

Educational History

- Ph.D. 2013 Stony Brook University, Long Island, New York, Anthropology,
Dissertation: *Physical Activity and Genetics as Determinants of Limb
Bone Morphology*, Advisor: Brigitte Demes
- M.A. 2009 Stony Brook University, Long Island, New York, Anthropology
- B.A. 2006 University of Minnesota, Twin Cities, Minnesota, Anthropology,
summa cum laude

Employment History Part I

- Assistant Professor, 2020–present, Department of Anthropology, University of New Mexico,
Albuquerque, New Mexico
- Lecturer, 2018–2019, Department of Human Evolutionary Biology, Harvard University,
Cambridge, Massachusetts
- Postdoctoral Research Fellow, 2015–2018, Department of Human Evolutionary Biology,
Harvard University, Cambridge, Massachusetts
- Postdoctoral Research Fellow, 2013–2015, Department of Anthropology, Stony Brook
University, Long Island, New York

Employment History Part II

- Co-Director, 2020–present, Orang Asli Health and Lifeways Project, Malaysia
- Director, 2020–present, Human Physical Activity Laboratory, Department of Anthropology,
University of New Mexico, Albuquerque, New Mexico

Professional Recognition and Honors

- Star Family Prize for Excellence in Advising, 2019, Harvard University
- Certificate of Teaching Excellence, Course: Evolutionary Human Physiology and Anatomy,
2019, Harvard University
- Certificate of Teaching Excellence, Course: Human Evolution and Human Health, 2019, Harvard
University
- President’s Award for Distinguished Doctoral Students, 2014, Stony Brook University

Norman Creel Prize for Outstanding Student Research, 2013, Stony Brook University

Norman Creel Prize for Outstanding Student Research, 2011, Stony Brook University

Graduate Fellowship, 2006–2013, Turkana Basin Institute

Short Narrative Description of Research, Teaching, and Service Interests

My research tackles two big questions: How did humans evolve to use their bodies to move? And what are the costs and benefits of modern physical activity patterns for human health? To address these questions, I explore how the way humans use their bodies has changed over time. I'm especially interested in the transitions from non-industrial to industrial and then post-industrial societies. I study contemporary humans in both the field and lab, focusing on measures of locomotor biomechanics and their ties to the health and function of the musculoskeletal system, the only part of the human body that readily fossilizes. I also study the fossil and archeological records. Given the nature of my research questions, the work that I do is integrative and interdisciplinary, and I value collaborations with clinicians, ecologists, engineers, ethnologists, and many others.

Recently, my fieldwork has focused on the indigenous peoples of Peninsular Malaysia, known collectively as the Orang Asli. Traditionally, the Orang Asli live in remote rainforest camps and villages and subsist on some combination of hunting, fishing, wild food collection, and swidden horticulture. Today, however, few Orang Asli remain isolated from outside economic and cultural influences due to rapid expansion of industries, the market economy, and urban areas across Malaysia over the last half-century. As a result, Orang Asli lifestyles are changing, including patterns of physical activity. My research aims to better understand how and why lifestyle changes are occurring among the Orang Asli and how such changes are affecting their health and risk of disease.

What drives my research, what energizes me, is a profound wonder for humanity: the saga of our evolutionary history and the lessons it holds, the exquisite diversity of people and cultures, the undeniable similarity of us all, the joy and pain of being a person. But in pursuing my work I've discovered another strong motivating force: I want my research to help people. As a result, I'm particularly drawn to topics that lie at the interface between evolutionary anthropology and medicine, especially those related to degenerative diseases that appear to stem from deleterious interactions between our evolutionary heritage and modern environments. Thus, while I approach anthropology with curiosity and awe similar to a natural historian, I'm also compelled by the potential practical value of my research to modern human life.

In addition to being a researcher, I am passionate about teaching. I enjoy working with both undergraduate and graduate students in diverse ways, including through lecturing, seminars, and mentoring research in the field and lab. I find it inspiring to encourage undergraduates to think differently, teach them valuable skills, and, above all, help them understand the importance of using the lens of evolution to evaluate, and ideally improve, the current state of the world and human life. Also, it is truly a privilege to be able to guide graduate students and advanced undergraduates to become critical thinkers and scientists.

Scholarly Achievements

Articles Published in Refereed Journals

2022 **Wallace IJ**, Kraft TS, Venkataraman VV, Davis HE, Holowka NB, Harris AR, Lieberman DE, Gurven M. Cultural variation in running techniques among non-industrial societies. *Evolutionary Human Sciences* 4, e14

2022 **Wallace IJ**, Riew GJ, Landau R, Bendele AM, Holowka NB, Hedrick TL, Konow N, Brooks DJ, Lieberman DE. Experimental evidence that physical activity inhibits osteoarthritis: implications for inferring activity patterns from osteoarthritis in archeological human skeletons. *American Journal of Biological Anthropology* 177, 223–231

2022 **Wallace IJ**, Felson DT, Worthington S, Lieberman DE. Response to: ‘Is non-industrial society undergoing an energy balance transition predisposed to accumulate abdominal adipose tissue and susceptible to knee osteoarthritis?’ by Yu et al. *Annals of the Rheumatic Diseases* 81, e64

2022 Holowka NB, Kraft TS, **Wallace IJ**, Gurven M, Venkataraman VV. Forest terrains influence walking kinematics among indigenous Tsimane of the Bolivian Amazon. *Evolutionary Human Sciences* 4, e19

2021 Kraft TS, Venkataraman VV, **Wallace IJ**, Crittenden AN, Holowka NB, Stieglitz J, Harris JA, Raichlen DA, Wood BM, Gurven M, Pontzer H. The energetics of uniquely human subsistence strategies. *Science* 374, eabf0130

2021 Holowka NB*, **Wallace IJ***, Mathiessen A, Ojiambo RM, Okutoyi P, Worthington S, Lieberman DE. Urbanization and knee cartilage growth among children and adolescents in western Kenya. *ACR Open Rheumatology* 3, 765–770 (*Co-lead authors)

2020 **Wallace IJ**, Burgess ML, Patel BA. Phalangeal curvature in a chimpanzee raised like a human: implications for inferring arboreality in fossil hominins. *Proceedings of the National Academy of Sciences USA* 117, 11223–11225

2020 **Wallace IJ**, Marsh D, Otárola-Castillo E, Billings BK, Mngomezulu V, Grine FE. Secular decline in limb bone strength among South African Africans during the 19th and 20th centuries. *American Journal of Physical Anthropology* 172, 492–499

2020 Lieberman DE, Mahaffey M, Cubesare Quimare S, Holowka NB, **Wallace IJ**, Baggish AL. Running in Tarahumara (Rarámuri) culture: persistence hunting, footracing, dancing, work, and the fallacy of the athletic savage. *Current Anthropology* 61, 356–379

2019 **Wallace IJ**, Felson DT, Worthington S, Duryea J, Clancy M, Aliabadi P, Eick GN, Snodgrass JJ, Baggish AL, Lieberman DE. Knee osteoarthritis risk in non-industrial societies undergoing an energy balance transition: evidence from the indigenous Tarahumara of Mexico. *Annals of the Rheumatic Diseases* 78, 1693–1698

2019 **Wallace IJ**, Bendele AM, Riew G, Hung H-H, Frank EH, Holowka NB, Bolze AS, Venable EM, Yegian AK, Dingwall HL, Carmody RN, Grodzinsky AJ, Lieberman DE. Physical inactivity and knee osteoarthritis in guinea pigs. *Osteoarthritis and Cartilage* 27, 1721–1728

2019 Karakostis FA, **Wallace IJ**, Konow N, Harvati K. Experimental evidence that physical activity affects the multivariate associations among muscle attachments (entheses). *Journal of Experimental Biology* 222, 213058

2018 **Wallace IJ**, Koch E, Holowka NB, Lieberman DE. Heel impact forces during barefoot versus minimally shod walking among Tarahumara subsistence farmers and urban Americans. *Royal Society Open Science* 5, 180044

2018 Berenbaum F, **Wallace IJ**, Lieberman DE, Felson DT. Modern-day environmental factors in the pathogenesis of osteoarthritis. *Nature Reviews Rheumatology* 14, 674–681

2018 Venkataraman VV, Yegian AK, **Wallace IJ**, Holowka NB, Tacey I, Gurven M, Kraft TS. Locomotor constraints favour the evolution of the human pygmy phenotype in tropical rainforests. *Proceedings of the Royal Society B: Biological Sciences* 285, 20181492

2018 Holowka NB, **Wallace IJ**, Lieberman DE. Foot strength and stiffness are related to footwear use in a comparison of minimally- vs. conventionally-shod populations. *Scientific Reports* 8, 3679

2018 Patel BA, Jashashvili T, Bui SH, Carlson KJ, Griffin NL, **Wallace IJ**, Orr CM, Susman RL. Inter-ray variation in metatarsal strength properties in humans and African apes: implications for inferring bipedal biomechanics in the Olduvai Hominid 8 foot. *Journal of Human Evolution* 121, 147–165

2017 **Wallace IJ**, Worthington S, Felson DT, Jurmain RD, Wren KT, Maijanen H, Woods RJ, Lieberman DE. Knee osteoarthritis has doubled in prevalence since the mid-20th century. *Proceedings of the National Academy of Sciences USA* 114, 9332–9336

2017 **Wallace IJ**, Winchester JM, Su A, Boyer DM, Konow N. Physical activity alters limb bone structure but not enthesal morphology. *Journal of Human Evolution* 107, 14–18

2017 Wei P, **Wallace IJ**, Jashashvili T, Musiba CM, Liu W. Structural analysis of the femoral diaphyses of an early modern human from Tianyuan Cave, China. *Quaternary International* 434, 48–56

2016 **Wallace IJ**, Botigué LR, Lin M, Smaers JB, Henn BM, Grine FE. Worldwide variation in hip fracture incidence weakly aligns with genetic divergence between populations. *Osteoporosis International* 27, 2867–2872

2016 **Wallace IJ**, Garland T Jr. Mobility as an emergent property of biological organization: insights from experimental evolution. *Evolutionary Anthropology* 25, 98–104

- 2015 **Wallace IJ**, Rubin CT, Lieberman DE. Osteoporosis. *Evolution, Medicine, and Public Health* 2015, 343
- 2015 Patel BA*, **Wallace IJ***, Boyer DM, Granatosky MC, Larson SG, Stern JT Jr. Distinct functional roles of primate grasping hands and feet during arboreal quadrupedal locomotion. *Journal of Human Evolution* 88, 79–84 (*Co-lead authors)
- 2015 **Wallace IJ***, Pagnotti GM*, Rubin-Sigler J, Naeher M, Copes LE, Judex S, Rubin CT, Demes B. Focal enhancement of the skeleton to exercise correlates with responsivity of bone marrow mesenchymal stem cells rather than peak external forces. *Journal of Experimental Biology* 218, 3002–3009 (*Co-lead authors)
- 2015 Almécija S, **Wallace IJ**, Judex S, Alba DM, Moyà-Solà S. Comment on “Human-like hand use in *Australopithecus africanus*.” *Science* 348, 1101
- 2015 Mongle CS, **Wallace IJ**, Grine FE. Cross-sectional structural variation relative to midshaft along hominine diaphyses. I. The forelimb. *American Journal of Physical Anthropology* 158, 386–397
- 2015 Mongle CS, **Wallace IJ**, Grine FE. Cross-sectional structural variation relative to midshaft along hominine diaphyses. II. The hind limb. *American Journal of Physical Anthropology* 158, 398–407
- 2015 **Wallace IJ**, Gupta S, Sankaran J, Demes B, Judex S. Bone shaft bending strength index is unaffected by exercise and unloading in mice. *Journal of Anatomy* 226, 224–228
- 2015 **Wallace IJ**, Judex S, Demes B. Effects of load-bearing exercise on skeletal structure and mechanics differ between outbred populations of mice. *Bone* 72, 1–8
- 2014 **Wallace IJ**, Nesbitt A, Mongle C, Gould ES, Grine FE. Age-related variation in limb bone diaphyseal structure among Inuit foragers from Point Hope, northern Alaska. *Archives of Osteoporosis* 9, 202
- 2014 **Wallace IJ**, Demes B, Mongle C, Pearson OM, Polk JD, Lieberman DE. Exercise-induced bone formation is poorly linked to local strain magnitude in the sheep tibia. *PLoS One* 9, e99108
- 2014 **Wallace IJ**, Leakey MG, Leakey LN. Implications of a new aff. *Hippopotamus karumensis* mandible from the Koobi Fora Formation, Turkana Basin, Kenya. *SINET: Ethiopian Journal of Science* 37, 143–148
- 2013 **Wallace IJ**, Kwaczala AT, Judex S, Demes B, Carlson KJ. Physical activity engendering loads from diverse directions augments the growing skeleton. *Journal of Musculoskeletal and Neuronal Interactions* 13, 245–250

- 2013 Su A, **Wallace IJ**, Nakatsukasa M. Trabecular bone anisotropy and orientation in an Early Pleistocene hominin talus from East Turkana, Kenya. *Journal of Human Evolution* 64, 667–677
- 2012 **Wallace IJ**, Tommasini SM, Judex S, Garland T Jr, Demes B. Genetic variations and physical activity as determinants of limb bone morphology: an experimental approach using a mouse model. *American Journal of Physical Anthropology* 148, 24–35
- 2010 **Wallace IJ**, Middleton KM, Lublinsky S, Kelly SA, Judex S, Garland T Jr, Demes B. Functional significance of genetic variation underlying limb bone diaphyseal structure. *American Journal of Physical Anthropology* 143, 21–31
- 2008 **Wallace IJ**, Demes B, Jungers WL, Alvero M, Su A. The bipedalism of the Dmanisi hominins: pigeon-toed early *Homo*? *American Journal of Physical Anthropology* 136, 375–378
- 2008 **Wallace IJ**, Demes B. Symmetrical gaits of *Cebus apella*: implications for the functional significance of diagonal sequence gait in primates. *Journal of Human Evolution* 54, 783–794
- 2006 **Wallace IJ**, Shea JJ. Mobility patterns and core technologies in the Middle Paleolithic of the Levant. *Journal of Archaeological Science* 33, 1293–1309
- 2006 **Wallace IJ**. A description of lithic artefacts from the Springbok Flats, South Africa. *Annals of the Transvaal Museum* 43, 113–115
- 2005 Thackeray JF, S  n  gas F, **Wallace IJ**. The distribution of cave breccias at Kromdraai A and B in relation to dolomite. *Annals of the Transvaal Museum* 42, 89–91

Articles Appearing in Chapters in Edited Volumes

- 2018 **Wallace IJ**, Hainline C, Lieberman DE. Sports and the human brain: an evolutionary perspective. In *Sports Neurology*, Hainline B, Stern RA, editors. San Diego: Elsevier, pp. 3–10
- 2017 **Wallace IJ**, Demes B, Judex S. Ontogenetic and genetic influences on bone’s responsiveness to mechanical signals. In *Building Bones: Bone Formation and Development in Anthropology*, Percival CJ, Richtsmeier JT, editors. Cambridge: Cambridge University Press, pp. 234–253

Other Scholarly Works

- 2015 Nunn CL, **Wallace IJ**, Beall CM. Connecting evolution, medicine, and public health. *Evolutionary Anthropology* 24, 127–129
- 2014 Yang D, **Wallace IJ**, de Vries D. Peking Man: new research. *Evolutionary Anthropology* 23, 162–163

2014 Everhart JL, **Wallace IJ**. Big things in Texas: highlights of the 79th annual SAA meeting. *Evolutionary Anthropology* 23, 164–165

2010 **Wallace IJ**. Evolution in real time. *Evolutionary Anthropology* 19, 200–201

2008 **Wallace IJ**, Wheeler BC, Su A, Lodwick JL. Physical anthropologists return to America's heartland. *Evolutionary Anthropology* 17, 163–165

2007 **Wallace IJ**. Highlights of the 2007 meeting of the Paleoanthropology Society. *Evolutionary Anthropology* 16, 121–122

2007 Royer DF, Gilbert CC, Sisk ML, **Wallace IJ**. The first humans. *Evolutionary Anthropology* 16, 86–87

2006 **Wallace IJ**. Review of *Examining the Levallois Reduction Strategy from a Design Theory Point of View*. *PaleoAnthropology* 2006, 51–53

Works in Progress

- Submitted for Publication

Wallace IJ, Lea AJ, Lim YAL, Chow SKW, Sayed IbM, Ngui R, Shaffee MTH, Ng K-S, Nicholas C, Venkataraman VV, Kraft TS. Orang Asli Health and Lifeways Project (OA HeLP): a cross-sectional cohort study protocol.

Lea AJ, Clark AG, Dahl A, Devinsky O, Garcia A, Golden CD, Kamau J, Kraft T, Martins D, Mogo D, Pajukanta P, Perry GH, Pontzer H, Trumble BC, Urlacher SS, Venkataraman V, **Wallace I**, Gurven MD, Lieberman DE, Ayroles JF. Evolutionary mismatch and the role of GxE interactions in human disease.

Karakostis FA, **Wallace IJ**. Climbing influences enthesal morphology in the humerus of mice: An experimental application of the V.E.R.A. methodology.

Wallace IJ, Riew GJ, Landau R, Bendele AM, Holowka NB, Hedrick TL, Konow N, Ruiz M, Lieberman DE. Effects of physical activity and impact loading rate on knee osteoarthritis. In *Biocultural Implications: An Agenda for Integrative Approaches*, A. Karakostis, G. Jäger, editors.

Invited or Refereed Abstracts and/or Presentations at Professional Meetings

- Invited Lectures

2021 University of California, Riverside, Department of Biology

2020 University of New Mexico, Department of Biology

- 2019 Harvard Medical School, Hebrew SeniorLife, Marcus Institute for Aging Research
- 2019 University of New Mexico, Department of Anthropology
- 2018 Hunter College of the City University of New York, Department of Anthropology
- 2017 Harvard University, Concord Field Station
- 2017 University of Massachusetts Lowell, Department of Biological Sciences
- 2017 University of Southern California, Keck School of Medicine, Department of Radiology
- 2017 New York Institute of Technology, College of Osteopathic Medicine, Department of Anatomy
- 2015 Harvard University, Department of Human Evolutionary Biology
- 2014 University of the Witwatersrand, Evolutionary Studies Institute
- 2014 Stony Brook University, Distinguished Doctoral Students' Awards Colloquium
- 2014 Stony Brook University, Provost's Graduate Student Lecture Series
- 2013 Brown University, Department of Ecology and Evolutionary Biology

- Conference Abstracts

- 2022 **Wallace IJ**, Toya C, Peña Muñoz MA, Martinez A, Meyer JV, Martinez J, Miller-Moore M, Busby T, Harris AR, Reynolds AZ, Ruff CB. Effects of an energy balance transition on skeletal health among indigenous peoples of the southwestern United States. *American Journal of Biological Anthropology* S73, 192–193
- 2022 Holowka NB, Kraft TS, **Wallace IJ**, Gurven M, Venkataraman VV. Forest terrains influence walking kinematics among indigenous Tsimane of the Bolivian Amazon. *American Journal of Biological Anthropology* S73, 84–85
- 2022 Pearson OM, **Wallace IJ**, Jashashvili T, Carlson KJ, Warden SJ, Fleagle JG. Cross-sectional geometry and bilateral asymmetry of Omo I humeri. *American Journal of Biological Anthropology* S73, 142
- 2020 **Wallace IJ**, Felson DT, Worthington S, Duryea J, Clancy M, Aliabadi P, Eick GN, Snodgrass JJ, Baggish AL, Lieberman DE. Knee osteoarthritis susceptibility among non-industrial societies undergoing rapid lifestyle changes. *American Journal of Physical Anthropology* S69, 299

- 2019 **Wallace IJ**, Riew G, Landeau R, Holowka NB, Bendele AM, Grodzinsky AJ, Frank EH, Lieberman DE. Physical (in)activity and the etiology of osteoarthritis. *American Journal of Physical Anthropology* S68, 260
- 2019 Konow N, Winchester JM, Boyer DM, **Wallace IJ**. New methods for quantifying enthesal shape and adaptation to functional loading. *American Journal of Physical Anthropology* S68, 129–130
- 2019 **Wallace IJ**, Jurmain RD, Lieberman DE. Industrialization and the prevalence of osteoarthritis in the United States. 46th Annual North American Meeting of the Paleopathology Association, Cleveland, OH
- 2018 **Wallace IJ**, Holowka NB. What fossils can and can't tell us about hominin locomotor evolution: insights from experimental skeletal biomechanics. *FASEB Journal* 32, 92.1
- 2018 **Wallace IJ**, Ruiz M, Holowka NB, Lieberman DE. Foot sole cushioning lowers the rate of tibial shaft strains recorded *in vivo* during running. *American Journal of Physical Anthropology* S66, 293
- 2018 Venkataraman VV, Kraft TS, Yegian A, **Wallace IJ**, Holowka NB, Gurven M. Walking mechanics and the evolution of the human pygmy phenotype. *American Journal of Physical Anthropology* S66, 286
- 2018 Marsh D, **Wallace IJ**, Otárola-Castillo E, Mngomezulu V, Grine FE. Long-term declines in limb bone shaft strength among South African Bantu-speaking peoples during the 20th century. *American Journal of Physical Anthropology* S66, 167
- 2017 **Wallace IJ**, Worthington S, Felson DT, Jurmain RD, Wren KT, Maijanen H, Woods RJ, Lieberman DE. Osteoarthritis as an evolutionary mismatch disease. *American Journal of Physical Anthropology* S64, 400
- 2017 Holowka NB, Koch E, Ruiz M, **Wallace IJ**, Lieberman DE. Foot muscle size and longitudinal arch biomechanics in a minimally shod, non-industrial population. *American Journal of Physical Anthropology* S64, 221
- 2016 **Wallace I**, Shea J, Brown F, Zewdie S, Sisay F, Gebru Y, Fleagle J. Update on the paleoanthropology of the Kibish Formation, southwestern Ethiopia. *PaleoAnthropology* 2016, A33
- 2016 **Wallace IJ**, Judex S, Su A, Demes B. Trabecular bone adaptations to arboreal and terrestrial environments: experimental evidence from mice. *American Journal of Physical Anthropology* S62, 327
- 2016 Rubin-Sigler J, Pagnotti GM, **Wallace IJ**. Biology trumps mechanics: bone adaptation to exercise correlates more closely to bone marrow stem cell responsivity than peak forces. *American Journal of Physical Anthropology* S62, 274–275

- 2015 **Wallace IJ**, Judex S, Demes B. Skeletal effects of physical activity differ between populations. *American Journal of Physical Anthropology* S60, 317
- 2015 Ward CV, **Wallace IJ**, Patel BA, Plavcan JM, Kirera FM. A large 1.5-year-old hominin radius from Koobi Fora, Kenya. *American Journal of Physical Anthropology* S60, 319
- 2014 **Wallace IJ**, Copes L, Raichlen D, Garland T Jr. Mobility as a nexus of biological organization. 79th Annual Meeting of the Society for American Archaeology, Austin, TX
- 2014 **Wallace IJ**, Demes B, Mongle C, Pearson OM, Lieberman DE. Exercise-induced bone formation is poorly linked to peak strain magnitude. *American Journal of Physical Anthropology* S58, 264
- 2014 Patel BA, **Wallace IJ**, Granatosky M, Boyer DM, Stern JT, Larson SG. Emancipation of the forelimb: new experimental evidence on the functional roles of grasping hands and feet during arboreal quadrupedal locomotion. *American Journal of Physical Anthropology* S58, 205
- 2014 Mongle C, **Wallace IJ**, Grine FE. Diaphyseal cross-sectional variation in extant hominoid humeri: implications for incomplete hominid fossils. *American Journal of Physical Anthropology* S58, 188
- 2014 **Wallace IJ**, Judex S, Demes B. The effects of weight-bearing exercise on skeletal structure and strength differ between outbred populations of mice. *Integrative and Comparative Biology* 54, Suppl 1, e364
- 2013 **Wallace IJ**, Demes B, Judex S, Kwaczala AT, Carlson KJ. Physical activity producing loads from diverse orientations enhances growing bones. *Journal of Bone and Mineral Research* 28, S211
- 2013 **Wallace IJ**, Patel BA. Cross-sectional geometry of chimpanzee finger bones. *American Journal of Physical Anthropology* S56, 283
- 2013 Carlson KJ, **Wallace IJ**, Judex S. Differentiation of bone functional adaptations in the forelimb and hind limb. *American Journal of Physical Anthropology* S56, 94
- 2013 Patel BA, **Wallace IJ**. Cross-sectional geometry of chimpanzee (*Pan troglodytes*) finger bones is correlated with habitual load bearing of individual digits during knuckle-walking. *FASEB Journal* 27, 744.2
- 2012 **Wallace IJ**, Tommasini SM, Judex S, Garland T Jr, Demes B. Inferring hominin activity levels from limb bone remains: insights from a mouse model. *American Journal of Physical Anthropology* S54, 296–297

- 2011 **Wallace IJ**, Garland T Jr, Wallace SA, Middleton KM, Kelly SA, Judex S, Demes B. Genetic and epigenetic effects on diaphyseal morphology in selectively bred mice with the mini-muscle allele. *Integrative and Comparative Biology* 51, Suppl 1, e263
- 2010 **Wallace IJ**, Middleton KM, Lublinsky S, Kelly SA, Judex S, Garland T Jr, Demes B. Activity, genes, and diaphyseal structure. *American Journal of Physical Anthropology* S50, 238
- 2010 Carnation S, **Wallace IJ**, Nakatsukasa M. Relative limb strength in *Paracolobus chemeroni*. *American Journal of Physical Anthropology* S50, 77
- 2009 Kirera F, **Wallace IJ**, Patel BA. A nearly complete hominin radius from Area 40 of the Koobi Fora Formation (East Turkana, Kenya). *American Journal of Physical Anthropology* S48, 165
- 2008 **Wallace IJ**, Demes B. Footfall patterns and peak vertical substrate reaction forces in *Cebus apella*. *American Journal of Physical Anthropology* S46, 216
- 2006 **Wallace IJ**, Shea JJ. Mobility strategies and core technologies in the Levantine Middle Paleolithic. *PaleoAnthropology* 2006, A76

Contributed (un-refereed) Abstracts and/or Oral Presentations at Professional Meetings

- 2021 **Wallace IJ**. Experimental evidence that physical activity inhibits osteoarthritis: Implications for inferring activity patterns from osteoarthritis in archeological human skeletons. Biocultural Implications: An Agenda for Integrative Approaches, Annual Symposium of the DFG Center for Advanced Studies “Words, Bones, Genes, Tools”, University of Tübingen, Tübingen, Germany
- 2021 **Wallace IJ**. Osteoarthritis as a mismatch disease. The Evolutionary Mismatch Hypothesis in the Genomics Era, Zoom Webinar hosted by Princeton University, Princeton, NJ
- 2020 **Wallace IJ**. Non-communicable chronic disease risk among the Orang Asli. Orang Asli Health and Well-Being, Zoom Webinar hosted by Keene State College, Keene, NH
- 2019 **Wallace IJ**, Burgess ML, Patel BA. Phalangeal curvature in a chimpanzee raised like a human. Northeast Regional Meeting of the Society for Integrative and Comparative Biology, Boston College, Chestnut Hill, MA
- 2018 **Wallace IJ**, Lieberman DE. Effect of prolonged walking on a cushioned substrate on the knees of guinea pigs. Northeast Regional Meeting of the Society for Integrative and Comparative Biology, Brown University, Providence, RI
- 2017 **Wallace IJ**, Lieberman DE. Adaptation of articular cartilage to exercise-induced loading. Northeast Regional Meeting of the Society for Integrative and Comparative Biology, University of Massachusetts Lowell, Lowell, MA

2017 **Wallace IJ**. Role of joint loading in the prevention of osteoarthritis. Survive, Then Thrive: Harvard-Yale Conference on Human Evolution, Harvard University, Cambridge, MA

2016 **Wallace IJ**, Lieberman DE. Osteoarthritis as an evolutionary mismatch disease. Northeast Regional Meeting of the Society for Integrative and Comparative Biology, Tufts University, Medford, MA

2013 **Wallace IJ**, Judex S, Demes B. The effects of weight-bearing exercise on skeletal structure and strength differ between outbred populations of mice. 2nd Annual Musculoskeletal Repair and Regeneration Symposium, Albert Einstein College of Medicine, Bronx, NY

Research

Research Funding

- External funding

Early Life Effects on Health During Rapid Lifestyle Change: Evolutionary and Molecular Mechanisms

Co-Principal Investigator

National Science Foundation

Award number: BCS-2142091

2022

\$460,000

Orang Asli Osteoarthritis (OAOA) Study

Principal Investigator of subcontract

National Institutes of Health

Award number: P30AR072571

2021

\$22,500

Phylogenetic Signal in Limb Bone Shaft Structure among South Africans

Principal Investigator

Leakey Foundation

2014

\$17,000

Genotype-Specific Growth Patterns and Long Bone Functional Adaptation

Principal Investigator

Leakey Foundation

2008

\$11,000

- Internal funding

Enhancing Active Learning in Human Evolutionary Physiology and Anatomy

Principal Investigator

Teaching Allocation Grant, University of New Mexico

2021

\$4,957

Orang Asli Osteoarthritis (OAOA) Study

Principal Investigator

Research Allocations Committee, University of New Mexico

2020

\$9,250

Energetics of Uniquely Human Subsistence Strategies
Principal Investigator
American School of Prehistoric Research, Harvard University
2017
\$3,500

Fieldwork

2020–present Orang Asli Health and Lifeways Project, Malaysia

2015–2016 Health screening among the Tarahumara, Copper Canyons, Mexico

2014 Fossil prospection in the Kibish Formation, Lower Omo Valley, Ethiopia

2008 Fossil prospection in the Koobi Fora Formation, East Turkana, Kenya

2007 Archeological survey in the Galana Boi Formation, West Turkana, Kenya

2007 Excavation in the Nachukui Formation, West Turkana, Kenya

2005–2007 Excavation at Abri Castanet, Dordogne, France

2005 Excavation at Hummal, El Kowm, Syria

2005 Excavation at Roc de Marsal, Dordogne, France

2004 Excavation at Kromdraai, Gauteng, South Africa

Teaching

Doctoral Advisement

Jordan Martinez

Bachelor's Honors Advisement

- University of New Mexico

Amaya Abeyta-Brown, scheduled to graduate in Spring 2023

Harry Cook-Graver, scheduled to graduate in Spring 2023

Chloé Lauer, scheduled to graduate in Spring 2023

- Harvard University

Rebecca Landau, 2019, A.B. (*cum laude*), Thesis: *Breaking It down: Investigating the Effects of Variation in Physical Activity and Loading Substrates on the Development of Knee Osteoarthritis* (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2022 *American Journal of Biological Anthropology* 177, 223–231)

Grant Riew, 2019, A.B. (*magna cum laude*), Thesis: *Obesity and the Pathogenesis of Knee Osteoarthritis: Assessing the Relative Influence of Joint Stress and Visceral Adiposity* (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2022 *American Journal of Biological Anthropology* 177, 223–231)

Undergraduate Student Mentoring

- University of New Mexico

Alexandra Harris, 2021, Independent research project: Running technique among the Tsimane of Bolivia (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2022 *Evolutionary Human Sciences* 4, e14)

Alexis Martinez, 2020, Independent research project: Skeletal strength among the indigenous peoples of New Mexico

Zachary Villasenor, 2020, Independent research project: Effect of femoral bicondylar angle on step width among the Tarahumara of Mexico

- Harvard University

Elizabeth Koch, 2017, Independent research project: Effects of habituation to minimal footwear on walking biomechanics (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2018 *Royal Society Open Science* 5, 180044)

Grant Riew, 2017, Independent research project: Effects of physical activity on knee cartilage mechanical properties (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2019 *Osteoarthritis and Cartilage* 27, 1721–1728)

Andrew Roney, 2016, Independent research project: Effects of shoe arch supports on knee adduction moments relevant to osteoarthritis (Resulted in single-authored presentation at a professional conference: Roney A. 2018 Knee adduction moments associated with knee osteoarthritis are increased by medial arch supports. International Foot and Ankle Biomechanics Meeting, New York, NY)

- Stony Brook University

D'Arcy Marsh, 2015, Independent research project: Ontogenetic change in the structural properties of midshaft cortical bone among South Africans (Resulted in co-authorship on a refereed journal article: Wallace IJ, et al. 2020 *American Journal of Physical Anthropology* 172, 492–499)

Classroom Teaching

- University of New Mexico

2022 Anthropology Honors Seminar (ANTH 498), 14 students

2022 Human Behavioral Ecology and Life History (ANTH 567), 8 students

2021 Human Evolutionary Anatomy and Physiology (ANTH 450), 16 students in spring semester, 10 students in fall semester

2020 Principles of Evolutionary Medicine (ANTH 1996), 11 students

2020 Human Physical Activity (ANTH 450), 15 students

2020 Evolution and Human Health (ANTH 450), 28 students

- Harvard University

2019 Evolutionary Human Physiology and Anatomy (LS 2), 168 students

2019 Human Evolution and Human Health (HEB 1386), 37 students

2018 Evolutionary Human Physiology and Anatomy (LS 2), 127 students

Curriculum Development

2021 Human Evolutionary Anatomy and Physiology (ANTH 390L & 590L), scheduled to be offered in fall 2022

2021 Human Biology: Evolution, Life History, and Health (ANTH 2135), scheduled to be offered in fall 2022

Service

Editorships

- 2022 Guest Editor, *Frontiers in Nutrition*
- 2020 Guest Editor, *Proceedings of the National Academy of Sciences USA*
- 2011–2013 Editorial Assistant, *Evolutionary Anthropology*

Reviewing for Journals

- 2022 *Journal of Human Evolution*
- 2021 *American Journal of Physical Anthropology*; *Journal of Anatomy*; *Journal of Human Evolution*; *PaleoAnthropology*
- 2020 *American Journal of Physical Anthropology*; *eLife* (x 2); *Exercise and Sport Sciences Reviews*; *Journal of Anthropological Research*; *Journal of Human Evolution* (x 2); *Journal of Theoretical Biology*; *Osteoarthritis and Cartilage*; *Quaternary Research*
- 2019 *American Journal of Physical Anthropology*; *Current Anthropology*; *Footwear Science*; *Hand Surgery and Rehabilitation*; *Journal of Human Evolution*; *Osteoporosis International*
- 2018 *American Journal of Physical Anthropology* (x 2); *Anatomical Record*; *Journal of Anatomy*; *Journal of Experimental Biology* (x 2); *PeerJ*; *PLoS One*
- 2017 *American Journal of Physical Anthropology* (x 3); *Journal of Human Evolution* (x 2); *Journal of Morphology*
- 2016 *American Journal of Physical Anthropology* (x 2); *Ecology and Evolution*
- 2015 *American Journal of Physical Anthropology* (x 3); *Evolutionary Anthropology*; *Journal of Anatomy*; *Journal of Morphology*; *Journal of Musculoskeletal and Neuronal Interactions*; *PLoS One*; *Proceedings of the Royal Society B: Biological Sciences*
- <2015 *American Journal of Physical Anthropology*; *Evolutionary Anthropology* (x 9); *Journal of Human Evolution*

Reviewing for Funding Organizations

- 2022 **European Research Council**; Leakey Foundation (x 2)
- 2021 Leakey Foundation (x 2)
- 2020 National Science Foundation (x 3)

2019 Leakey Foundation

2018 Natural Sciences and Engineering Research Council of Canada

2017 National Geographic Society; National Science Foundation

2016 Leakey Foundation (x 3)

2015 Leakey Foundation (x 2); National Research Foundation of South Africa

At UNM

2022–present Member, Department of Anthropology Graduate Studies Committee

2021–present Chair, Evolutionary Anthropology Journal Club

2020–present Chair, Department of Anthropology Colloquium Committee