

Monica H. (Ahsan) Keith, Ph.D.

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EDUCATION

- 2020 Ph.D., Anthropology, University of Missouri
Dissertation: *Genetic variation and health in a rural Caribbean village*
Advisor: Gregory E. Blomquist
- 2014 M.A., Anthropology, University of Missouri
Thesis: *Genetic and maternal effects on neonatal survival in the western lowland gorilla*
Advisor: Gregory E. Blomquist
- 2012 B.S., Anthropology, Biology minor, Texas State University
summa cum laude

ACADEMIC APPOINTMENTS

- 2020- Postdoctoral Scholar, University of Washington, Department of Anthropology
Faculty mentor: Melanie A. Martin

RESEARCH PROJECTS

- 2021- Social Determinants of Maternal Health, Allostatic Load, and Preterm Birth in the US (Project Lead)
Collaborators: Melanie A. Martin
Duties: Analysis of National Institute of Child Health and Human Development (NICHD) data; Bayesian modeling of social determinants, birth outcomes, and biological intermediaries
- 2021- COVID-19 and Breastfeeding Study (Collaborator)
Directors: Melanie A. Martin, Dan T.A. Eisenberg, Eleanor Brindle, Courtney Meehan, Michelle McGuire
Duties: Data management and analysis, Bayesian modeling of antibody and symptom data
- 2020- Chaco Area Reproductive Ecology (CARE) Program (Collaborator)
Directors: Melanie A. Martin, Claudia Vallengia
Duties: Child growth analysis, linear and nonlinear Bayesian modeling, data management

- 2016- Shodagor Longitudinal Health and Demography Project (Collaborator)
 Director: Kathrine E. Starkweather
 Duties: Project development, longitudinal data analysis, Bayesian modeling of growth, health, socio-economic, environmental, and behavioral data
- 2014- Dominica Longitudinal Health Study (Genetic Project Lead)
 Collaborators: Mark V. Flinn, Gregory E. Blomquist, Jared E. Decker
 Duties: Grant-writing, research approvals, field data collection, longitudinal health data management and analysis, DNA extractions, genotype data management and analysis
- 2012-14 Taxonomic Investigation of Bornean Loris Variation (Research Assistant)
 Directors: Lori S. Eggert, Rachel A. Munds
 Duties: Ancient DNA extraction from museum tissue, PCR, gel electrophoresis, sequence alignment, phylogenetic reconstruction
- 2011 Genetics of Metabolic Health (Intern)
 Texas Biomedical Research Institute, Department of Genetics, Comuzzie Lab
 Director: Anthony Comuzzie
 Duties: Pedigree analysis, cardiac data analysis, serum processing, metabolic profiling in captive baboons, uric acid assay configuration

PUBLICATIONS

Peer-Reviewed

Keith MH, Flinn MV, Durbin HJ, Rowan TN, Blomquist GE, Taylor KH, Taylor JF, Decker JE. (in revision). Genetic ancestry, admixture, and population structure in rural Dominica.

Martin MA, **Keith MH**, Olmedo S, Edwards D, Barrientes A, Pan A, Valeggia C. (in revision). Cesarean section and breastfeeding outcomes in an Indigenous Qom community with high breastfeeding support.

Starkweather KE, **Keith MH**, Prall SP, Alam N, Zohora F, Emery Thompson M. 2021. Are fathers a good substitute for mothers? Paternal care and growth rates in Shodagor children. *Developmental Psychobiology: Comparative Perspectives on Paternal Effects* [Special Issue]. PMID: 34087947.

Keith MH, Blomquist GE, Flinn MV. 2019. Anthropometric heritability and child growth in a Caribbean village: A quantitative genetic analysis of longitudinal height, weight, and BMI in Bwa Mawego, Dominica. *American Journal of Physical Anthropology* 170:393–403.

Starkweather KE, **Keith MH**. 2019. One piece of the matrilineal puzzle: the socioecology of maternal uncle investment. *Philosophical Transactions of the Royal Society B: The*

evolution of female-biased kinship in humans and other mammals [Special Issue] 374: 20180071.

Starkweather KE, **Keith MH**. 2018. Estimating impacts of the nuclear family and heritability of nutritional outcomes in a boat-dwelling community. *American Journal of Human Biology* 30: e23105.

Ahsan MH, Blomquist GE. 2015. Modeling variation in early life mortality in the western lowland gorilla: genetic, maternal and other effects. *American Journal of Primatology* 77: 666–678.

Manuscripts in Preparation

Keith MH, Corley M, Daniel S, Glass DJ, Lipton S, Ellison P, Vallengia C, Martin MA. Statistical methods to evaluate sampling designs: a Bayesian mixed model approach to assess intra- and inter-individual variation using pubertal hormone data.

Martin MA, Brindle EB, Meehan CL, Eisenberg D, McGuire MK, **Keith MH**, Kunkle A, McGuire MA, Seppo A, Gogel AC, Fehrenkamp BD, Pace CDW, Lackey KA, Navarrete AD, Caffè B, Barbosa-Leiker C, Ley SH, Pace RM, Williams JE, Jarvinen KM. COVID-19 antibody responses and symptoms in breastfeeding infants following acute maternal infection.

Starkweather KE, **Keith MH**, Alam N, Zohora F. Impacts of climate-induced flooding on household nutrition, child growth, and adult body mass in a Shodagor fishing community.

Keith MH, Flinn MV, Taylor JF, Taylor KH, Blomquist GE. Genome-wide association (GWA) tests of cardiometabolic traits in a Caribbean community show association between Ankyrin-3 (ANK3) and body mass index.

Starkweather KE, **Keith MH**. Women's work and child illness: The disease ecology of Shodagor women's trading.

TEACHING EXPERIENCE

2016-20 University of Missouri, Department of Anthropology
Introduction to General Anthropology, Instructor of Record
Introduction to Multiculturalism, Instructor of Record
Introduction to Biological Anthropology, Laboratory Instructor

2017-19 University of Missouri, Department of Biological Sciences
General Biology Lab, Teaching Assistant
Summer Transition Program Biology Lab, Teaching Assistant

2011 Texas State University, Student Learning Assistance Center
Pre-medical Biology and Chemistry, Tutor

INVITED LECTURES

- 2020 "Longitudinal Health in Two Small-Scale Societies". Presented for the University of Michigan, Genes for Good Research Group. February 3, 2020.
- 2019 "Health, Genes, and Ancestry in a Caribbean Village". Presented for the University of Pittsburgh, Department of Anthropology. January 28, 2019.

CONFERENCE PRESENTATIONS

- 2021 Starkweather KE, **Keith MH**, Prall SP, tuz Zohora F, Alam N, Emery Thompson M. Are fathers a good substitute for mothers? Paternal care and growth rates in Shodagor children. Presented at the 46th annual Human Biology Association meetings, virtual.
- 2020 **Keith MH**, Durbin HJ, Rowan TN, Blomquist GE, Flinn MV, Taylor JF, Decker JE. Genetic ancestry and demographic history of a rural Caribbean village. Abstract for the 89th annual American Association of Physical Anthropology meetings.
- 2019 Starkweather KE, **Keith MH**. Shodagor women's work and reproductive decision-making. Presented at the American Anthropology Association Annual Meetings, Vancouver, BC.
- 2019 **Keith MH**, Starkweather KE. Socio-ecological predictors of maternal uncle investment in bilateral, semi-nomadic Shodagor. Presented at the 88th annual American Association of Physical Anthropology meetings, Cleveland, OH.
- 2017 **Ahsan MH**, Starkweather KE. Effects of genetics and the nuclear family environment on Shodagor health. Presented at the 86th annual American Association of Physical Anthropology meetings, New Orleans, LA.
- 2016 **Ahsan MH**, Bain JC, Flinn MV. Heritable traits and their impacts on child health in a Caribbean village. Poster at the 85th annual American Association of Physical Anthropology meetings, Atlanta, GA.
- 2015 **Ahsan MH**, Blomquist GE. Survival of the infants: An analysis of early life mortality in captive western lowland gorillas. Presented at the 27th annual Human Behavior and Evolution Society meetings, Columbia, MO.
- 2014 **Ahsan MH**, Blomquist GE. Heritability and maternal effects of neonatal survival in the western lowland gorilla. Presented at Missouri Life Sciences Week, Columbia, MO.

GRANTS AND FELLOWSHIPS

- 2017 Research Board Grant (\$47,048), University of Missouri
- 2017 Dorothy (Dot) Tompkins Gelvin, Ph.D., Memorial Research Scholarship (\$1,500), University of Missouri
- 2012-16 Life Sciences Fellowship (\$33,000/year), University of Missouri

HONORS AND AWARDS

- 2020 William S. Pollitzer Student Travel Award, American Association of Physical Anthropologists
- 2019 Best Paper by a New Investigator, Evolutionary Anthropology Society, American Anthropology Association Annual Meeting, Vancouver, BC.
- 2019 Conference Travel Award (\$500), Department of Anthropology, University of Missouri
- 2017 Conference Travel Award (\$500), Department of Anthropology, University of Missouri
- 2012 Outstanding Undergraduate in Anthropology, Texas State University
- 2012 Golden Key International Honour Society Induction
- 2011 Lambda Alpha National Honor Society Induction
- 2010-11 University Honors Scholarship (\$1,000), Texas State University
- 2009-12 Texas State Achievement Scholarship (\$2,500/year), Texas State University
- 2009-12 Top 10% Scholarship (\$2,000/year), Texas State University
- 2009-12 Dean's List, Texas State University

TECHNICAL SKILLS

Ancient DNA extractions from tissue; DNA extractions from tissue, buccal swabs
PCR, gel electrophoresis
Serum processing, biomarker assays
Anthropometric, osteological measurements

Proficient in Program R, Linux, SAS, Systat, PEDSYS, SOLAR, and Excel; basic Perl script
Longitudinal phenotype database and genotype data management
Bayesian modeling, linear and nonlinear mixed models, multivariate analysis
Pedigree analysis, heritability estimation
Admixture dating and analysis
Genome-wide association studies
Phylogenetic reconstructions, comparative methods

AFFILIATIONS AND MEMBERSHIPS

American Association of Physical Anthropologists
American Society of Human Genetics
Human Behavior and Evolution Society
Human Biology Association