

Deanna N. Grimstead Curriculum Vitae

Contact Information:

Department of Anthropology
The Ohio State University
4034 Smith Laboratory, 174 W. 18th Ave.
Columbus, OH 43210-1106, U.S.A
Tele: (530) 570-7615; e-mail: deanna.grimstead@gmail.com

Education

Ph. D., Anthropology, with Geosciences emphasis, University of Arizona, 2011.
Committee: Drs. Mary C. Stiner (*co-chair*), Jay Quade (*co-chair*), Barnet Pavao-Zuckerman, David Dettman, and Barbara Mills
M. A., Anthropology, California State University, Chico, 2005, with distinction.
Committee: Drs. Frank E. Bayham (Chair), Greg G. White, and Jelmer Eerkens
B. A., Anthropology, California State University, Chico, 2001, with honors in general education and Anthropology, Dean's Honor Role List 1998 - 2001.

Research Foci

Evolutionary ecology; Geochemistry; Zooarchaeology; Human adaptive responses to climate and environmental change, Human behavioral ecology of foraging, horticultural, and agricultural societies.

Academic Appointments (current appointments underlined)

Assistant Professor, Department of Anthropology, The Ohio State University, Fall 2013 – present.
Primary Investigator, Comparative Zooarchaeology Lab, Department of Anthropology, The Ohio State University, Fall 2013 – present.
Primary Investigator, Archaeological Isotope Lab, Department of Anthropology, The Ohio State University, Fall 2013 – present.
Co-Primary Investigator, Radiogenic Isotope Laboratory, School of Earth Sciences, Spring 2014 – 2017.
Adjunct Lecturer, University of Arizona, Fall 2011, Fall 2012, Spring 2013.
Instructor of Record, Department of Anthropology, University of Arizona, Spring 2010 & Winter 2010 – 2011.
Primary Investigator, Anthropological Services, Chico, California: 06/2007 – 08/2009.
Zooarchaeology Lab Manager, California State University, Chico: 05/2005 – 05/2006.
Archaeologist, Lassen National Forest: 05/2004 – 08/2004 & 06/2005 – 08/2006.
Archaeological Field and Lab Technician, California State University, Chico: 01/30/04 – 02/28/04.
Osteological Lab Assistant, Calif. State Univ., Chico: 3/01/99 – 04/30/99.

Publications (* denotes students)

Books and Monographs:

Grimstead, Deanna N., Joan Coltrain, and Alyson Thibodeau

In Prep *Isotope Archaeology*. (Prospectus stage).

Willey, P., Paulette Leach, and **Deanna N. Grimstead**

1999 *Analysis of Human Bones Attributed to the Civil War Battle of Wilson's Creek: The Kerr-Glidwell and Manion's Auction Collection*. Midwest Archaeological Center, National Park Service, Lincoln, Nebraska.

Journal articles and book chapters:

Grimstead, Deanna N., Selin Nugent*, Sara McGuire*

major revisions Differential bioavailability of strontium in food, implications for ⁸⁷Sr/⁸⁶Sr sourcing in bone and teeth. *Current Anthropology*.

Grimstead, Deanna N., Matthew C. Pailes, and R. Kyle Bocinsky

2017 Refining potential source regions via combined maize niche modeling and isotopes: A case study from Chaco Canyon, NM, USA. *Journal of Archaeological Method and Theory* Published on-line: DOI: 10.1007/s10816-017-9359-6.

Grimstead, Deanna N., Adam Rezac*, and Amy E. Clark

2017 Uranium and Vanadium Concentrations as a Trace Element Method for Identifying Diagenetically Altered Bone in the Inorganic Phase. *Journal of Archaeological Method and Theory* Published on-line: DOI 10.1007/s10816-017-9353-z.

Grimstead, Deanna N., Jean Whipple, and Selin Nugent*

2017 Why a Standardization of Strontium Isotope Baseline Environmental Data are Needed and Recommendations for Methodology. *Advances in Archaeological Practice* 5(2):184-195.

Grimstead, Deanna N. & Barnet Pavao-Zuckerman

2016 Historical continuity in Southern Arizona free-range ranching practices: Carbon, oxygen, and strontium isotope evidence from two 18th-Century missions. *Journal of Archaeological Science: Reports* 7:37-47.

Grimstead, Deanna N., Jay Quade, Mary C. Stiner

2016 Isotopic Evidence for Long-Distance Procurement and Resource Depletion, Chaco Canyon, New Mexico. *Geoarchaeology* 31:335-354. Published online 2015.

Grimstead, Deanna N., Reynolds, Amanda C., Hudson, Adam M.*, Akins, Nancy J., and Betancourt, Julio L.

2016 Using strontium isotope population variance in turkey remains to evaluate domestication: A case study from Chaco Canyon, New Mexico, U.S.A. *Journal of Archaeological Method and Theory* 23:127-149. Published on-line 2014.

- Grimstead, Deanna N.**, Buck, Sharon*, Vierra, Bradley J., and Benson, Larry
 2015 Another Possible Source of Archaeological Maize found in Chaco Canyon, NM: The Tohatchi Flats area, NM, USA. *Journal of Archaeological Science: Reports* 3:181-187.
- Grimstead, Deanna N.**, Matthew C. Pailles*, Katherine A. Dungan*, David L. Dettman, Natalia Martinez Tagüeña*, and Amy E. Clark*
 2013 Identifying the Origin of Southwestern Shell: A Geochemical Application to Mogollon Rim Archaeomolluscs. *American Antiquity* 78(4):640 – 661.
- Grimstead, Deanna N.** and Frank E. Bayham
 2013 Feasting at the Marana Platform Mound. In *Power and Economy in Early Classic Period Hohokam Society: An Archaeological Perspective from the Marana Mound Site*, edited by James M. Bayman, Paul R. Fish, and Suzanne K. Fish, pp. 152-190. Arizona State Museum Series, Tucson.
- Grimstead, Deanna N.**
 2012 Prestige and Prejudice: The Role of Long Distance Big Game Hunting as an Optimal Foraging Decision. *American Antiquity* 77(1):168 – 178.
- Grimstead, Deanna N.**
 2011 Contradictions and Compliments: The Use of Geochemistry and Body Part Utility Analysis to Detect Non-Local Procurement Strategies during the Late Holocene in Northern California. In *Exploring Methods of Faunal Analysis: Perspectives from California Archaeology*, edited by Michael A. Glassow and Terry L. Joslin, Pp. 33 - 52. Cotsen Institute Press, Los Angeles.
- Grimstead, Deanna N.** and Frank E. Bayham
 2010 Evolutionary Ecology, Elite Feasting, and the Hohokam: A Case Study from a Southern Arizona Platform Mound. *American Antiquity* 75(4):1-25.
- Grimstead, Deanna N.**
 2010 Ethnographic and Modeled Costs of Long-Distance Big Game Hunting. *American Antiquity* 75(1):61-80.
- Pavao-Zuckerman, Barnet and **Deanna N. Grimstead**
 2009 Isotopes in Livestock Teeth Shed Light on Ranching Practices at Spanish Missions. *Glyphs* 59(7):8-9.

Articles submitted:

Quade, Jay, Susan Mentzer, **Deanna N. Grimstead**, Mary Stiner, Gunes Duru, and Mihriban Özbasaran.

Submitted Building a Neolithic Tell: Carbonates Inputs at Asıklı Höyük (Turkey). *Geoarchaeology*.

Articles in prep (anticipated submittal date)

Kennett, Douglas, J., Brendan J. Culleton, **Deanna N. Grimstead**, Laurence R. Bird, and Katherine Freeman

2018 High-Precision AMS ^{14}C , $^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{18}\text{O}$, $\delta^{13}\text{C}$, and $\delta^{15}\text{N}$ Analyses of the Tuqan Man Remains: A 10,000 Year Old Paleoamerican Skeleton from CA-SMI-608, San Miguel Island, California. *Manuscript in prep for the PNAS*. (80% complete)

Grimstead, Deanna N.

2018 Prairie Dog for Dinner Again? Analysis of prey Choice at Chaco Canyon, New Mexico. *Manuscript in prep for Journal of Archaeological Science: Reports*. (50% complete).

Grimstead, Deanna N., Laurie Reitsema, Carey Garland, and Bradley Vierra

2018 An Evaluation of Garden Hunting via Carbon Isotopes in the Chuska Valley, Tohatchi Flats, New Mexico, USA, with Implications for Management of Modern Agricultural Pests: Part I, Deer. *Manuscript in prep for PLOS ONE*. (70% complete)

Grimstead, Deanna N., Laurie Reitsema, Carey Garland, and Bradley Vierra

2018 An Evaluation of Garden Hunting via Carbon Isotopes in the Chuska Valley, Tohatchi Flats, New Mexico, USA, with Implications for Management of Modern Agricultural Pests: Part II, Prairie Dogs. *Manuscript in prep for PLOS ONE*. (10% complete)

Catherine E. Mendel, **Deanna N. Grimstead**, Joan Brenner Coltrain, Aaron Comstock, Harlan McCaffery, Tiffany A. Rawlings, Erin Thornton, and Bradley J. Vierra

2018 Persistence in Turkey Husbandry Practices in the Southwest and Four Corners Region: The isotopic and ethnohistorical evidence. *Manuscript in prep for American Antiquity*. (60% complete)

Grimstead, Deanna N., Kristina Crawford, and Carolynn Osborn

2019 Older and Wiser: A Re-analysis of Non-Local Deer Procurmen at Thompson Canyon, California. *Manuscript in prep for the Journal of California and Great Basin Archaeology*. (20% complete).

Newby, Sean* and **Deanna N. Grimstead**

2019 Inter-lab comparison of strontium isotope ratios ($^{87}\text{Sr}/^{86}\text{Sr}$) in modern mammalian bone and teeth. *Journal of Archaeological Science: Reports* (60% complete)

Grimstead, Deanna N. and Shannon Nastold*

2019 The Signification of Costly Signaling: An Evaluation of Visibility from Moundville, Alabama. *Manuscript in prep for American Antiquity*. (60% complete)

Grimstead, Deanna N., Denise M. Furlong, and Jim Nelson

2020 Identification of social elites in prehistoric Northern California (CA-SHA-1043). *Manuscript in prep for the Journal of California and Great Basin Archaeology*. (10% complete)

Orsborn, Rachel*, Aaron Comstock*, **Deanna N. Grimstead**, and Jules Angel

2020 Environment and ecology of Late Fort Ancient fresh water mollusk subsistence practices, Proctorville, Ohio, U.S.A. *Manuscript in prep for Journal of Ohio Archaeology*. (20% complete)

Young, Colin* & **Deanna N. Grimstead**

2020 Maya Bloodletting as a Costly Signal. *Manuscript in prep for Human Nature*. (20% complete)

Reports & Miscellaneous Publications:

Kennett, Douglas, J., Brendan J. Culleton, **Deanna N. Grimstead**, Laurence R. Bird, and Katherine Freeman

2016 *High-Precision AMS ^{14}C , $^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{18}\text{O}$, $\delta^{13}\text{C}$, and $\delta^{15}\text{N}$ Analyses of the Tuqan Man Remains: A 10,000 Year Old Paleoamerican Skeleton from CA-SMI-608, San Miguel Island, California*. Final report submitted to the Channel Island National Park Service, California.

Kennett, Douglas, J., Brendan J. Culleton, **Deanna N. Grimstead**, Laurence R. Bird, and Katherine Freeman

2015 *High-Precision AMS ^{14}C , $^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{18}\text{O}$, $\delta^{13}\text{C}$, and $\delta^{15}\text{N}$ Analyses of the Tuqan Man Remains: A 10,000 Year Old Paleoamerican Skeleton from CA-SMI-608, San Miguel Island, California*. Preliminary report submitted to the Channel Island National Park Service, California.

Grimstead, Deanna N.

2011 *Applications of Evolutionary Ecology and Isotope Geochemistry Shed Light on North American Prehistoric Human Behavior and Regional Procurement Systems*. Ph.D. Dissertation, Department of Anthropology, University of Arizona.

Grimstead, Deanna N.

2005 *Tracking Artiodactyl Hunting Across Late Period Northern California: An Assessment of Traditional and Geochemical Methods*. M. A. Thesis, California State University, Chico.

Dalton, Kevin and **Deanna N. Grimstead**

2005 *Faunal Analysis of FBI Case No. ***-2005, Auburn County, California*. Report Submitted to the Federal Bureau of Investigations, Sacramento, May 2005.

Westwood, Lisa, **Deanna N. Grimstead**, and Brandon E. Patterson

2004 *Archaeological Survey Report for the Sierra Source Project, Near Chilcoot, Plumas County, California.* February 18. Chico: California State University, Chico, Archaeological Research Program.

Grants, Fellowships, Research Contracts

- Successful Internal Review - Planned Submittal Jan. 2018* NSF-MRI:
Acquisition of a Multi-Collector Inductively Coupled Plasma Mass Spectrometer for Earth and Environmental Sciences, The Ohio State University. Co-PIs: Elizabeth Griffith, Thomas Darrach, Lonnie Thompson, W. Berry Lyons, John W. Olesik, Andrea Grottoli; Co-Is: Bryan Mark, Paolo Gabrielli, Matthew R. Saltzman, **Deanna Grimstead** (\$610,250)
- Planned Submittal July 2018* NSF-Senior Archaeologist: *Examining the Impact of the Younger Dryas to Occupants of Dust Cave, Alabama and deer populations via isotope sourcing, aDNA, and modeling.* PI: Shane Miller; Co-PI: **Deanna N. Grimstead**; Senior Personnel: Renee Walker (~\$200,000).
- Planned Submittal July 2018* NSF-Senior Archaeologist: *Maize, Migration, and the Establishment of Village Institutions in the Middle Ohio Valley: isotopes, ancient DNA, and ethnohistory informs the relationships between maize and community making among early Native American societies.* PI: Aaron Comstock; Co-PIs: Deanna N. Grimstead, Robert Cook, Kristen Gremillion; Senior Personnel: Frederika Kaestle (~250,000).
- Submitted* NSF-Senior Archaeologist: *Networks of Exchange and Networks of Ideology: A Marine Shell Isotope Based Analysis.* **PI: Deanna N. Grimstead**; Co-PIs: Matthew Pailes (\$280,000).
- 2017 Marianna Russell Technology Grant. **PI: Deanna N. Grimstead** (The Ohio State University: \$1,500).
- 2017 Ohio Archaeological Council Patricia Essenpreis Memorial Grant: *An Evaluation of Maize Niche Construction in the Ohio Valley, Ohio, USA for the Development of Garden Hunting Patches.* **PI: Deanna N. Grimstead**; Co-PI Aaron Comstock, Catherine Mendel, and Robert Cook. (\$1,100).
- 2016 Cobb Institute of Archaeology Research Fund: *Did the Occupants of Dust Cave, Alabama Even Notice the Younger Dryas?: Examining Logistical Mobility using Strontium Isotopes from Faunal Remains.* PI: Shane Miller; Co-PIs: **Deanna N. Grimstead** and Renee Walker (Mississippi State University: \$2,300).
- 2015 Research contract from National Park Service (NPS) (\$5,768).
- 2014 Research contract from Statistical Research Inc., sub-contracted under New Mexico Department of Transportation (NMDOT), project number G5B16. (\$14,000)
- 2007-2011 USA Funds Scholar (4 year federal scholarship: \$1,500/year)
- 2011 William A. Longacre Scholarship (University of Arizona: \$300)
- 2011 Louie and Francis-Fera Schiffer Scholarship (Univ. of Arizona: \$300)
- 2010 Emil W. Haury Education Fund Research Grant (Univ. of Arizona: \$500)
- 2010 Arizona Archaeological and Historical Society Scholarship: (\$500)

- 2009 P.E.O. Venture Neal Trust Named Scholar (International Society: \$15,000 research Scholarship)
- 2009 William G. McGinnies Arid Lands Scholarship (Univ. of Arizona: \$1,000)
- 2008 Social and Behavioral Sciences Research Institute Dissertation Research Grant (University of Arizona: \$800)
- 2008 William Shirley Fulton Scholarship (Univ. of Arizona: \$800)
- 2008 Louie and Frances-Fera Scholarship (Univ. of Arizona: \$800)
- 2008 Joe Ben Wheat Research Award (Colorado State Museum: \$2,500)
- 2008 William Self and Associates, Inc. Research Scholarship Co-recipient (A National Cultural Research Management firm: \$5,000).
- 2008 Fred Plog Memorial Fellowship (Society for American Archaeology: \$1,000)
- 2008 SAA Student Research Award (Society for American Archaeology: \$1,000)
- 2007 Emil W. Haury Education Fund Research Grant (Univ. of Arizona: \$1,000)
- 2007 Social and Behavioral Sciences Research Institute Pre-Doctoral Graduate Research Grant (Univ. of Arizona: \$600)
- 2007 Riecker Research Grant (Univ. of Arizona: \$600)
- 2006-2007 NSF IGERT traineeship in archaeological science (1 year: Tuition - ~\$17,000, research grant - \$3,500, and stipend - \$30,000)
- 2004 James A. Bennyhoff Memorial Award, co-recipient. (Society for California Archaeology Student Award: 100 obsidian hydration rim values, 50 obsidian source determination, 4 AMS dates, and \$1,000)

Awards

- 2017 Distinguished Undergraduate Research Mentor (DURM) Award
(*nomination*)

Professional Presentations:

Mendel, Catherine and **Deanna N. Grimstead**

- 2018 *Persistence in Turkey Husbandry Practices in the Southwest and Four Corners Region: The Isotopic and Ethnohistorical Evidence*. Poster presented at the Society for American Archaeology, Annual Conference, Washington, D.C., April 13th, 2018.

Grimstead, Deanna N., Jay Quade, and Mary C. Stiner

- 2017 *Isotopic Evidence for Long-Distance Mammal Procurement, Chaco Canyon, New Mexico, USA*. Paper presentation at the Society for American Archaeology, Annual Conference, Vancouver, B.C., March 31st, 2017. (**Invited**)

Grimstead, Deanna N. and Barnet Pavao-Zuckerman

- 2016 *Historical continuity in Southern Arizona free range ranching practices: Carbon, oxygen, and strontium isotope evidence from two 18th-Century missions*. Paper presentation at the Society for American Archaeology, Annual Conference, Orlando, FL, April 9th, 2016. (**Invited**)

Grimstead, Deanna N.

- 2015 *Revealing the Ecological and Behavioral Contexts of Pueblo Bonito Subsistence Strategies: Evidence from Isotopes in Archaeofauna ($^{87}\text{Sr}/^{86}\text{Sr}_{\text{bioapatite}}$, $\delta^{18}\text{O}_{\text{bioapatite}}$, & $\delta^{13}\text{C}_{\text{bioapatite}}$)*. University of Cincinnati Anthropology Lecture Series sponsored by the Charles Phelps Taft Research Center. Cincinnati, Ohio, November 5th, 2015. **(Invited)**
Barnet Pavao-Zuckerman, **Deanna N. Grimstead**, Nicole Mathwich, Jeremy Moss, Alex Ruff, and J. Homer Thiel
- 2015 *Archaeological Perspectives on Spanish Colonial Ranching and Water Use in the Santa Cruz River Valley*. Paper presented at the 7th annual Santa Cruz River Research Days, Tucson, Arizona, March 26th, 2015. **(Invited)**
Grimstead, Deanna N., Hudson, Adam M., Reynolds, Amanda C., Betancourt, Julio L., and Akins, Nancy J.
- 2014 *Use of strontium isotope ratio variability to assess the presence of domesticated turkeys within Chaco Canyon archaeofauna*. Paper presented at the 12th International Conference of Archaeozoology, San Rafael, Argentina, September 23rd, 2014. **(Invited)**
Grimstead, Deanna N.
- 2014 *Identifying the Origin of Southwestern Shell: A Geochemical Application to Mogollon Rim Archaeomolluscs*. Invited speaker, Department of Anthropology, University of Utah, Salt Lake City, Utah, February, 2014.
Grimstead, Deanna N.
- 2013 *A Preliminary Report of the Archaeofauna from Three Sites in the Río Sonora Region of México*. Paper presented at the 9th Annual Stanley J. Olsen Memorial Conference, Eagle Lake, CA, July 20th, 2013.
Grimstead, Deanna N.
- 2012 *The human behavioral ecology of turkey domestication: A model and ancestral Puebloan case study from Chaco Canyon, New Mexico*. Paper presented at the 33rd Great Basin Anthropological Conference, Stateline, NV, October 19th, 2012. **(Invited)**
Grimstead, Deanna N.
- 2012 *The use of strontium isotope ratio variability to assess the presence of domesticated turkeys within Chaco Canyon Archaeofauna*. Paper presented at the 8th Annual Stanley J. Olsen Memorial Conference, Eagle Lake, CA, July 21st, 2012.
Grimstead, Deanna N.
- 2011 *The Origin of Pueblo Bonito Food: Evidence from Isotopic ($^{87}\text{Sr}/^{86}\text{Sr}$ and $\delta^{18}\text{O}$) Sourcing of Archaeofauna*. Paper presented at the 7th Annual Stanley J. Olsen Memorial Conference, Eagle Lake, CA, July 23rd, 2011.
Grimstead, Deanna N.
- 2010 *Where Did You Get That? A Paleoecological Reconstruction of Local Habitat Mammalian Availability and Regional Animal Procurement, Chaco Canyon, New Mexico*. Paper presented at the Amerind Foundation Seminar on “Current Issues in the Archaeology of Chaco Canyon, A.D. 850 – 1150”, Dragoon, AZ, October 11th, 2010. **(Invited)**
Grimstead, Deanna N., Katherine Dungan, Matthew Pailles, Natalia Martinez

- 2009 *Applying Signaling Theory to Shell Procurement Behavior in the Prehistoric Southwest: A case study in geochemical sourcing of ^{13}C - ^{14}C Mogollon Rim shell artifacts.* Paper presented at the 5th Annual Stanley J. Olsen Memorial Zooarchaeology Conference, Eagle Lake, CA, July 18th, 2009.
- Grimstead, Deanna N.**
- 2009 *Spatial Patterns of Archaeofauna Procurement at Pueblo Bonito Chaco Canyon, New Mexico: Evidence from geographic ($^{87}\text{Sr}/^{86}\text{Sr}$ ratios) and topographic ($\delta^{18}\text{O}$) sourcing techniques.* Paper presentation at the Society for American Archaeology, Annual Conference, Atlanta, GA, March 25th, 2009.
- Dungan, Katherine, **Deanna N. Grimstead**, Mathew Pailles, and Natalia Martinez
- 2009 *Shell Procurement Behavior in the Prehistoric Southwest: Geochemical and GIS Methods.* Paper presentation at the Society for American Archaeology, Annual Conference, Atlanta, GA March 25th, 2009.
- Pavao-Zuckerman, Barnet and **Deanna N. Grimstead**
- 2009 *Landscapes, Livestock, and Land-Use Practices at 18th-Century Pimería Alta Missions.* Paper presentation at the Society for American Archaeology, Annual Conference, Atlanta, GA March 25th, 2009.
- Grimstead, Deanna N.**
- 2008 *Spatial Patterns of Resource Procurement and Distribution at Chaco Canyon, New Mexico: A Multi-Isotopic Look at the Archaeofaunal Evidence.* Paper presented at the Stanley J. Olsen Memorial Zooarchaeology Conference, Eagle Lake, CA, July 25th, 2008.
- Grimstead, Deanna N.** and Amanda C. Reynolds
- 2008 *Spatial and Temporal Patterns of Resource Intensification from $^{87}\text{Sr}/^{86}\text{Sr}$ ratios of Archaeofauna derived from Chaco Canyon, New Mexico.* Poster presented at the Society for American Archaeology, Annual Conference, Vancouver, B.C., March 27th, 2008.
- Grimstead, Deanna N.** and Frank E. Bayham
- 2007 *The Signification of Costly Signaling: An Evaluation of Visibility in Prehistory.* Paper presented at the Society for California Archaeology, Annual Conference, San Jose, March 18th, 2007. (**Invited**)
- Bayham, Frank E. and **Deanna N. Grimstead**
- 2006 *Social Implications of a Small Mammal Feast in the Prehistoric North American Southwest.* Paper presented at the International Council for Archaeozoology, International Conference, Mexico City, August 24th, 2006. (**Invited**)
- Grimstead, Deanna N.**
- 2005 *Using Geochemistry to Source Archaeofaunal Remains in Northern California.* Paper presented at the 2nd Annual Stanley J. Olsen Memorial Zooarchaeology Conference, Eagle Lake, July 30th – 31st.
- Grimstead, Deanna N.**
- 2004 *Where Did the Hunters Hunt? Detecting Distant Patch Utilization via Trace Element Analysis of Artiodactyl Bone.* Poster presented at the 39th

Annual Meetings of the Society for California Archaeology, Sacramento,
April 21 – 24, 2005.

Grimstead, Deanna N., Frank E. Bayham, and Michael J. Boley

2004 *Archaeofaunal Associations at the Marana Platform Mound: Evidence of Feasting?* Paper presented at the Annual Meetings of the Society for American Archaeology, Montreal, April 2, 2004. **(Invited)**

Service & Synergistic Activities

Reviews of Manuscripts:

Advances in Archaeological Practice
American Antiquity
Chemical Geology
Current Anthropology
Earth System Science Data (ESSD)
Journal of Archaeological Method and Theory
Journal of Archaeological Science: Reports
Journal of California and Great Basin Anthropology
PLoS One

Reviews of Books and Book Proposals:

2016 Review of text book for Thames & Hudson, *Principles of Archaeology: A New Look*, T. Douglas Price and Kelly Knudson.
2016 Review of book proposal for Thames & Hudson, *Principles of Archaeology: A New Look*, T. Douglas Price and Kelly Knudson.

Grant/Fellowship Reviewer

2017 – 2020 Fred Plog Memorial Fellowship Committee member and reviewer.
2017 American Association for University Women Fellowship Panelist.
2016 American Association for University Women Fellowship Panelist.
2014 National Science Foundation Graduate Research Fellowship Panelist.

Conferences Organized:

2015 11th Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-organizer**). Eagle Lake, California. July 17th – 19th, 2015.
2014 Tenth Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-organizer**). Eagle Lake, California. July 18th – 20th, 2014.
2013 Ninth Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-Organizer**). Eagle Lake, California. July 19th – 21st, 2013.
2012 Eighth Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-Organizer**). Eagle Lake, California. July 27th – July 29th, 2012.
2011 Seventh Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-Organizer**). Eagle Lake, California. July 29th – July 31st, 2011.
2010 Sixth Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-Organizer**). Eagle Lake, California. July 16th – July 26th, 2010.
2009 Fifth Annual Stanley J. Olsen Memorial Zooarchaeology Conference (**Co-Organizer**). Eagle Lake, California. July 18th – July 29th, 2009.

Organized Symposia:

- 2014 Environment and Ecology of Zooarchaeological Remains. Symposium organized for the International Council of Archaeozoology Meetings, San Rafael, Argentina, Sept. 22 – 27th, 2014. (**Organizer**)
- 2007 *Human Behavioral Ecology and California Archaeology*. Symposium organized for the Society of California Archaeology Annual Meetings in San Jose, 2007. (**Organizer**)

Committees:

- 2017-2020 Society for American Archaeology Fred Plog Memorial Fellowship Committee member
- 2017-2019 Society for American Archaeology Zooarchaeology Interest Group Co-Chair
- 2017-2018 OSU Department of Anthropology Awards Committee member
- 2017-Present Undergraduate Anthropology Club Advisor.
- 2016-2017 OSU Department of Anthropology Awards Committee member
- 2015-2016 OSU Department of Anthropology Awards Committee member
- 2015-2016 OSU Department of Anthropology Diversity Committee member
- 2014-2015 OSU Department of Anthropology Diversity Committee member

Outreach:

- 2017 Glacial Princess Race Horse Recovery, collaboration with horse racing enthusiasts to recovery Glacial Princess from the Beulah Race Park grounds to have her added to the Circle of Champions, Kentucky Horse Park.
- 2017 NPR Interview by Angus Chen for, “Bison or Brain? From a Calorie Perspective, Cannibalism Didn’t pay for Paleo Humans”, in the series: the salt – what’s on your plate, food for thought. URL: <http://www.npr.org/sections/thesalt/2017/04/06/522880018/what-s-the-dietary-value-of-a-human>
- 2015 Wright Brother’s institute, Divergent Collaboration Think Tank Participant, December, 2015.
- 2015 Wright Brother’s institute, Divergent Collaboration Think Tank Participant, June, 2015.
- 2014 Archaeology Career Shadowing for gifted 7th and 8th graders of Licking County, Ohio, October 30th, 2014.
- 2014 Wright Brother’s institute, Divergent Collaboration Think Tank Participant, February, 2014.
- 2014 Wright Brother’s institute, Divergent Collaboration Think Tank Participant, October, 2014.

Volunteerism:

- 2008 – 2013 Pima County Search and Recovery Divers, Board of Directors.
- 2007 Manager of Paleoenvironmental Lab, University of Arizona
- 2006 – 2013 Search and Recovery Diver for Southern Arizona Rescue Association (SARA).

- 2006 – 2007 Assisted in archaeological public outreach for the Rio Nuevo Project: a reconstruction of a historic Spanish Mission and surrounding community.
- 2003 – 2004 Zooarchaeology lab manager, California State University, Chico.
- 2003 – 2006 Rescue Diver for the Butte County Interagency Rescue Group, California.
- 1998 – 2006 Volunteer Fire Fighter for the Butte County Fire Department, California.

Professional Membership:

- 2015 – Present Ohio Academy of Science
- 2010 – 2014 Arizona Archaeological and Historical Society
- 2007 – 2011 Society for Animal Behavior
- 2007 – Present Register of Professional Archaeologists
- 2006 – Present International Council for Archaeozoology
- 2001 – Present Society for American Archaeology; member of zooarchaeology and geoarchaeology interest groups
- 2001 – Present Society for California Archaeology

Advising & Mentoring

Graduated students:

Sharon M. Buck (M.A., May, 2015) – M.A. thesis title: The Growing Divide: Understanding Emergent Social Inequality in San Pedro de Atacama, Chile during the Middle Horizon through Bioarchaeology.

Undergraduate students:

Catherine Mendel (Dual Major: Anthropology and Evolutionary Ecology and Organismal Biology) – Senior Thesis Title: Impacts of Invasive Species in the Sonoran Desert, AZ on Human Subsistence Strategies. (Current)

Publications

Mendel, Catherine, Deanna. N. Grimstead, Joan Coltrain, and Bradley J. Vierra. 2017. An Evaluation of Turkey Foddering and Management via Carbon and Nitrogen Isotopes in the Chuska Valley, Tohatchi Flats, New Mexico, USA. *Manuscript in prep for American Antiquity*. (40% complete)

Fellowships, Awards, and Honors

- 2017 First Place in Social and Behavioral Sciences, The Ohio State University Denman Undergraduate Research Forum Poster Competition.
- 2017 First Place in the Natural and Mathematical Sciences, The Ohio State University, Undergraduate Research Poster Competition.

Sean, Newby (Dual Major: Earth and Environmental Sciences and Anthropology) – Senior Honors Thesis Title: Seawater ⁸⁷Sr/⁸⁶Sr Stratigraphy of the Middle Ordovician in Central Virginia. (Graduated)

Shannon Nastold (Anthropology Major) – Senior Thesis Title: The Signification of Costly Signaling: An Evaluation of Visibility from Moundville, Alabama.

Nicolas Alexandre (Anthropology Major) – Senior Thesis Title: A Zooarchaeological Analysis of Mule Creek, AZ Fauna (2012).

Emily Sheen (Honors student) – Honors Thesis Title: Bipedality and Energetics: Evidence from Non-human Primates (2012).

Graduate students:

Katy Marklein (Anthropology Ph.D. student, 2013 – 2015) – Her dissertation will look at six mass graves, as well as contemporaneous multi-generational graves, to assess pathogen virulence and human physiological susceptibility to disease.

Sara A. McGuire (Anthropology Ph.D. student, 2014 – 2016) - Her dissertation will look at the impact of pollution, production, and industrialization on health through an analysis of the isotopic content of bone, focusing on carbon and known pollutants such as lead and arsenic.

Fellowship: The Ohio State University, University Fellowship, 2013-2014

Selin Nugent (Anthropology Ph.D. student, 2013 – 2016) - Her dissertation concerns the relationship between mobile pastoralist and the emergent urban centers of the Bronze-Iron Age (2400-800 BCE) South Caucasus, Azerbaijan.

Leigh Oldershaw (Anthropology Ph.D. student, 2013 - 2014) – Her dissertation assesses the role that identity construction played in the formation of the Roman Hispania, in order to increase our understanding of Roman-Iberian interaction.

Daniel Peart (Anthropology Ph.D. student, 2014 – current) – ABD.

Marissa Stewart (Anthropology Ph.D. student, 2013 - 2016) – Her dissertation focuses on mortuary behavior in Medieval Tuscany analyzed via spatial distribution of burial patterns and osteological features.

Teaching Experience

Assistant Professor (Ohio State University):

Archaeology Laboratory Methods, Spring 2014,
Fundamentals of Archaeology, Spring 2014, 2015, 2017; Fall 2016
Isotope Archaeology, Fall 2013
New World Prehistory – Ancient Maya, Fall 2014, Spring 2017, 2018
Survey of World Prehistory, Fall 2017
Zooarchaeology: Comparative osteology for archaeologists, Spring 2015

Adjunct Lecturer (University of Arizona):

Patterns in Prehistory, Spring 2013, Fall 2012
Principles of Archaeology, Fall 2012
The Origins of Human Diversity, Fall 2011

Instructor of Record (University of Arizona):

Patterns In Prehistory, Winter 2010-2011

The Origins of Human Diversity, Spring 2010

Teaching Assistant (University of Arizona & C.S.U., Chico):

Statistics in Archaeology, Spring 2008, Fall 2006 & 2003.

Human Behavioral Ecology, Spring 2005.

Zooarchaeology, Fall 2003 & 2007.

Geochemical Projects

Tuqan Man, NAGPRA collaboration with the National Park Service: This collaboration brings together researchers from The Ohio State University, Penn State, and the National Park Service with the goal of identifying the goal of aiding in determining the geographical origin of an approximately 10,000 year old human burial to assist in identifying the most likely descendant population. The burial was unearthed on the Santa Catalina Islands, the ancestral home of the Chumash. **CoPI Grimstead** conducted strontium isotope analyses to rule out likely regions of origin. A PNAS article for this project is forth coming.

Paisley Cave Paleo- Lake and ecology reconstruction: In collaboration with researchers from the University of Oregon, Oregon State University, Central Washington University, USGS, and the Ohio State University, this project seeks to use carbon, oxygen, and strontium isotopes from archaeofaunal fish remains to reconstruct the Paleolake levels of Chewuacan Lake and current day Lake Summer and Abert Lake, Southeastern Oregon. Shoreline reconstruction and zooarchaeological analyses will assist in better understanding the paleoecology of this region in context of the Paleoindians that inhabited Paisley Cave.

Inter-tribal Buffer zone project:

Models from evolutionary ecology suggest competition for high-ranking artiodactyls may have influenced the dynamic nature of cultural territories and competition over contested regions lying between sedentary communities. Modern and historical accounts of these contested zones (inter-tribal buffer zones) have been shown to contain the highest density of animals including artiodactyls, partially as a result of resource depression in the areas immediately surrounding the communities, and also as a result of the known phenomenon of warring when encountering another tribe. It is likely these buffer zones existed prehistorically, and **Prof. Deanna Grimstead** and her students will source ($^{87}\text{Sr}/^{86}\text{Sr}$ and $\delta^{18}\text{O}$) artiodactyls from two contemporary prehistoric village sites in Northern California in an attempt to evaluate if intertribal boundaries existed in the Atsugewi, Maidu and Northern Paiute cultural regions. These village sites span the medieval climatic anomaly, thus the broader implication of this research seeks to assess how this complex human-ecological phenomenon may have impacted people's capacity to adapt to climate and environmental change, and if evidence of inter-personal violence increased during times of climate stress. It is hoped this research will provide insight into the possible human behavior and capacity of small village communities to adapt during climate change in the modern era.

Turpin, Southern Ohio (33 HA 139): This rich zooarchaeological assemblage spans the period of the adoption and intensification of maize agriculture. In the Ohio Valley, USA dated maize cobs in the archaeological record occur approximately 1,000 years before wide spread adoption for human subsistence as evidence via carbon isotopes. This project will use carbon and oxygen isotopes to assess if deer and turkey were accessing maize prior to human adoption of maize as a subsistence base. If deer and turkey were accessing maize prior to this time, then it is likely humans were using agricultural fields to attract highly preferred animals such as turkeys and deer. This project is awaiting mass spectrometry.

Chaco Canyon Corn Sourcing:

Combining archaeology and surface-water hydrology this study sought to understand the source of corn recovered from Chaco Canyon, New Mexico. The Chacoan complex is striking both for its command of regional exchange networks and its brief existence. Great Houses built within Chaco Canyon, including Pueblo Bonito, were on an unparalleled scale of size, architectural planning, and complexity among surrounding Puebloan communities of the time. Chaco Canyon is a World Heritage site located in the San Juan Basin of New Mexico. The intensification of agricultural practices, trade networks, and large community building projects correlates with peaks in prehistoric human occupation (~A.D. 850 – 1150). Environmental and isotopic evidence from architectural timbers shows overland transportation from mountain forests 80 – 150 km to Chaco Canyon, while imports of corn, ceramics, and lithics originate from a variety of non-local sources. One possible source of the corn is 90km to the west at the base of the Chuska slopes. There are three large km-scale field systems in the Newcomb area that may have served as the "breadbasket" for the Chacoan political system whose great houses line Chaco Canyon. These field systems were fed by intermittent surface-water runoff from such systems as Captain Toms Wash which heads in the Chuska Mountains. The objective of the surface-water study would be to assess the availability of surface water and precipitation on the field systems relative to the growing of maize. **Prof. Deanna Grimstead** and her students will measure $^{87}\text{Sr}/^{86}\text{Sr}$ and $\delta^{18}\text{O}$ to assess if this previously unstudied region could in fact have been a possible source for corn. (Summer 2014 – present)

Archaeofauna Sourcing of the National Park Service Chaco Project Artiodactyls, Lagomorphs, and Rodents: This project asks how far the Chacoans were obtaining their animal protein from. A sample of the more than 200,000 archaeofaunal specimens has undergone strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) and oxygen ($\delta^{18}\text{O}$) isotopic analyses in an effort to discriminate a likely region of origin. These results show evidence of long distance procurement of Artiodactyls (>60km) and non-local procurement of lagomorphs and rodents suggestive of garden hunting. All $^{87}\text{Sr}/^{86}\text{Sr}$ analyses have been run by myself on a Sector 54 Thermal Ionization Mass Spectrometer (TIMS) at the University of Arizona's Geochronology Laboratory. All $\delta^{18}\text{O}$ analyses have been run on an automated carbonate preparation device (KIEL-III) coupled to a gas-ratio mass spectrometer (Finnigan MAT 252). (Fall 2009 – Present)

Southwestern Shell Sourcing: This project developed a geographic sourcing model utilizing $\delta^{18}O$ and $\delta^{13}C$. This model, which is based upon modern shell data, is capable of distinguishing shell obtained from either the Pacific Ocean or the Gulf of California, and further distinguishes 3 distinct sub-regions within the Gulf of California, north of the Sonora-Sinaloa Mexican State borders. This model was applied to a 13-14th Century case Study from the Mogollon Rim, Arizona, where it was shown that all almost the entire sampled assemblage was procured from the extreme Northern Gulf of California or the closest region to the site. All $\delta^{18}O$ analyses have been run on an automated carbonate preparation device (KIEL-III) coupled to a gas-ratio mass spectrometer (Finnigan MAT 252). NSF grant funding to support additional research has been submitted (Summer 2008 – current)

Mission San Agustín del Tucson, located in Tucson, Arizona, U.S.A. (excavated by Desert Archaeology, Inc.), and Mission Nuestra Señora del Pilar y Santiago de Cocospera, Sonora, Mexico (excavated by the Instituto Nacional de Antropología e Historia): $\delta^{18}O$ and $\delta^{13}C$ from Cattle and Caprine teeth were sampled in order to determine if corn foddering was occurring and if the water management practices of the modern were similar to those in the past. Because of the complications associated with CAM and naturally available C4 plants in the desert southwest the $\delta^{13}C$ ratio results were unable to identify a percentage of maize foddering, but it was determined that these animals were not 100% foddered by maize. $\delta^{18}O$ results showed that historic period cattle and caprine water management practices were similar to the modern free ranging cattle ranching practices of southern Arizona. That is, animals are restricted from riverine habitats, and water for the animals are contained within stock ponds that undergo significant evaporation within the desert southwest climate. (Spring 2009 – Summer 2010)

Aşıklı Höyük Domestication Project: This project seeks to isotopically ($^{87}Sr/^{86}Sr$ and $\delta^{18}O$) distinguish pre-domesticated, proto-domesticated, and post-domesticated sheep (*Ovis orientalis* - *Ovis aries*), hopefully providing a more exact method for temporally identifying this transition when paired with zooarchaeological morphometrics. Current dates for Aşıklı Höyük range between 10,500 – 9,300 calYBP, and the oldest layers of the mound have not been dated, making this potentially one of the earliest examples of animal domestication in the Old World. This project has been undertaken in cooperation with the Turkish University of Istanbul, the university of Arizona, and Rochester Institute of Technology. J. Quade and D. Grimstead collected modern materials in the summer of 2010, and $^{87}Sr/^{86}Sr$ analyses have been run by myself on a Sector 54 Thermal Ionization Mass Spectrometer (TIMS) at the University of Arizona's Geochronology Laboratory. All $\delta^{18}O$ analyses have been run on an automated carbonate preparation device (KIEL-III) coupled to a gas-ratio mass spectrometer (Finnigan MAT 252). (Summer 2010 – Present)

Thompson Canyon (CA-COL-267): This research developed a trace element sourcing model for Northern California based upon modern deer specimens. The model was applied to a Northern California archaeofaunal assemblage, Thompson Canyon, demonstrating that most deer were procured from distances greater than 30 kilometers

from the habitation site. Samples prepared for ICP-MS analyses by myself, and run by the University of Californian at Davis Mass Spectrometry Laboratory. (Fall 2002)

Zooarchaeology Projects

Turpin, Southern Ohio (33 HA 139): This rich zooarchaeological assemblage spans the period of the adoption and intensification of maize agriculture, making it an ideal assemblage to assess resource intensification of fauna across the same time period, as well as subsistence changes that may have occurred as a result of changing labor investments in agriculture. The Ohio Valley, USA remains one of a few regions in North America where zooarchaeological investigations are lacking. The assemblage contains ~200,000 specimens and analyses are ongoing.

Proctorville, Proctorville, Ohio: A large assemblage of early Fort Ancient archaeofaunal remains recovered from a salvage excavation under the current Proctorville library. Archaeomollusks have been identified, and a paper is currently being revised for journal publication. This paper assesses resource intensification using taxa evenness and richness while looking to modern conservation implications. Zooarchaeological analyses continue on the remainder of the assemblage.

Rio Moctezuma, Sonora, Mexico: Nine adobe structures from 3 sites were excavated by Matt Pailes, near the town of Moctezuma, Sonora, in the summer of 2012. These sites may span from 1100 A.D. to the protohistoric period (dating in progress). Faunal analysis completed, report writing stage. (June – December 2012)

Antelope Creek Evaluation, Tehama County, California: Several midden mounds located in North Eastern California have been excavated by the Lassen National Forest over the past two decades. Analysis of the faunal remains has been completed for Lassen National Forest sites: 05-06-51-008, 05-06-51-701, 05-06-51-014, and 05-06-51-004. These sites generally consist of middle to late period prehistoric occupations, and the faunal assemblages total over 20,000 specimens. (January - August 2006)

Black Rock Camp Ground, Tehama County, California (05-06-51-159): This assemblage contained 80 specimens of unknown origin. The analysis was conducted with the intent of determining whether the assemblage resulted from historic, prehistoric, or modern occupation. (July 2006)

Yellow Creek Sample, Lassen County, California (05-06-51-735): A very small and significantly weathered faunal assemblage (114 total specimens) was associated with several features at a historic mining site including: a cabin, a trash dump (“D”), a possibly privy, and a general trash scatter. Analysis of the faunal assemblage led to the conclusion that the lack of local fauna, presence of historic butchery techniques, and presence of moderate quality meat cuts most accurately represents a middle class Euro-American occupation. (May 2006)

Marana Platform Mound: Classic Period Hohokam faunal assemblage, Marana, Arizona (Compound 9, Room 9 and Compound 1, Room 1). This project included the supervision

of zooarchaeology students who worked on the assemblage, as well as the identification and analysis of over 3,000 specimens. (Summer 2002 – Spring 2003)

Thompson Canyon (CA-COL-268): Prehistoric faunal assemblage from the Cache Creek drainage, Colusa County, California. Analyses from a Late Period burial recovery included approximately 2,000 faunal specimens. (Fall 2002)