

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

2014 University of Texas at Austin. Ph.D., Anthropology.
2008 University of Texas at Austin. M.A., Anthropology.
2005 Tulane University. B.S., Anthropology and French.

Academic Appointments

2019 - Present Assistant Professor. Center for the Advanced Study of Human Paleobiology. Department of Anthropology. The George Washington University.
2014 - Present Research Associate. Department of Paleobiology. National Museum of Natural History.
2016 - 2019 Visiting Assistant Professor. Center for the Advanced Study of Human Paleobiology. Department of Anthropology. The George Washington University.
2014 - 2016 Postdoctoral Scientist. Center for the Advanced Study of Human Paleobiology. Department of Anthropology. The George Washington University. Advisor: Bernard Wood.

Research Grants and Fellowships

2021 National Science Foundation - Examining the relationship between an increasingly carnivorous *Homo erectus* and Pleistocene mammal extinctions. Role: PI. \$90,099
2020 National Science Foundation - Collaborative Research: Catching Fire: Pyrotechnology and Ecosystem Change in the Turkana Basin. Role: Co-PI. \$237,661.
2019 National Science Foundation - Collaborative Research: REU Site: Past and Present Human-Environment Dynamics in the Turkana Basin, Kenya. Role: Senior Personnel. \$305,846
2019 National Science Foundation - HRRBAA: Paleontology and paleoanthropology of a potential Late Miocene site in the Laikipia highlands. Role: PI. \$26,581. 2020 fieldwork season postponed due to COVID-19.
2018 American Association of Physical Anthropologists - Professional Development Award. Tumbili (late Miocene, Kenya): A new window into eastern African mammalian evolution at the dawn of the hominin lineage. \$7,500
2013 University of Texas at Austin - Named Continuing Fellowship. \$29,000.
2012 Wenner-Gren Foundation - Dissertation Fieldwork Grant. \$13,317.
2007 National Science Foundation - Graduate Research Fellowship. \$90,000.
2007 University of Texas at Austin - Liberal Arts Graduate Research Fellowship. \$1,800.

Peer-Reviewed Journal Articles

In Press or Early View

24. Robinson JR, Rowan J, **Barr WA**, Sponheimer M. Intrataxonomic trends in herbivore enamel $\delta^{13}\text{C}$ are decoupled from ecosystem woody cover. *Nature Ecology and Evolution*.

2021

23. Dumouchel L, Bobe R, Wynn J, **Barr WA**. The environments of *Australopithecus anamensis* at Allia Bay, Kenya: A multiproxy analysis of early Pliocene Bovidae. *Journal of Human Evolution*. 151:102928. doi:10.1016/j.jhevol.2020.102928
22. Fraser D, Soul LC, Tóth AB, Balk MA, Eronen JT, Pineda-Munoz S, Shupinski AB, Villaseñor A, **Barr WA**, Behrensmeyer AK, Du A, Faith JT, Gotelli NJ, Graves GR, Jukar AM, Looy CV, Miller JH, Potts R, Lyons SK. Investigating biotic interactions in deep time. *Trends in Ecology and Evolution*. 36:61-75, doi:10.1016/j.tree.2020.09.001
21. Pineda-Munoz S, Jukar AM, Amatangelo K, Balk MA, **Barr WA**, Behrensmeyer AK, Blois J, Davis M, Du A, Eronen JT, Fraser D, Gotelli NJ, Looy C, Miller J, Shupinski AB, Soul LC, Tóth AB, Villaseñor A, Wing S, Lyons SK. Body mass-related changes in mammal community assembly patterns during the late Quaternary of North America. *Ecography*. 44:56-66. doi:10.1111/ecog.05027

2020

20. **Barr WA**, Biernat M. Mammal functional diversity and habitat heterogeneity: Implications for hominin habitat reconstruction. *Journal of Human Evolution*. 146:102853. doi:10.1016/j.jhevol.2020.102853
19. Faith JT, Rowan J, Du A, **Barr WA**. The uncertain case for human-driven extinctions prior to *Homo sapiens*. *Quaternary Research*. 96:88-104. doi:10.1017/qua.2020.51
18. Alemseged Z, Wynn JG, Geraads D, Reed DN, **Barr WA**, Bobe R, McPherron S, Deino A, Alene M, Sier M, Roman D, Mohan J. Fossils from Mille-Logya, Afar, Ethiopia, shed light on the link between late Pliocene environmental changes and the origin of *Homo*. *Nature Communications*. 11:2480. doi:10.1038/s41467-020-16060-8
17. Geraads D, Didier G, **Barr WA**, Reed D, Laurin M. The fossil record of camelids demonstrates a late divergence between Bactrian camel and dromedary. *Acta Palaeontologica Polonica*. 65(2):251-260. doi:10.4202/app.00727.2020
16. **Barr WA**. The morphology of the bovid calcaneus: function, phylogenetic signal, and allometric scaling. *Journal of Mammalian Evolution*. 27:111-121. doi:10.1007/s10914-018-9446-9

2019

15. Geraads D, **Barr WA**, Reed DN, Laurin M, Alemseged Z.. New remains of *Camelus grattardi* (Mammalia, Camelidae) from the Plio-Pleistocene of Ethiopia and the phylogeny of the genus. *Journal of Mammalian Evolution*. doi:10.1007/s10914-019-09489-2
14. Tóth, AB, Lyons SK, **Barr WA**, Behrensmeyer AK, Blois JL, Bobe R, Davis M, Du A, Eronen J, Faith JT, Fraser D, Gotelli NJ, Graves GR, Jukar AM, Miller JH, Pineda-Munoz S, Soul LC, Villaseñor A, Alroy J. Reorganization of surviving mammal communities after the end-Pleistocene megafaunal extinction. *Science*. 365:1305-1308. doi:10.1126/science.aaw1605
13. Patterson DB, Braun DR, Allen K, **Barr WA**, Behrensmeyer AK, Biernat M, Lehmann SB, Maddox T, Manthi FK, Merritt SR, Morris SE, O'Brien K, Reeves JS, Wood BA, Bobe R. Comparative isotopic evidence from East Turkana is consistent with a dietary shift between early *Homo* and *Homo erectus*. *Nature Ecology and Evolution*. 3:1048-1056. doi:10.1038/s41559-019-0916-0

2018

12. Fraser D, Haupt R, **Barr WA**. Phylogenetic signal in tooth wear dietary niche proxies: What it means for those in the field. *Ecology and Evolution*. doi:10.1002/ece3.4540
11. Fraser D, Haupt R, **Barr WA**. Phylogenetic Signal In Tooth Wear Dietary Niche Proxies. *Ecology and Evolution*. 8:5355-5368 doi:10.1002/ece3.4052
10. Blondel C, Rowan J, Merceron G, Bibi F, Negash E, **Barr WA**, Boissarie JR. Feeding ecology of Tragelaphini (Bovidae) from the Shungura Formation, Omo Valley, Ethiopia: contribution of dental wear analyses. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 496:103-120. doi:10.1016/j.palaeo.2018.01.027

2017

9. **Barr WA**. Signal or noise? A null model method for testing hypotheses about pulsed faunal turnover. *Paleobiology*. 43:656-666. doi:10.1017/pab.2017.21
8. **Barr WA**. Bovid locomotor functional trait distributions reflect land cover and annual precipitation in sub-Saharan Africa. *Evolutionary Ecology Research*. 18:253-269.

2015

7. **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
6. 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
5. 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

4. **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
3. **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
2. 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

1. 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

Peer-Reviewed Book Chapters**2018**

2. **Barr WA**. Ecomorphology. In: Croft DA, Simpson SW, and Su DF (eds.), *Methods in Paleoecology: Reconstructing Cenozoic Terrestrial Environments and Ecological Communities*. Springer (Vertebrate Paleobiology and Paleoanthropology Series), Cham, Switzerland. 339-349. doi:10.1007/978-3-319-94265-0

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

Honors and Awards

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| 2015 | Travel Grant - Paleoanthropology Society for meetings in Calgary. \$500. |
| 2013 | Pollitzer Student Travel Award - American Association of Physical Anthropologists. \$500. |
| 2008 - 2011 | Professional Development Award - Department of Anthropology, University of Texas at Austin. |
| 2007 | Student Prize - Texas Association of Biological Anthropologists. |

Fieldwork

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| 2018 - Present | Tumbili Paleoanthropology Project, Laikipia County, Kenya (Late Miocene). I am the director of this new collaborative project in a unique geographical context outside the Great Rift Valley. To date we have discovered a moderately rich fossil fauna, and excavations are planned to expand the faunal sample from this poorly represented time period. |
| 2014 - Present | Mille-Logya Research Project, Afar Region, Ethiopia (Plio-Pleistocene). I conduct field research to recover new fossils and to understand the environmental and ecological context of human evolution in this region. |
| 2016 | Koobi-Fora Field School, East Turkana, Kenya. 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. |
| 2013 - 2014 | Great Divide Basin Project, Wyoming. Collected primate and mammalian fossils from Eocene sediments, and prospected for new localities. |
| 2010, 2012 | Dikika Research Project, Afar Region, Ethiopia. Surface collection of Plio- Pleistocene hominin and mammalian fossils. Managed GIS data collection with hand-held computers and high-precision GPS base station. |
| 2007, 2008, 2010 | Dalquest Research Site, Big Bend Region, Texas. Surface collected primate and mammalian fossils in the Devil's Graveyard Formation. (Eocene: Late Uintan). |
| 2009 | Contrebandiers Cave, Temara, Morocco. Excavated site preserving Middle Stone Age archaeology (Aterian) and hominin remains. Performed systematic analysis of rodent fauna. |

Synergistic Activities

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| 2015 - Present | External Member. Evolution of Terrestrial Ecosystems Working Group. National Museum of Natural History. |
| 2012 - 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. |

Scholarly Presentations

Invited Talks, Symposia, Workshops

2019

6. Invited speaker. *The Environmental Context of Hominin Evolution: Fieldwork, Fossils, and Functional Morphology*. Howard University, Washington, DC.

5. Invited speaker. *The Environmental Context of Hominin Evolution: Fieldwork, Fossils, and Functional Morphology*. Colorado State University, Ft. Collins, Colorado.

2018

4. Invited speaker at symposium: *Advances in Paleoecology*. 2nd Lembersky Conference in Human Evolutionary Studies. Rutgers University. November 14 - 16.

2017

3. Invited speaker. *Data Analysis, Visualization, and Comparative Methods in R*. February 16-17. University of North Carolina - Greensboro.

2015

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

2014

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

Published Abstracts from Conference Presentations

*indicates undergraduate under my supervision

2020

21. **Barr WA**, Geraads D, Reed D, Bobe R, Wynn JG, Alemseged Z. Faunal turnover at Mille-Logya (Plio-Pleistocene, Ethiopia) reflects in situ environmental change: implications for the origins of *Homo*. American Association of Physical Anthropology. In-person meeting cancelled due to COVID-19.

2019

20. Alemseged Z, Wynn JG, Geraads D, Reed D, **Barr WA**, Bobe R, McPherron S. New hominin remains from Mille-Logya, Afar, Ethiopia and their implication for the origin of *Homo*. Paleoanthropology Society.

2018

19. Hammond AS, Hunter LE, Thompson B, Corniner E, Biernat M, **Barr WA**, Braun DR. Morphology and context of a new early *Homo* mandible from Koobi Fora, Kenya.
18. **Barr WA**, Biernat M. Quantifying African habitat heterogeneity and mammalian functional diversity with implications for understanding hominin habitats. American Association of Physical Anthropology.

2017

17. **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.
16. 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.
15. 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.
14. 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.
13. 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

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

2015

11. **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, McPherson 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

10. **Barr WA**. Paleoenvironments of the Hadar and Shungura Formations: Synthesizing multiple lines of evidence using bovid ecomorphology. American Association of Physical Anthropology.
9. Kemp A and **Barr WA**. Rates of homoplasy in the mammalian skeleton. American Association of Physical Anthropology.

2013

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

2012

7. **Barr WA**. Ecomorphology in a phylogenetic statistical context: a case study using the bovid femur. *American Journal of Physical Anthropology*. 147:90-91.
6. Scott RS and **Barr WA**. Ecomorphology and phylogeny among the Bovidae: implications for habitat reconstruction. *American Journal of Physical Anthropology*.
5. Kappelman JK, Keane P, Reed D, Tenbarger 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

4. 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

3. **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.
2. Toborowsky CJ, **Barr WA**, Lewis, RJ. Does environmental unpredictability drive lemur life histories? *American Journal of Physical Anthropology*.
1. **Barr WA**. The effects of allometric scaling patterns on the template method for estimating dimorphism. *American Journal of Physical Anthropology*.

Courses Taught

Introduction to Biological Anthropology. ANTH 1001. Undergraduate survey of the field of biological anthropology. The George Washington University, Anthropology. Taught Fall 2016, Spring 2017.

Analytical Methods in Evolutionary Anthropology. ANTH 6413. I designed this graduate 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. The George Washington University, Anthropology. Taught Spring 2015, Fall 2016, Fall 2018.

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. The George Washington University, Anthropology. Taught Spring 2016, Spring 2017.

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. The 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.

Advising**Postdoctoral Researchers**

2019-present Enquye Negash (The George Washington University)

PhD students, primary advisor

In progress Kathryn Fish (The George Washington University)

PhD students, committee member

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| In progress | Victoria Lockwood (The George Washington University) |
| In progress | Kristen Tuosto (The George Washington University) |
| In progress | Kim Foecke (The George Washington University) |
| In progress | Alexis Williams (The George Washington University) |
| In progress | Rachel Nelson (The George Washington University) |
| In progress | Maryse Biernat (Arizona State University) |
| 2019 | Eve Boyle (The George Washington University) |
| 2018 | Laurence Dumouchel (The George Washington University) |
| 2018 | Vance Powell (The George Washington University) |
| 2017 | Chrisandra Kufeldt (The George Washington University) |
| 2016 | David Patterson (The George Washington University) |

Masters Students - Primary or Co-Advisor

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| 2020 | Nicholas Burns (The George Washington University) |
| In progress | Annelise Beer (The George Washington University) |
| In progress | Monica Cheung (The George Washington University) |
| In progress | Noelle Purcell (The George Washington University) |

Undergraduate Research Associates

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| 2019 - 2020 | Rowan Sherwood (The George Washington University) |
| 2018 - 2019 | Jane Meiter (The George Washington University) |
| 2018 - 2019 | Paulette Ma (The George Washington University) |
| 2016 - 2017 | Maryse Biernat (Stockton University) |
| 2016 - 2017 | Elliot Greiner (The George Washington University) |

Koobi Fora Field School Students

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| 2018 | Suzy Strubel (University of Minnesota) |
| 2018 | Joshua Porter (The George Washington University) |
| 2018 | James Frazier (Bryn Mawr) |
| 2018 | Annalys Hanson (Emory University) |
| 2016 | Lorena Benitez (Harvard University) |
| 2016 | Alyssa Enny (Stockton University) |
| 2016 | Catherine Llera (University of Florida) |
| 2016 | Weldeyared Reda (Aksum University, Ethiopia) |

Departmental and Professional Service

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| 2020 | CASHP Comprehensive Examination Committee - Member. |
| 2019 - 2020 | GWU Anthropology Library representative - Served as liason to GWU libraries on all aspects of library services on behalf of the Anthropology department. |

- 2017 - Present Webmaster, Center for the Advanced Study of Human Paleobiology. I maintain the website and mailing list for our research center.
- 2014 - 2015 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.
- 2013 - present [Academic Phylogeny of Biological Anthropology](#) - In collaboration with Liza Shapiro and Brett Nachman, I created this website as a public resource that tracks academic lineages of Biological Anthropology PhDs. The site has had over 2200 user submissions.
- 2008 Reviewer - University of Texas Liberal Arts Graduate Research Fellowship. Evaluated grant proposals from students competing for \$50,000 in grant funds.

Public Outreach and Science Communication

- May 16, 2018 *The Scientist is In*. National Museum of Natural History. I interacted directly with over a hundred visitors to the National Museum of National History's Hall of Human Origins and answered their questions about human evolution.
- March 30, 2017 *Survivors: What Fossils Tell Us About the Past and Future*. I answered questions for the general public at the National Museum of National History as part of the 30th anniversary celebration of the Evolution of Terrestrial Ecosystems program, of which I am a member.
- 2016 - Present [Faces of Fieldwork](#) - I created Faces of Fieldwork because I believe people engage more with science when they understand who we are and what we do. This site features weekly photographic posts highlighting the good, the bad, and the ugly of real people doing real research.
- 2014-2015 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.

Media Coverage

- 2019 Tóth et al. paper on extinction impacts covered by 11 news outlets, including Smithsonian.com. [altmetrics link](#)
- 2017 Online coverage of *Signal or noise? A null model method for testing hypotheses about pulsed faunal turnover* in [Science Daily](#), [phys.org](#), [GW Today](#) and others.
- 2017 Feature on [theguardian.com](#) highlighting several contributors to Faces of Fieldwork.
- 2015 *GWU aims to be among top research schools*. [Washington Post](#).

Manuscript and Grant Reviews

The Leakey Foundation
 Journal of Human Evolution
 Nature Ecology & Evolution
 Journal of Vertebrate Paleontology
 Methods in Ecology and Evolution
 PLoS One
 Quaternary Research
 Comptes Rendus Palevol
 International Journal of Primatology
 Manning Publications (book proposal review)

Professional Memberships

American Association of Physical Anthropologists

Paleoanthropology Society