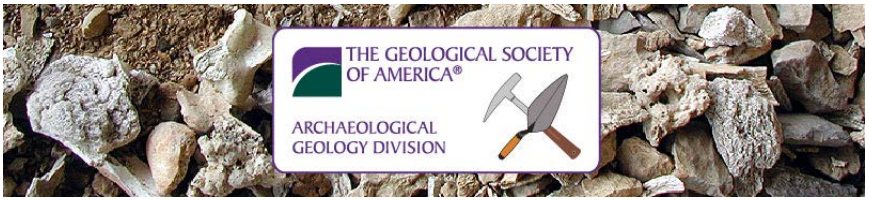

Fall 2014

Newsletter of the Archaeological Geology Division of the Geological Society of America

EDITORS:
Judson Finley (judson.finley@usu.edu) &
Ed Herrmann (edherrma@indiana.edu)

UPCOMING MEETINGS

NATIONAL MEETING OF THE GEOLOGICAL SOCIETY OF AMERICA
October 19-22, 2014
Vancouver, BC, Canada
http://community.geosociety.org/gsa2014/Home/

GSA Archaeological Geology Division Business Meeting & Awards Ceremony: *Monday, October 20, 2014, 5:15-7:00 PM, Vancouver Convention Centre-West Room 122*

ARCHAEOLOGICAL GEOLOGY SESSIONS:

29. Archaeological Geology Posters
Sunday, October 19, 2014, 9:00 AM-5:00 PM, Vancouver Convention Centre-West, Exhibition Hall C

T57. Digital Geology Sandpit I (Digital Posters)
GSA Geoscience Education Division; Archaeological Geology Division (& 12 other divisions)

T59. A Grand Tour of the World's Most Important Geological Sites on Google Earth
GSA Geoscience Education Division; GSA Archaeological Geology Division (& 12 other divisions)
Declan G. De Paor, Steve Whitmeyer and Callan Bentley, Advocates

T85. The Archaeological Record as a Paleoclimatic and Paleoenvironmental Archive
GSA Archaeological Geology Division
Alice R. Kelley and Daniel H. Sandweiss

T86. Coastal Geoarchaeology
GSA Archaeological Geology Division
Eduard Reinhardt and Joseph I. Boyce

T87. Past Human-Environment Interactions
GSA Archaeological Geology Division; GSA Quaternary Geology and Geomorphology Division
Catherine H. Yansa and Albert E. Fulton II

T108. Palynology in Geoarchaeological and Environmental Studies (Posters)
GSA Archaeological Geology Division; Canadian Association of Palynologists; The Palynological Society; Paleontological Society

T241. Paleoenvironmental Reconstruction of Hominin Sites: Techniques—From the Unique and New to the Tried and True
GSA Sedimentary Geology Division; GSA Limnogeology Division; GSA Quaternary Geology and Geomorphology Division; Society for Sedimentary Geology (SEPM)
Cynthia M. Liutkus-Pierce and Gail M. Ashley

CONFERENCES AND WORKSHOPS

IX INQUA Congress
Quaternary Perspectives on Climate Change, Natural Hazards and Civilization
July 27-August 2, 2015, Nagoya, Japan
http://www.inqua2015.jp/

International Association of Geomorphologists Working Group on Geoarchaeology workshop: Landscape Archaeology workshop: From Theory to Practice
November 19-21, 2014 Berlin, Germany
http://www.topoi.org/event/24533/

Middle Palaeolithic in the Desert 2
University of Bordeaux, December 1, 2014
https://sites.google.com/site/middlepalaeolithicdesert/home

Society for American Archaeology Annual Meeting
April 15-19, 2015. San Francisco, CA
http://saa.org/AbouttheSociety/AnnualMeeting/tabid/138/Default.aspx

Association of American Geographers:
New Perspectives in Paleoenvironmental Change and Geoarchaeology
Chicago, IL April 21-25, 2015
Contact Matt Peros (mperos@ubishops.ca)
Abstract Deadline is November 5, 2014

Geoarchaeology Session, AGU-CGU-GAC-MAC
Joint Assembly, May 2015, Montréal
http://ja.agu.org/2015

47th Annual Meeting of the
Canadian Archaeological Association
St. Johns, Newfoundland and Labrador
April 29-May 3, 2015
http://www.mun.ca/caa2015/intro.html

Developing International Geoarchaeology (DIG)
Currently accepting expressions of interest in hosting 2015 annual meeting
http://www.developinginternationalgeoarchaeology.org/7.html

Geological Society of America Regional Section Meetings
South-Central section meeting
March 19-20, 2015 Stillwater, OK
http://www.geosociety.org/Sections/sc/2015mtg/

Southeast Section Meeting
March 19-20, 2015 Chattanooga, TN
http://www.geosociety.org/Sections/se/2015mtg/

Northeast Section Meeting
March 23-25, 2015 Bretton Woods, NH
http://www.geosociety.org/Sections/ne/2015mtg/

Cordilleran Section Meeting
May 11-13, 2015 Anchorage, AK
http://www.geosociety.org/Sections/cord/2015mtg/

North Central Section Meeting
May 19-26, 2015 Madison, WI
http://www.geosociety.org/Sections/nc/2015mtg/

Rocky Mountain Section Meeting
May 21-23, 2015 Casper,WY
http://www.geosociety.org/Sections/rm/2015mtg/

AWARDS

TÜBINGEN PRIZE FOR ICE AGE RESEARCH

The Department of Early Prehistory and Quaternary Ecology of the Institute for Pre- and Protohistory and Archaeology of the Middle Ages at the Eberhard-Karls-University in Tübingen is pleased to announce the 17th award of the Tübingen Prize for Ice Age Research. This prize is sponsored through a donation of 5.000 Euro from Romina Mineralbrunnen GmbH, Reutlingen, Germany. *

The purpose of this prize is to foster innovative research among young scholars studying Ice Age archaeology, Quaternary ecology and human evolution. Submissions may include master's and doctoral theses, published monographs, or similar academic publications. The closing date for all submissions is November 1st, 2014. The prize will be awarded in January 2015. Materials submitted will be returned only by request and on a prearranged basis. Please send applications to the department.

Materials Required: Anyone interested in applying for the prize should include her or his work, typically a doctoral thesis and publications with a short cover letter and a CV.

For more information or to apply:
Prof. Nicholas Conard
Department of Early Prehistory and Quaternary Ecology
Schloss Hohentübingen
72070 Tübingen GERMANY

Submission deadline: November 1, 2014

THE DOUGLAS C. KELLOGG AWARD FOR GEOARCHEOLOGICAL RESEARCH

The Douglas C. Kellogg Award provides support for dissertation research, with emphasis on the field and/or laboratory aspects of this research, for graduate students in the earth sciences and archaeology. Under the auspices of the SAA's Geoarchaeology Interest Group, family, friends, and close associates of Douglas C. Kellogg formed a memorial in his honor.

Eligibility: Recipients of the Kellogg Award will be students who are (1) actively pursuing the Ph.D. degree in earth sciences or archaeology; (2) applying earth science methods to archaeological research and (3) seeking to engage in a career in geoarchaeology.

Materials Required: The application should consist of a research proposal no more than three pages long that describes the research and its potential contributions to American archaeology, a curriculum vita, and two letters of support, including one from the chair that certifies that the student is conducting the proposed research along with the expected date of completion of the degree. Electronic submissions as pdfs sent to the committee chair are preferred. File names must include the applicants surname or last name and the award (Douglas C. Kellogg Fund for Geoarchaeological

Research) must be clearly indicated in the proposal.

For more information contact:
Susan M. Mentzer (susan.mentzer@ifu.uni-tuebingen.de)

Application guidelines:
http://www.saa.org/AbouttheSociety/Awards/DouglasCKelloggFellowshipforGeoarchaeologica/tabid/174/Default.aspx

Submission Deadline: November 30, 2014

Congratulations to our 2014 awardee:
Michael Aiuvalasit!

GEOARCHAEOLOGY INTEREST GROUP M.A./M.S. RESEARCH AWARD

The Geoarchaeology Interest Group M.A./M.S. Research Award provides support for thesis research, with emphasis on the field and/or laboratory aspects, for graduate students in the earth sciences and archaeology.

Eligibility: Recipients of the Geoarchaeology Interest Group M.A./M.S. Research Award will be students who are (1) actively pursuing the M.A. or M.S. degree in earth sciences or archaeology (please indicate which on application); and (2) applying earth science methods to archaeological research.

Materials Required: The application should consist of a research proposal no more than three pages long that describes the research and its potential contributions to American archaeology, a curriculum vita, and two letters of support, including one from the committee chair that certifies that the student is conducting the proposed research along with the expected date of completion of the degree. Electronic submissions as pdfs sent to the committee chair are preferred. File names must include the applicants surname or last name and the award you are applying for must be clearly indicated in the proposal.

For more information contact:
Susan M. Mentzer (susan.mentzer@ifu.uni-tuebingen.de)

Application guidelines:
http://saa.org/AbouttheSociety/Awards/GeoarchaeologyInterestGroupMAMSResearchAward/tabid/1505/Default.aspx

Submission Deadline: November 30, 2014

Congratulations to our 2014 awardee:
Brendan S. Fenerty!

SOCIETY FOR ARCHAEOLOGICAL SCIENCES STUDENT RESEARCH INTERNATIONAL TRAVEL AWARD

The Society for Archaeological Sciences is pleased to announce the creation of the SAS Student Research International Travel Award. Up to $1000 is now available to help with costs of international travel for laboratory or field research to students who have been SAS members for more than one consecutive year.

Eligibility: Applications will be accepted from undergraduates in their final year of study who are planning to attend graduate school as well as Masters degree and PhD students. Research must be undertaken in a different country than that of their home institution. Funds may not be used to attend at conferences, field schools, classes and/or training courses.

For more information contact:
Dr. Michael W. Gregg (greggmic@sas.upenn.edu)

Application guidelines:
http://www.archaeological.org/grants/6473

Submission deadline: 1 February & 1 September annually

FRYXELL AWARD FOR INTERDISCIPLINARY RESEARCH

The Fryxell Award is presented in recognition for interdisciplinary excellence of a scientist who need not be an archaeologist, but whose research has contributed significantly to American archaeology. The award is made possible through the generosity of the family of the late Roald Fryxell, a geologist whose career exemplified the crucial role of multidisciplinary cooperation in archaeology. The award cycles through zoological sciences, botanical sciences, earth sciences, physical sciences, and general interdisciplinary studies. The Fryxell Award for 2015 will be presented in the 'general interdisciplinary' category.

Eligibility: Any professional archaeologist may submit nominations for this award. Nominees must be SAA members by the time of their nomination.

Materials Required: Nominators must submit a letter that describes the nature, scope, and significance of the nominee's contributions to American archaeology, as well as the nominee's curriculum vita. Support letters from other scholars are helpful. Four to six are suggested. Please send submissions to the committee chair.

For more information contact:
Ben Fitzhugh (fitzhugh@uw.edu)

Application guidelines:
http://www.saa.org/AbouttheSociety/Awards/FryxellAwardforInterdisciplinaryResearch/tabid/172/Default.aspx

Nomination/Submission Deadline: 4 February 2014

RIP RAPP AWARD

George "Rip" Rapp, Jr. was one of the primary individuals responsible for establishment of the division and generously established a division award fund with the GSA Foundation. The award is given for outstanding contributions to the interdisciplinary field of archaeological geology.

Materials Required: Nominations should include a biographical sketch, a statement of outstanding achievements, and a selected bibliography of the nominee.

For more information contact:
Rolfe D. Mandel (mandel@ku.edu)

Nomination deadline: 15 February annually

Congratulations to our 2014 awardee, Dr. William R. Dickinson! *Professor Emeritus, Department of Geosciences at the University of Arizona and member of the National Academy of Sciences.* Dickinson is one of the founders of the Gazzi-Dickinson method for determining sandstone provenance using QFL plots**.**
Nominated by: David Killick & Scarlet Chiu

CLAUDE ALBRITTON, JR. AWARD

Under the auspices of the Archaeological Geology Division, family, friends and close associates of Claude C. Albritton, Jr., have formed a memorial fund in his honor at the GSA Foundation.

Eligibility: Recipients of the award are students who have (1) an interest in achieving a Master's or Ph.D. degree in earth sciences or archaeology; (2) an interest in applying earth science methods to archaeological research; and (3) an interest in a career in teaching and academic research.

For more information contact:
Rolfe D. Mandel (mandel@ku.edu)

Application guidelines:
http://www.geosociety.org/arch/studentawards.html

Submission deadline: March 5, annually
Funding & Contributions: Initially, the fund was set up with a gift of several thousand dollars. Members of the division, other GSA members, and those who know Claude are being asked to consider contributing to this fund. To contribute to the Albritton Fund, send your gift to the GSA Foundation, indicating that the gift should go toward this award.

Congratulations to our 2014 awardee, Brendan S. Fenerty!

R.E. TAYLOR STUDENT POSTER AWARD

This prestigious award acknowledges innovative student contributions to archaeological research through the use of scientific methods, and has enhanced the careers of prominent young scholars and professionals for more than a decade. The award is named in honor of Professor Emeritus R. Ervin Taylor of the University of California at Riverside for his outstanding contributions in the development and application of radiocarbon dating in archaeological research and his dedication to the founding of the Society for Archaeological Sciences; his leading role as President (1980) and General Secretary (1981-2002) of the Society; and his committed service as editor of the SAS Bulletin.

Eligibility: Entries will be judged on the significance of the archaeological problem, appropriateness of the methods used, soundness of conclusions, quality of the poster display, and oral presentation of the poster by the student, who should be the first author in order to be considered.

For more information contact:
Destiny Crider (destiny.crider@asu.edu)

Application guidelines:
http://www.socarchsci.org/awards.html

Submission deadline: April 1, 2015

Congratulations to our 2014 awardees, María Teresa Plaza and Marcos Martinon-Torres!

RICHARD HAY STUDENT PAPER/POSTER AWARD

Richard Hay was a long-standing member of the Archaeological Geology Division and had a long and distinguished career in sedimentary geology, mineralogy, and archaeological geology. He is particularly well known for his work on the Olduvai

Gorge and Laetoli hominid-bearing sites and was awarded the Division's Rip Rapp award in 2000. The grant is competitive and will be awarded based on the evaluation of the scientific merit of the research topic and the clarity of an expanded abstract for the paper or poster prepared by a student for presentation in the Division's technical session at the meeting.

Eligibility: The Richard Hay Student Paper/Poster Award is a travel grant awarded to a student presenting a paper or poster at the GSA's annual meeting.

For more information contact:
Rolfe D. Mandel (mandel@ku.edu)

Application guidelines:
http://www.geosociety.org/arch/studentawards.html

Submission deadline: September 20, annually

Funding & Contributions: To contribute to the Hay Award, send your gift to the GSA Foundation, designating the gift for the Archaeological Geology Division Fund.

GEOARCHAEOLOGY: AN INTERNATIONAL JOURNAL

Geoarchaeology is an interdisciplinary journal published six times per year that presents the results of original research at the methodological and theoretical interface between archaeology and the geosciences. It remains the premier peer-reviewed publication emphasizing our discipline. Virtual issues are currently accessible on-line at the journal's website - all virtual issue articles are free for downloading.

You are invited to submit your research to Geoarchaeology. There are three submission categories: research articles, short contributions, and review papers. Manuscripts should examine the interrelationship between archaeology and the various disciplines within Quaternary science and the Earth Sciences more generally, including, for example: geology, geography, geomorphology, pedology, climatology, oceanography, geochemistry, geochronology, and geophysics. We also welcome papers that deal with the biological record of past human activity through the analysis of faunal and botanical remains and palaeoecological reconstructions that shed light on past human-environment interactions.

The journal also welcomes manuscripts concerning the examination and geological context of human fossil remains as well as papers that employ analytical techniques to advance understanding of the composition and origin or material culture such as, for example, ceramics, metals, lithics, building stones, plasters, and cements. Manuscripts reporting on research conducted in Africa, Australia, and South America are especially encouraged.

Manuscript submission and review is fully electronic and processed through Manuscript Central, a web-based program for managing documents in the peer-review process.

Journal Website & Submission Guidelines:
http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1520-6548

Co-editors: Gary Huckleberry & Jamie C. Woodward

For more information contact:
Gary Huckleberry (ghuck@email.arizona.edu)

FEATURED RESEARCH

Freshwater Resources in East Africa Rift Valley: Modern and Ancient (1994-2014)

Gail M. Ashley
Dept. Earth & Planetary Sciences
Rutgers University

My geoarchaeological research over the last two decades has focused on the water resources in arid East Africa that were available to hominins 1-2 million years ago (Olduvai Gorge), Holocene-age hunter-gatherers (Lake Turkana), and modern Hadza hunter-gatherers (Lake Eyasi). We have targeted geological records of lakes and rivers, as well as springs near, or associated with, archaeological sites. Because many of the lakes are saline and rivers seasonal, the research has concentrated on groundwater discharge (GWD) areas. Two studies are briefly summarized below.

Hadzabe, Lake Eyasi, Tanzania

In drylands, where evaporation may be 4-5 times greater than precipitation, groundwater is the only viable source of dependable water. Shielded from evaporation, groundwater may be available even during extended droughts. These questions drive my research: (1) where does the groundwater originate, (2) why groundwater emerges on the land surface where it does, and (3) how dependable is the water supply? I have conducted modern studies mainly in rural areas of Tanzania to

Figure 1. Hadza men prepare for the day's hunt.

avoid anthropogenic impacts on the environment. In 2011 and 2012 I traveled to the foraging area of the Hadzabe (Lake Eyasi) to study their water resources and assess groundwater sustainability. Annual rain fall is seasonal and usually <500 mm. The bedrock is metamorphic, but groundwater seeps into the subsurface via fractures and is stored in shallow aquifers. Water seeps year round into topographic lows, including dry river channels. Initial results suggest that springs are present year round and groundwater flow is sufficient to support a number of small groups (30-40 individuals each) living as hunter- gatherers.

Olduvai Gorge, Tanzania – World Heritage Site

The other aspect of the research involves reconstruction (from the geological record) of paleo springs and wetlands developed on landscapes 1-2 million years old. In conjunction with graduate and undergraduate students from Rutgers, I have conducted research with international scientific teams Olduvai Gorge and Laetoli to better understand the paleoenvironment, in particular the freshwater resources used by early humans. Olduvai is a UNESCO World Heritage site and has a rich archive of fossils and cultural remains up to 2 million years old. Carbonate (tufa) is frequently precipitated from springs and wetlands leaving a permanent mineral record. Stable isotope analyses indicate water was meteoric. The carbonates also contain pollen, diatoms, phytoliths and other plant remains, which provide a record of water and vegetation available to animals and hominins. The geological record of freshwater resources in this arid region provides information on the physical conditions existing in areas where human evolution took place. It may also provide some answers to paleoenvironmental

Figure 2. Groundwater is fresh and seeps into topographic lows during dry seasons.

conditions that existed when humans migrated out-of-Africa to others parts of the world starting at 1.85 million years ago. The wetland occurred ~ 200 meters from the FLK Zinj archaeological site that contained over 3500 bones (7% cut-marked) and stone tools, as well as fossil remains of *Homo Habilis* and *Paranthropus.*

Figure 3. Ashley at an outcrop of tufa (white carbonate deposit) formed in a groundwater-fed wetland (~ 1.8 Ma).

Geoarchaeology Summer Field School at Olduvai Gorge, Tanzania

Jackson Njau
Geological Sciences
Indiana University

Indiana University launched a geoarchaeology field school in 2014 that takes advantage of a well-established research and field instruction facility at Olduvai Gorge, Tanzania. Olduvai is, of course, a famous paleoanthropological site known for discoveries of early hominin fossils by Drs. Louis and Mary Leakey. The goal of this six-week, six-credit course is to give students first-hand experience in the fundamentals of field geology, archaeology and paleontology, and to develop an understanding of the varied contexts for the paleoanthropological record. Detailed geological research by Richard Hay established the stratigraphic sequence and paleoenvironmental contexts of human evolution in the last two million years (*Editors' Note: The AGD student paper/poster award is named in honor of Richard Hay, pioneering geologist at Olduvai Gorge*). The oldest strata (Beds I and II) contain a rich paleoanthropological record preserved in wetland environments. These deposits, which continue to yield fossil remains of robust australopithecines and early *Homo*, as well as stone artifacts, contain many distinct tephra layers that are valuable marker beds correlating archaeological contexts between diverse settings such as offshore lacustrine, lake-margin, fluvial and alluvial fan environments.

Figure 1. Outcrop in Geological Locality 80 in Olduvai Gorge.

Ongoing research at Olduvai investigates the role of environmental and tectonic forcing in shaping human evolution. To achieve this goal we recently initiated a drilling program to collect long, continuous sediment cores with the aim of obtaining datable high-resolution

Figure 2. Second Fault, Olduvai Gorge. Ngorongoro Volcanic Highlands seen behind.

paleoclimate and paleoenvironmental records (e.g., fossils, organic matter, tephrostratigraphy, geochronology and other material that are frequently degraded in outcrops). The drill cores provide great improvement in reconstructing hominin paleoenvironments compared to currently available outcrop records.

A training program is at the center of this project, which aims to provide undergraduate and graduate students the opportunity to learn about physical and biological processes of evolution within geological contexts.

Comparative Island Ecodynamics

Ian Simpson, Sarah Christie, Frank Feeley, Paul Ledger
Christian Madsen, Michael Nielsen, and Lilja Pállsdóttir
North Atlantic Biocultural Organisation

Anthrosols in Greenland's Norse Settlement

Archaeological survey of Norse settlements (ca. A D 1000–1500) in Greenland's outer fjords identified organised groupings of major and smaller farms together with shieling sites. The homefield areas of the farms all have drier generally podsolised areas where amended soils of varying thicknesses overlie landnám surfaces. Our field findings indicate fully functioning farms and intensive management for fodder production in areas previously thought to be marginal for livestock-based agriculture.

Excavations of booths at the 15th and 16th century fishing station of Gufuskálar revealed a series of hearths in different phases of the site. Residues associated with

Figure 1. Site Ø129, Norse Eastern Settlement, Greenland

Figure 2. Anthrosol (dark) horizon, Site Ø129 Norse Eastern Settlement, Greenland

Hearths and fuel residues evident at Gufuskálar Fishing Station, Snæfellsnes Iceland

the hearths and examined through thin section micromorphology indicate high-quality carbon-rich peats as the primary fuel source fired within a turf lined hearth. Peat of this quality is not evident in the vicinity of the site because of eroded mineral material additions. Our observations suggest importing of fuel resources to the site.

We acknowledge NSF support through the Comparative Island Ecodynamics in the North Atlantic programme.

Figure 3. Excavation at Gufuskálar, Snæfellsnes Iceland

Figure 4. Hearth and fuel residues, Gufuskálar, Snæfellsnes Iceland

Geoarchaeological Investigations at La Ferrassie, Dordogne, SW France

Vera Aldeias
(Department of Human Evolution, Max Planck Institute)
Paul Goldberg
(Institute for Archaeological Sciences, University of Tübingen; Centre for Archaeological Science, University of Wollongong; Boston University)

La Ferrassie (Dordogne, France) is a long-known Upper and Middle Paleolithic site with several Neanderthal human remains. Until now, most of the research has focused on the eastern sedimentary sequence left by previous excavations. Recent excavations since 2010, along with geoarchaeological research, have more clearly exposed intact layers in the western part of the site. Examination of the sedimentary sequences there prompted a reevaluation of the nature of the archaeological occupations and formation processes.

The overall aims of the project are

1) Establish the stratigraphic framework at La Ferrassie
2) Reconstruct the sedimentary history (origin of the deposits, agents of accumulations, syn- and post-depositional modifications)
3) Address the stratigraphic context of the human occupations
4) Verify the stratigraphic association of the Neanderthal remains at the site

Figure 1. Photomosaic of the La Ferrassie rockshelter and stratigraphic deposits.

Although the work is still ongoing, we have been able to document a number of depositional processes, including roof fall accumulation, solifluction in the lower Mousterian deposits, and inputs of aeolian dust (loess). Anthropogenic additions are limited in the lower part of the Mousterian basal deposits but become much more abundant in the last part of the Mousterian and up through the Châtelperronian and Aurignacian deposits. These later deposits are extremely rich in bone and flint and organic matter, and constitute a dryfall talus cone derived from a platform and cave above the western excavations. The above Mousterian and Upper Paleolithic assemblages were deposited through syn-depositional slope processes, which did not result in major reworking of time-distinct occupations.

NOTES FROM THE FIELD

Christian Wells (University of South Florida) worked with **Georgia Fox** (CSU-Chico) at Betty's Hope, an historical sugarcane plantation in Antigua, British West Indies. The team characterized and sampled two catenas adjacent to the main settlement to evaluate how long-term (1650-1980) monocropping has impacted the soilscape. Wells and graduate student, **Suzanna Pratt**, are modeling landscape productivity and degradation using E.P.I.C. with soil/sediment data, comparing results to plantation archives that record 300 years of changing agricultural productivity.

Ryan Parish (University of Memphis) and colleagues continue to develop reflectance spectroscopy as a nondestructive, fast, and low-cost chert sourcing method. The team sourced Mississippian Period ceremonial bifaces and Late Paleoindian artifacts from the Lower Tennessee River Valley to understand movement and resource selection. Parish collected 3,000 samples from 100 chert deposits in the Midwest and Southeast and the positive results characterize materials from both geologic formations and archaeological deposits.

PhD candidate **Stuart Nealis** (University of Kentucky) conducted geoarchaeological fieldwork at Portsmouth Earthworks, Greenup County, Kentucky and nearby Portsmouth, Ohio. Nealis performed a gradiometer survey over 11 hectares followed by core and auger sampling. Preliminary results from Squier and Davis' (1848) Group C indicate that concentric rings may no longer be present due to cultivation, but the central mound is still intact. The mound contains a large central feature and a perimeter ring of alternating high and low magnetic features. Preliminary mound-edge cores evidence discrete burned areas useful for radiocarbon dating.

MS student **Hillary Jones** (Utah State University) conducted thesis research along the north shore of Montana's Lima Reservoir where erosion exposed sediments containing three Paleoindian sites, each with highly distinct depositional sequences. Jones mapped seven stratigraphic locations and collected eight optically stimulated luminescence (OSL) samples for age control and participated in **Tammy Rittenour's** (Utah State University) two-week intensive luminescence dating short course.

Floyd McCoy (University of Hawaii) conducted field research on Crete along with **Curtis Runnels** and **Priscilla Murray** (Boston University), and **Robert Bauslaugh** (Brevard College). The team identified Palaeolithic artifacts in Quaternary alluvial fan deposits at Mochlos further documenting the presence of archaic hominids in Crete. This research bears important implications for early intentional and directed open-sea travel.

Elizabeth Graham's (Archaeology UCL) multi-disciplinary and multi-institutional research team studied how modern soils (Maya 'dark earths') and vegetation reflect long-term anthropogenic contributions to soil formation processes. The Marco Gonzalez site, located on a coral island off Belize's north coast, allows the team to control for parent materials unaffected by anthropogenic activity. Ongoing studies document

sediments, soils, ancient and modern vegetation, faunal remains, residues, and disturbance agents (e.g. land crabs).

Bill Eckerle (Western GeoArch Research), collaborating with Utah State University Archaeological Services **Ken Cannon**, evaluated the effectiveness of geophysical survey combined with small diameter augering for assessing site potential at Camp Guernsey in Wyoming's Hartville Uplift. Eckerle worked with Western Archaeological Services in the Jonah natural gas field, upper Green River Basin, Wyoming to determine the age and paleoenvironmental significance of a conspicuous and widespread, rubified B horizon and its relationship to Early and Middle Archaic occupations. Eckerle also conducted geoarchaeology on the Cascade Canyon glacial moraine that dams Jenny Lake in Grand Teton National Park where complex geomorphic relationships between valley glacier recession and glacio-fluvial outwash from the Yellowstone ice cap complicate cultural chronostratigraphic units.

Grant Snitker, **Micahel Barton**, and **Sean Bergin** (Arizona State University) and **Joan Bernebeu Audan** (Universitat de València) led archaeological survey, vegetation survey, and geological reconnaissance in the Canals de Navarrés valley, eastern Spain as part of the NSF-funded Mediterranean Landscape Dynamics Project The group field-tested iPads linked to high-resolution geospatial data to identify, map, and record data for survey areas. iPads performed well under field conditions and allowed for survey data to be quickly integrated in an existing spatial database.

Jennifer Kielhofer (University of Arizona) participated in geoarchaeological field research in central Alaska working in the middle Tanana River Valley's Shaw Creek Flats. Kielhofer excavated three archaeological sites overlooking Quartz Lake. The project expanded old test units, found new datable features and artifacts, and completed stratigraphic descriptions. Excavations at Keystone Dune revealed a hearth feature and the first in situ artifacts and faunal remains. A deeper cultural component and older soils at the Cook site may date >9,000 cal BP. This field season expanded the chronology of human foraging and land use, landscape evolution, and paleoecology in the subarctic lowlands.

Metcalf Archaeological Consultants, Inc. performed geoarchaeological coring and trenching within western North Dakota's Knife River Flint (KRF) Primary Source Area (PSA) as part of an ongoing highway expansion project. These efforts identify landscapes that contain late Pleistocene to Holocene deposits while assessing their potential to yield buried cultural materials that will further understandings of the archaeological record and uses of KRF within the PSA.

Bosiljka Gumac (Smith College) and **Scott Fitzpatrick** (University of Oregon) presented a paper entitled "Yapese Stone Money: Local Marble as a Potential Inspiration for Producing Limestone Exchange Valuables in Palau, Micronesia" at "The Cultures of Stone: Interdisciplinary Research on the Materiality of Stone" Conference at University College Dublin, Ireland in September 2014. Professors Glumac and Fitzpatrick worked on relating the geological settings of the islands of Palau and Yap in the western Pacific to the source material and a possible impetus for carving large disk-shaped artifacts, often referred to as "stone money," from speleothem flowstone in caves on Palau and their watercraft transport of more than 400 km to Yap, mainly between c. AD 1400-1900.