

KAREN L. BAAB

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EDUCATION

- Ph.D.**, 2007 The Graduate Center (City University of New York) Anthropology
Dissertation Title: Cranial shape variation in *Homo erectus*
- M.A.**, 2003 Hunter College (City University of New York) Anthropology
Thesis Title: Nasal morphology and climate in Neanderthals"
- B.A.**, 2000 Muhlenberg College (Honors, Summa cum laude) History and Anthropology

PROFESSIONAL APPOINTMENTS

- 2018-present **Associate Professor of Anatomy** Midwestern University
- 2014-2018 **Assistant Professor of Anatomy** Midwestern University
- 2010-2014 **Assistant Professor of Anthropology** Stony Brook University
- 2008-2010 **Postdoctoral Researcher in Anatomical Sciences** Stony Brook University

SCHOLARLY PUBLICATIONS

Peer-reviewed Journal Articles and Book Chapters

- In review Bruner, E., Holloway, R., **Baab, K.L.**, Rogers, M., Semaw, S. The endocast from Dana Aoule North (DAN5/P1): a 1.5 million year-old human braincase from Gona, Afar, Ethiopia. *American Journal of Biological Anthropology*.
- 2022 Ward, D. L., Schroeder, L., Roy, J. E., Hertz, M., Uhl, A., Pomeroy, E., Stock, J. T., Copes, L., **Baab, K. L.**, Viola, T. B., Silcox, M. T. The influence of subsistence strategy and climate on bony labyrinth morphology in recent *Homo sapiens*. *American Journal of Biological Anthropology*, Early View.
- 2022 **Baab, K.L.**, Rogers, M., Bruner, E., Semaw, S. Reconstruction and analysis of the DAN5/P1 and BSN12/P1 Gona early Pleistocene *Homo* fossils. *Journal of Human Evolution*. 162: 103102. (<https://doi.org/10.1016/j.jhevol.2021.103102>)
- 2021 **Baab, K.L.**, Nesbitt, A., Hublin, J.J., Neubauer, S. Assessing the status of the KNM-ER 42700 fossil using *Homo erectus* neurocranial development. *Journal of Human Evolution*. 154: 102980. (<https://doi.org/10.1016/j.jhevol.2021.102980>)
- 2020 **Baab, K.L.** Reconstructing cranial evolution in an extinct hominin. *Proceedings of the Royal Society B*. 288: 20202604. (<https://doi.org/10.1098/rspb.2020.2604>)
- 2020 Riede, T., Coyne, M., Tafoya, B., **Baab, K.L.** Postnatal development of the mouse larynx: Negative allometry, age-dependent shape changes, morphological integration and a size-dependent spectral feature. *Journal of Speech, Language, and Hearing Research*. 63: 2680-2694. (https://doi.org/10.1044/2020_JSLHR-20-00070)

- 2019 Borgard, H.L., **Baab, K.L.**, Pasch, B., Riede, T. The shape of sound: A geometric morphometrics approach to laryngeal functional morphology. *Journal of Mammalian Evolution*. (<https://doi.org/10.1007/s10914-019-09466-9>).
- 2018 **Baab, K.L.** Evolvability and craniofacial diversification in genus *Homo*. *Evolution*. 72: 2781-2791. (<https://doi.org/10.1111/evo.13637>).
- 2018 Zichello, J., **Baab, K.L.**, McNulty, K.P., Raxworthy, C.J. and Steiper, M.E. Hominoid intraspecific cranial variation mirrors neutral genetic diversity. *Proceedings of the National Academy of Sciences*. 115: 11501-11506.
- 2018 **Baab, K.L.**, Copes, L.E., Ward, D., Wells, N., Grine, F.E. Using modern human cortical bone distribution to test the systemic robusticity hypothesis. *Journal of Human Evolution*. 119: 64-82.
- 2017 **Baab, K.L.** and Zaim, Y. Global and local perspectives on cranial shape variation in Indonesian *Homo erectus*. *Anthropological Science*. 125: 67-83.
- 2016 **Baab K.L.**, Brown P., Falk D., Richtsmeier J.T., Hildebolt C.F., Smith K., Jungers W. A critical evaluation of the Down syndrome diagnosis for LB1, type specimen of *Homo floresiensis*. *PLoS ONE*. 11(6): e0155731
- 2016 Ledogar, J.A., Dechow, P.C., Wang, Q., Gharpure, P.H., Gordon, A.D., **Baab, K.L.**, Weber, G.W., Grosse, I.R., Ross, C.F., Richmond, B.G., Wright, B.W., Byron, C., Wroe, S., Strait, D.S. Human feeding biomechanics: performance, variation and functional constraints. *PeerJ*. 4e:2242.
- 2016 **Baab, K.L.** The place of *Homo floresiensis* in human evolution. *Journal of Anthropological Studies*. 94: 1-14. *Invited*
- 2016 **Baab, K.L.** The role of neurocranial shape in defining the boundaries of an expanded *Homo erectus* hypodigm. *Journal of Human Evolution*. 92: 1-21.
- 2015 **Baab, K.L.** Defining *Homo erectus*. Henke, W. and Tattersall, I. (Eds.). *Handbook of Paleoanthropology*. New York: Springer, pp. 2189-. *Invited*
- 2014 **Baab, K.L.** Phylogenetic, ecological, and allometric correlates of cranial shape in Malagasy lemuriforms. *Evolution*. 68: 1450–1468.
- 2013 **Baab, K. L.** The impact of superimposition choice in geometric morphometric approaches to morphological integration. *Journal of Human Evolution*. 65: 689-692.
- 2013 **Baab, K.L.**, McNulty, K.P., and Harvati, K. *Homo floresiensis* contextualized: A geometric morphometric comparative analysis of fossil and pathological human samples. *PLoS ONE* 8(7): e69119.
- 2012 **Baab, K.L.**, McNulty, K.P. and Rohlf, F.J. The shape of human evolution: a geometric morphometrics perspective. *Evolutionary Anthropology*. 21: 151-165. *Invited*
- 2010 McNulty, K.P. and **Baab, K.L.** Keeping asymmetry in perspective: A reply to Eckhardt and Henneberg. *American Journal of Physical Anthropology*. 143: 337-339.
- 2010 **Baab, K.L.** Cranial shape in Asian *Homo erectus*: geographic, anagenetic, and size-related variation. In: Norton, C.J., Braun, D.R. (Eds.) *Asian Paleoanthropology: From Africa to China and Beyond*. New York: Springer, pp. 57-80.
- 2010 **Baab, K.L.**, Freidline, S.E., Wang, S.L, Hanson, T. Relationship of cranial robusticity to cranial form, geography and climate in *Homo sapiens*. *American Journal of Physical Anthropology*. 141: 97-115.

- 2009 **Baab, K.L.**, McNulty, K.P. Size, shape and asymmetry in fossil hominins: the status of the LB1 cranium based on 3D morphometric analyses. *Journal of Human Evolution*. 57: 608-622.
- 2008 **Baab, K.L.** The taxonomic implications of cranial shape variation in *Homo erectus*. *Journal of Human Evolution*. 54: 827-847.
- 2008 **Baab, K.L.**, A re-evaluation of the species affinities of KNM-ER 42700. *Journal of Human Evolution*. 55: 741-746.

Contributed Papers and Posters

- 2021 **Baab, K.L.** Comparing population history in the widely dispersed *Homo erectus* and *Homo sapiens* species. *American Journal of Physical Anthropology*. *Accepted*.
- 2021 Ward, D.L., Schroeder, L., Roy, J., Hertz, M, Uhl, A., Pomeroy, E., Stock, J.T., Copes, L., **Baab, K.L.**, Bence Viola, T., Silcox, M.T. Global bony labyrinth shape variation with climate and subsistence strategy. *American Journal of Physical Anthropology*. *Accepted*.
- 2019 **Baab, K.L.** and Nesbitt, A. Ontogeny of vault shape in *Homo erectus* with implications for KNM-ER 42700. *American Journal of Physical Anthropology*. Suppl. 68: 10.
- 2018 **Baab, K.L.** Craniofacial integration and evolution of hominins. *American Journal of Physical Anthropology*. Suppl. 66: 15.
- 2018 Ward, D. L., **Baab, K.L.**, Bence Viola, T. and Silcox, M.T. Using unintentional vault modification to evaluate integration of the bony labyrinth and cranium. *American Journal of Physical Anthropology*. Suppl. 66: 295.
- 2018 Arrington, S., Tafoya, B., Parker, T., Schaefer, C., **Baab, K.**, Pasch, B., and Riede, T. The Shape of Silence: A Study of Rodent Laryngeal Structure. **Poster** presented at the 2018 Arizona Imaging and Microanalysis Society (AIMS) Annual Conference.
- 2018 Borgard, H.L., **Baab, K.**, Pasch, B., and Riede, T. Geometric morphometrics applied to laryngeal functional morphology. **Talk** presented at 11th International Conference on Voice Physiology and Biomechanics (“ICVPB 2018”).
- 2017 **Baab, K.L.**, O’Neill, M.C., Hammond, A.S. and Jungers, W.L. Comparative Morphometric Analysis and Digital Reconstruction of the *Homo floresiensis* Pelvis. *American Journal of Physical Anthropology*. 162: 106.
- 2015 **Baab, K.L.**, Perry, J.M.G., Rohlf, F.J., and Jungers, W.L. Lemur craniomandibular diversification in relation to dietary ecology. *Journal of Vertebrate Paleontology*, Program and Abstracts: 82.
- 2015 **Baab, K.L.**, Falk, D., Brown, P., Richtsmeier, J.T., McNulty, K., Hildebolt, C.F., Prior, F.W., Smith, K.E. and Jungers, W. A re-evaluation of the Down syndrome diagnosis for LB1. *American Journal of Physical Anthropology*. 156 (S60): 74.
- 2015 Nesbitt, A. and **Baab, K.L.** The magnitude of covariation among regions of the human cranium. *American Journal of Physical Anthropology*. 156 (S60): 235.
- 2013 **Baab, K.L.**, Perry, J.M.G. Assessing function via shape: what is the place of geometric morphometrics in functional morphology? *American Journal of Physical Anthropology*.

- 2012 **Baab, K.L.** Using pathology to explore cranial integration in *Homo sapiens*. American Journal of Physical Anthropology. 147 (S54): 88.
- 2011 **Baab, K.L.** Rohlf, F.J., Jungers, W.L., Perry, J.M.G. Application of phylogenetic comparative methods to the adaptive radiation of Malagasy lemurs. American Journal of Physical Anthropology. 144 (S52): 79.
- 2010 **Baab, K.L.** Comparison of the LB1 neurocranium to extinct hominins, normal and pathological modern humans. American Journal of Physical Anthropology. 141 (S50): 59.
- 2009 **Baab, K.L.**, Jungers, W.L. Cranial shape variation in extant and giant subfossil lemurs from Madagascar. American Journal of Physical Anthropology. (S48): 81.
- 2008 **Baab, K.L.** A shape-based species definition for *Homo erectus*. American Journal of Physical Anthropology (S46): 62.
- 2007 **Baab, K.L.**, McNulty, K.P., Brown, P. Allometric scaling of craniofacial shape: implications for the Liang Bua hominins. PaleoAnthropology A2.
- 2007 **Baab, K.L.** Magnitude and pattern of geographic variation in cranial shape within *Homo erectus*, especially from Asia. American Journal of Physical Anthropology (S 44): 66-67.
- 2006 **Baab, K.L.**, Friedline, S.E., Wang, S.L. An investigation of robusticity in modern human crania: implications for *Homo erectus*. PaleoAnthropology A50.
- 2006 McNulty, K.P., **Baab, K.L.** Sexual dimorphism in hominine supraorbital morphology. American Journal of Physical Anthropology. 129 (S42): 128-129
- 2006 McNulty, K.P., **Baab, K.L.** Sexual dimorphism in hominin supraorbital morphology. PaleoAnthropology. Appendix: A65.
- 2006 Harvati, K., Panagopoulou, E., Karkanus, P., Frost, S.R., Athanassiou, A., Elefanti, P., Schrein, C., **Baab, K.**, Henderson, E., Tournalonkis, E., Garefalakis, C. New findings of the Aliakmon Paleolithic Survey, Greece 2004-2006. PaleoAnthropology. Appendix: A61.
- 2006 Harvati, K., Panagopoulou, E., Karkanus, P., Frost, S.R., Athanassiou, A., Elefanti, P., Schrein, C., **Baab, K.**, Henderson, E., Tournalonkis, E., Garefalakis, C. New findings of the Aliakmon Paleolithic Survey, Greece 2004-2006. Presented to the congress of the International Union for Prehistoric and Protohistoric Sciences, Lisbon, Portugal, September 2006.
- 2004 **Baab, K.L.**, Harvati, K. A 3-D analysis of shape differences in the scapula between Neanderthals and modern humans using geometric morphometrics (abstract). American Journal of Physical Anthropology. 123 (S38): 57.
- 2003 **Baab, K.L.**, Ting, N., Capellini, T.D., Hagell, S.E. Precision in 3-D landmark data collection for geometric morphometrics. American Journal of Physical Anthropology. 120 (S36): 61-62.
- 2003 Delson, E., Reddy, D., Rohlf, F.J., Frost, S., Friess, M., McNulty, K., **Baab, K.**, Capellini, T., Hagell, S.E. 3-D visualization of inferred intermediates on a phylogenetic tree –implications for paleoanthropology. American Journal of Physical Anthropology. 120 (S36): 86-87.

Other Publications and Presentations

- 2018 **Baab, K.L.** Evidence of early humans outside of Africa. *Desperta Ferro Ediciones* (popular science magazine in Spain). In press. *Invited*
- 2012 **Baab, K.L.** *Homo floresiensis*: Making sense of the small-bodied hominin fossils from Flores. *Nature Education Knowledge* 3(9): 4. *Invited*
- 2012 **Baab, K.L.** Book Review of *Wiley-Blackwell Encyclopedia of Human Evolution* (by B. Wood, 2011) *Quarterly Review of Biology*. 87: 59-60. *Invited*
- 2011 Delson, E., **Baab, K.L.** Fossil Humans in *McGraw-Hill Encyclopedia of Science and Technology* ed. 10, vol. 7, 464-478. *Invited*
- 2010 Jungers, W., **Baab, K.** The geometry of hobbits: *Homo floresiensis* and human evolution. *Significance*. 6: 159-194. *Invited*
- 2009 McNulty, K.P, **Baab, K.L.** The Fossil “Hobbits” of Flores: Perspectives from morphometric simulation. *AnthroQuest* (Newsletter of The Leakey Foundation).
- 2009 **Baab, K.L.** Fossil Hominids from Dmanisi. 2009 *McGraw-Hill Encyclopedia of Science and Technology*. *Invited*
- 2009 **Baab, K.L.** Paleoanthropology 2009: The Chicago Meetings. *Evolutionary Anthropology*. 18: 84.
- 2009 St. Clair, E.M., **Baab, K.L.** Throwing light on human evolution in Africa. *Evolutionary Anthropology*. 18: 121-122.
- 2008 **Baab, K.L.**, Book Review of *A New Human: The Startling Discovery and Strange Story of the “Hobbits” of Flores, Indonesia* (by M. Morwood and P. van Oosterzee, 2007). *American Journal of Physical Anthropology*. 136: 369-370. *Invited*

GRANT SUPPORT

Extramural

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| 2021-2023 | National Science Foundation (PI)
<i>Testing Adaptive Hypotheses of Plio-Pleistocene Hominin Craniofacial Evolution</i> | \$330,000 |
| 2013-2015 | L.B.S. Leakey Foundation Research Grant (PI)
<i>Integration of Robust Features Across the Cranial and Postcranial Skeleton</i> | \$19,100 |
| 2005-2007 | L.B.S. Leakey Foundation Research Grant (PI)
<i>Cranial Shape Variation in Homo erectus: A Geometric Approach</i> | \$4,500 |
| 2004-2007 | National Science Foundation (Doctoral Dissertation Improvement Grant)
<i>Cranial Variation in Homo erectus</i> | \$10,000 |
| 2004 | Sigma Xi Grants-In-Aid of Research
<i>Cranial Variation in Homo erectus</i> | \$1,000 |

Intramural

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| 2021-2023 | Midwestern University Postdoctoral Fellowship Program
<i>Supports a three-year postdoc position in my lab</i> | \$78,000 |
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PROFESSIONAL SOCIETY MEMBERSHIPS

American Association of Biological Anthropologists
Paleoanthropology Society
European Virtual Anthropology Network (EVAN) Society
American Association of Anatomists

SERVICE

University

2019-Current Senator (Arizona College of Osteopathic Medicine), Faculty Senate (MWU)
2018-Current Member, Faculty Development Committee (MWU)
2017-2018 Member, Bioethics Committee (MWU)
2016-2018 Member, Admissions Committee (PA Program, MWU)
2016-2018 Judge, Kenneth Suarez Research Day (MWU)
2015-2016 Member, Wellness Committee (MWU)
2015-2016 Member, College of Health Sciences, Student Promotion and Graduation Committee (MWU)

College

2020-Current Co-Chair Curriculum Subcommittee for College of Graduate Studies Diversity and Inclusion Taskforce (MWU)
2020-Current Member, Admissions Subcommittee for College of Graduate Studies Diversity and Inclusion Taskforce (MWU)
2019-2020 Member, Research Committee for College of Graduate Studies (MWU)
2017-2018 Member, Intramural Grant Committee for College of Graduate Studies (MWU)

Department

2019-Current Member, Committee to Develop Tenure and Promotion Guidelines (Dept. Anatomy, MWU)
2020 Chair, Search Committee for Research Assistant (Dept. Anatomy, MWU)
2018 Member, Search Committee for Assistant Professor (Dept. Anatomy, MWU)
2018 Member, Search Committee for Research Assistant (Dept. Anatomy, MWU)
2014-2020 Administrator for Web-Ex technology, (Dept. Anatomy, MWU)
2013 Member, Admissions Committee for M.A. Program (Dept. Anthropology, SBU)
2013 Member, Teaching Assistance Committee for Interdepartmental Doctoral Program in Anthropological Sciences (SBU)
2012 Member, Search Committee for Assistant Professor (Dept. Anthropology, SBU)
2010-2014 Library Representative, (Dept. Anthropology, SBU)
2011 Organized informal eight week "Geometric Morphometrics" seminar for graduate students (Dept. Anthropology, SBU)

External

- Current Member, Program Committee for 2022 American Association of Biological Anthropology Meetings
- 2016-Current Member, Review Committee for Cobb Professional Development Grant (American Association of Biological Anthropology)
- 2019 Co-Organizer 'Women in STEM' event at Highland Lakes Middle School
- 2017-2019 Highland Lakes Middle School Science Fair

STUDENTS

- 2020-Current Member, M.S. committee for Breanna Aikens
- 2010-2017 Ph.D. Supervisor for Allison Nesbitt (SBU)
- 2011-2013 Member, M.A. committees for Ronda Graves, Katherine Goodenberger, Stephanie Blatch, and Molly Elmer (SBU)
- 2013 Supervised High School student Alexandra Zigomalas (The Siemens Competition in Math, Science and Technology and Intel International Science and Engineering Fair)

PROFESSIONAL AND PUBLIC SERVICE ACTIVITIES

Grant Reviews

National Science Foundation (NSF)

Leakey Foundation

Natural Sciences and Engineering Research Council of Canada (NSERC)

Peer Reviews

Science, Evolutionary Biology, Journal of Human Evolution, American Journal of Physical Anthropology, Anthropological Science, Journal of Anthropological Science, Journal of Biogeography, Anthropologischer Anzeiger, Anatomical Record, PLOS ONE

SEMINARS AND PROFESSIONAL PRESENTATIONS

Chaired Symposia

- 04/2020 "From Old Monkeys to New Morphometrics: A Symposium Honoring the Scientific Contributions of Eric Delson" Symposium, American Association of Physical Anthropology, Los Angeles **DELAYED UNTIL 2022 DUE TO COVID**
- 06/2017 "The Evolution of Form and Function in the Hominin Pelvis" Symposium, American Association of Physical Anthropology, New Orleans

Invited Symposia

- 10/2015 "The Shape of Things To Come: Geometric Morphometrics in Vertebrate Paleontology" Symposium, Society of Vertebrate Paleontology Meetings. Dallas
- 08/2010 "Stop the Presses! A Magazine to Shout for Statistics!" Special Presentation, Joint Statistical Meetings. Vancouver

Invited Conferences

- 10/2014 “What made us human? Biological and cultural Evolution of *Homo sapiens*” Symposium, The International School of Ethology of the Ettore Majorana Centre for Scientific Culture. Erice, Italy.
- 05/2014 Peking Man International Research Conference, Confucius Institute, Stony Brook University
- 02/2009 “Darwin’s Legacy: Early Human Evolution in Africa” Conference (NYCEP), New York City

Invited Seminars

- 12/2020 Seminar, Paleo Talks, (Zoom)
- 04/2019 Seminar, Institute of Human Evolution, Arizona State University
- 02/2019 Seminar, Department of Anthropology, Washington University
- 11/2014 Seminar, National Museum of Nature and Science, Anthropology Department, Tsukuba, Japan
- 06/2012 Seminar, Département Hommes, Nature, Sociétés, Muséum national d’Histoire naturelle, Paris
- 04/2011 New York Regional Primatology colloquia, NYCEP
- 04/2009 Seminar, Department of Evolutionary Anthropology, Duke University
- 02/2008 Seminar, Turkana Basin Institute and Paleobiology Seminar Series, Stony Brook University

PUBLIC OUTREACH

- 2021 Interviewed about *Homo erectus* for ‘Evolution Soup’ YouTube Channel
- 2020 Interviewed about *Homo floresiensis* for ‘Evolution Soup’ YouTube Channel
- 2017 Foothills Branch Library Community Health Lecture Series 2017 “The ‘Hobbits’ of Southeast Asia: A Controversial New Human Species”
- 2016 Interviewed about *Homo floresiensis* for New York Times.
- 2013 Interviewed about *Homo floresiensis* for New York Times and Newsday
- 2009 Interviewed about *Homo floresiensis* for National Geographic News and Newsday.
- 2008 Interviewed about position of *Homo erectus* in human evolution for “A New Hominin” episode in video teaching series “Introduction to Physical Anthropology.”

TEACHING EXPERIENCE

Midwestern University

- Anatomical Sciences (School of Medicine, College of Podiatric Medicine)
Human Anatomy & Embryology (Physician Assistant, Physical Therapy, Nurse Anesthesia Programs)
Module Leader, 2016; Course Director, 2018, 2020
- Head and Neck Anatomy (College of Dental Medicine, College of Optometry)
Module Leader 2017-Current

Stony Brook University

Human Anatomy (Undergraduate)

Introduction to Physical Anthropology (Undergraduate)

Seminar: Hominins in the Headlines (Undergraduate)

Human Gross Anatomy (School of Dental Medicine)

City University of New York

Human Gross Anatomy Medical (*Sophie Davis School of Biomedical Education*)

Human Origins (Undergraduate)

Introduction to Human Evolution (Undergraduate)