Keith Hunley **Anthropology** **December 1, 2010**

Educational History

- BS 1980 Purdue University Biology
- MA 1996 University of Michigan Anthropology
- PhD 2002 University of Michigan Anthropology

Employment History

- Assistant Professor 2005 – present University of New Mexico
- Visiting Assistant Professor 2004 – 2005 University of New Mexico
- Faculty Research Fellow 2002 – 2004 University of Michigan

Professional Recognition and Honors

- 2002. Roy A. Rappaport Teaching Award. Department of Anthropology. University of Michigan
- 2000 – 2001. Genome Sciences Training Fellowship. National Institutes of Health. University of Michigan
- 1999 – 2000. Genome Sciences Training Fellowship. National Institutes of Health. University of Michigan

Description of Research, Teaching, and Service Interests

Research

The goals of my research program in genetic anthropology are to improve our understanding of the evolutionary processes that have molded human biological and cultural diversity at different times and places in the past, and to explore the larger social and scientific meaning of these evolutionary processes. My specific interests include human origins and prehistory, genetic and linguistic co-evolution in Native America and Island Melanesia, and ethnicity and health in New Mexico. My research is supported by grants from the National Science Foundation and has been published in *Science*, *the Proceedings of the National Academy of Sciences, PLoS Genetics, Molecular Biology and Evolution, the Journal of Human Evolution, the American Journal of Physical Anthropology,* and *the Annual Review of Genomics and Human Genetics*.

Teaching

The primary goal of my teaching is to help students understand the data and methods that evolutionary anthropologists use to study the nature, evolutionary causes, and social and scientific meaning of human biological variation. In all courses, I emphasize critical thinking and the importance of systematic, scientific investigation of the natural world. I teach a 100-level undergraduate course in biological anthropology, seven upper-level undergraduate-graduate courses, one graduate seminar in genetic anthropology, and independent study courses in molecular laboratory methods. The 100-level course emphasizes the scientific method, evolutionary theory, the evolution of modern human anatomy and behavior, and the social and scientific implications of our evolutionary history. The upper-level courses survey primary literature in these fields and provide hands-on training in molecular laboratory methods and data analyses. The graduate seminar in genetic anthropology teaches students how to critically evaluate primary literature in genetic anthropology and related disciplines.

Service

I serve, or have served, on the following committees: Space Committee, Search Committee for a hire in Evolutionary Anthropology, Non-Tenure Track Faculty Review Committee, Maxwell Museum Human Evolution Exhibit Committee, Maxwell Museum Publication Committee, Program in Interdisciplinary Biological & Biomedical Sciences (PIBBS), and the Undergraduate Committee (Director). I have guest lectured for courses in Anthropology, Linguistics, PIBBS, and Freshmen Learning Communities. Service to the larger discipline include membership on the Program Committee and Student Prize Committee for the American Association of Physical Anthropologists, local-area coordinator for the Human Biology Association, manuscript review for *Science, the Proceedings of the National Academy of Sciences, the Proceedings of the Royal Society B, the American Journal of Physical Anthropology, Molecular Biology and Evolution, Trends in Genetics,* and *PLoS One*, and text book review for Prentice Hall, McGraw Hill, and Cambridge University Press.

Scholarly Achievements

Articles in Refereed Journals

Friedlaender J, Hunley K, Dunn M, Terrill A, Lindström E, Reesink G, Friedlaender F. Letter: Linguistics more robust than genetics. Science. 324(5926):464-465. 2009

Hunley K, Healy M, Long J. The global pattern of gene identity variation reveals a history of long-range migrations, bottlenecks, and local mate exchange: Implications for biological race. American Journal of Physical Anthropology. 139(1): 35-46. 2009

Edgar H, Hunley K. Reconciling race?: How biological anthropologists view human variation. American Journal of Physical Anthropology. 139(1): 1-4. 2009

Hunley K, Dunn M, Lindström E, Reesink G, Terrill A, Healy M, Koki G, Friedlaender F, Friedlaender J. Genetic and linguistic coevolution in Northern Island Melanesia. PLoS Genetics 4(10):e1000239. 2008

Hunley K, Spence JE, Merriwether DA. The impact of lineal fissions on genetic structure in Native South America and implications for human evolution. American Journal of Physical Anthropology. 135:195-205. 2008

Cabana G, Hunley K, Kaestle F. Population continuity or replacement?: A novel computer simulation approach and its application to the Numic expansion (Western Great Basin, USA). American Journal of Physical Anthropology. 135(4): 438-447. 2008

Clark J, Dobson S, Anton S, Hawks J, Hunley K, Wolpoff M. Identifying artificially deformed crania. International Journal of Osteoarchaeology. 17:596-607. 2007

Hunley K, Cabana G, Merriwether DA, Long J. A formal test of linguistic and genetic coevolution in Native Central and South America. American Journal of Physical Anthropology. 132 (4): 622-631. 2007

Cabana G, Merriwether DA, Hunley K, Demarchi DA. Is the genetic structure of Gran Chaco populations unique? Interregional perspectives on Native South American mitochondrial DNA variation. American Journal of Physical Anthropology 131(1): 108-119. 2006

Hunley K, Long J. Gene flow across linguistic boundaries in Native North Americans. Proceedings of the National Academy of Sciences U S A 102(5): 1312-7. 2005

Mulligan C, Hunley K, Cole S, Long J. Population genetics, history, and health patterns in Native Americans. Annual Review of Genomics and Human Genetics. 5:295- 315. 2004

Wolpoff M, Hawks J, Frayer D, Hunley K. Modern human ancestry at the peripheries: A test of the Replacement Theory. Science. 291:293-297. 2001

Hawks J, Hunley K, Lee S, Wolpoff M. 2000. Population bottlenecks and Pleistocene human evolution. Molecular Biology and Evolution. 17(1):2-22. 2000

Hawks J, Oh S, Hunley K, Dobson S, Cabana G, Dayalu P, Wolpoff M. An Australasian test of the recent African origin theory using the WLH-50 calvarium. Journal of Human Evolution. 39: 1-22. 2000

Mitani J, Hunley K, Murdoch E. Geographic variation in the calls of wild chimpanzees: A re-assessment. American Journal of Primatology. 47(2): 133-152. 1999

Articles Appearing in Chapters in Edited Volumes

Hunley K, Dunn M, Lindström E, Reesink G, Terrill A, Norton H, Scheinfeldt L, Friedlaender F, Merriwether DA, Koki G, and Friedlaender J. Inferring prehistory from genetic, linguistic, and geographic variation. In Genetics, Linguistics, and Culture History in the Southwest Pacific. J Friedlaender (editor). Cambridge: Cambridge University Press. 2007

Hunley K. Models of migration in human prehistory and their anthropological significance. In Current developments in the anthropological study of past human migration. G Cabana, J Clark (editors). Gainesville: University Press of Florida. In Press

Other Writings

Book Review

Hunley K. The 10,000 Year Explosion: How Civilization Accelerated Human Evolution by Gregory Cochran and Henry Harpending. New York: Basic Books. Journal of Anthropological Research. 2010

Works in Progress

Hunley K, Healy M. The impact of founder effects, gene flow, and European admixture on Native American genetic diversity. **Submitted** to the American Journal of Physical Anthropology on Sept 4, 2010.

Bowern C, Epps P, Gray R, Hill J, Hunley K, McConvell P. Loans in the basic vocabulary of hunter-gatherer languages. **Submitted** to the Proceedings of the National Academy of Sciences USA, on Nov 19, 2010.

Hunley K, Joyce S, Long J. Departures from serial-founder-effects are the result of admixture between archaic and modern humans and genetic exchange.

Hunley K, Healy M. The relationship between genetic ancestry and ethnic identity in New Mexicans of Spanish-speaking descent.

Invited or Refereed Abstracts and/or Presentations at Professional Meetings

Hunley K. Genes and language in the Americas. American Association of Physical Anthropologists. Albuquerque. American Journal of Physical Anthropology. 141: S50. 2010

Long J, Hunley K. New evidence for natural selection acting at the ALDH locus. American Association of Physical Anthropologists. Albuquerque. American Journal of Physical Anthropology. 141: S50. 2010

Joyce S, Hunley K, Long J. Analysis of global gene identity reveals a history of serial founder effects, admixture between long-diverged Oceanic groups, and interbreeding with archaic humans. American Association of Physical Anthropologists. Albuquerque. American Journal of Physical Anthropology. 141: S50. 2010

Schneider N, Hunley K. Genetic and linguistic coevolution in Native Latin America. American Association of Physical Anthropologists. Chicago. American Journal of Physical Anthropology. 138: S48. 2009

Healy M, Hunley K. Using mitochondrial DNA in population genetic research: A comparison of the information content of the mitochondrial d-loop and the coding region. American Association of Physical Anthropologists. Columbus. American Journal of Physical Anthropology. 137: S47. 2008

Healy M, Hunley K. The impact of geography, ecology, and language on Native American genetic structure. American Association of Physical Anthropologists. Philadelphia. American Journal of Physical Anthropology. 134: S45. 2007

Spence J, Hunley K, Merriwether DA. Genetic structure and implications for human biological and cultural evolution: A case study of the Yanomamo. American Association of Physical Anthropologists. Philadelphia. American Journal of Physical Anthropology. 134: S45. 2007

Long J, C Lewis, Li J, Malhi R, Hunley K. DNA Sequence and natural selection at human ALDH. American Society of Human Genetics. New Orleans. 2006

Hunley K, Merriwether DA, Cabana G, Long J. Linguistic and genetic correspondence in Native Central and South America. American Association of Physical Anthropologists. Anchorage. AK. American Journal of Physical Anthropology. 131: S43. 2006

Cabana G, Hunley K. Migration or microevolution? The Numic expansion revisited through genetics and computer simulation modeling. Society for Anthropological Sciences. First General Scholarly Meeting, Santa Fe. 2005

Hunley K, Long J, Cabana G, Merriwether DA. Gene flow across linguistic boundaries in Native South American populations. Society for Anthropological Sciences. First General Scholarly Meeting. Santa Fe. 2005

Hunley K, Long J. Rejection of isolation by distance for human gene geography and suggested alternatives. American Association of Physical Anthropologists. Milwaukee. American Journal of Physical Anthropology. 128: S41. 2005

Long J, Hunley K. Predictions of isolation by distance and alternatives for human gene geography. American Association of Physical Anthropologists. Milwaukee. American Journal of Physical Anthropology. 128: S41. 2005

Demarchi DA, Cabana G, Hunley K, Merriwether DA. Linajes mitocondriales en poblaciones del Chaco Argentino: Patrones únicos de variación regional. 34ª Congreso Argentino de Genética (Trelew, 12 al 14 de Septiembre de 2005) y VII Jornadas Nacionales de Antropología Biológica. Córdoba. 2005

Hunley K, Long J. Does Greenberg's linguistic classification predict patterns of New World genetic diversity? American Association of Physical Anthropologists. Tampa. American Journal of Physical Anthropology. 125: S39. 2004

Malhi R, Hunley K, Long J. Tests for selection on ALDH2 in a Southeast Asian population. American Association of Physical Anthropologists. Tempe. American Journal of Physical Anthropology. 122: S37. 2003

Long J, Hunley K, Kittles R. Analysis of DNA sequences under unequal evolutionary rates. American Association of Physical Anthropologists. Tempe. American Journal of Physical Anthropology. 122: S37. 2003

Long J, Hunley K. Analysis of DNA sequences and repeat lengths under unequal evolutionary rates. American Society of Human Genetics. Los Angeles. 2003

Hunley K, Merriwether DA. The Anthropological Utility of Genetic Data in Small-Scale Populations: Migration Rates and Patterns among the Yanomamo. American Association of Physical Anthropologists. Buffalo. American Journal of Physical Anthropology. 119: S35. 2002

Cabana G, Hunley K, Kaestle F. Biomolecular archaeology: Genetic approaches to reconstructing the past: Population movement or genetic drift and gene flow? Southern Illinois University Visiting Scholar's Conference. Carbondale. 2002

Hunley K, Cabana G. The Genus *Homo*: One or multiple species? American Association of Physical Anthropologists. Kansas City. 2001. American Journal of Physical Anthropology. 116: S33. 2001

Cabana G, Hunley K, Kaestle R. Modeling the effects of random genetic drift and migration on the genetic diversity of ancient populations. 5th International Ancient DNA Conference. Manchester, UK. 2000

Hunley K, Merriwether DA. Reconstructing the Past: Population structure among the Yanomamo. American Association of Physical Anthropologists. San Antonio. American Journal of Physical Anthropology. 113: S31. 2000

Wolpoff M, Hawks J, Hunley K, Dobson S, Cabana G, Dayalu P. An Australian test of the Recent African Origin Theory using the WLH-50 Calvarium. American Association of Physical Anthropologists. Columbus. American Journal of Physical Anthropology. 110: S29. 1999

Hunley K. Seattle, WA. Vertebral canal size and function: a comparison of extant and fossil hominoids. Seattle. Paleoanthropology Society. 1999

Ahlstrom C, Hawks J, Hunley K, Oh S. The application of nested cladistics to investigate population structure in chimpanzees. American Association of Physical Anthropologists. Salt Lake City. American Journal of Physical Anthropology. 107: S27. 1998

Hunley K, Merriwether DA. The effect of fossil age on the estimation of time to a common ancestor. Human Biology Association. Salt Lake City. American Journal of Physical Anthropology. 107: S27. 1998

Research Funding

The cultural and biological significance of ethnic substructure in New Mexican Hispanics. National Science Foundation. PI: Keith Hunley. $327,703. 2010

The relationship between genetic admixture and sociocultural history in New Mexico. UNM Research Allocation Committee. Discipline-specific Large Grant. PI: Keith Hunley. $7,260. 2009

Dynamics of hunter-gatherer language change. National Science Foundation. Co-PI: Keith Hunley (PI: Claire Bowern, Yale University). $723,133. 2008

Symposium: Race Reconciled? How biological anthropologists view human biological variation. Funded by UNM Maxwell Museum, Departments of Anthropology and Biology, Office of Research. $12,000. 2007

Linguistic and genetic coevolution and implications for human evolution. UNM Research Allocation Committee. Discipline-specific Large Grant. PI: Keith Hunley. $7,185. 2005

Population stratification in New Mexican Hispanics and implications for medical and anthropological genetic research. UNM Cross Campus Collaboration in the Life Sciences. PI: Keith Hunley. $24,214. 2005

Student Funding

2009 Bonnie Young. Effects of genetic ancestry and socio-cultural factors on susceptibility to tuberculosis in Mexico. Wenner Gren. (PIs: Keith Hunley and Bonnie Young). $12,969

2009 Meghan Healy. Genetic and cultural variation in New Mexicans of Spanish-speaking descent. UNM Graduate Research and Development Committee. $4,949

Teaching

Doctoral Advisement

PhD graduates

2010 Timothy Peterson. Committee member. Taxonomic implications of basicranial variation in *Australopithecus africanus.*

2010 Wendy Potter. Committee member. Evidence for a change in the rate of aging of osteological indicators in American documented skeletal samples.

2009 Hsiu-Man Lin. Committee member. The biological evidence of the San-Pau-Chi people and their affinities with island population in the Pacific.

2008 Yann Klimentidis. Committee member. Using genetic admixture to examine social and biological aspects of ethnicity among New Mexican Hispanics and Native Americans. Committee member. Current position: Postdoctoral Fellow. Department of Biostatistics. University of Alabama at Birmingham. Birmingham, AL.

2006 Jada Benn Torres. Co-Chair. African ancestry and admixture in the Anglophone Caribbean. Current position: Assistant Professor of Anthropology. Notre Dame University. South Bend, IN

Current PhD students

Bonnie Young. PhD committee chair
Meghan Healy. Advisor
Sarah Joyce. Advisor
Carmen Mosely. Special examination committee member
Rebecca Melsheimer. Special examination committee member

Undergraduate Student Training & Mentoring

Casey Frank. Evolution and Religion
Gabriela Gomez. Molecular Laboratory Methods
Jessica Smith. Molecular Laboratory Methods
Sierra Wilcox-Hindmarch. Molecular Laboratory Methods
Allison Chavez. Molecular Laboratory Methods
Jillian Castor. Molecular Laboratory Methods
Viengkeo Kay Bounkeua. Molecular Laboratory Methods
Michael Krencicki. Molecular Laboratory Methods
Melanie Martinez. Molecular Laboratory Methods
Michael Deason. Molecular Laboratory Methods

Classroom Teaching

2010 Fall. Evolution and Human Emergence. ANTH 150
2010 Spring. Modern Human Origins & Prehistory. ANTH 450/550
2010 Spring. Evolution and Human Emergence. ANTH 150
2009 Fall. Evolution and Human Emergence. ANTH 150

2009 Fall. Are Human Races Real? ANTH 450/550
2009 Spring. Evolution and Human Emergence. ANTH 150
2009 Spring. Human Genetics. ANTH 555
2008 Fall. Population Genetics. ANTH/Biology 491/591
2008 Fall. Evolution and Human Emergence. ANTH 150
2007 Fall. Evolution and Human Emergence. ANTH 150
2007 Fall. Human Genetics. ANTH 455/555
2007 Spring. Evolution and Human Emergence. ANTH 150
2007 Spring. Modern Human Origins. ANTH 450/550
2006 Fall. Evolution and Human Emergence. ANTH 150
2006 Fall. Measuring and interpreting human variation. ANTH 550
2006 Spring. Evolution and Human Emergence. ANTH 150
2006 Spring. Human Genetics. ANTH 455/555
2005 Fall. Evolution and Human Emergence. ANTH 150
2005 Fall. Computer Aided Inferences in Natural Science. ANTH 450/550
2005 Spring. Evolution and Human Emergence. ANTH 150
2005 Spring. Introduction to Population Genetics. ANTH 450 550
2004 Fall. Evolution and Human Emergence. ANTH 150
2004 Fall. Human Genetics. ANTH 455/555

Service

Literature/Grant Reviewing

Journals

Science
Proceedings of the National Academy of Sciences
Proceedings of the Royal Society B
Molecular Biology and Evolution
American Journal of Physical Anthropology
PLoS One
Trends in Genetics

National funding organizations

National Science Foundation – BCS section, Physical Anthropology

Books

Biological Anthropology: The Natural History of Humankind by Craig Stanford, John S Allen, Susan C Anton. Prentice Hall (March 4, 2005)

Cultural Anthropology by Conrad Kottak. McGraw-Hill; 12th edition (November 29, 2006)

A Computational Approach to Statistical Argument by George Estabrook. Cambridge University Press (August, 2009)

Administrative work with professional societies

2010-present Program Committee. American Association of Physical Anthropologists.

2010 Human Biology Association. Local-area coordinator for annual meetings in Albuquerque, NM

2007 American Association of Physical Anthropologists. Student Prize Committee

Administrative work in Department, College, University committees

2005-present Undergraduate Committee. Undergraduate student advisor for Evolutionary Anthropology. Department of Anthropology. UNM

2006-present Maxwell Museum Publication Committee, Department of Anthropology. UNM

2010-present Non-Tenure Track Faculty Review Committee. Department of Anthropology. UNM

2010-present Director, undergraduate Committee. Department of Anthropology. UNM

2006-2010 Advisory Council. Program in Interdisciplinary Biological & Biomedical Sciences. UNM

2008-2010 Maxwell Museum Human Evolution Exhibit Committee. Maxwell Museum, UNM

2007-2008 Space committee. Department of Anthropology. UNM

2007 Biological Anthropology Search Committee. Department of Anthropology. UNM

Guest Lectures, Seminars, Symposia, and Public Anthropology

2009 Community Radio Series in Public Anthropology, through Alfonso Ortiz Center for Intercultural Studies. UNM

2009 Presentation. Darwin Day Symposium. Title: There are no races, there are only nested hierarchies. Departments of Anthropology and Biology. UNM

2009 Presentation. Title: Population genetic structure and admixture in New Mexican Hispanics. Division of Epidemiology and Biostatistics. UNM

2008 Faculty Symposium sponsored by the Alfonso Ortiz Center for Intercultural Studies. The social and health-related implications of sociocultural and biological variation in New Mexicans of Hispanic descent. UNM

2008 Faculty Symposium sponsored by the Alfonso Ortiz Center for Intercultural Studies. The social and scientific implications of biological, cultural, and linguistic variation in New Mexican Hispanics. UNM

2007 Symposium: Race reconciled?: How biological anthropologists view human biological variation. Organized by K Hunley and H Edgar. UNM

2007 Presentation. Title: Linguistic and genetic coevolution in Native America. Perspectives in Human Ecology Seminar. Department of Anthropology. UNM

2007 Presentation. Title: The global pattern of human genetic variation: No clines, no trees, and no races. Program in Interdisciplinary Biological & Biomedical Sciences. UNM

2007 Guest Lecturer for FLC-623: Genes, peoples, languages. Freshmen Learning Communities. UNM

2006 Presentation. Title: Linguistic and genetic coevolution in Native America. Department of Linguistics, UNM

2006 Presentation. Title: Is there a biological basis for human race? Department of Anthropology Archaeology Seminar. UNM

2005 Guest Lecturer for FLC-623: Genes, peoples, and languages. Freshmen Learning Communities. UNM