W. Andrew Barr - Curriculum Vitae

Center for the Advanced Study of Human Paleobiology
Department of Anthropology
The George Washington University

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Education

PhD - 2014 - University of Texas at Austin. Anthropology.
MA - 2008 - University of Texas at Austin. Anthropology.
BS - 2005 - Tulane University. Anthropology, French.

Academic Appointments

Visiting Assistant Professor. Center for the Advanced Study of Human Paleobiology. Department of Anthropology. The George Washington University. Spring 2016 - Present.
Postdoctoral Scientist. Center for the Advanced Study of Human Paleobiology. Department of Anthropology. The George Washington University. Advisor: Bernard Wood. Fall 2014 - Fall 2015.
Research Associate. Department of Paleobiology. National Museum of Natural History. 2014 - Present.

Peer Reviewed Publications

In Prep

Barr WA. The morphology of the bovid calcaneus: function, phylogeny, and allometric scaling. To be submitted to *Journal of Morphology*.

In Review

Barr WA. Signal or noise? A null model method for testing hypotheses about pulsed faunal turnover. In review at *Paleobiology*.

Barr WA, Du A, Toth A, Jukar A, Bercovici A, Dommain A, Dumouchel L, Villasenor A, Negash E, Behrensmeyer AK, and Lyons SK. Evaluating climatic and mid-domain effects on mammalian species richness at global and continental scales. In riveiew at to *Journal of Biogeography*.

Reed, DN, **Barr WA**, Kappelman J. PaleoCore: an open-source platform for geospatial data integration in paleoanthropology. To be published in Anemone R, Conroy G (eds.), *New Geospatial Approaches in Anthropology*. University of New Mexico Press. Albuquerque, NM.

Blondel C, Rowan J, Merceron G, Bibi F, Negash E, **Barr WA**, Boisserie JR. Feeding ecology of Tragelaphini (Bovidae) from the Shungura Formation, Omo Valley, Ethiopia: contribution of dental wear analyses. In review at *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Kemp A and **Barr WA**. Rates of homoplasy vary among regions of the mammalian skeleton. In review at *Journal of Human Evolution.*

Accepted or In Press

Barr WA. Accepted. *Ecomorphology*. To be published in D.A. Croft, S.W. Simpson, and D.F. Su (eds.), *Methods in Paleoecology: Reconstructing Cenozoic Terrestrial Environments and Ecological Communities*. Springer (Vertebrate Paleobiology and Paleoanthropology Series), Dordrecht.

2017

Barr WA. Bovid locomotor functional trait distributions reflect land cover and annual precipitation in sub-Saharan Africa. *Evolutionary Ecology Research*. 18:253-269.

2015

Barr WA. Paleoenvironments of the Shungura Formation (Plio-Pleistocene: Ethiopia) based on ecomorphology of the bovid astragalus. *Journal of Human Evolution*. 88:97-107. doi:10.1016/j.jhevol.2015.05.002

Reed D, **Barr WA**, McPherron S, Bobe R, Geraads D, Wynn J, Alemseged Z. Digital Data Collection in Paleoanthropology. *Evolutionary Anthropology*. 24:238-249. doi:10.1002/evan.21466

Thompson JC, McPherron S, Bobe R, Reed DN, **Barr WA**, Wynn J, Marean CW, Geraads D, Alemseged Z. Taphonomy of fossils from the hominin-bearing deposits at Dikika, Ethiopia. *Journal of Human Evolution*. 86:112-135. doi:10.1016/j.jhevol.2015.06.013

2014

Barr WA. Functional Morphology of the Bovid Astragalus In Relation To Habitat: Controlling Phylogenetic Signal In Ecomorphology. *Journal of Morphology*. 275:1201-1216. doi:10.1002/jmor.20279

Barr WA and Scott RS. Phylogenetic comparative methods complement discriminant function analysis in ecomorphology. *American Journal of Physical Anthropology*. 153:663-674. doi:10.1002/ajpa.22462

Scott RS and **Barr WA**. Ecomorphology and phylogenetic risk: implications for habitat reconstruction using fossil bovids. *Journal of Human Evolution*. 73:47-57. doi:10.1016/j.jhevol.2014.02.023

2010

Reed DN, and **Barr WA**. A preliminary account of the rodents from Pleistocene levels at Grotte des Contrebandiers (Smuggler's Cave), Morocco. *Historical Biology*. 22:286-294. doi:10.1080/08912960903562192

Funding and Awards

2015

National Science Foundation (Archaeology) - Middle Pleistocene Hominin Behavior and Paleoecology at Farre, Chalbi Basin, Northern Kenya. PI: Ferraro. Role: Senior Scientist. Amount awarded: $60,000.

2014

Travel Grant - Paleoanthropology Society for meetings in Calgary. $500.

2013

Named Continuing Fellowship - University of Texas at Austin Graduate School. $29,000.
Pollitzer Student Travel Award - American Association of Physical Anthropologists. $500.

2012

Dissertation Fieldwork Grant - Wenner-Gren Foundation. $13,317.

2008

Professional Development Award - Department of Anthropology, University of Texas at Austin. Also received in 2009-2011.

2007

Graduate Research Fellowship - National Science Foundation. $90,000.
Liberal Arts Graduate Research Fellowship - University of Texas at Austin.
Student Prize - Texas Association of Biological Anthropologists.
David Bruton, Jr. Graduate Fellowship - University of Texas at Austin. Also received in 2008.

Courses Taught

Introduction to Biological Anthropology. ANTH 1001. Undergraduate survey course with enrollment of approximately 240 students. This course is designed as a survey of the field of biological anthropology, and fulfills a general science requirement. George Washington University, Anthropology. Taught Fall 2016.

Analytical Methods in Evolutionary Anthropology. ANTH 6413. I designed this graduate course course covering applied statistical methods (e.g, regression, ANOVA and related techniques, categorical data analysis, resampling approaches) and the R statistical programming language. This is a required course for the Hominid Paleobiology PhD program. George Washington University, Anthropology. Taught Spring 2015, Spring 2016.

Climate Change and Human Evolution. ANTH 3491. I designed this upper level undergraduate course covering changes in global climate through evolutionary time and the impacts on evolution, with an emphasis on humans. (Previous course title: Evolutionary Impacts of Cenozoic Climate Change). George Washington University, Anthropology. Taught Spring 2016.

Public Understanding of Science. HOMP 8302. Graduate course in which students complete semester-long public service internships. Student projects target underserved Washington, DC-area public schools and general audiences at public museums with a goal of increasing scientific literacy and creating interest in scientific careers. George Washington University, Anthropology. Taught Spring 2016.

GIS and Remote Sensing for Archaeology and Paleontology. ANT 391 / GRG 396. Teaching Assistant. University of Texas at Austin, Anthropology. 2010.

Human Variation. ANT 394C. Teaching Assistant. University of Texas at Austin, Anthropology. 2009.

Introduction to Physical Anthropology. ANT 301. Teaching Assistant. University of Texas at Austin, Anthropology. 2006, 2007, 2010, 2011, 2012.

Student Advising

PhD students, committee member

David Patterson (PhD awarded in 2016, Center for the Advanced Study of Human Paleobiology. George Washington University)

Laurence Dumouchel (Center for the Advanced Study of Human Paleobiology. George Washington University)

Chrisandra Kufeldt (Center for the Advanced Study of Human Paleobiology. George Washington University)

Vance Powell (Center for the Advanced Study of Human Paleobiology. George Washington University)

Undergraduate Assistants

Maryse Biernat (Stockton University)

Elliot Greiner (George Washington University)

Koobi Fora Field School Students

Lorena Benitez (Harvard University)

Alyssa Enny (Stockton University)

Catherine Llera (University of Florida)

Weldeyared Reda (Aksum University, Ethiopia)

Professional Preparation

External Member. Evolution of Terrestrial Ecosystems Working Group. National Museum of Natural History. 2015 - Present.

Research Associate and Software Developer. PaleoCore Project. I am a key member of this NSF Funded project, which aims to create a data-standard for physical anthropology. I contributed heavily to the development of PaleoCore informatics tools for data sharing. 2012 - Present.

Participant. AnthroTree Workshop in Phylogenetic Methods. Amherst, MA. 2011.

Research Assistant. eSkeletons.org and eFossils.org. PI: John Kappelman. 2010, 2011.

Fieldwork Experience

Koobi-Fora Field School, East Turkana, Kenya. Directors: David Braun and Purity Kiura. I collected fossil data relating to sub-regional faunal variability in the Koobi Fora Formation from 2.0 - 1.4 Ma. I supervised four undergraduate student research projects that were organized around this topic. Summer 2016.

Mille-Logya Research Project, Afar Region, Ethiopia. PI: Zeresenay Alemseged. I am a member of the scientific team conducting research to recover new fossil evidence of human evolution from this Plio-Pleistocene site. 2014.

Great Divide Basin Project, Wyoming. PI: Robert Anemone. Collected primate and mammalian fossils from Eocene sediments, and prospected for new localities. 2013, 2014.

Dikika Research Project, Afar Region, Ethiopia. PI: Zeresenay Alemseged. Surface collection of Plio- Pleistocene hominin and mammalian fossils. Managed GIS data collection with hand-held computers and high-precision GPS base station. 2010, 2012.

Dalquest Research Site, Big Bend Region, Texas. PI: E. Chris Kirk. Surface collected primate and mammalian fossils in the Devil's Graveyard Formation. (Eocene: Late Uintan). 2007, 2008, 2010.

Contrebandiers Cave, Temara, Morocco. PI: Harrold Dibble & Utsav Schurmans. Excavated site preserving Middle Stone Age archaeology (Aterian) and hominin remains. Performed systematic analysis of rodent fauna. 2009.

Scholarly Presentations

Published Abstracts from Conference Presentations

*indicates undergraduate under my supervision

2017

Barr WA. Bovid locomotor traits track land cover and mean annual precipitation: using an ecometric approach to reconstruct paleoenvironments in the Shungura Formation (Plio-Pleistocene, Ethiopia). American Association of Physical Anthropology.

Llera C*, Benitez L*, Biernat M*, Braun DR, Hammond AS, Patterson DB, and **Barr WA**. Subregion-scale heterogeneity in bovid abundance in the Koobi Fora Formation (Pleistocene, Northern Kenya). American Association of Physical Anthropology.

Thompson B, Arenson J, Biernat M*, **Barr WA**, Reeves J, Braun DR and Hammond AS. A preliminary study of primate abundance in East Turkana collection areas relative to outcrop size. American Association of Physical Anthropology.

Enny A*, Biernat M*, Braun DR, Reda W*, Hammond AS, Patterson DB and **Barr WA**. Exploring the impact of collection strategies on interpretations of faunal abundance: a case study from the Koobi Fora Formation (Pleistocene, northern Kenya). American Association of Physical Anthropology.

Benitez L*, Llera* C, Biernat M*, Braun DR, Hammond AS, Patterson DB, **Barr WA**. The Implications of Faunal Abundance for Pleistocene Paleoenvironments in the Turkana Basin, Northern Kenya. Paleoanthropology Society.

2016

Barr WA. Signal or noise? Testing hypotheses about faunal turnover. Paleoanthropology Society.

2015

Barr WA and Dunn RH. A method for analyzing complex joint surfaces in ecomorphology using slope rasters derived from Digital Elevation Models. American Association of Physical Anthropology.

Thompson JC, McPherron SP, Bobe R, **Barr WA**, Reed D, Wynn J, Marean CW, and Alemseged Z. Taphonomy of fossils from the hominin-bearing deposits at Dikika, Ethiopia. Paleoanthropology Society.

2014

Barr WA. Paleoenvironments of the Hadar and Shungura Formations: Synthesizing multiple lines of evidence using bovid ecomorphology. American Association of Physical Anthropology.

Kemp A and **Barr WA**. Rates of homoplasy in the mammalian skeleton. American Association of Physical Anthropology.

2013

Barr WA. Ecomorphology of the bovid astragalus: body size, function, phylogeny and paleoenvironmental reconstruction. *American Journal of Physical Anthropology*. 150:74.

2012

Barr WA. Ecomorphology in a phylogenetic statistical context: a case study using the bovid femur. *American Journal of Physical Anthropology*. 147:90-91.

Scott RS and **Barr WA**. Ecomorphology and phylogeny among the Bovidae: implications for habitat reconstruction. *American Journal of Physical Anthropology*.

Kappelman JK, Keane P, Reed D, Tenbarge J, Witzel A, **Barr WA**, Nachman BA, Russo GA. eFossils.org: a collaborative website and community database for the study of human evolution. *American Journal of Physical Anthropology*.

2011

Reed DN, McPherron S, **Barr WA**, Alemseged Z, Bobe R, Geraads D, and Wynn J. A new GPS data collection methodology and data schema for integrating multiple project databases: examples from the Dikika Research Project geodatabase. *American Journal of Physical Anthropology*. 144:249-250.

2009

Barr WA, Reed DN. Coping with taxonomic ambiguity and inter-observer variation in paleontological and paleoanthropological analyses. *American Journal of Physical Anthropology*. 144:249-250.

Toborowsky CJ, **Barr WA**, Lewis, RJ. Does environmental unpredictability drive lemur life histories? *American Journal of Physical Anthropology*.

2008

Barr WA. The effects of allometric scaling patterns on the template method for estimating dimorphism. *American Journal of Physical Anthropology*.

Scholarly Presentations Without Published Abstracts

2013

Barr WA, Nachman B, Shapiro L. The Academic Phylogeny of Physical Anthropology. Annual Meetings of the Texas Association for Biological Anthropologists. Austin, TX.

Reed D, **Barr WA**, Urban T. Free as in speech and beer: open source software solutions for spatial data management in physical anthropology. Annual Meetings of the Texas Association for Biological Anthropologists. Austin, TX.

2012

Barr WA. Refining hominin paleoenvironmental reconstructions using bovid ecomorphology: the role of phylogenetic comparative methods. Presentation at University of Texas at Austin Paleontology Brown-Bag Seminar Series.

Barr WA. Refining hominin paleoenvironmental reconstructions with bovid ecomorphology. Presentation at University of Texas at Austin Informal Physical Anthropology Semininar series.

2011

Barr WA. Ecomorphology in a phylogenetic statistical context: a case study using the bovid femur. Annual Meetings of Texas Association for Biological Anthropologists. San Marcos, TX.

2010

Barr WA. Pattern or chaos? Exploring a null model of faunal turnover patterns. Annual Meetings of Texas Association for Biological Anthropologists. Waco, TX.

Barr WA. Quantitative ecomorphology of mammalian dentitions: Refining a tool for reconstructing early hominin paleoenvironments. Presentation at University of Texas at Austin Informal Physical Anthropology Semininar series.

2008

Barr WA. Coping with taxonomic ambiguity and inter-observer variation in paleontological and paleoanthropological analyses. Annual Meetings of Texas Association for Biological Anthropologists. College Station, TX.

2007

Barr WA. The effects of allometric scaling patterns on the template method for estimating dimorphism. Annual Meetings of Texas Association for Biological Anthropologists. Austin, TX.

Invited Talks, Symposia, Workshops, Guest Lectures

2017

Invited workshop presenter. Topic: *Data Analysis, Visualization, and Comparative Methods in R*. February 16-17. University of North Carolina - Greensboro.

2015

Invited participant in symposium entitled: *Latest methods in reconstructing Cenozoic terrestrial environments and ecological communities*. September 10 - 12. Cleveland Museum of Natural History.

2014

Invited participant in symposium entitled: *The Role of Mosaic Habitats in Hominin Evolution*. Annual Meeting of the American Association of Physical Anthropologists. Calgary, Alberta.

2013

Guest Lecture for Denné Reed in graduate-level Statistical Methods course at University of Texas at Austin. Topic: Data reshaping and advanced plotting with ggplot2.

Guest Lecture for E. Christopher Kirk Introduction to Physical Anthropology course at University of Texas at Austin. Topic: Primate Evolution.

Professional Service

Coordinator, Capstone Seminar - Coordinated speakers and organize the academic program for this departmental seminar in the Center for the Advanced Study of Human Paleobiology at The George Washington University. 2014-2015.

Academic Phylogeny of Physical Anthropology - In collaboration with Liza Shapiro and Brett Nachman, I created this website as a public resource that tracks academic lineages of Physical Anthropology PhDs. The site has had over 1700 user submissions. 2013.

Volunteer, Explore UT - University wide K-12 educational open house. Helped organize and run activity "Leaping Lemurs of Madagascar" on locomotion and conservation of lemurs. 2010, 2011.

Reviewer - University of Texas Liberal Arts Graduate Research Fellowship. Evaluated grant proposals from students competing for $50,000 in grant funds. 2008.

Coordinator - Informal Physical Anthropology Seminar Series, University of Texas at Austin. Responsible for planning weekly seminars and recruiting speakers. 2008.

Media Coverage

February 26, 2015. *GWU aims to be among top research schools.* Washington Post.

Manuscript Reviews

Journal of Human Evolution. 2014, 2015, 2017.
Comptes Rendus Palevol. 2017.
Nature Ecology & Evolution. 2016.
International Journal of Primatology. 2014.
Methods in Ecology and Evolution. 2012.
Manning Publications (book proposal review). 2012.

Professional Memberships

American Association of Physical Anthropologists
Paleoanthropology Society