe a strong ENSO signal in the variance of tree-ring records at many Two Creekan forest locations in eastern Wisconsin and Michigan spanning 14ka to 13ka. The timeframe of tree-ring chronologies corresponds to the megafauna extinction and the collapse of Clovis culture in the Great Lakes region. Tree rings from the later Younger Dryas and Preboreal events (11ka and 8.2 ka) show no evidence of ENSO variability. Further evaluation of tree-ring patterns from the ancient boreal forests suggests that termination of spruce stands was caused by abrupt changes in the paleohydrology of the region associated with both floods and droughts. We discuss how well we can determine decadal climate change from dry to pluvial conditions with subfossil tree rings. It seems very likely that droughts impacted Two Creekan spruce growth. Perhaps, the livelihood of humans and megafauna in the Great Lakes region was disturbed by these abrupt changes as well.

Charlotte Pevny, William Barse and R. Christopher Goodwin
Late Pleistocene-Early Holocene Human Adaptation in Northern Florida

Recent data recovery excavations at five sites located along the Cody Scarp in northern Florida have identified late Paleoindian (Suwannee) and Early Archaic (Bolen) components preserved in stratified contexts. These sites share consistent features of stratigraphy and archeological context reflecting a landform subjected to the same climatically induced depositional processes at the close of the Pleistocene. Such processes served to encapsulate Paleoindian and Early Achaic sites along the Scarp’s edge within variably thick packages of eolian sand deposits. Technological, microwear, and blood residue analyses were used to study approximately 27,000 lithic artifacts. The largest site (8LE21 OS) functioned as a base camp and a “gearing-up” locale. A pooled mean average of two dates [11,273 CALYBP (9870 ±38 RCYBP)] from the Bolen component at site 8LE21 OS is remarkably similar to dates from other Early Archaic sites in this region like Page-Ladson and Wakulla Springs. The four smaller sites (8IE2”102, SJE880/8IE2909, 8JE8.72, and 8JE878) were utilized for hunting and other resource extraction activities. These five sites offered an opportunity to explore local and regional patterns of settlement, subsistence, and technological change at the Pleistocene-Holocene transition.

Jessica Phillips
Fingerprinting Our Past: A Dermatoglyphic Study at the Topper Site (38AL23)

The study of pre-historic fingerprints has not been widely recognized as a useful resource for anthropological and archaeological use. Further research examining prehistoric fingerprints could assist researchers in a number of areas including: demographic information on artifact production (women/men/children/age), contributing to our understanding of artifact production (hand position, etc.), comparison of modern fingerprints to past populations, and contribute to geofact/artifact determination. In April 2012, ten artifacts recovered from the Topper Site (38AL23) located in Allendale County, South Carolina, were tested to determine if it was possible to develop latent fingerprints of volunteers

who handled the artifacts. The artifacts consisted of materials made from chert and clay pottery. Several methods for developing latent fingerprints were used, including: superglue fuming, “shake-n-bake” with iodine crystals, ninhydrin, black powder, and magnetic powder. Modern latent fingerprints of the test personnel were identified on all ten samples, with varying degrees of visibility. Based on initial findings, it is suggested that further research into the presence of prehistoric fingerprints is warranted.

Bonnie L. Pitblado, Holly Andrew, Ben Fowler and Richard Shipley
Paleoindian Occupation of Southeastern Idaho and Northern Utah

For the past seven years, we have worked to establish a baseline understanding of Paleoamerican occupation of southeastern Idaho (southeast of the Snake River Plain) and northern Utah (Cache and Rich Counties). For historical reasons, this region had previously been the focus of precious few archaeological investigations. Yet it is unequaled in the American West in both the diversity of its ecological setting (we refer to it as “the mother of all ecotones” for reasons we explain in our poster) and in terms of specific resources available to Paleoamericans who used the landscape. Our poster reports our methods—principally collaborations with avocational archaeologists—and results to date for establishing chronological parameters and geographic/cultural “signatures” for Paleoamerican use of Southeastern Idaho and Northern Utah.

Vladimir Pitulko, Pavel Nikolskiy, Aleksandr Basilyan and Elena Pavlova

Yana RHS Site, the Earliest Occupation of Siberia

For years, the initial stage of human habitation within Western Beringia was supposed to be not older than the Late Upper Paleolithic, with firm dates younger than the LGM. Discovery of Yana RHS doubled length of the record of human habitation in NE Asia. Human occupations at Yana site pre-date the LGM and show that the area was inhabited almost 30,000 14C years ago. This is the earliest evidence known in the Arctic. The site yielded a unique evidence for Early Upper Paleolithic culture of this remote part of the world. Fauna remains that come from the site belong to almost all species of the local Late Pleistocene habitat. Reindeer, bison, and horse are most numerous. Three major contexts compose the Yana archaeological complex. Two of them are lithic contexts called correspondingly “macro tools” (cores, scrapers, large tools) and “micro tools” (small scrapers, chisel-like pieces, backed blades but almost no burins). The third one is presented by well developed bone/ivory industry that includes hunting equipment, sewing tool kit, and other implements. Numerous personal ornaments and decorated artifacts demonstrate highly developed complicated symbolic behavior. This article presents the data on geology, radiocarbon dating and artifact collection of the Yana site.

Vladimir Pitulko and Elena Pavlova
Environmental Changes in Western Beringia during the LGM as Human Habitation Factor

As Yana RHS site demonstrates, Upper Paleolithic humans spread into Western Beringia prior the LGM. But there is no evidence for human habitation during the LGM. This is often taken as a basis for depopulation model caused by LGM environmental stress. Indeed most of known sites, especially close to the Bering Land Bridge area, are of the Late Glacial age or younger. In this connection, they may serve as an evidence for re-colonization of Beringia. However there are sites whose age appears to be coeval to the LGM environmental changes (e.g.,

Ikhine I and II, Ezhantsy, and, potentially, Verhne-Troitskaya in Aldan, and newly discovered ISR-34 site in NW Yana-Indighirka lowland). Unfavorable temperature and precipitation trend would necessarily drive negative changes in Beringian biome and then affected resources important for Paleolithic inhabitants of the area. That might be causing also a decrease of human population. However, a number of Pleistocene animal species (mammoth, rhinoceros, reindeer, horse, hare) inhabited New Siberian Islands and the NW part of Yana-Indighirka lowland during the LGM while bison and musk ox are known for Wrangel Island. But still, presence of them indicates environmental conditions providing vital resources for human habitation in Western Beringia during the LGM.

Ben A. Potter, Chuck Holmes and David Yesner
Technology and Economy among the Earliest Prehistoric Foragers in Interior Eastern Beringia

In the past decade, the archaeological record of eastern Interior Beringia (Alaska and Yukon Territory) has seen a transformation in our understanding of the earliest foragers. This presentation focuses on new sites, new data and new interpretations of technology and economy from the region, including emerging models of landscape use and settlement systems. Patterns of continuity and discontinuity from adjacent regions (western Beringia and central North America) are evaluated. Clovis ancestors may be present in Beringia, but they are not easily distinguished through material culture patterns. Other avenues of inquiry with different assumptions are needed to understand the anthropological problem of the colonization of the New World. Recent theoretical approaches incorporating technological organization and behavioral ecology have provided ways to explore this early record.

Chelsea Reedy
Practice Makes Paleo

Many archaeologists have centered their research around Paleo American large game hunting tactics. They analyze the evidence of possible hunting strategies based off the remains of the butchered megafauna and artifact assemblages that remains in the archaeological record. This research synthesizes the benefits for using experimental archaeology in the form of butchering to aid in analysis of Paleo American megafauna kill sites. My research includes a synopsis of how to construct experimental archaeology. Also included are experimental butchering studies conducted with carcasses of elephants, modern bison, and cattle to emulate the megafauna that roamed the land during the late Pleistocene through the Early Holocene. In this research I aim to underline the usefulness of experimental butchering and the insight it brings to analysis of Paleo American kill sites.

Karl Reinhard, Adauto Araujo, Elizabeth Racz and Scott L. Gardner
Paleoamerican Parasitism: Infections that Signal the Origin and Route of Migration

The study of parasites from American archaeological sites reveals aspects of human behavior, including migrations. Host-specific parasites of humans are especially important because their ecological requirements are well known and they infect only humans. Because hookworms are tropical, their repeated discovery in the Americas challenged parasitologists to define migration routes through which tropical parasites could have passed from the Old World to the New. That research pointed to alternative migration routes other than the Bering Land Bridge. Alternative trans-Pacific and coastal migrations

have been considered. A climate simulation, based on hookworm extra-corporeal requirements for infection, suggested that a coastal migration of humans hosting hookworms was plausible. However, the simulation indicates the best climate would have been immediately before Clovis times. Recent discovery of hookworm eggs from Paisley Caves supports a coastal migration hypothesis that allowed for the establishment of hookworm infection in the region of Oregon by 9,000 years ago. In addition, a cluster of additional parasites including whipworm, giant intestinal roundworm and wireworm have been found in the prehistoric New World. Therefore, it is very likely that Paleoamericans arrived in the New World with a diverse community if persistent parasite infections.

Kenny Resser

Projectile Points and Knives of the Central Great Plains

This young man in his mid-30's has amassed a huge personal collection from northeast Kansas, almost all Permian flint from Flint Hills. All pieces are documented on artifact and in a notebook (date, time, picture, etc.). Kenny is a high school graduate who is a self-taught illustrator of great talent, known to collectors and archaeologists alike. He is an extremely talented young man. Do to requests he is currently working on a chart of Texas points. A picture of the chart will be presented at the conference.

Tyler Retherford and William Andrefsky, Jr.

Using Lithic Debitage to Distinguish between Geofacts and Artifacts: An Experimental Approach

The problem of distinguishing naturally produced stone debris from human modified artifacts has long plagued archaeologists, and is becoming increasingly important in the discussion of archaeological sites which potentially predate Clovis occupations. This poster tackles this problem by using lithic debitage at the assemblage level. A set of naturally produced debitage was created experimentally by dropping obsidian and chert cores from varying heights. The resulting assemblages were then compared to experimental human-produced debitage assemblages as well as an archaeological collection. A quantitative analysis of simple, easily replicable attributes of the these debitage assemblages was conducted in order to determine if debitage analysis is capable of distinguishing between gravity-produced natural flakes and intentionally created human debitage. It is our hope that this can form a strong line of evidence in solving this complex archaeological problem which is particularly pertinent to the study of the colonization of the Americas.

David Rhode, Allise Rhode and Alvin McLane

Western Fluted and Clovis Blades: An Intriguing Assemblage from Western Nevada

An archaeological site located in the Pine Grove Hills, western Nevada, has yielded a small but very interesting Paleoindian assemblage. The site is intriguing in several respects. First, it contains projectile points attributable to the western fluted horizon, associated with well-formed and well-used classic Clovis blades, an unusual combination in the Great Basin (or elsewhere, it seems). Second, it is located in the upper reaches of the Pine Grove Hills at ~2320 m (7820'), an uncommon altitude to find fluted points, not to mention Clovis blades, in the Great Basin. Third, it appears shallowly buried, though that is not yet confirmed by controlled archaeological testing. Here we describe the site and its assemblage, and speculate on its possible implications.

Andrew Richard

Clovis in a Kiln: A Projectile Point Use-Breakage Study

The use-breakage of projectile points provides researchers information on specific use, hafting style, projectile point strengths and other valuable data. This experimental archaeology research project compares the different types of use-breakage between Clovis and Folsom projectile points to determine their strengths and weaknesses. The goal of this experiment is to ascertain if the different use-breakage characteristics and the frequency of breakage of each style of projectile point can be used to determine the type of spear used by Clovis and Folsom hunters the thrusting spear or atlatl dart? This experiment will also define which projectile point is stronger, Clovis or Folsom? To answer these questions a process was developed using ceramics to produce projectile points consistently, in large quantities, in a material that mimics the characteristics of stone. Using stone has inherent problems involving production time, production numbers, consistent morphology and expense when attempting to flintknape large quantities of projectile points. In the use-breakage study Clovis and Folsom points were cast in porcelain, hafted, attached to darts and thrusting spears and then thrown or thrust into fresh cow bones to recreate use-breakage in Clovis and Folsom projectile points.

Torben Rick, Courtney Hofman, Andreanna Welch, Jon Erlandson, Jesus Maldonado and Robert Fleischer

Marine Mammals, Ancient DNA, and Paleo-coastal Subsistence on California's Northern Channel Islands

Human occupation of California's Channel Islands spans at least 13,000 calendar years, making the region important for understanding the initial peopling of the Americas and the coastal migration theory. Eleven sites on the northern Channel Islands date between 13,000-11,000 cal BP and dozens more date between 10,000-8000 cal BP. Faunal remains from these sites suggest that people exploited a variety of aquatic birds, shellfish, finfish, and marine mammals. Although marine mammals appear to have been important, the vast majority of these early bones is highly fragmentary and cannot be identified to family, genus, or species using traditional zooarchaeological techniques. Here we present the results of genetic analysis of marine mammal bones from two Paleo-coastal archaeological sites on the Channel Islands dated to ~11,200 and ~9500 cal BP. These data illustrate the importance of aDNA analysis of archaeological faunal remains for helping understand early New World subsistence strategies and terminal Pleistocene/earliest Holocene paleoecology.

Brian S. Robinson

Large and Highly Structured: Refining Spatial Patterns at Bull Brook

The Bull Brook Paleoindian site in Ipswich, Massachusetts has an unusually large and highly structured settlement plan, among known Paleoindian sites in North America. These two factors, large and highly structured, may be dependant variables of certain kinds of aggregation. The site was salvaged over 50 years ago from imminent destruction by avocational archaeologists who recognized its potential. Although excavations were far from ideal, there is substantial documentation from which to glean spatial evidence. Work on refining the spatial pattern continues. If Bull Brook represents an organized event, scrutiny should yield evidence of increasing structure.

Francis "Jess" Robinson, John G. Crock and Wetherbee Dorshow
Through the Mountains to the Sea: An Analysis of Champlain Sea Shorelines, Site Patterning, and Travel Corridors in the Eastern Champlain Basin

Our poster will present results from ongoing analyses of Paleoindian site deposits and their relationships to Champlain Sea shorelines along the eastern (Vermont) portion of the Champlain Basin. Paleoindian group movements into and out of the Basin are also explored through least-cost pathway analysis and other techniques. An exploration of these occupation and movement patterns provides important information about how Northeastern Paleoindian groups accessed and utilized this geographically circumscribed locale and the resources therein through time.

Heather Rockwell, Richard Boisvert and Bruce Rusch

Settling into the Late Pleistocene Landscape: The Potter Site, a Multi-component Paleoindian Site in New Hampshire

The Potter site, initially discovered in 2003, is a Paleoindian site located in Northern New Hampshire. Extensive excavation and statistical analysis suggest that the site represents multiple reoccupations during both the Early and Middle Paleoindian periods. Microwear analysis performed upon a large sample of the artifacts shows that the site was used primarily as a base camp to manufacture tools. The Potter site holds great potential for contributing to our understanding of how groups settle into the landscape after the initial colonization process.

Michael F. Rondeau, John Pryor and Roger La Jeunesse

Clovis Technology at the Skyrocket Site, California

Eighty-one artifacts from the Skyrocket site (CA-Cal-629/630) have recently been restudied. As a result, a second fluted point was identified along with 33 unfinished bifaces that evidence percussion end thinning, overshot flaking or both. In addition, 44 overshot flakes, a fluting flake, and a limace were recorded. The Skyrocket site has the most significant Paleoindian assemblage in California currently available for research.

Chantel Saban

Palynological Perspectives on Late Pleistocene to Early Holocene Human Ecology at Paisley Caves (35LK3400), Cave 2

Towards the goal of rebuilding the paleoenvironment of the Chewaucan Basin for the purpose of better understanding and interpreting the archaeological record, this is an analysis of pollen recovered from sediments at Paisley 5-Mile Butte (35LK3400), more commonly called Paisley Caves. The Paisley Caves are a system of eight rockshelters located in the Summer Lake Sub-basin of Eastern Oregon. Excavations of these caves have resulted in the discovery of 14,300-year-old coprolites yielding ancient human DNA, representing some of the earliest human remains in the New World. Sediments were recovered from intact stratigraphic context and represent a time span of 7,600 cal BP to 13,600 cal BP. Initial pollen analysis from Cave units 2/6B and 2/4C has produced a clear record of climate change affecting the Summer Lake Sub-basin during a time period spanning between 13,600 cal BP to the time of the time of the Mount Mazama eruption 7,640 cal BP. The goal is to shed light on the paleoenvironmental context of early human occupants at Paisley Caves towards better understanding possible adaptive behaviors of early humans in the Northern Great Basin.

Douglas Sain

A Model for Paleoamerican Coastal Zone Preference for the Atlantic Slope of Eastern North America since the Last Glacial Maximum

Paleoamerican colonization models have emphasized the importance of coastal zone types for provisioning hunter gatherers with a diverse range of resources suitable for exploitation. This paper expands on recent research, and presents a coastal model to explain the distribution of Clovis projectile points across the Atlantic Slope of Eastern North America relative to coastal breadth variation. Marine transgression since the last glaciation has inundated large tracts of the Atlantic continental shelf. Coastal areas with gradual sloping landforms promote superior shallow bay habitat for coastal organisms relative to areas of steeper gradient. Bathymetric data was employed to estimate the Clovis age shoreline from Delaware to Florida. Clovis biface data obtained from the Paleoindian database of the Americas (PIDBA) was compared to the slope of the paleo shoreline to predict coastal zone preference. Results indicate a correlation between point distribution and coastal zone type. Based on the distribution of fluted points recovered from contemporary terrestrial settings, locales where major rivers intersect broad coastal zones served important roles to Clovis settlement subsistence systems. The potential exists for early Paleoamerican sites along the continental shelf submerged beneath 55 - 75m of the extant Atlantic Ocean. Coastal regions with high densities of Clovis points may serve as analogues for identifying earlier sites now submerged as a result of marine transgression.

Guadalupe Sanchez, Vance Holliday, Joaquin Arroyo, Natalia Martinez and John Carpenter

El Fin del Mundo, Sonora, Mexico: Where Clovis People Hunted Gomphotheres

Since 2007 we have been investigating a Clovis site in the basin of the Bacoachi River, in northern Sonora. The site, El Fin del Mundo, consists of at least 25 localities including a buried, stratified feature where Clovis peoples hunted Pleistocene elephants (gomphotheres), several camp areas, and two lithic quarries. A total of 17 Clovis points and 27 Clovis preforms have been collected from various contexts at the site, along with more than a hundred Clovis artifacts (e.g. blades, conical cores, end scrapers). Four Clovis points were found in situ at the gomphothere feature. Of special interest is a complete rhyolite Clovis point discovered in 2012 associated with the mandible of Gomphothere #2. Small fragments of teeth and bone were found above and below the Clovis point. Twenty-one flakes have been recovered from the feature. In 2012 charcoal fragments were found associated with two flakes at the western end of the feature. One of the charcoal fragments was radiocarbon dated to 11560 ± 140 14C B.P. (13454 ± 170 cal BP).

Jeffrey Saunders, Gennady Baryshnikov and Kevin Seymour
Evolution of an Arizona Paleoindian Landscape

The Murray Springs Clovis Site, Cochise County, Arizona includes strata containing fossil assemblages dating to pre-Clovis, Clovis, and to a more limited extent, post-Clovis intervals. Moreover, an expanded SE Arizona study area includes additional Clovis-associated assemblages (Escapule, Lehner, Leikem, Naco) and assemblages from coeval non-cultural, as well as from both pre-Clovis and post-Clovis contexts. These assemblages, when organized and collated, the components compared and contrasted, provide an unprecedented first opportunity to examine large mammal community dynamics in the SE Arizona study area prior to, during, and, as noted to a lesser degree, subsequent to

Clovis occupation. Specifically, at the behest of Clovis investigators Drs. C. Vance Haynes and Bruce B. Huckell this poster addresses four questions posed for the paleontological dataset: (1) whether the evidence points to a thriving community at the time of Clovis; or (2) whether it might have already been in decline in terms of diversity/number of taxa; (3) whether the extinction event was a slow process or a more rapid one; (4) whether particular taxa may have gone extinct before others (horses, camels prior to mammoths). We close with some thoughts on the factors causing the late Pleistocene extinction event.

Linda Scott Cummings and R. A. Varney
Climate Reconstruction: Modeling Examples of Rapid Vacillations for the Pre-Clovis and Clovis Eras

Macrophysical climate modeling creates monthly and annual temperature and precipitation charts using century averages for point locations on the landscape. Compilation of these data may be overlain on landscape maps, resulting in display of environmental parameters that would have affected distribution of vegetation and game, and hence people, on the landscape. Vacillation between extremes, which can be seen in the temperature models for this period, suggests the potential for animal population isolation in remote environmental areas. Creating an index of temperature difference identifies time periods likely to have been most risky and provides a tool for examining hypotheses. Changes in seasonal distribution of precipitation also have the potential to dramatically alter vegetation communities, thus introducing new variables in herd distribution and human decision-making. Model output can be viewed either as “still” images or aggregated onto landscape maps and viewed at 1 second per century, creating the illusion of animation and producing a valuable tool for examining potential animal and human movement across the landscape.

Linda Scott Cummings and R. A. Varney
What You See Is What You Get, or Is It?

Can we depend on our eyes to judge the landscape of the past? Is what we see today an accurate representation of the landscape and vegetation community distribution, just minus the large game? If not, what differences are apparent between “then” and now? Was the vegetation really that different? Today vegetation at the eastern edge of Dinosaur National Monument is sparse pinyon/juniper woodland (mostly juniper), with a few shrubs and widely distributed grasses. A feature dated 11,200 BP at KibRidge Yampa in northwestern Colorado indicates PaleoIndian occupation. The stratigraphic pollen record indicates a well-developed birch forest in the local drainages at that time, suggesting a vastly different climate and different forage for large animals. Calculating large game forage requirements, such as those for mammoth and mastodons, requires some creative use of modern range data and also provides approximate parameters for the past. Mammoths and mastodons would have had to consume >150 kg (330+ lbs) of vegetation per day. Where would they find that food on the landscape? And finally, what evidence of hunting large game, specifically proboscideans, shows up in the protein residue record?

Adriana Schmidt Dias and Lucas Bueno
The First Colonization of South America Eastern Lowlands: Brazilian Archaeological Contributions to Settlement of America Models

Between 12,000 and 8,000 yrs BP, South America Eastern Lowlands was occupied by a stable and diversified hunter-gatherers population. The predominance of generalist subsistence strategies and the lithic

industries regional variability show the limits of classic models for the settlement of America to explain the processes of early colonization of this region. In chronological terms, such diversity involves adaptive strategies referring to initial occupations earlier than those assumed by traditional models. Radiocarbon dating that support this hypothesis were obtained for several archaeological sites in Brazil, but the validity of these data has been questioned, as they concern to isolated contexts with discrete characteristics. Also, by analyzing the geographical distribution of the Brazilian archaeological data for Pleistocene-Holocene transition it can be suggest migration flows with differentiated routes, speeds and shift behaviors. Brazilian archeological and paleoenvironmental research suggests that the process of initial colonization of the South American Lowlands entailed multiple strategies, including the valleys of large rivers as inland routes. This dynamic of space usage can promote a rapid displacement over long distances, which, in some cases, explains the existence of almost contemporary sets of sites with similar lithic industries and cultural patterns separate by great distances. For Pleistocene-Holocene transition at least two distinct colonization events would have contributed to the original settlement of the eastern portion of South America that actually corresponds to Brazilian territory. A first set of evidences, among 12,000 and 11,000 14C yrs BP, refers to the colonization of the tropical forests and savannahs in northern, central and northeastern Brazil, whose river systems supposedly served as access routes to the continent interior. Interacting with these tropical landscape mosaics, the Itaparica Tradition and Lagoa Santa Complex hunter-gatherers invested in generalist strategies, based on mobility systems supported by vast territories which boundaries were marketed by rock art regional styles. After 11,000 14C yrs BP a second population movement is related to the colonization of South and Southeastern Brazil and is associated to Umbu Tradition. The more moderate climate, without severe seasonal alternation, associated with the expansion of the Atlantic Forest biome in Southern Brazil, contributed to the first attraction of these populations which develop generalist strategies of forest resource exploitation. Its origin probably has a cultural connection to the pioneer populations who colonized the continent's southernmost points, expanding northwards and towards the Atlantic coast, until reaching the transition zone between Atlantic Forest and tropical savannahs. According to this data, the colonization of the current Brazilian territory would be at least contemporary to the Clovis horizon, showing, however, quite distinct cultural characteristics, emphatically indicating the existence of continental peopling processes earlier and differentiated than the ones accepted by the classic models.

Theodore G. Schurr
Tracing Human Movements across Siberia and into the Americas: New Insights from Mitochondrial DNA and Y-Chromosome Data

In this paper, I present genetic data from native Siberian and indigenous populations of North America that help to address questions about the process and timing of the peopling of the Americas. These new genetic data indicate that Eskimoan- and Athapaskan-speaking populations are genetically distinct from one another, as well as each to Amerindian groups, and that the formation of these circumarctic populations was the result of two population expansions that occurred after the initial expansion of settlement of the Americas. Our high-resolution analysis of Y chromosome haplogroup Q has also reshaped the organization of this lineage, making connections between New World and Old World populations more apparent and demonstrating that southern Altaians and Native Americans share a recent common ancestor.

The data also make clear that Y-chromosomal diversity among the first Native Americans was greater than previously recognized. Overall, these results greatly enhance our understanding of the peopling of Siberia and the Americas from both mtDNA and Y-chromosome perspectives.

Zach Scribner and Nathan Nelson
Reconstructing the Hydrological System of a Paleoarchaic Complex in Central Western Utah

A complex of over 50 Paleoarchaic sites is located within a 30 by 30 kilometer area in central western Utah. The majority of these sites appear to be associated with interconnected extinct stream channels that likely would have formed a marsh environment located between two major obsidian sources. We attempt to reconstruct the hydrological system that may have supported such an environment during the terminal Pleistocene/early Holocene transition by using a 5 m resolution digital elevation model. The model will be regulated by mapped levels of Lake Bonneville, local geological studies, paleoclimate studies, soil maps, and the distribution of known Paleoarchaic sites. A typological study of the diagnostic artifacts and their comparative distribution within the study area will also be presented.

Mark Seeman and Garry Summers
The Fluted Points from Nobles Pond, an Early Paleoindian Site in Northeastern Ohio: Manufacturing and Typological Considerations

This poster describes and analyzes fluted point production and maintenance at Nobles Pond (33St357), an early Paleoindian site located in Stark County, northeastern Ohio. Here we compare the results of 1) a standard reduction sequence model and 2) a second model that assumes that blank size (and context) more strongly affects individual production decisions. Results suggest that limited production did take place well away from quarry-related workshops, often with relatively small blanks. These were extensively end-thinned. Fluting itself was both opportunistic and observed differences on alternate faces are interpreted as tactical decisions designed to reduce the risk of production breakage. Nobles Pond fluted points have somewhat convergent lateral margins, slightly flaring ears and deep basal concavities resulting from the multiple fluting of each face—in these respects they differ modally from both Clovis and Barnes points and tend to support the typological utility of recognizing a distinct Gainey style.

Fred Sellet, Robert Brunswig and Rolfe Mandel
The Paleoenvironmental and Archaeological Context of the Late Pleistocene-Early Holocene Transition at the KibRidge Site

The KibRidge site is a stratified site, situated in the Rocky Mountains of Colorado, on the eastern margins of the Great Basin, that has yielded a complex Paleoindian archaeological sequence. The oldest occupation at the site dates to ca 11,000 BP and has yet to produce any culturally or temporally diagnostic material. This Clovis-age level is overlaid by multiple archaeological layers that span the Younger Dryas period. Additionally, several Late Paleoindian projectile points as well as a Folsom point have been recovered on the surface. This poster summarizes the preliminary results of the archaeological and paleoenvironmental studies conducted at the site since 2010 by the University of Kansas and the University of Northern Colorado with funding from the Bureau of Land Management.

Steven Shackley
The Secondary Distribution of Archaeological Obsidian in Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Paleoamerican Procurement and the Age of Sediments

The secondary distribution of sources of archaeological obsidian through long term erosion is an extremely important factor in the understanding of procurement in the prehistory of the North American Southwest, as in any arid region where high velocity stream erosion is common. In the New Mexico/Chihuahua region of the Southwest, this is a particularly important issue where at least seven sources and chemical groups are present in different proportional combinations along the Rio Grande for well over 700 stream kilometers from the El Rechuelos source in northern New Mexico to Chihuahua. This poster presents a summary of ten years of research collecting and analyzing thousands of samples at primary obsidian sources at Mount Taylor, the Jemez Mountains, and secondary sources along the Rio Grande from Española to San Antonito, New Mexico, as well as investigation of the presence of these sources in sites dating from the Clovis Paleoindian period (ca. 13 kya) to the Colonial Period (ca. A.D. 1540-1840), especially the former.

Erika Shofner, Meg Gaillard, Helena Ferguson and Tom Pertierra
Presenting Paleo: Sharing Our Past

The Topper Site in Allendale, South Carolina is recognized for its contributions toward the investigation of early human existence through the study of its Paleoindian components. A key feature of the Topper research program is its success in incorporating the interested public in the excavation process, and enhancing the partnership of public and professional archaeologists dedicated to a common research goal. In 2011, the South Carolina Archaeology Public Outreach Division (SCAPOD) developed and installed the permanent exhibit “Searching for Our Beginnings: Public Archaeology at the Topper Site” at the University of South Carolina Salkehatchie library. This exhibit presents Topper research and partnerships to the local Allendale community, the university community, and visitors to the area.

Zachary Singer
Ohomowauke: An Early Paleoindian Site in Southeastern Connecticut

This poster presents a summary of the Early Paleoindian component at the Ohomowauke site (72-137), which is located on the Mashantucket Pequot Reservation in southeastern Connecticut. This summary includes information on the lithic analysis, spatial patterning, and local paleo-environmental reconstruction pertaining to the Early Paleoindian component. The location of Ohomowauke in southeastern Connecticut provides evidence of Early Paleoindian adaptations near the southern extreme of the New England and Canadian Maritimes region.

Alan Slade
Clovis: What's the Point? Can Clovis Projectiles be Defined by Type?

There is at present a real need for Clovis projectile point technology to be more well defined and until archaeologists and analysts agree on what is and what is not a Clovis point. There will always be this problem in definition due to the fact that some archaeologists and researchers call certain assemblages Clovis and others assign their projectiles to a different culture or type, even though they appear chronologically and technologically contemporaneous (David Meltzer pers. comm.). As an archaeological culture Clovis portrays a range of variations in technology and the projectile point has often been the primary, if not only, di-

agnostic means of identifying a particular assemblage as being 'Clovis'. A Clovis projectile point typology, defined by 'stylistic variation' may go some way in clarifying the problem and this poster is an introduction to my postgraduate research I will identify and separate some of the variations within the projectile point assemblages from well documented and archaeologically recorded Clovis sites, some projectile points that are in private collections and selected isolated point discoveries will also be included.

Ashley Smallwood, Albert C. Goodyear, Derek T. Anderson, D. Shane Miller and Sarah Walters

Dating the Hillside Clovis Occupation of the Topper Site, Allendale County, South Carolina

The Topper site is an extensive quarry-related Clovis site in Allendale County, South Carolina. Recent AMS dating of charred remains from the Clovis occupation of the upper hillside area of the site has provided the first Clovis date in the American Southeast that is directly associated with diagnostic Clovis lithic artifacts in a buried context. This poster presents the results of dating, lithic analysis, and geologic context of the Clovis component at Topper. This new data helps clarify the age of Clovis in the Southeast.

Heather L. Smith

An Analysis of Fluted-Point Technology at Serpentine Hot Springs, Alaska

Two new fluted points were recovered during the 2011 excavations at Serpentine Hot Springs (BEN-192), Bering Land Bridge National Preserve, Alaska, bringing the total number of fluted points from the site to eight, the most fluted points yet recovered from a single Alaskan site. Four are from buried and secure contexts associated with hearth features dating to about 12,200-12,000 cal BP. This poster presents results of a technological and morphological analysis of the Serpentine fluted point collection, and considers the results in the greater context of fluted-point technology across North America.

Heather L. Smith, Jeff Rasic, and Ted Goebel

Biface Traditions of Northern Alaska and their Role in the Peopling of the Americas

Archaeologists have long looked to Alaska for evidence of the origins of the first Americans, but still no clear Clovis ancestor has been uncovered there. In this presentation we review the bifacial-rich traditions of north and northwest Alaska, focusing on new results from two fluted-point sites—Serpentine Hot Springs and Raven Bluff, and reviewing earlier work conducted at the Mesa, Sluiceway-Tuluq, and Nogahabara sites, all thought to potentially date to the terminal Pleistocene. In terms of technology, subsistence, and settlement, these complexes seemingly represent "Paleoindians" in the Arctic; however, none of them (with the possible exception of Sluiceway-Tuluq) are as old as or older than Clovis. More likely they are the product of a northward spread of Paleoindian people—or Paleoindian technology—into the Arctic at the very end of the Pleistocene, 13,000-12,000 calendar years ago, simultaneous to the dispersal of temperate North American bison into the north.

Morgan Smith, David Selmo and Steve Cushman

A Pre-Project Overview of the Wakulla 3 Project: An Archaeological Survey of a Spring and Deep Underwater Cave

Wakulla Spring, located just south of Tallahassee, FL, has long been known as an archaeological site with striking potential. Previous work

at the spring has included cave exploration, mapping, water quality testing, hydrologic studies, and biological analysis. The archaeology of the spring and cave system however, remains a footnote in the published works of these previous projects. Wakulla 3 seeks to rectify this by performing a full archaeological survey of the cave and spring. This poster will discuss proposed methodologies and techniques for the survey, research aims, possible funding sources for the project, and finally how Wakulla 3 can benefit other scientific disciplines.

Charles Speer

Source Determination of Edwards Plateau Chert Using LA-ICP-MS

The purpose of this research is to determine if Edwards Plateau chert can be effectively sourced at both the local and the regional level. A dozen unique locations of the Edwards Plateau chert bearing limestone formation are analyzed using LA-ICP-MS to characterize chert geochemistry. For this pilot research, all geologic sources sampled were taken from primary contexts. Using multivariate statistics, the recovered geochemical trace element concentration data is analyzed and compared to the trace element concentration data of 34 Clovis projectile points, 10 pieces of debitage, and 8 prismatic blade fragments recovered from the Gault site (41BL323) in Bell County, Texas. This research hopes to better understand Clovis hunter-gatherer mobility by determining the movement of raw material and artifacts from their geologic origin.

Kary Stackelbeck

Domestic Architecture of the Terminal Pleistocene to Early Holocene in the Central Andes

Domestic architecture is perhaps among the least common features documented on Paleoindian sites in the New World. And yet, among sites of the Terminal Pleistocene to Early Holocene in the Central Andes, many such features have been recorded. In one region in particular, the lower Jequetepeque Valley in northern Peru, structures of five different forms have been identified among Preceramic sites dating between ca. 13,000-9,000 cal BP. This poster explores the significance of these structures for understanding the processes of colonization and regionalization in this area, settlement patterns, and socio-economic organization within the context of changing environmental conditions. Suggestions regarding future avenues of investigation are also presented, including a broader hemispherical approach to problematizing and studying household organization among early mobile populations as evidenced in the archaeological record.

Thomas W. Stafford, Jr.

Geochronology, Stratigraphy and Taphonomy as the Foundations for Pre-Clovis Research

Time, followed closely by stratigraphy and taphonomy, are the arbiters of pre-Clovis research. Only 100 years might separate an important Clovis site from a paradigm shifting pre-Clovis discovery. Now that the Clovis-First barrier has been broken, accurate 14C measurements are increasingly crucial to interpreting the peopling of the Americas. With greater geologic age, 14C chronologies are increasingly affected by geological contaminants, decreasing numbers of dateable materials, and chemical decay, especially of vertebrate fossils. Loss of stratigraphic integrity and clarity through bioturbation, erosion and geochemical degradation create palimpsests from previously obvious archaeological records. The absence of large lithics, rare and uncharacteristic microlithics or exclusive use of bone preordains that early sites may go

unrecognized and that taphonomy will become increasingly important for differentiating natural versus human-origin sites.

These factors demand new approaches to geochronology and geology because pre-11,000 RC yr records are unlike younger ones. Millimeter-resolution stratigraphy, genus-level identification of fossils, and molecular-level AMS 14C dating with ± 15 yr precisions must replace current dating and excavation techniques. As successive age barriers are broken for first human presence, scientists must acknowledge that ever-older occupations are possible. These principles are described using 14C dating experiments and sites across North America.

Dennis Stanford, Darrin Lowery, Bruce Bradley, Marvin Kay, Robert J. Speakman, Margaret Jodry and Tom Stafford

The Cinmar Discovery: Evidence for an Ice Age Occupation of the Middle Atlantic Outer Continental Shelf

A mastodon skull and a large bi-pointed rhyolite biface were retrieved from the outer margin of the Middle Atlantic continental shelf near the Norfolk Canyon, some 50 miles off the Virginia shore. The assemblage was dredged by the scalloping vessel Cinmar from a drowned terrace located over 240 feet beneath the current surface of the Atlantic Ocean. A slight amount of oxidation was observed on both the bone and artifact indicating that they were both subjected to the same depositional environment and that they both were originally deposited in a peat bog. Use wear traces were preserved on the surfaces of the biface indicating that it was not subject to transportation damage and that it functioned as a hafted knife. Radiometric dates on ivory collagen of $22,760 \pm 90$ BP confirmed the antiquity of the site. Sea level data along with the radiometric suggest a human occupation along the drowned Middle Atlantic coastline during the last glacial maximum. Moreover, during the earliest phase of Clovis occupation in the Americas, the site was already drowned and beneath nearly 50 feet of water.

Dennis Stanford, Darrin Lowery, Margaret Jodry, Bruce Bradley, Marvin Kay and Robert J. Speakman

The Chesapeake Bifaces: Evidence for an LGM Occupation of the Mid-Atlantic Region of North America?

Mastodon remains dated to 22,760 RCYBP and a bifacial laurel leaf knife were recovered from 250 feet below sea level on the outer continental shelf of Virginia. This paper reports the results of our research concerning this find, and on-going survey of the extensive archaeological collections of the Smithsonian and other repositories including large private collections that are representative of the Chesapeake Bay watershed. We have located twelve additional laurel leaf specimens including four found by watermen while working on the continental shelf. This paper also presents data from three upland archeological sites dated to the same time, all suggesting an LGM occupation of Eastern North America.

Anastasia Steffen, Heather R. Evans and Jeremy Decker

Discovering the Earliest Prehistory of the Valles Caldera

The Valles caldera holds a key position in the prehistoric human landscape of North America. Located in north-central New Mexico at the highest point of the Jemez Mountains, this area connects the Southwest with the Plains and anchors the southern extent of the Rocky Mountains. In addition to an abundance of high elevation resources, the Jemez volcanic field offered North America's easternmost sources of high-quality obsidian toolstone. The caldera provides a unique setting for investigating the earliest prehistoric use of obsidian and high-ele-

vation landscapes. This poster explores the evidence for Paleoamerican uses of the caldera with a focus on diagnostic projectile points found in the Valles Caldera National Preserve. We examine point styles and function, raw material usage, obsidian hydration data, and spatial distribution of artifacts to consider landscape use, transport of artifacts and materials, and potential interactions beyond this pivotal location.

Charles Stern, Alfredo Prieto and Jordi Estévez

The Peopling by Littoral Hunter-Gatherers of the Fuego-Patagonian Fjords

The maritime peoples of Fuego-Patagonia, the oldest evidence for which is mid-Holocene (6500 14C BP), adapted themselves to the sea from terrestrial hunter-gatherer populations already living since >11000 cal BP in southernmost South America. This adaptation, the last step in the population of the southernmost tip of South America, may have taken place first in the area around Seno Otway, where transit to and from the interior pampas was relatively easy and forest providing trees for canoes existed. We suggest that an eruption of Hudson volcano at $\sim 6890 \pm 100$ 14C BP was a significant trigger to the development of the maritime population from older terrestrial hunter-gatherers. As well as interrupting long distance transport of obsidian over all of southern Patagonia, this eruption covered large parts of Tierra del Fuego with up to >20 cm of tephra, where it may have devastated for an extended time period the flora and fauna supporting the local terrestrial hunter-gatherers, who were already isolated by the opening of the Strait of Magellan at $\sim 8245 \pm 65$ 14C BP. However, it was unlikely to have affected marine species, and therefore motivated the development and spread of a new littoral based economy.

Andre Strauss, Pedro Da-Gloria, Rodrigo De-Oliveira, Danilo Bernardo, Domingo Carlos Salazar Garcia, Caroline Wilkinson, Sue Black, Sahra Talamo, Philipp Gunz, Mike Richards, Mark Hubbe, Astolfo Araujo, Renato Kipnis, Jean-Jacques Hublin and Walter Neves

The Oldest Case of Decapitation in the New World

Few Amerindian habits impressed the European colonizers more than the displaying of body parts, especially when decapitation was involved. The archaeological evidence testifies that decapitation has deep roots in the continent and since most of South American cases occurred in the highlands, it was assumed this was an Andean phenomenon in both its origin and most unambiguous expression. Here, we report the oldest case of decapitation in the New World. This deposit, excavated at Lapa do Santo (Brazil), has been directly dated using ultra-filtration method to 8331 ± 44 BP and forces a re-evaluation of the previous interpretations of this practice based on its temporal depth and geographic dispersion. In addition, as part of a funerary context that affirms the ritual manipulation of fresh corpses it adds to the ever-growing body of evidence attesting a higher social complexity among Early Holocene hunter-gatherers. Strontium isotope signature on human teeth was used to evaluate whether this individual came from the same locality as other skeletons of the site. Finally, a facial reconstruction based on a retro-deformed three-dimensional model together with a multivariate metric analysis, confirms the hypothesis that the New World's first inhabitants had a distinct cranial shape when compared to recent Native Americans.

Mark E. Swisher, Dennis L. Jenkins, Lionel E. Jackson, Jr., Fred M. Phillips

A Reassessment of the Role of the Canadian Ice-Free Corridor in Light of New Geological Evidence

The idea that late ice age peoples might have successfully migrated south from Alaska along Alberta's foothills via a gap between the Cordilleran and Laurentide ice Sheet was first proposed by W.A. Johnston in the mid-1930's. Ernst Antevs coined the term "ice-free corridor" (IFC). This observation was influential in the development of the Clovis-first hypothesis: these people were the first to occupy the Americas, entering North America south of the ice sheets via the ice-free corridor between 13,000 and 11,000 BP. Recent findings require a modification of this hypothesis. Cosmogenic nuclide dating of the Foothills Erratics Train together with sub-till radiocarbon ages indicate that there was no IFC during the last glacial maximum (LGM). It is reasonable to estimate that this route was closed between about 20,000 and 15,000 cal BP. An IFC opened during deglaciation but this was after the appearance of people south of the ice sheets: ages from seven pre-Clovis sites (Paisley Caves, Manis, Friedkin, Hebior, Shaefer, Meadowcroft, Monte Verde) range from 19,000 to 13,200 cal BP. If an IFC served as a migration corridor into the Americas, it was prior to the LGM.

John Taylor-Montoya

The Entangled Bank: Can We Detect Cultural Lineages in Lithic Technology and What, if Anything, does that Tell Us about the Paleoamerican Odyssey?

The past several years has seen a burgeoning interest in testing hypotheses about the peopling of the Americas using cultural phylogeny in concert with phenetic tests. One of the ongoing themes is explaining changes in Paleoamerican point styles over time. Two sets of hypotheses have been put forward to explain these changes: climate forcing and the demographic-adaptation model. This study represents a first-order test of these hypotheses. A regional sample of projectile points, consisting of over 2000 artifacts representing more than 300 sites and isolated finds from the Southern Great Plains, was subjected to a series of phenetic and phylogenetic analyses. The phylogenetic tests detected a historical relationship among most of the projectile point classes, but one group of points might represent diffusion into the study area. An examination of prey choice and point style did not reveal significant patterns of association between those two variables. However, late in the Paleoamerican period there is some indication of niche separation. The spatial distribution of point styles does not follow a simplified reading of either model but more closely resembles the expectations of the demographic-adaptation hypothesis. As important as the positive findings are the clear gaps in data that this study exposed.

Alejandro Terrazas Mata, Martha E. Benavente, Arturo H. González González and Wolfgang Stinnesbeck

Human Remains of Late Pleistocene-Early Holocene Age from Submerged Caves of the Yucatan Peninsula (State of Quintana Roo, Mexico): Preliminary Dental Analysis and Implications for the Settlement of the Americas

We present the morphology of teeth of seven human individuals discovered in submerged caves of the Yucatan peninsula. These skeletal remains located near the modern coast line of Quintana Roo, Mexico, were dated between 11,57 ± 65 yr and 8050±150 14C yr BP. None of the specimens preserves a good state of the dentition, but patterns preserved allow for comparison with published data from ancient

populations in the Americas and Asia. We discuss the significance of these data in relation to the origin of the first settlers of the American Continent.

Aleksei V. Tetenkin

Transition from Pleistocene to Holocene on Lower Vitim (Baikalian Siberia, Russia): Coexistence of Ethnic Groups or Combination of Different Adaptive Strategies?

During the last 20 years of research on the lower of Vitim River by author and Evgeny M. Ineshin there were discovered and researched archaeological sites of the Final Pleistocene – Early Holocene (13,000-6,000 RCYBP) including Bol'shoi Yakor' I, Kovrizhka I-V, Invalidny III/1-3, and Mamakan II-VI. Most of these are multicomponent. There are more than 30 well stratified cultural horizons supported by radiocarbon analysis. The cultural remains are grouped into three types of assemblages persistently repeated during several thousand years and coexisting locally. Two such assemblages look Paleolithic (Diuktai), and they are dated between 13,000-6,000 RCYBP. These are the Bol'shoi Yakor' type and Avdeikha type assemblages. The former is characterized mainly by the technology of multipurposeful usage of bifaces as tools, reducing the working edge by splitting ski spalls like ubetsu technique and producing terminal wedge-shaped microcores. Avdeikha differs by more simple ordinary technique of microcore manufacturing from biface or flake. The third group of assemblages has a Mesolithic (Sumnagin like) character and labeled Bol'shaia Severnaia assemblages. They appeared on the Lower Vitim about 10,000 RCYBP and in the Early Holocene coexisted with first two types of sites. They are characterized by microblade splitting of prismatic cores mostly of a fine chert source. The occurrence of a few original, distinctive artifact types in these assemblages leads us to skeptically consider the ethnic version of explanation of cultural variability, but we continue to search for functional adaptational explanations.

Scott Thomas, Mike Rondeau and Patrick O'Grady

Filling the Void: Clovis Spear Points and Diagnostic Artifacts in the Far Northern Great Basin

Over the last seven years Burns BLM District, working with University of Oregon, Oregon Archaeological Society and Mike Rondeau, has been systematically searching Clovis spear points and sites in the far northern Great Basin in southeastern Oregon. Through scientific reasoning and serendipity we have begun to populate our map with these locations. As new discoveries are made we rely on Mike Rondeau to aid us in identification and description of Clovis points. As time progressed Mike began to educate us on what he calls "Clovis Diagnostics" or remnants of Clovis lithic technology that have been shown to be as distinctive as Clovis points themselves. Most recently we have shifted our emphasis to searching for these diagnostic artifacts such as overshot flakes, overshot bifaces and fluted bifaces. We assume that Clovis points are much more likely to be collected than the diagnostics and, with diagnostics, we may be able to discover more Clovis sites by looking lower in the lithic technological hierarchy. This poster is a simple depiction of the locations of Clovis point isolates, sites and diagnostics. At all Clovis sites we have been able to find Clovis diagnostics. Conversely, we have documented a number of sites with diagnostics that have not yielded Clovis points. However, we believe that focusing on both lines of evidence will eventually yield a well-populated map and give us the evidence necessary to begin discussions about Clovis geography, tool-stone use patterns, site location preferences and big game hunting traps.

David Thulman and Michael Faught

How Long did Clovis Last? A Re-assessment of the Clovis and Other Paleoindian Occupations Using Bayesian Statistics

How long was the diagnostic Clovis point used in the New World? Recent estimates (Waters and Stafford 2007; Faught 2008) say about 200 years, but our analysis indicates it lasted significantly longer. Here we report on the use Bayesian statistics to better interpret the radiocarbon record of Clovis and other Paleoindian occupations and assess alternative hypotheses regarding the peopling of the New World.

Emma Toole, Silvia Gonzalez, David Huddart, John Moores, Alex Brasier and Darrin Mark

Humans, Megafauna and Quaternary Environmental Change, Tequixquiac, Northern Basin of Mexico

The Tequixquiac Basin is well known for its rich megafaunal assemblages, lithics and preceramic art. Of particular interest is a camelid sacrum bone carved to resemble a wolf or dog found at a depth of 12 meters during the construction of a tunnel exit which was part of works to drain the Basin of Mexico. When the Sacro was discovered in 1870 it was described as "the oldest example of mobile art in the Americas" but unfortunately this claim was never validated. Here we present a chronology for the Tequixquiac sediment sequence that spans the Early Pleistocene to the Early Holocene (constrained by nine C14 dates and two Ar – Ar dates). During the Late Pleistocene to Early Holocene (C14: 40,000+ to 8,240 ± 40 BP) alluvial and fluvial sedimentation occurred in localized areas relative to watershed drainage patterns. Within the Late Pleistocene stratigraphy a conglomerate unit associated with the Sacro located 12 meters down from the surface has been dated to between 14,610±60 BP and 40,000BP + (uncalibrated). This poster explains the development of the Tequixquiac Basin during the Quaternary, the stratigraphic position of the Sacro and its contribution to early human histories in the Americas.

Óscar Torres-Solis, Patricia Ochoa-Castillo, Michael R. Waters, and Joaquín Arroyo-Cabrales

Recent Findings in the Hueyatlaco Site, Puebla, México

For more than 60 years, there have been reported controversial findings of early human activities associated to Late Pleistocene extinct animals. However, after different undertakings, the evidence of hunter-gatherers has not been confirmed. In fact, high technology research has provided information to discard some of the hypotheses calling for a very early human presence. In any case, several studies put the site findings at the Late Pleistocene, and mostly at the end of the Wisconsin glaciation, between 10,000 and 30,000 BP, forming three faunal zones. The Archaeological Project HUEYATLACO is the most recent on-going research in the area, with the current study of the animal remains recovered during the excavations in 2001 and 2004, with about 2582 specimens, having a positive identification 119 of them which pertained to four orders (blackened), five families, and five genera of mammalian herbivores that included: Perissodactyla: Equidae, Equus; Artiodactyla: Antilocapridae, Antilocapra; Camelidae, Camelops and Hemauchenia; Cervidae, Odocoileus; Cingulata, Glyptotheridae; and members within Proboscidea. Detailed studies of the bone have shown possible anthropic marks on some long bones, but further study is warranted.

Jacob Tumerlaire, Francis E. Smiley, William Reitze, Meghan M. Vance and Cole B. Wandler

The Rainbow Forest Site: A Clovis and Folsom Locality on the Southern Colorado Plateau

The poster presents ongoing research at the Rainbow Forest site, AZ Q:01:103 (ASM), located on the southwestern edge of the Petrified Forest National Park, Arizona. The site shows occupation during the Clovis and Folsom periods with additional human use from Late Archaic times to the present. The Rainbow Forest site is actually a large locality more than 700 m on a side with a small seasonal playa at the center. The site lies on the uplands overlooking the Little Colorado River drainage. The presence of the famous Petrified Forest lithic materials in great quantities, the seasonal availability of water, and the upland vantage make the locality an ideal location for repeat occupations across millennia. The Rainbow Forest site, as the only known Clovis/Folsom venue on the southern Colorado Plateau, provides a unique and valuable window on early Paleoamerican settlement, technology, and culture.

Jesse Tune and Judith A. Melton

Interpreting Activity Areas and Cumberland Lithic Technology at the Phil Stratton Site, Kentucky

The Stratton site, located along the Red River in southern Kentucky, provides a unique opportunity to examine Cumberland lithic technology. The site was intermittently occupied from the late Pleistocene through the middle Holocene, and contains the only buried, Cumberland occupation currently documented in North America. The distribution of artifacts excavated from the site was analyzed to identify discrete activity areas. In addition, the results of an artifact refit study further support the identification of separate activity areas and indicate that minimal post-depositional disturbance has occurred at the site. As a result, distinct Cumberland activity areas may be distinguishable from subsequent Archaic occupations at the Stratton site. Furthermore, the success of the distribution analysis and refit study facilitates the first ever site-level interpretations of Cumberland lithic technological organization.

Nicole M. Waguespack

Pleistocene Extinctions: The State of Evidence and the Structure of Debate

The demise of the Pleistocene megafauna has become a topic of such longstanding and contentious debate that it is difficult to evaluate the merit of causal evidence independent of entrenched argumentative positions. Generally structured around the role humans and climate did or did not play in the extinction event, the generation of new data, which will ultimately contribute to resolution of the issue, also currently serves to perpetuate particular points of dispute. While I have participated in this debate and have advocated for the role of human hunting, I review the current evidence in light of its implications for what is known about the extinction event (i.e., that it was a rapid, widespread event with an inordinate impact on large-bodied fauna during the Late Pleistocene) and its congruence with plausible expectations of the empirical record. Widespread acceptance of any particular cause, be it human, climate, catastrophe, or disease triggered must be consistent with what the archaeological, paleontological, and paleoenvironmental records can provide? not necessarily with what proponents of either side of the debate claim as essential requirements for resolution.

Robin Gay Wakeland

Iberian Peninsula Lithics, 19,000-13,250 B.P., from Spanish Museum Collections

This poster presents photos of lithics in the collection of Museo de los Orígenes (Museum of the Spain's Origins), Plaza de San Andrés, Madrid, Spain, dated 20,000-15,000 BP. These include Paleolithic leaf-shaped points, flakes, cores, and blades. Their provenience is near present day Madrid, Spain.

Sarah Walters, Sean Cary von Gunter and Albert C. Goodyear III
The Secret Life of Carbonized Plant Remains: A Guide to Dating in the Age of Clovis

Archaeologists often make limiting operational choices that – though considered and logical – are (sometimes) necessarily assumptive. One such a priori framework posits that costly paleoethnobotanical (PEB) recovery and analyses are not worthwhile when working in acidic, sandy soils; as organic remains are destroyed far too rapidly to allow for differential preservation by inherent chemical and mechanical processes. This poster demonstrates that these destructive processes are somewhat misunderstood. Indeed, successful collection of PEB material is possible from select colluvial sediments, hereto thought to be organically sterile. Moreover, such efforts can yield enough viable carbon to establish an absolute chronology for archaeological sites where, previously, none was thought possible. Clovis-aged carbonized plant remains were recently recovered from the sands at the Topper Site (a chert quarry in South Carolina) and dated by AMS. The data are shown to: (1) quantify the age of associated lithic deposits; and (2) independently corroborate Topper's vertical stratigraphic integrity. Too often, the utility of paleoethnobotany is narrowly conceived as only able to address matters of subsistence. PEB data, however, can address a far greater range of questions – the answers to which better inform the largely unresolved debates surrounding the nature of early migrations into and across the Americas.

Michael Waters

In Search of the First Americans—What the Friedkin Site, Texas, Manis Site, Washington, and Others Tell Us About the First Americans

The Friedkin site, located in central Texas, is a stratified site with Late Prehistoric, Archaic and Paleoindian horizons. The Paleoindian sequence includes Golondrina, Dalton, Midland, Folsom, and Clovis horizons. Beneath the Clovis levels at the site are over 18,000 artifacts including bifaces, blades, bladelets, and other tools dating between 13,500 and 15,500 yr B.P. At the Manis site in northwestern Washington, the tip of a bone projectile point is embedded into the rib of a mastodon dated to 13,800 yr B.P. This evidence, combined with the evidence from other sites as well as human genetic data, provides a new understanding of the late Pleistocene colonization of the Americas and the origins of Clovis.

Tom Westfall, Grayson Westfall and Rick Miller

Evidence of Clovis Occupation in the South Platte River Valley in Eastern Colorado

The South Platte River Valley in eastern Colorado has experienced human occupation since at least Clovis times. A number of Clovis sites, including the Dent Site, the Fox Site, and the Drake Cache Site have been discovered in the South Platte drainage area. This poster will feature artifacts from each of these sites and will give a brief description of the site. Each time the South Platte River floods, numerous Clovis artifacts are recovered in the river gravels, along with the fossilized

bones of giant sloth, camel, mammoth and others. As evidenced by the stone projectile points that have been recovered in the South Platte River Valley, Clovis people used a variety of widely scattered lithic sources from which to knap their points and tools. This suggests either significant travel or well-developed trade routes, or both. Although artifacts recovered from the river gravels lack “archaeological context” they are important in terms of the archaeological record as they show evidence of lithic migration. The authors, avocational archaeologists, routinely make their collections available for University level research and have contributed to several studies of lithic migration in eastern Colorado during the Clovis time period. This poster will also identify other items from the Clovis tool kit, including uniface knives and bifaces, and will provide a description and pictures of “overshot” flaking.

Andrew D. Wickert, Kelly R. Monteleone, Jerry X. Mitrovica and Robert S. Anderson

Reconstructing the Paleogeography of Beringia

Understanding the human past in Beringia requires accurate base maps of the rapidly-changing paleogeography of this now-submerged region. We reconstruct shoreline positions, river systems, and climate from the Last Glacial Maximum to the present. While melting ice sheets led to global mean sea level rise, relative sea level change across Beringia was nonuniform due to (1) uplift of formerly glaciated areas, (2) subsidence of regions inundated by rising sea levels, (3) broad West to East sea level variability due to the gravitational influence of the North American ice sheets, and (4) large-scale divergence from mean sea level due to changes in Earth rotation associated with deglaciation. Sea level calculations are subject to uncertainties in past ice sheet geometries, so we use a suite of ice sheet models to estimate the range in past shorelines through time. We then combine these with a paleoclimate general circulation model (TraCE-21K) calibrated to modern data to assess past temperatures, precipitation, and evapotranspiration across Beringia, and use the latter two to reconstruct past river networks and discharges. These final maps constitute our current best estimate of Beringian paleogeography, and may be used to guide future archaeological studies.

Kristina Wiggins and William Andrefsky, Jr.

Analyzing Population Data to Recognize Human and Natural Fracture Properties in Brittle Solids

Trained archaeologists can easily recognize elaborately shaped stone tools and cores made from chipped tool-stone. They can often easily recognize debris fragments from the production of stone tools when those items are found within the contexts of archaeological sites. However, when fragments of cryptocrystalline raw material are found at source locations or when they are found as isolates, these specimens are often less easily recognized as human production debris or human-made artifacts. In this study four populations of chert debris (naturally exfoliating fragments, tumbled cobble fragments, hard-hammer core reduction fragments, ancient bifacial reduction flakes) are compared in order to determine the characteristics most useful for discriminating culturally modified debris or tool production by-products. Results of the study indicate that features such as platform type, flake type, dorsal cortex amount, and flake size manifest differently in naturally occurring versus human-manufactured assemblages when viewed from a sample population perspective. Specimens viewed individually are less diagnostic.

Eske Willerslev

Genetics as a Means for Understanding Early Peopling of the Americas

Most of our knowledge on the peopling of the Americas comes from classical studies of the archaeological record and modern genetics. Ancient genetic studies represent another and largely unexplored means by which crucial new information can be obtained. However the field of ancient DNA is hammered with pitfalls. In this talk I discuss what DNA studies may and may not be able to tell us about the early human colonization of the New World.

Justin Williams and William Andrefsky, Jr.

An Image is Worth 1000 Measurements: Using Images to Analyze Paleo-Period Artifacts

Due to the rarity and geographic extent of Paleo-period cultures it is often problematic for archaeologists to include a large sample of artifacts within a single study. The time required to gather such a sample makes substantial intra-region studies difficult and time consuming. One way to mitigate these complications is to perform analysis on scale images of the original artifact found in published sources. Use of images can greatly reduce travel time and expense when gathering data on artifacts from many institutions. While convenient, the accuracy and replicability of using images is often questioned. This study seeks to better understand the biases and accuracy of using scaled artifact images from published as proxy data for actual specimens. Measurements from publications, scanned images of the actual artifacts, and the artifacts themselves are compared to assess the precision of metric variables recorded by these techniques. This study focuses on Clovis period hafted bifaces from various parts of North America. It is determined that both scanned images and images from publications can be used as replacements for analysis of the actual artifact when making many types of linear measurements.

Janice Bernadette Wood and Patrick Warren O'Grady

Tephra Traps and Projectile Points: An Exploration of Volcaniclastic and Cultural Chronologies at Rimrock Draw Rockshelter (35HA3855), Harney County, Oregon, U.S.A.

Laboratory analyses of samples collected during the 2011-2012 excavations at Rimrock Draw Rockshelter indicate regional eolian and pyroclastic surge materials are collected in “traps” influenced by both mechanical and chemical weathering processes. These tephra accumulations range in size from microstratigraphic layers visible only through particle size and geochemical analysis to massive bar deposits of Mazama ash in the stream channel adjacent to the rockshelter. Thus far, identified ash samples include Newberry (1000 RCYBP), Mazama O (6850 RCYBP), and St Helens SG (13,000 RCYBP), the latter collected from buried deposits above fragments of camelid teeth and a chalcedony flake tool. Trenching of both fluvial and eolian deposits is planned for 2013 to explore the relationship of erosion and deposition processes to the cultural deposits within the rockshelter, and to extract additional tephra toward a more refined tephrochronology of the region. Ash mantled clays within the rockshelter preserve diagnostic artifacts associated with the Western Stemmed tradition; plus overshot flakes, bifaces with overshots, gravers, and fluting flakes that may be associated with fluted point technology. This paper will report the results of tephra analysis on samples collected from both archaeological and geologic deposits, and their relationship to diagnostic projectile points, extinct animal species, and radiocarbon dated features.

Don Wyckoff, Nick Czaplewski and Brian Carter

Investigating Mid-Wisconsinan Deposits in Oklahoma: the Burnham and Powell Farm Sites

Since 1986, interdisciplinary research at two western Oklahoma locations have investigated the occurrence of chipped stone objects believed associated with mid-Wisconsinan deposits. In the Red Hills of northwestern Oklahoma the Burnham site has eolian, carbonate-rich soils over a 37,000 year old paleosol and adjacent lacustrine deposits incised in that soil by a spring-fed stream. Associated with the lowest fluvial deposit were found bones of *Bison chareyi*, 51 small flakes with some showing bifacially flaked platforms, a multipurpose tool, and a wedge-shaped fragment of an apparent biface. AMS dates on charcoal from this deposit implicate an age of 35,000 years ago. Recent major excavations at the Powell Farm site in the Rolling Redbed Plains of west-central Oklahoma investigated the 1949 finds of mammoth, mastodon, horse, and camel along with a small elliptical biface of Alibates flint. This work exposed a lacustrine deposit dating to 35,000 years ago. Above this, multiple cut-and-fill deposits attest to late Pleistocene and early Holocene erosion of significant proportions. AMS dates on the mammoth, mastodon, camel and horse teeth demonstrate these fossils were redeposited between 19,000 and 15,000 years ago. The biface may have been incorporated then or even during a much later period.

Brian T. Wygal

By Land or Sea? Human Colonization of Southern Alaska

The early prehistory of the Susitna River region provides important regional information about the movement of small-scale foraging societies into southcentral Alaska as well as specific data concerning lithic use. Trapper Creek is strategically located between the Nenana Valley in the central Alaska Range and the earliest occupations of the Pacific coast. If humans colonized eastern Beringia from a coastal or inland route during the terminal Pleistocene, then evidence of this should be found in the archaeological record of the Susitna Valley. Results of lithic analyses including raw material sourcing suggest the initial migration into southcentral Alaska came from north of the central Alaska Range and not from the coastal environments of Cook Inlet. Further research in the region offer a refined understanding of early prehistoric colonization events and contribute to interior versus coastal migration hypotheses for the peopling of the New World.

Alexander Yarnell, Danny Welch and Ted Goebel

Obsidian Transport to Bonneville Estates Rockshelter, Nevada: Implications for Mobility

Bonneville Estates Rockshelter contains a series of well-preserved cultural occupations spanning 13,000 years of prehistory. In this poster we present results of XRF geochemical analysis of obsidians from the shelter, examining how procurement changed through time and how hunter-gatherer technological and settlement organization evolved in the context of environmental change, focusing primarily on terminal Pleistocene to middle Holocene warming and secondarily on patterns during the late Holocene (late Archaic, Fremont, and post-Fremont periods).

Kate Yeske and Julie Esdale

Paleogeography and Early Archaeology of the Tanana Flats, Central Alaska

The landscape of the Tanana Flats in central Alaska during the terminal Pleistocene and early Holocene (13,000-12,000 calendar years ago)

determined the route early hunter-gatherers traveled through eastern Beringia. Evidence of short-term camps and hunting lookouts appear on glacial outwash terrace edges, stabilized vegetated sand dunes, lakeshores, and bedrock hills and ridgelines. This terrain evolved over time; rivers migrated and lakes fluctuated, prominent uplands were established, and flora and fauna transformed as the climate changed. These changes shaped large game movement and hunter-gatherer site location choices and settlement patterns. The paleogeography of this region is mapped by synthesizing stratigraphic data to show how and when gravels were deposited, sediment accumulated, and soils cemented the landscape that contains late Pleistocene archaeology. The oldest radiocarbon date extracted from archaeological sites in the area dates to 11,600 ± 50 RCYBP. This poster reconstructs the paleogeography of the Tanana Flats, providing insight into the implications the changing environment had on human behavior and adaptation.

David Yesner
Changes in Faunal Exploitation Patterns across the Younger Dryas Boundary, Eastern Beringia

Following initial colonization at the end of the late Pleistocene “Birch Period,” early inhabitants of eastern Beringia exploited an eclectic fauna including a wide diversity of bovids, cervids, small game, and birds under mesic conditions associated with the beginning of the “Poplar Rise” in the terminal Pleistocene. The onset of the Younger Dryas, although in many ways less marked than outside northwestern North America, created arid, cold, windy conditions that resulted in reductions of human populations in eastern Beringia. Within a few hundred years after the onset of the Younger Dryas, human groups became re-established, but with an exploitation pattern more narrowly focused on bison. This pattern is even more obvious in the somewhat harsher climates of the southern Yukon than in interior Alaska. The reorganization of human society linked to this pattern is reminiscent of that associated with Folsom cultures and their descendants in the terminal Pleistocene of the northern Plains. Paradoxically, in both areas this pattern continued in association with Hypsithermal warming and associated vegetational change. Drawing on data from the Broken Mammoth, Mead, Gerstle River Quarry, and Little John sites, these patterns are elucidated with the use of faunal, artifactual and settlement pattern data, and connections are drawn to the early Holocene occupation of southcentral Alaska and beyond.

Robert M. Yohe II, Jill K. Gardner, Christopher A. Duran and Beau DeBoer
Lake China Revisited: An Assessment of the Recent Discovery of a Cluster of Clovis Points in Indian Wells Valley on the Naval Air Weapons Station, Southeastern California

During a recent archaeological survey conducted by Epsilon Systems Solutions, Inc., on the Naval Air Weapons Station along portions of the relict shorelines of Pleistocene Lake China, five Clovis points—four of which are complete—were discovered in association with fragmentary and mostly unidentifiable fossilized large mammal remains. To date, these artifacts are the best preserved and least damaged by sandblasting of the Clovis points found within the Lake China Basin. The purpose of

this poster is to provide a complete technological description of these projectile points as well as to report the results of obsidian hydration analysis, protein residue analysis, and use wear studies. Implications regarding the archaeological context of these specimens with respect to Paleoamerican studies in the Desert West are also explored.

Angela Younie, Thomas Gillispie, Lyndsay DiPietro and Christine Fik
Lithic Technologies and Adaptations to Beringian Environments at the Linda's Point Site, Healy Lake, Alaska

The Linda's Point site, located on the shores of Healy Lake in the Tanana River basin of central Alaska, provides a record of human occupation spanning the late Pleistocene and the Holocene, dating as early as 13,000 cal BP. Recent excavations have uncovered a dense concentration of artifacts, including microblades, lanceolate bifaces, and triangular bifaces. The oldest component provides clear evidence for occupation on a stable Bølling-Allerød surface, immediately prior to rapid eolian deposition during the Younger Dryas. It displays characteristics distinct from those of subsequent occupations, indicating unique patterns of mobility, raw material procurement, and site activities that may reveal information about human adaptations to the environmental conditions of the late glacial. Linda's Point is located 1.25 kilometers from the Village site, and exhibits similarities in geological context and cultural materials, providing an opportunity to corroborate research performed there in the 1960s, and to contrast the nature of occupation at two different locations along the lakeshore. Here we present the results of geological and lithic analysis, focusing on occupations dating to Beringian times, and their place within the wider context of Beringian occupation of interior Alaska.

David Zeanah, Robert G. Elston and Brian F. Coddling
Resource Use, Patch Residence Time and the Sexual Division of Labor among Great Basin Foragers during the Pleistocene-Holocene Transition

We use models from behavioral ecology to consider how paleoenvironmental variability of the Pleistocene-Holocene Transition (PHT) structured patch use and the sexual division of labor among Great Basin foragers. We argue that large ungulates were tethered to wetlands, allowing PHT foragers to reliably intercept and procure high return prey. Ethnographic evidence suggests that sexual division of labor would have diverged as artiodactyl populations were locally depressed, explaining the breadth of prey apparent in PHT faunal assemblages. However, abundant wetlands even during the most climatically challenging intervals of the PHT, would have kept travel time between wetlands constant, encouraging regular residential moves and short residence times. Patch choice models predict that foraging strategies would have focused on resources requiring low handling costs explaining the rarity of milling stones in Prearchaic assemblages. Site distributions in Railroad Valley of eastern Nevada accord well with our expectations because they suggest that Prearchaic foragers positioned themselves to simultaneously access wetlands and the intercept hunting opportunities offered by riparian corridors as we expect in a convergent division of labor. We compare site distributions elsewhere in the Great Basin in light of our model.

Thursday, October 17

	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.
Sweeney Ballroom		Oral Symposium 1: Greater Beringia						Oral Symposium 2: Routes & Process					Evening Sym. 1		
Coronado/DeVargas		Poster Symposium 1: Great Plains						Poster Symposium 3: Greater Beringia							
Peralta/Lamy		Poster Symposium 2: Great Basin & Far West						Poster Symposia 4A (Latin America) & 4B (Biol.)							
Exhibition Room	Exhibits on Display														
Nambe Mtng. Room													Round-Table 1		

Friday, October 18

	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.
Sweeney Ballroom		Oral Symposium 3: Clovis						Oral Symposium 4: Clovis Contemp.					Evening Sym. 2		
Coronado/DeVargas		Poster Symposia 5A (Southeast) & 5B (Geology)						Poster Symposia 7A (Taphon.) & 7B (Submerged)							
Peralta/Lamy		Poster Symposia 6A (Northeast) & 6B (Southwest)						Poster Symposia 8A (Technol.) & 8B (New Persp.)							
Exhibition Room	Exhibits on Display														
Nambe Mtng. Room													Round-Table 2		
San Juan Mtng. Room													Round-Table 3		

Saturday, October 19

	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.
Sweeney Ballroom		Oral Symposium 5: Pre-Clovis I						Oral Symposium 6: Pre-Clovis II							
Coronado/DeVargas		Poster Symposium 9: Great Plains													
Peralta/Lamy															
Exhibition Room	Exhibits on Display														
La Fonda Hotel													Banquet		

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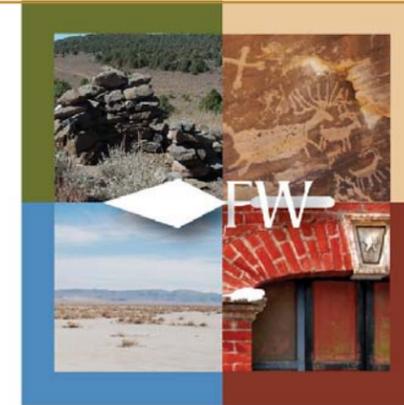
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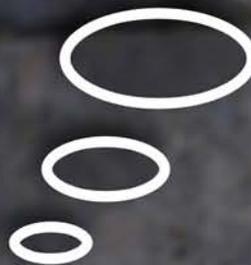
The Lithic Analysis Laboratory at R. Christopher Goodwin & Associates, Inc. is directed by Charlotte D. Pevny, Ph.D. Our Class A laboratory space and analytical facility includes the Nikon AZ100 microscope (up to 340x) and photoimaging software.

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