

UNIVERSITY OF UTAH ARCHAEOLOGICAL CENTER**Report of Activities, 1998-2002**

The University of Utah Archaeological Center is an arm of the Department of Anthropology. Founded in 1948 as the "Statewide Archaeological Survey," its original mission was to investigate the prehistoric archaeology of Utah. Under the leadership of its first Director, Jesse Jennings, it pursued an aggressive program of fieldwork and laboratory research, resulting in hundreds of publications on the archaeology of the eastern Great Basin and northern Colorado Plateau.

In 1978, the Survey was re-named the "University of Utah Archaeological Center," and James O'Connell appointed to replace Jennings as Director. Since then, the Center has continued to maintain its interest in regional research, but has also broadened its focus to include other aspects of prehistoric human ecology and evolution.

The Center is housed in the Stewart Building, just south of the Utah Museum of Natural History, on the University of Utah campus. It has two large laboratory rooms for teaching and research, a zoo-archaeological comparative collection, a small library, an archive of local research records, and a store of field equipment. It provides office space for staff, including the dozen or so graduate students usually involved in Center research at any given time. It is also the hub of the Anthropology Department's computing network. Most faculty and graduate students in the Department make at least some use of the Center's facilities; 20-25 faculty and graduate students do so routinely.

From 1998-2002, Center staff included the Director, Executive Secretary Jennifer Graves, Laboratory Manager Brianna Kramer, Museum Liaisons Rachel Quist and Shannon Arnold. Faculty most closely connected with the Center's research efforts were Jack Broughton, Kristen Hawkes, Duncan Metcalfe, Richard Paine, and Alan Rogers. Douglas Bird and Rebecca Bliege-Bird (now at the University of Maine) were post-doctoral associates in 1997-98 and 2000-01; Joan Coltrain acted in the same capacity from 1998 onward.

Graduate students most closely involved with the Center during 1997-2002 were:

Peter Ainsworth	Helen Alvarez	Shannon Arnold
Renee Barlow	Bonnie Bass	Kelly Beck
Jason Bright	David Byers	Tiffany Bustin
Edward Christensen	Douglas Edwards	Melissa Heck
Jude Higgins	Kim Holanda	Lori Hunsaker

Brian McEneaney	Jacki Massimino	Danny Mullins
Ellen Nelson	Christopher Parker	Jacki Rabb
Dominique Rampton	Brian Robertson	Shannen Robson
Karyn Sharp	Corinne Springer	Andrew Ugan
	Siiri Wilson	

Undergraduates similarly involved included:

Julie Allen	Shannon Arnold	Jed Banta
Bonnie Bass	Joel Boomgarden	James Burreston
Tiffany Bustin	Jessica Dalton	Jill Haslam
Laurel Heap	Deb Jensen	Ryan Jensen
Marinel Kniesley	Derinna Kopp	Robert Lindquist
Adam McLaughlin	Katie Paraskeva	Ellen Nelson
Greg Nelson	Kare Neve	Audrey Prothro
Rachel Quist	Shannen Robson	Corinne Springer
Josh Trammel	David Victor	Sage Wall
Jana Wallace	Emilie Warden	Dan Webber

### Research

The attached appendix lists all grants, contracts, dissertations, theses, presented papers and publications produced by Center associates from January 1998-December 2002. Most of this work can be grouped under six headings:

- Western North American archaeology. Specific research topics include regional chronology, prehistoric hunter-gatherer ecology and technology, and the spread of prehistoric agriculture in the northern Colorado Plateau and eastern Great Basin.
- Ecology of modern hunter-gatherers. Research on time allocation, foraging returns and variation therein by age and sex among the Hadza of East Africa, the Meriam of Torres Strait, and the Mardu of Western Australia; implications for research on long-term human evolution.
- Experimental and ethno-archaeology. Economics of resource exploitation, with special emphasis on maize, acorns, geophytes and large ungulates; analyses of modern hunter-gatherer site structure.
- Evolution of human life history. Special emphases on life history changes associated with the Plio-Pleistocene transition in East Africa, and with the onset of modern climatic conditions in Europe.
- Stable carbon isotopes and molecular genetics. Investigations of the relationship between climate change, population replacement and subsistence economies in the eastern Great Basin and North American Arctic.

- Eastern Great Basin climate and environment. Special attention to the Pleistocene/Holocene transition in the eastern Basin.

### **Teaching**

The Center is the main departmental venue for coursework on non-human osteology (Anth 4272 - Zooarchaeology) and archaeological methodology (Anth 4341 - Fundamentals of Archaeology). It also provides workspace for graduate and undergraduate research projects, commonly organized in cooperation with the Utah Museum of Natural History (Anth 4950 - Individual Studies). It also provides field equipment and lab space for the archaeological field school, run as a co-operative venture by the Department and the Museum.

### **Service**

The Center maintains a large archive of basic data on local archaeology, and routinely responds to inquiries from the public on a wide range of archaeological topics. Center associates (both faculty and graduate students) serve on several state-wide boards involved in the management of archaeological resources, and also play an important role in the Utah Professional Archaeological Council, the most prominent group of professional archaeologists in the state.

## PUBLICATIONS

**Books and monographs**

Broughton, J. M. (ed.)

- 1999 Resource Depression and Intensification during the Late Holocene, San Francisco Bay: Evidence from the Emeryville Shellmound Vertebrate Fauna. University of California Anthropological Records 32.

**Journal articles and book chapters**

Bentley, G. R., R. R. Paine and J. L. Boldsen

- 2001 Fertility changes with the prehistoric transition to agriculture: Perspectives from reproductive ecology and paleodemography. In Reproductive Ecology and Human Evolution, edited by Peter T. Ellison, pp. 203-231. Chicago: Aldine.

Bliege Bird, R., and D. W. Bird

- 2002 Aboriginal burning regimes and hunting strategies in Australia's West Desert. Proceedings of the Royal Society, Ser. B. (in press).

Blurton Jones, N. G., K. Hawkes and J. F. O'Connell

- 2000 Antiquity of post-reproductive life: Are there modern impacts on hunter-gatherer post-reproductive life spans? American Journal of Human Biology 14:184-205.

1999 Some current ideas about the evolution of human life

- history. In Comparative Primate Socioecology, edited by P. C. Lee, pp. 140-166. Cambridge: Cambridge University Press.

Blurton Jones, N. G., F. Marlowe, K. Hawkes and J. F. O'Connell

- 2000 Hunter-gatherer divorce rates and the paternal provisioning theory of human monogamy. In Human Behavior and Adaptation: An Anthropological Perspective, edited by L. Cronk, N. Chagnon and W. Irons, pp. 69-90. Hawthorne, NY: Aldine de Gruyter.

Bright, J. R.

- 2002 Institutional constraints on economic and social fluidity during the eastern Great Basin Formative: Bioarchaeology and the sexual division of labor. Utah Archaeology (in press).

- Bright, J. R., and C. J. Loveland  
 1999 A biological perspective on prehistoric human adaptation in the Great Salt Lake wetlands. In Prehistoric Lifeways in the Great Basin Wetlands: Bioarchaeological Reconstruction and Interpretation, edited by B. E. Hemphill and C. S. Larsen, pp. 103-116. Salt Lake City: University of Utah Press.
- Bright, J. R., and A. Ugan  
 1999 Ceramics and mobility: Assessing the role of foraging behavior and its implications for culture-history. Utah Archaeology 12:17-29.
- Bright, J. R., A. Ugan and L. Hunsaker  
 2002 The effect of handling time on subsistence technology. World Archaeology 34:164-181.
- Broughton, J. M.  
 2002 Pre-Columbian human impact on California vertebrates: Evidence from old bones and implications for wilderness policy. In Wilderness and Political Ecology: Aboriginal Influences and the Original State of Nature, edited by C.E. Kay, and R. T. Simmons. Salt Lake City: University of Utah Press (in press).
- Human optimal foraging strategies: An overview. Encyclopedia of Evolution, edited by M. Pagel, pp. 521-523. Oxford: Oxford University Press.
- Why didn't native Californians farm? Encyclopedia of Evolution, edited by M. Pagel, pp. 522. Oxford: Oxford University Press.
- Measuring resource depression with archaeological faunas: Insights from the Emeryville Shellmound vertebrate record. World Archaeology 34:60-83.
- 2001 Resource intensification and Late Holocene human impacts on Pacific Coast bird populations: Evidence from the Emeryville Shellmound avifauna. In Posing Questions for a Scientific Archaeology, edited by T. Hunt, C. Lipo, and S. Sterling, pp. 251-278. Westport, CT: Greenwood Publishing.
- 2000 The Homestead Cave ichthyofauna. In Late Quaternary Paleoecology in the Bonneville Basin, edited by D. Madsen, pp. 103-121. Salt Lake City: Utah Geological Survey Bulletin 130.
- Cathedral Cave fishes. In Late Quaternary Paleoecology in the Bonneville Basin, edited by D. Madsen, pp. 134-135. Salt Lake City: Utah Geological Survey Bulletin 130.

Terminal Pleistocene fish remains from Homestead Cave, Utah, and implications for fish biogeography in the Bonneville Basin. Copeia 2000:645-656.

Broughton, J. M., and J. F. O'Connell

1999 On evolutionary ecology, selectionist archaeology, and behavioral archaeology. American Antiquity 62:153-165.

Broughton, J. M., D. B. Madsen and J. Quade

2000 Fish remains from Homestead Cave and lake levels of the past 13,000 years in the Bonneville Basin. Quaternary Research 53: 392-401.

Broughton, J. M., D. Rampton and K. Holanda

2002 A test of an osteologically-based age determination method in the Double-crested Cormorant (Phalacrocorax auritus). Ibis: The International Journal of Avian Science 144:143-146.

Coltrain, J. B., J. Field, R. Cosgrove, and J. F. O'Connell

2002 Stable isotope and protein analysis of Genyornis remains from Cuddie Springs: Implications for site chronology and the timing of megafaunal extinctions. Archaeology in Oceania (submitted).

Coltrain, J. B., J. M. Harris, T. E. Cerling, J. R. Ehleringer, M.

Dearing, J. Ward, and J. Allen

2002 Trophic level relationships among Rancho La Brea fauna and their implications for the paleoecology of the Late Pleistocene based on bone collagen stable isotope chemistry. Palaeogeography, Palaeoclimatology, Palaeoecology (submitted).

Coltrain, J. B., M. Geoffrey Hayes, and D. H. O'Rourke

2002 Sealing, whaling and caribou: The skeletal isotope chemistry of eastern Arctic foragers. Arctic Anthropology (submitted).

Coltrain, J. B., and S. W. Leavitt

2002 Climate and diet in Fremont prehistory: Economic variability and abandonment of maize agriculture in the Great Salt Lake Basin. American Antiquity 67:1-33.

Coltrain, J. B., and T. W. Stafford, Jr.

1999 Stable carbon isotopes and Salt Lake wetlands diet: Towards an understanding of the Great Basin Formative. In Prehistoric Lifeways in the Great Basin Wetlands: Bioarchaeological Reconstruction and Interpretation, edited by B. E. Hemphill and C. S. Larsen, pp. 55-83. Salt Lake City: University of Utah Press.

- Cosgrove, R., J. F. O'Connell, J. Coltrain, J. Field, J. Allen, A. Goede and U. Zoppi  
n.d. New evidence for late survival of megafauna in Tasmania: implications for human-megafauna interaction (circulating).
- Harpending, H. C., and A. R. Rogers  
2000 Genetic perspectives on human origins and differentiation. Annual Review of Genomics and Human Genetics 1:361-385.
- Harpending, H., M. Batzer, M. Gurven, L. Jorde, A. Rogers and S. Sherry  
1998 Genetic traces of ancient demography. Proceedings of the National Academy of Science (USA) 95:1961-1967.
- Hawkes, K.  
2002 Mating, parenting and the evolution of human pair bonds. In Kinship and Behavior in Primates, edited by B. Chapais and C. Berman. Oxford: Oxford University Press (in press).
- Grandmothers and the evolution of human longevity. American Journal of Human Biology (in press).
- 2001 Is meat the hunter's property? Ownership and explanations of hunting and sharing. In Meat-eating and Human Evolution, edited by C. Stanford and H. Bunn, pp. 219-236. Oxford: Oxford University Press.
- 2000 Big game hunting and the evolution of egalitarian societies: Lessons from the Hadza. In Hierarchies in Action: Cui Bono?, edited by M. Diehl. Center for Archaeological Investigations, Occasional Paper 27:59-83. Carbondale: Southern Illinois University Press.
- n.d. Male mating competition and human evolution: Sexual divisions of labor, and multiple fatherhood. For Symposium on Partible Paternity, organized by S. Beckerman and P. Valentine (circulating).
- n.d. Showing off and the evolution of men's work. For Signs of Quality: The handicap principal in biology, economics, and culture; A joint workshop. University College London (circulating).
- Hawkes, K., and R. Bliege Bird  
2002 Showing off, handicap signaling and the evolution of men's work. Evolutionary Anthropology 11:58-67.
- Hawkes, K., J. F. O'Connell and N. Blurton Jones  
2001 Hadza meat sharing. Evolution and Human Behavior 22:113-142.

Hadza hunting and the evolution of nuclear families. Current Anthropology 42:681-709.

The evolution of human life histories: Primate tradeoffs, grandmothereing, socioecology and the fossil record. In The Role of Life Histories in Primate Socioecology, edited by P. Kappeler and M. Pereira. Chicago: University of Chicago Press (in press).

2000 Why do women have mid-life menopause? Grandmothereing and the evolution of human longevity. In Female Reproductive Aging, edited by E. R. te Velde, P. L. Pearson and F. J. Broekmans, pp. 27-42. New York: Pantheon.

Hawkes, K., J. F. O'Connell, N. G. Blurton Jones, H. Alvarez and E. L. Charnov

1998 Grandmothereing, menopause, and the evolution of human life histories. Proceedings of the National Academy of Science (USA) 95:1336-1339.

Hawkes, K., J. F. O'Connell, N. G. Blurton Jones, E. L. Charnov and H. Alvarez

2000 The grandmother hypothesis and human evolution. In Human Behavior and Adaptation: An Anthropological Perspective, edited by L. Cronk, N. Chagnon and W. Irons, pp. 237-258. Hawthorne, NY: Aldine de Gruyter.

Hayes, M. G., J. B. Coltrain, and D. H. O'Rourke

2002 Molecular archaeology of the Dorset, Thule and Sadlermiut: Ancestor-descendant relationships in eastern North American Arctic prehistory. In The Dorset Culture--75 Years after Jenness, edited by P. Sutherland. Mercury Series, Archaeological Survey of Canada, Canadian Museum of Civilization; Hull, Quebec (in press).

Mitochondrial DNA analysis of Dorset, Thule, Sadlermiut, and Aleut skeletal samples from the prehistoric North American Arctic. In Proceedings of the 4<sup>th</sup> World Congress on Mummy Studies. Copenhagen: Danish Polar Center (in press).

Huckleberry, G., C. Beck, G. Jones, A. Holmes, M. Cannon, S. Livingston and J. M. Broughton.

2001 Terminal Pleistocene/early Holocene environmental change at the Sunshine Locality, north-central Nevada, U.S.A. Quaternary Research 55:303-312.

Jorde, L., M. Bamshad and A. Rogers

1998 Using mitochondrial and nuclear DNA markers to reconstruct human evolution. BioEssays 20:136-136.

Lupo, K. D., and J. F. O'Connell

- 2001 Cut and tooth mark distributions on large animal bones: Ethnoarchaeological data from the Hadza and their implications for current ideas about early human carnivory. Journal of Archaeological Science 29:85-109.

Madsen, D. B., D. Rhode, D. K. Grayson, J. M. Broughton, S. D. Livingston, J. Hunt, J. Quade, D. N. Schmitt and M. W. Shaver.

- 2001 Late Quaternary environmental change in the Bonneville Basin, Western USA. Palaeogeography, Palaeoclimatology, Palaeoecology 167:243-271.

Massimino, J., and D. Metcalfe

- 1999 New form for the Formative. Utah Archaeology 1999 12:1-16.

Metcalfe, D.

- 1998 An archaeological assessment. In Visions of the Grand Staircase - Escalante: Examining Utah's Newest National Monument, edited by Robert B. Keiter, Sarah B. George, and Joro Walker, pp. 31-40. Salt Lake City: Publishers Press.

O'Connell, J. F.

- 2000 An emu hunt. In Australian Archaeologist: Collected Papers in Honour of Jim Allen, edited by A. Anderson and T. Murray, pp. 172-181. Division of Archaeology and Natural History, Research School of Pacific and Asian Studies. Canberra: Australian National University.

O'Connell, J. F., and F. J. Allen

- 1998 When did humans first arrive in Greater Australia, and why is it important to know? Evolutionary Anthropology 6:132-146. [Reprinted (2002) in The Human Evolution Source Book (2<sup>nd</sup> Ed.), edited by R. Ciochon & J. Fleagle. Prentice Hall.]

O'Connell, J. F., K. Hawkes and N. G. Blurton Jones

- 2002 Meat-eating, grandmothering and the evolution of early human diets. In Human Diet: Its Origin and Evolution, edited by P. Unger and M. Teaford, pp. 49-60. Westport, CT: Bergin & Garvey.

- 1999 Grandmothering and the evolution of Homo erectus. Journal of Human Evolution 36:461-485. [Reprinted (2002) in The Human Evolution Source Book (2<sup>nd</sup> Ed.), edited by R. Ciochon & J. Fleagle. NJ: Prentice Hall.]

O'Connell, J. F., K. Hawkes, K. Lupo and N. G. Blurton Jones

- 2002 Male strategies and Plio-Pleistocene archaeology. Journal of Human Evolution 43:831-872.

Paine, R. R.

2002 Demography. In Handbook of Archaeological Methods, edited by H. D. G. Maschner and C. Chippindale. Walnut Creek, CA: Altamira Press (in press).

Origins of agriculture. In The Oxford Encyclopedia of Evolution, edited by Mark Pagel, pp. 15-19. Oxford: Oxford University Press.

Demography and human disease. In The Oxford Encyclopedia of Evolution, edited by Mark Pagel, pp. 280-282. Oxford: Oxford University Press.

Population trends. In The Oxford Encyclopedia of Evolution, edited by Mark Pagel, pp. 926-930. Oxford: Oxford University Press.

2000 If a population crashes in prehistory and there is no paleodemographer there to hear it does it make a sound? American Journal of Physical Anthropology 112(2):181-190.

Paine, R. R., and J. L. Boldsen

2002 Linking mortality and population dynamics. In Paleodemography: Age Distributions from Skeletal Samples edited by R. D. Hoppa and J. W. Vaupel, pp. 169-180. Cambridge: Cambridge University Press.

Paine, R. R., and H. C. Harpending

1998 The effect of sample bias on paleodemographic fertility estimates. American Journal of Physical Anthropology 105:231-240.

Rogers, A. R.

2001 Order emerging from chaos in human evolutionary genetics. Proceedings of the National Academy of Science (USA) 98:779-780.

How should fertility vary with wealth? Human Behavior and Evolution (in press).

Rogers, A. R.

2000 On the value of soft bones in faunal analysis. Journal of Archaeological Science 27:635-639.

On equifinality on faunal analysis. American Antiquity 65:709-723.

Analysis of bone counts by maximum likelihood. Journal of Archaeological Science 27:111-125.

Rogers, A. R. and J. M. Broughton.

2001 Selective transport of animal parts by ancient hunters: A new statistical method and an application to the Emeryville Shellmound fauna. Journal of Archaeological Science 28:763-773.

Storey, G. R., and R. R. Paine

1999 Latin Funerary Inscriptions: (Yet) Another Attempt at Demographic Analysis. XI Congresso Internazionale di Epigrafia Grecia e Latina, pp. 847-862. Rome, Italy: Edizioni Quasar.

Ugan, A., and J. Bright

2001 Measuring foraging efficiency with archaeological faunas: The relationship between relative abundance indices and foraging returns. Journal of Archaeological Science 28:1309-1321.

Watkins, W., C. Ricker, M. Bamshad, M. Carroll, S. Nguyen, M. Batzer, H. Harpending, A. Rogers and L. Jorde

2001 Patterns of ancestral human diversity: An analysis of Alu-insertion and restriction site polymorphism. American Journal of Human Genetics 68:738-752.

West, D., D. Corbett, C. Lefevre, F. Bouchet, M. Geoffrey Hayes, J. B. Coltrain, and D. O'Rourke

2001 A human burial from Zeto Point, Adak, Alaska. Arctic (submitted).

Wooding, S., and A. R. Rogers

2000 A Pleistocene population X-plosion? Human Biology 72:693-695.

### **Technical reports**

Arnold, S., C. Springer, J. Boomgarden, K. R. Barlow and D. Metcalfe.

n.d. Teasdale Preliminary Reports: Site No. 42Wn2398. Report written for State and Institutional Trust Lands Administration (SITLA) on excavations conducted through 2001.

Barlow, K. R., D. Metcalfe, C. Springer, S. Arnold and J. Boomgarden.

n.d. Teasdale Preliminary Reports: Site No. 42Wn2401/2400. Report written for State and Institutional Trust Lands Administration (SITLA) on excavations conducted through 2001.

Boomgarden, J., K. R. Barlow, D. Metcalfe, S. Arnold, and C. Springer.

n.d. Teasdale Preliminary Reports: Site No. 42Wn2374. Report written for State and Institutional Trust Lands Administration (SITLA) on excavations conducted through 2001.

Christensen, E. R., and D. Metcalfe  
 2000 Results of Sourcing Obsidian Artifacts from FS-05-09-53-0995 and FS-05-09-53-0996 in the Warner Mountain Ranger District, Modoc National Forest, California. Utah Museum of Natural History, Report of Investigations 99-4.

Metcalfe, D., S. Arnold, J. Boomgarden, C. Springer and K. R. Barlow.  
 n.d. Teasdale Preliminary Reports: Site. No. 42Wn2150. Report written for State and Institutional Trust Lands Administration (SITLA) on excavations conducted through 2001.

O'Connell, J. F.  
 2000 University of Utah Archaeological Center Report of Activities, 1997-2000. University of Utah Archaeological Center, Report of Investigations 00-1.

Springer, C., D. Metcalfe, J. Boomgarden, K. R. Barlow, and S. Arnold.  
 n.d. Teasdale Preliminary Reports: Site No. 42Wn2377. Report written for State and Institutional Trust Lands Administration (SITLA) on excavations conducted through 2001.

#### **Notes, Comments, Reviews, Abstracts**

Broughton, J.M.  
 2000 Review of Rediscovering Darwin: Evolutionary Theory and Archaeological Explanation, edited by C. M. Barton and G. A. Clark. Human Biology 72:261-265.

Coltrain, Joan B.  
 1999 Review of The Desert's Past: A Natural History of the Great Basin, by D. K. Grayson. American Antiquity 64:563-564.

Hawkes, K.  
 1999 Review of Mother Nature: A History of Mothers, Infants, and Natural Selection, by S. B. Hrdy. Nature 402:120-121.

Hawkes, K., R. Bleige Bird and D. Bird  
 1998 Comment on D. S. Wilson: "Hunting, sharing, and multi-level selection: The tolerated-theft model revisited." Current Anthropology 39:89-90.

Hawkes, K., J. F. O'Connell and N. G. Blurton Jones  
 1998 Comment on R. W. Wrangham et al.: "The raw and the stolen: Cooking and the ecology of human origins." Current Anthropology 40:581-582.

- O'Connell, J. F.  
 2002 Review of Hunter-Gatherers: An Interdisciplinary Perspective, edited by C. Panter-Brick, R. H. Layton, and P. Rowley-Conwy. Journal of Human Evolution 43:124-126.
- Tubers and human evolution. In Ancient Starch Analysis, edited by R. Torrence. Sydney: The Australian Museum (in press).
- 2000 Review of Prehistory of Australia, by John Mulvaney and Johan Kamminga. Journal of Anthropological Research 56:407-409.
- 1999 Commentary: Genetics, archaeology and Holocene hunter-gatherers. Proceedings of the National Academy of Science 96:10562-10563.
- 1998 Forward to Archaeology of Aboriginal Australia, edited by Tim Murray. Sydney: Unwin Allen.
- O'Connell, J. F., and R. G. Elston  
 1999 Commentary: History, theory, archaeology and the management of cultural resources. In Models for the Millennium: The Future of Research in Great Basin Anthropology, edited by C. Beck, pp. 261-265. Salt Lake City: University of Utah Press.
- O'Connell, J. F., and K. D. Lupo  
 2002 Reply to Dominguez-Rodrigo. Journal of Archaeological Science (in press).
- O'Connell, J. F., K. Hawkes and N. Blurton Jones  
 2002 Abstract: Male strategies and Plio-Pleistocene archaeology. Journal of Human Evolution 12:A26-A27.
- 2000 Abstract: A critical look at the role of carnivory in early human evolution. Journal of Human Evolution 38:A23-A24.
- 1998 Abstract: Can grandmothering explain the evolution of Homo erectus? Journal of Human Evolution 38:A16.

#### THESES and DISSERTATIONS

- Bright, J.  
 2000 Ceramics and Mobility: Exploring the Role of Foraging Behavior and Implications for Culture-History. Publishable paper submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Christensen, E.

- 1999 Results of Sourcing Obsidian Artifacts from FS-05-09-53-0995 and FS-05-09-53-0996 in the Warner Mountain Ranger District Modoc National Forest, California. Publishable paper submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Edwards, D. E., and J. F. O'Connell

- Broad Spectrum Diets in Arid Australia. In Transitions: Pleistocene to Holocene in Australia and Papua New Guinea, edited by F. J. Allen and J. F. O'Connell. Antiquity, Special Issue 265:769-806. Originally submitted by Edwards as a publishable paper in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Heck, M. D.

- 1999 Tradeoffs in the Exploitation of Maize and Acorns in the Greater American Southwest: A Proposal for Research. Publishable paper submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Rampton, D.

- 1999 Human Patch Choice and its Effect on Mobility: An Archaeofaunal Examination of the Sudden Shelter Materials. Thesis submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Sharp, K.

- 1998 Grease Extraction and Differential Processing of Limb Elements, or in other words: Should One Boil, or Bust and Boil? Publishable paper submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

Ugan, A.

- 1999 Changing Alyawarra Residential Distributions. Publishable paper submitted in partial fulfillment of the Master's Degree, Department of Anthropology, University of Utah.

#### PRESENTED PAPERS

Ainsworth, P.

- 2002 Home range, foraging range and isostatic rebound: Implications and alternative explanations for the ichthyofauna assemblage from Homestead Cave. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

Geodynamics and the age of Utah Lake. Utah Professional Archaeological Council Spring Meeting; Richfield, UT.

2001 Visual sourcing of Utah obsidian. Utah Statewide Archaeological Survey Meeting, Salt Lake Chapter.

2000 Mobility, foraging, time allocation and lithic technological organization. 27th Great Basin Anthropological Conference; Ogden, UT.

Flake scar sequencing: Addressing old questions with new techniques. 34th Annual Meeting of the Society for California Archaeology; Riverside, CA.

Ainsworth, P. and J. McCarthy

2002 The lithic landscape of the Black Rock Obsidian Source. Utah Professional Archaeological Council Fall Meetings; Price, UT.

Ainsworth, P. and E. Skinner.

2001 Obsidian sources and Great Salt Lake Holocene lake shores. Utah Professional Archaeological Council Fall Meetings; Salt Lake City, UT.

Ainsworth, P., and A. Steffen

2001 Mass consumption: Assembling theory and technique in aggregate analysis. 66th Annual Meeting of the Society for American Archaeology; New Orleans, LA.

Barlow, K. R., B. Bass, S. Arnold, J. Boomgarden and P. Nelson.

2002 Locomotive Rock. 28th Great Basin Anthropological Conference; Elko, NV.

Barlow, K. R., and D. Metcalfe

2002 Storage strategies, caching, and the economy of a variable environment. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

Boldsen, J. L., and R. R. Paine

1999 Human longevity since the Ice Age. Third European-American Research Colloquium on Social and Biological Determinants of Longevity, Max Planck Institute for Demographic Research; Rostock, Germany

Boomgarden, J., P. Nelson, S. Arnold and B. Bass

2002 The deluxe apartment in the sky. 28th Great Basin Anthropological Conference; Elko, NV.

Bright, J.

2002 Bioarchaeology and economic diversity: Nutrition and health in Great Basin prehistory. Colloquium, Department of Sociology, Social Work and Anthropology, Utah State University; Logan.

Plain Gray ceramics and adaptive diversity: Residential and logistic mobility in farmer-forager contexts. Colloquium, Department of Sociology, Social Work and Anthropology, Utah State University; Logan.

The politics of hunting: Fremont big-game exploitation in North American context. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

Ceramic manufacture at Fallen Eagle and other sites: Exploring social relations of production in the Great Basin. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

2000 Handling ceramic variability: Examples from the Great Basin and implications for elsewhere. 27th Great Basin Anthropological Conference; Ogden, UT.

Bright, J. and A. Ugan

2000 Resource intensification and material culture variability: A perspective from evolutionary ecology. Symposium organized for the 27th Great Basin Anthropological Conference; Ogden, UT.

Introduction to the archaeology of the Little Boulder Basin area. 27th Great Basin Anthropological Conference; Ogden, UT.

Bright, J., S. R. Simms, A. Ugan and M. Memmott

1998 Identifying adaptive diversity with plain ceramics: An example from Utah's west deserts. 26th Great Basin Anthropological Conference; Bend, OR.

Broughton, J. M.

2002 Measuring resource depression with archaeological faunas: Insights from the Emeryville Shellmound. 28th Meeting of the Great Basin Anthropological Society; Elko, NV. Also presented at the 36th Annual Meeting of the Society of California Archaeology; San Diego, CA.

Pre-Columbian human impacts on California vertebrates: Zooarchaeological evidence and implications for wilderness policy. 9th Congress of the International Council for Archaeozoology; Durham, UK. Also presented at the 67th Annual Meeting of the Society for American Archaeology; Denver, CO.

2001 Fish remains from Homestead Cave and lake levels of the past 13,000 years in the Bonneville Basin. Zooarchaeology and Ecology Field Class, California State University (Chico). Eagle Lake Biological Field Station; Eagle Lake, CA. (Also presented at Paleoclimate and Human Responses: An Interdisciplinary Workshop; SMU-in-Taos, Ft. Burgwin, NM, 2002.)

2000 Archaeofaunal evidence for late Holocene declines in foraging efficiency and implications for change in technology, health and stature. Annual Meeting of the Society of California Archaeology; Riverside, California.

Owl pellets and the Homestead Cave faunal sequence. Evergreen Junior High School, Salt Lake City, UT.

1998 Panel on issues in recovery, identification, quantification and interpretation of vertebrate faunal remains. 8th International Congress of the International Council for Archaeozoology; Victoria, B.C.

Resource intensification in prehistoric California: Were native peoples over-using their environment? Colloquium, Department of Political Science, Utah State University; Logan, UT.

The Homestead Cave ichthyofauna and the loss of fishes in Lake Bonneville. Colloquium, Department of Anthropology, University of Utah.

Broughton, J. M., and M. L. Raab (symposium organizers and chairs)

2000 The evolutionary ecology of Eden: New perspectives in California history. Symposium at the Annual Meeting of the Society of California Archaeology; Riverside, CA.

Coltrain, J. B.

2001 A reexamination of Hrdlicka's Pre-Aleut and Aleut categories based on radiocarbon dating and stable isotope chemistry. 9<sup>th</sup> Annual Arctic Archaeology Conference; Salt Lake City, UT.

Eastern Arctic foraging strategies: A reconstruction of coastal paleodiets from the bone chemistry of Dorset, Thule and proto-historic burial assemblages. 70th Annual Meeting of the American Association of Physical Anthropologists; Kansas City, MO.

Invited participant. Arctic Social Science Workshop. Sponsored by the National Science Foundation and the Arctic Research Consortium of the United States; Seattle, WA.

2000 Sealing and whaling: Transitions in eastern Arctic paleoeconomies. 33rd Annual Meeting of the Canadian Archaeological Association; Ottawa.

Bone chemistry and paleodiet: Stable isotope and radiocarbon reconstructions of eastern Arctic subsistence strategies. 8th Annual Arctic Archaeology Conference; Lawrence, KS.

Coltrain, J. B., and S. W. Leavitt

1998 Evidence for abandonment of agriculture in the Great Salt Lake Basin: Correlations between climate and diet. 26th Great Basin Anthropological Conference; Bend, OR.

Hawkes, K.

2002 Grandmothers and human evolution. Annual Anthropology Lecture, Pomona College.

Slow life histories and human evolution. University of California (Berkeley) Demography Group.

Slow life histories & the role of grandmothers in human evolution. For the symposium Grandmothers: The Psychological, Social and Reproductive Significance of the Second Half of Life. Hanse Institute for Advanced Study; Demenhorst, Germany.

Discussant, NRC Workshop on the Biodemography of Fertility and Family Behavior; Washington D.C.

Grandmothers, the evolution of genus Homo, and the early archaeology. Southern California Primate Research Forum, Production and Reproduction: The Evolution of Primate and Human Life Histories; Fullerton, CA.

Grandmothers and the evolution of human life histories. Plenary session: Strategies for Reproductive Success, Human Biology Association Annual Meetings; Buffalo, NY.

Paleolithic archaeologists need evolutionary anthropology: Riddles of early Homo. Annual Meeting of the Society for American Archaeology; Denver, CO.

2001 Working mothers & grandmothers: The evolution of human life history. University of Tennessee; Knoxville, TN.

Why do men hunt? Showing off and the evolution of men's work. University of Tennessee; Knoxville, TN.

Non-human perspectives on human evolution. Plenary Address, Association for the Study of Animal Behavior; University of Glasgow.

Foraging, life histories, and paleoanthropology: The evolution of human families. Plenary address, Annual Meeting of the Human Behavior and Evolution Society, University College, London.

Why do men hunt? Lessons from the Hadza about men's work. University of Michigan; Ann Arbor, MI.

Why do men hunt? Evolutionary lessons from the Hadza. Colloquium, Department of Anthropology, Washington State University; Pullman, WA.

2000 The evolution of human aging: Why are our life spans so long? Mating, Parenting and Subsistence: The evolution of male and female strategies in humans and primates, A symposium in honor of Irven DeVore; University of Minnesota, Minneapolis, MN.

Grandmothering and the evolution of human life histories. University of California (Berkeley) Demography Group.

1999 The evolution of human life histories: Lines of evidence to explain human uniqueness. Symposium on Primate Socio-ecology: The Role of Life Histories. The German Primate Center (DPZ); Goettingen, Germany.

Showing off and the evolution of men's work. Workshop on Signs of quality: The Handicap Principle in Biology, Economics, and Culture; University College, London.

Why do women have mid-life menopause? Grandmothering and the evolution of human longevity. 10th Reinier de Graff Symposium: Female Reproductive Aging; Zeist, Netherlands.

Humans and the other hunting apes. Leakey Foundation: The Next Generation; Berkeley, CA.

Grandmothers, hunting and human nature. Colloquium on The Origin and Evolution of Sexual Behavior; Harvard University, Cambridge, MA.

Looking for individual benefits: Why do men hunt? Aldrich Utah Philosophy Colloquium on Human Nature; University of Utah.

Male mating competition and human evolution: Sexual divisions of labor and multiple fatherhood. Symposium on Partible Paternity. Annual Meetings of the American Association for the Advancement of Science; Anaheim, CA.[Coverage in Science (5 Feb 1999), The Economist (5 Feb 1999)]

1998 Grandmothers, hunting, and human evolution. Symposium on Evolutionary Anthropology. Max Planck Institute for Evolutionary Anthropology; Leipzig..

Is meat the hunter's property? Ownership and explanations of hunting and sharing. Wenner-Gren Conference on The Early Human Diet: The Role of Meat; Madison, WI.

The importance of ownership in explanations of hunting and meat sharing. Symposium on Cooperation, Reciprocity, and Food Sharing in Human Groups: Some Contemporary Approaches. Association for Politics and the Life Sciences; Boston. MA.

Demography of modern hunters and gatherers and primate life histories: Lessons for prehistory. La Vida En La Prehistoria: La Paleobiología De Nuestros Antepasados. El Escorial de San Lorenzo, Spain.

Who owns the meat? Ownership and explanations of hunting and sharing. MacArthur Preferences Network Meeting; Stanford, CA.

Grandmothers, gathering and the evolution of human diets. Symposium on The Evolution of Human Diets, International Congress of Archaeological and Ethnological Sciences; Williamsburg, VA.

Grandmothering, menopause, and the evolution of human life histories. The Evolution and Human Adaptation Lecture Series. University of Michigan; Ann Arbor, MI.

Grandmothering, menopause and human evolution. Evolutionary Biology Winter Symposium; University of Georgia, Athens, GA.

Hunting and meat sharing: Evolution of the nuclear family reconsidered. Evolutionary Biology Winter Symposium; University of Georgia, Athens, GA.

Hayes, M. G., J. B. Coltrain and D. H. O'Rourke  
2002 Paleogenetic assessment of human migration and population replacement in North American Arctic prehistory. 8<sup>th</sup> Annual Arctic Forum; Washington, D. C.

Higgins, J.

- 2001 Birds as an alternative food source: An archaeological signature of intensification? International Congress of Archaeozoology, Bird Working Group; Krakow, Poland.
- 2000 Human foraging strategies in the Holocene of Tierra del Fuego, Argentina. Institut für Ur- und Frühgeschichte; Tübingen, Germany.
- 1999 Prehistoric exploitation of birds in southern South America. Society for American Archaeology; Chicago, IL.

Higgins, J., and J. Bright

- 2002 Health, risk, and hunting: The relationship between abundance indices and physiological stress. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

Hunsaker, L., and J. F. O'Connell

- 2002 Economic utility of Intermountain geophytes: Some preliminary results. 28<sup>th</sup> Great Basin Anthropological Conference; Elko, NV.

Metcalf, D.

- 2002 Presenter and participant in roundtable discussion: Curation Issues in Utah Museums. Utah Museum Association Annual Conference; Park City, UT.
- 2000 Statewide NAGPRA Coordinator. Utah Museum Association Annual Conference; Price, UT.
- 1998 Prehistoric architecture in Utah. Historic Architecture Series, Division of State History; Salt Lake City, UT.

Metcalf, D., and J. Spangler

- 2002 The Range Creek project. 28th Great Basin Anthropological Conference; Elko, NV.

O'Connell, J. F.

- 2002 Evolution of male strategies. Lecture, Program in Human Biology; Stanford University, Palo Alto, CA.
  - 2001 The archaeology of grandmothering. Leakey Foundation/California Academy of Sciences Lecture Series on Human Evolution; San Francisco, CA.
- Two-and-a-half million years of technological evolution in ten minutes! Utah Symposium in Science & Literature; University of Utah.

- 1999 Grandmothering and the evolution of Homo erectus. Plenary lecture for the Annual Meeting of the Human Behavior and Evolution Society; Salt Lake City, UT. [Earlier versions also delivered during Spring 1998 in departmental seminars at Australian National University (Canberra), LaTrobe University (Melbourne), and Sydney university (Sydney).]
- 1998 The evolution of longevity. La Vida en la Prehistoria: La Paleobiología de Nuestros Antepasados. Departamento Paleontología de la Universidad Complutense de Madrid; Madrid, Spain.
- O'Connell, J. F., and K. Hawkes
- 2000 The Basic Prey Model: More Versatile than you Thought? 27<sup>th</sup> Great Basin Anthropological Conference; Ogden, UT.
- 1998 Grandmothers, gathering and the evolution of human diets. International Congress of Archaeological and Ethnological Sciences; Williamsburg, VA.
- O'Connell, J. F., K. Hawkes and N. Blurton Jones
- 1999 Can grandmothering explain the evolution of Homo erectus? Annual Meeting of the Paleoanthropology Society; Columbus, OH.
- 1998 A critical look at the role of carnivory in early human evolution. Annual Meeting of the Paleoanthropology Society; Philadelphia, PA.
- O'Connell, J. F., K. Hawkes, K. Lupo and N. Blurton Jones
- 2002 Male strategies and Plio-Pleistocene archaeology. Annual Meeting of the Paleoanthropology Society; Denver, CO.
- O'Connell, J. F., and L. Hunsaker
- 2001 Economic utility of geophytes. Annual Meeting of the Society for Ethnobiology; Durango, CO. (Also presented at the conference on State of the Art in Phytolith and Starch Research in the Australian-Pacific-Asian regions; Australian National University, Canberra.)
- 2000 Economic utility of geophytes. 27<sup>th</sup> Great Basin Anthropological Conference; Ogden, UT. Also presented at Annual Meetings of the Society for Ethnobiology Meetings; Durango, CO.
- Paine, R. R.
- 2002 Migration pulses and demographic recovery in Ancient Rome. Third Future Directions in Paleodemography International Workshop, Max Planck Institute for Demographic Research; Rostock, Germany.

- 2000 Modeling mortality and population dynamics in prehistory. Second Future Directions in Paleodemography International Workshop, Max Planck Institute for Demographic Research; Rostock, Germany.
- 1999 Human life history evolution in the Holocene: Paleodemographic evidence. Panum Institute, Copenhagen, Denmark.
- Agriculture, changing selective pressures and life history in Holocene Europe. University of Cambridge, UK.
- The adoption of agriculture and human life history. University College, London.
- Paleodemography and the study of human life history evolution (3-lecture series). University of Stockholm, Sweden.
- Epidemics and child mortality in pre-industrial Europe (8000 BC-AD 1400). Danish Center for Demographic Research, Odense, Denmark.
- Human life history evolution in the Holocene: Paleodemographic evidence. ADBOU Seminar Series, Odense University, Denmark.
- Mathematical modeling for paleodemography. Invited participant, Max Planck Institute for Demographic Research, Rostock, Germany.
- Paine, R. R., and J. L. Boldsen
- 2002 Paleodemographic data and why the Holocene is essential: Understanding the evolution of human life history. Symposium on The Evolution of Human Life History. School of American Research, Advanced Seminar Series; Santa Fe, NM.
- Paine, R. R., G. R. Storey and J. L. Boldsen
- 1998 Sex and death in the ancient world: Comparing paleodemographic and inscriptional data. 67th Annual Meeting, American Association of Physical Anthropologists; Salt Lake City, UT.
- Petersen, H-C., J. L. Boldsen, and R. R. Paine
- 1998 Population relationships in and around Medieval Danish towns. 97th Annual Meeting of the American Anthropological Association; Philadelphia, PA.
- Rogers, A. R., and J. M. Broughton
- 1999 Re-analysis of the Emeryville fauna using ABCML. 64th Annual Meeting of the Society for American Archaeology; Chicago, IL.

Storey, G. R., and R. R. Paine

1998 Catastrophic mortality in ancient Rome. In: Population and Pre-industrial Cities: Old and New World. 97th Annual Meeting, American Anthropological Association; Philadelphia, PA.

Spangler, J., and D. Metcalfe

2002 Categories, conundrums, and radiocarbon dates: Temporal frameworks for the Northern Colorado Plateau. Society of American Archaeology; Denver, CO.

Ugan, Andrew

2002 The relationship between foraging efficiency, energetic returns, and resource ecology. 28th Great Basin Anthropological Conference; Elko, NV.

Ugan, A., and A. R. Rogers

2000 Modeling the relationship between foraging returns, the optimal diet, and technological investment. 27th Great Basin Anthropological Conference; Ogden, UT.

#### GRANTS and CONTRACTS

Broughton, J. M.

2000 University of Utah Instrumentation Grant: Equipment for Stewart 114, Zooarchaeology Lab (\$99,068).

University of Utah Capital Facilities & Remodeling Grant: Remodeling cooling system, fume hoods, and other facilities in Stewart 114 (\$90,068).

1997 National Science Foundation: Late Holocene Human Impacts on Pacific Coast Bird Populations: Evidence from the Emeryville Shellmound Avifauna (\$55,614).

1997 University of Utah Teaching Grant: Acquisition of skeletal and fossil specimens for the Department of Anthropology (\$6,744).

Coltrain, J. B.

2002 National Science Foundation: Molecular Analyses of the Peabody Basketmaker Collection and their Implications for Anasazi Origins (\$118,869).

1999 National Science Foundation: Phase Two of a Stable and Radioisotope Study of Eastern Arctic Economies (\$82,409).

1998 National Science Foundation: Stable Carbon and Nitrogen Isotope Analysis of Eastern Canadian Arctic Populations with <sup>14</sup>C Chronologies (\$98,924).

Metcalf, D.

2001 Utah School and Institutional Trust Lands Administration: East Teasdale Archaeological Investigation II (\$39,270).

2000 Utah School and Institutional Trust Lands Administration: Big Water Survey (\$1,500).

U.S. Forest Service: Modoc National Forest Obsidian Sourcing (\$2450).

Utah School and Institutional Trust Lands Administration: East Teasdale Archaeological Investigation (\$29,966).

1999 National Park Service: Hill AFB Cultural Resource Management Plan (\$81,940).

Utah School and Institutional Trust Lands Administration: Bagley Meadows Archaeological Investigation (\$38,000).

U.S. Fish and Wildlife Service: Fish Springs Cultural Resource Protection Plan (\$3,500).

U.S. Forest Service: Testing of Two Sites on the Warner Mountain Ranger District (\$2,450).

Utah School and Institutional Trust Lands Administration: Tintic Parcel Archaeological Investigation (\$3,000).

1998 National Science Foundation Doctoral Dissertation Grant: Mitochondrial DNA Sequence Variation of Ancient Eastern North American Arctic Peoples; Geoffrey Hayes, candidate (\$12,000).

University of Utah: Fort Douglas Archaeological Project (\$539,394).

O'Connell, J. F.

2000 National Science Foundation: Economic Utility of Geophytes in the Intermountain West (\$117,700)

1998 National Science Foundation Doctoral Dissertation Grant: mtDNA Analysis of the Anasazi (Ancestral Pueblo); Shawn Carlyle, Candidate (\$12,000).

Paine, R. R.

University of Utah, College of Social and Behavioral Sciences, Proposal Initiative Grant: Preliminary Archaeological Investigation of a Cemetery at Kenan Tepe, Turkey (\$4,000).

University of Utah Faculty Research Grant: Preliminary  
Archaeological Investigation of a Cemetery at Kenan  
Tepe, Turkey (\$6,000).

Paine, R. R., and K. Hawkes

2001 School of American Research: Advanced Seminar on The Evolution  
of Human Life (\$30,000).

Paine, R. R., and D. O'Rourke

2000 National Science Foundation: Sex-based Mortality Differences  
among Sub-adults at Tirup, a Medieval Village in Eastern  
Jutland (\$19,800).