

CURRICULUM VITAE

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Research Interests

Molecular anthropology; protists in the human and non-human primate gut; evolution of the oral microbiome; bioinformatics; ancient DNA; host-associated microbial ecology

Academic Positions

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| <i>Present</i> | Postdoctoral Research Associate
Department of Biological Sciences, Clemson University, Clemson, SC
Advisor: Dr. Vincent Richards |
| <i>2019-2020</i> | Postdoctoral Research Associate
Department of Microbiology, Immunology, and Genetics, University of North Texas
Health Science Center, Fort Worth, TX
Advisor: Dr. Michael Allen, Dr. John Planz |
| <i>2018-2019</i> | Postdoctoral Research Fellow
Department of Botany, University of British Columbia, Vancouver, BC
Advisor: Dr. Laura Wegener Parfrey |
| <i>2016-2017</i> | Scientific Associate
Department of Archaeogenetics, Max Planck Institute for the Science of Human History,
Jena, Germany
Advisor: Dr. Christina Warinner |

Education

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| Ph.D. | Anthropology, University of Oklahoma, May 2018
Concentration: Human Health and Biology
Dissertation: Novel techniques for the description and interpretation of the modern human gut and ancient human oral microbiome
Advisor: Dr. Cecil M. Lewis |
| M.A. | Anthropology, University of Louisville, 2012
Concentration: Molecular Anthropology
Thesis: Y-chromosomal signatures of recent and ancient migrations in the Faroe Islands
Advisor: Dr. Christopher Tillquist |

B.A. Anthropology, University of Louisville, 2009

B.S. Sociology, University of Louisville, 2009

Grants and Awards

- 2017-2019 NSF #1650746 [co-PI] Doctoral Dissertation Research: The impact of microeukaryotes in human microbiome evolution
- 2018 University of British Columbia, Postdoctoral Research Day, 3rd place oral presentation
- 2018 University of Oklahoma, Graduate Student Senate Travel Grant
- 2012 University of Louisville, Department of Anthropology Travel Grant
- 2011 University of Louisville, Arts and Sciences Graduate Student Union Research Funding

Publications

- 2021 JA Fellows Yates, IM Velsko, F Aron, C Posth, CA Hofman, RM Austin, CE Parker, **AE Mann**, K Nägele, JW Arthur, CC Bauer, I Crevecoeur, C Cupillard, MC Curtis, L Dalén, MDZ Bonilla, JCD Fernández-Lomana, DG Drucker, EE Escrivá, M Francken, VE Gibbon, MG Morales, AG Mateu, K Harvati, AG Henry, L Humphrey, M Menéndez, D Mihailović, M Peresani, SR Moroder, M Roksandic, H Rougier, S Sázelová, JT Stock, LG Straus, J Svoboda, B Teßmann, KW Arthur, MJ Walker, RC Power, CM Lewis, K Sankaranarayanan, K Guschanski, R Wrangham, FE Dewhirst, DC Salazar-Garcia, J Krause, A Herbig, C Warinner. *The evolution and changing ecology of the African hominid oral microbiome*. PNAS. doi.org/10.1073/pnas.2021655118
- 2021 VJ Mancilla, **AE Mann**, Y Zhang, MS Allen. *The adult phenylketonuria (PKU) gut microbiome*. Microorganisms 9(3), doi.org/10.3390/microorganisms9030530
- 2020 **AE Mann**, JA Fellows Yates, Z Fagernäs, RM Austin, EA Nelson, CA Hofman. *Do I have something in my teeth? The trouble with genetic analyses of diet from archaeological dental calculus*. Quaternary International. doi.org/10.1016/j.quaint.2020.11.019
- 2020 **AE Mann**, EA Mitchell, Y Zhang, R Curtis-Robles, S Thapa, SA Hamer, MS Allen. *Comparison of the bacterial gut microbiome of North American Triatoma spp. with and without Trypanosoma cruzi*. Frontiers in Microbiology. doi.org/10.3389/fmicb.2020.00364
- 2019 **AE Mann**, F Mazel, MA Lemay, E Morien, V Billy, M Kowalewski, A Di Fiore, A Link, TL Goldberg, S Tecot, AL Baden, A Gomez, ML Sauter, FP Cuzzo, GAO Rice, NJ Dominy, R Stumpf, RJ Lewis, L Swedell, K Amato, L Wegener Parfrey. *Biodiversity of protists and nematodes in the wild non-human primate gut*. ISME J doi:10.1038/s41396-019-0551-4
- 2018 KA Ziesemer, J Ramos-Madrigal, **AE Mann**, B Brandt, K Sankaranarayanan, AT Ozga, M Hoogland, DC Salazar-Garcia, B Frolich, G Milner, M Aldenderfer, CM

Lewis Jr, C Hofman, C Warinner, H Schroeder. *The efficacy of whole human genome capture and high throughput sequencing of ancient dental calculus and dentin*. American Journal of Physical Anthropology.1:14.

- 2018 **AE Mann**, S Sabin, K Ziesemer, ÅJ Vågane, H Schroeder, AT Ozga, K Sankaranarayanan, CA Hofman, J Fellows Yates, D Salazar Garcia, B Frohlich, M Aldenderfer, M Hoogland, C Read, CM Lewis, J Krause, C Hofman, K Bos, C Warinner. *Differential preservation of endogenous human and microbial DNA in dental calculus and dentin*. Scientific Reports 8: 9822
- 2018 D McDonald, E Hyde, JW Debelius, JT Morton, A Gonzalez, G Ackermann, AA Aksenov, B Behsaz, C Brennan, Y Chen, L DeRight Goldasich, PC Dorrestein, RR Dunn, AK Fahimipour, J Gaffney, JA Gilbert, G Gogul, JL Green, P Hugenholtz, G Humphrey, C Huttenhower, MA Jackson, S Janssen, DV Jeste, L Jiang, ST Kelley, D Knights, T Kosciulek, J Ladau, J Leach, C Marotz, D Meleshko, AV Melnik, JL Metcalf, H Mohimani, E Montassier, J Navas-Molina, TT Nguyen, S Peddada, P Pevzner, KS Pollard, G Rahnavard, A Robbins-Pianka, N Sangwan, J Shorenstein, L Smarr, S Song, T Spector, D Swafford, VG Thackray, LR Thompson, A Tripathi, Y Vázquez-Baeza, A Vrbanc, P Wischmeyer, E Wolfe, Q Zhu, **The American Gut Consortium**, R Knight. *American Gut: An open platform for citizen science microbiome research*. mSystems May 2018, 3 (3) e00031-18; DOI: 10.1128/mSystems.00031-18
- 2017 C Warinner, A Herbig, **AE Mann**, JA Fellows-Yates, CL Weiß, HA Burbano, L Orlando, J Krause. *A Robust Framework for Microbial Archaeology*. Annual Reviews of Genomics and Human Genetics 18:13.10 – 1.26
- 2015 KA Ziesemer, **AE Mann**, K Sankaranarayanan, H Schroeder, AT Ozga, B Brandt, E Zaura, A Waters-Rist, M Hoogland, D Salazar-Garcia, M Aldenderfer, A Henry, C Speller, J Hendy, D Weston, MJ Collins, CM Lewis Jr, C Hofman, C Warinner. *Intrinsic challenges in ancient microbiome reconstruction using 16S rRNA gene amplification*. Scientific Reports 5:1-19

Other Research Experience

- 2018 Graduate Research Assistant, Department of Microbiology. Laboratories for Molecular Anthropology and Microbiome Research, University of Oklahoma, Norman, OK, USA. Advisor: Dr. Krithi Sankaranarayanan
- 2016 Graduate Research Assistant, Department of Anthropology, Laboratories for Molecular Anthropology and Microbiome Research, University of Oklahoma, Norman, OK, USA. Advisor: Dr. Cecil Lewis
- 2014 Student Assistant, The Lozupone Lab, Department of Bioinformatics and Personalized Medicine, University of Colorado, Denver, CO, USA. Advisor: Dr. Catherine Lozupone
- 2013 Student Assistant, The Knight Lab, BioFrontiers Institute, University of Colorado, Boulder, CO, USA. Advisor: Dr. Jessica Metcalf
- 2012-2013 Graduate Research Assistant, Department of Anthropology, Laboratories for Molecular Anthropology and Microbiome Research, University of Oklahoma, Norman, OK, USA. Advisor: Dr. Cecil Lewis

- 2011-2012 Research Assistant, Department of Anthropology, Molecular Anthropology and Population Studies Laboratory, University of Louisville, Louisville, KY, USA. Advisor: Dr. Christopher Tillquist
- 2009-2010 Research Assistant, Nursing Research Department, University of Louisville, Louisville, KY, USA. Advisor: Dr. M. Cynthia Logsdon

Teaching

- Spring 2015 Online instructor of record (ANTH 1913). Plagues and People: Health and Disease in Human Society, University of Oklahoma
- Fall 2015 Instructor of record (ANTH 1913). Plagues and People: Health and Disease in Human Society, University of Oklahoma
- Spring 2014 Online Instructor of Record (ANTH 1913). Plagues and People: Health and Disease in Human Society, University of Oklahoma
- Fall 2014 Instructor of record (ANTH 1913). Plagues and People: Health and Disease in Human Society, University of Oklahoma
- Fall 2013 Teaching Assistant (ANTH 1913). Plagues and People: Health and Disease in Human Society, University of Oklahoma
- Fall 2013 Teaching Assistant (ANTH 2253). Human and Animal Interaction Across Cultures, University of Oklahoma

Workshops & Seminars

- 2020 R Mini-hackathon. Co-coordinator of workshop. Attendees were given public data and challenged to answer specific questions using R scripting techniques. University of North Texas HSC
- 2019 Learning Git and GitHub. Workshop covered the basics of git version control software and online repositories. University of North Texas HSC
- 2018 Data transformation with R. Led a seminar workshop at the University of British Columbia's R Study Group.
- 2018 Python for Biology. Designed and led a workshop outlining basic python syntax, data visualization, and common python packages for biological analysis (e.g., BioPython, pandas, IPython).
- 2016, 2018 Beginner R Programming for Biological Anthropologists (And Other Folks Too!). Designed and led a workshop where attendees were taught the basics of the R statistical software suite. Skills learned at the workshop were then used for exploratory data analysis of a large set of craniometric measurements and climatic data. University of Oklahoma

- 2018 Inkscape for academics. Designed and led a workshop on the use of the open source vector graphics program Inkscape for the creation of high quality figures and presentation images.
- 2017 How Illumina Sequencing Works. Designed and co-led a methods bootcamp workshop discussing the mechanics and chemistry behind Illumina sequencing and how to interpret raw Illumina sequencing files. Max Planck Institute for the Science of Human History
- 2015 Scientific Computing Using Python. Designed and presented a tutorial for using the Python programming language, IPython, and the pandas and BioPython packages for genetic analysis and file manipulation. Presented at the LMAMR Programming Club Meeting, University of Oklahoma.

Presentations & Lectures

- 2021 Do I have something in my teeth? Preservation of DNA in archaeological dental calculus. Biological Sciences Seminar Series, Clemson University
- 2020 The hindgut microbiome of North American kissing bugs and Chagas disease control. Clemson University Postdoc Association Summer Seminar Series, Clemson University
- 2020 The hindgut microbiome of kissing bugs and Chagas disease. GIST seminar, University of North Texas Health Science Center
- 2019 Prion diseases. Guest lecture, University of Texas Arlington
- 2019 Impact of host phylogeny, local ecology, diet, and behavior on the diversity of gut-associated eukaryotes in the wild non-human primate gut. Texas Association of Biological Anthropologists Annual Meeting, Baylor University
- 2018 Phylogenetic patterning of eukaryotes in the primate gut. Postdoctoral Research Association Research Day, University of British Columbia
- 2018 Diversity and phylogenetic patterns of microeukaryotes in the primate gut. Biodiversity Legendary Internal Seminar Series, University of British Columbia
- 2018 Undercharacterized aspects of the human microbiome: parasites, predators, and old plaque. Microbiome Seminar Series, University of British Columbia.
- 2017 Length polymorphisms and preservation biases in ancient microbiome research. Seminar lecture, Department of Microbiology and Plant Biology, University of Oklahoma
- 2017 Differential preservation of DNA in archaeological dental calculus and dentin has implications for ancient microbiome research. Lecture presented to the EcoMunch group, Department of Biology, University of Oklahoma
- 2017 DNA preservation in archaeological dental calculus and dentin. Seminar lecture presented for the Department of Archaeogenetics, Max Planck Institute Für Menschheitsgeschichte

- 2013 Molecular ecology analysis using QIIME. Invited lecture at the Oklahoma Medical Research Foundation's Research Computing and Bioinformatics Seminar, Oklahoma City, OK
- 2013 Zoonotic Diseases. Guest lecture for the course Human Animal Interactions Across Cultures, Department of Anthropology, University of Oklahoma

Posters

- 2018 Microeukaryotic and dietary survey of the human gut by internal transcribed spacer metabarcoding. Microbiome Research Network Symposium, Vancouver, BC, Canada
- 2018 Ancient DNA from archaeological teeth and dental calculus preserves traces of biological processes that occur during an individual's life, and after their death. Oklahoma Archaeology Conference, Norman, OK
- 2017 Differential preservation of endogenous human and microbial DNA in dental calculus and dentin. Society for American Archaeology, 82nd Annual Meeting, Vancouver, Canada
- 2016 Intrinsic challenges in ancient microbiome reconstruction using 16S rRNA gene amplification. Student Research and Creativity Day, University of Oklahoma
- 2013 Founder effect impacts APOE allele frequency in northern Europe. American Association for Physical Anthropology Annual Meeting, Knoxville, TN
- 2012 Vikings, merchants, and pirates at the top of the world: Y-chromosomal signatures of recent and ancient migrations in the Faroe Islands. American Association for Physical Anthropology Annual Meeting, Portland, OR
- 2012 Vikings, merchants, and pirates at the top of the world: Y-chromosomal signatures of recent and ancient migrations in the Faroe Islands. Graduate Research Symposium, University of Louisville

Outreach

- 2021 South Carolina Academy of Science (SCAS) Annual Meeting. Written submission judge (microbiology/immunology/molecular biology).
- 2019, 2021 Greater Vancouver Regional Science Fair Judge. Intermediate division 1 (microbiology & genetics) and Ocean Wise Marine Stewardship Award judge.
- 2018 Adventures in Archaeological Science Coloring Book. Available under Creative Commons license in multiple languages including English, German, Spanish, Chinese, Greek, Nahuatl, Turkish, Mongolian, Dutch, Italian, Yucatec Mayan, and Arabic: <http://christinawarinner.com/outreach/children/adventures-in-archaeological-science/>
- 2016 Oklahoma Educators Evolve Teacher Workshop. Workshop alumni and upper level biology teachers lectured on the genetic basis of evolution. Activities included manually

aligning a portion of the mtDNA cytochrome B gene to reconstruct primate phylogeny and gummy bear genetics.

- 2015 Oklahoma Educators Evolve Teacher Workshop. At the workshop I designed and led a session for the education of Oklahoma and Texas public school teachers on the role of microbes in Eukaryotic evolution. This event was designed to increase understanding of basic concepts of evolution for local teachers as well as provide them with activities to take back into the classroom to engage students on this topic. The workshop was held over two full days and included a wide range of participants, from elementary school to high school biology teachers.
- 2015 Positive Tomorrows Science Day. The University of Oklahoma's Graduate Student Senate held a science day workshop for children attending Positive Tomorrows, Oklahoma's only elementary school specifically for homeless children and their families. At our booth, children learned about DNA and genetics and extracted DNA from peas.
- 2014 The Food Environment in the Cheyenne & Arapaho Tribal Jurisdictional Area: Food Stores and Food Deserts. Co-author of a report presented to members of the Cheyenne & Arapaho Tribes in Western Oklahoma on the availability of healthy food items in the tribal jurisdictional area. Designed to assess access and provide community based recommendations to improve health and nutrition in the area.

Service

Reviewer: FEMS Microbial Ecology, The Journal of Infection in Developing Countries, Microbiome, The Journal of Medical Entomology, Scientific Reports, Frontiers in Microbiology, Science Advances

Skills

Molecular Biology: I am experienced in a wide variety of molecular laboratory skills including DNA extraction and purification, Illumina metabarcoding and metagenomic library preparation, gel electrophoresis, quantitative PCR, and basic microbe cultivation and aseptic techniques. I have worked in both a modern BSL-2 molecular laboratory as well as an ISO-6 dedicated clean room for working with ancient DNA and am familiar with standard protocols and procedures for both.

Computational: I am a proficient Python, R, and bash-shell user and have extensive experience working in a Linux/Unix environment. Basic SQL database construction and management. Competent with the application of a wide range of bioinformatics tools and pipelines for the analysis of large biomolecular datasets. I am an experienced user of computational servers that use queuing software and parallelization of computationally expensive bioinformatics methods.

Professional Affiliations

American Association of Physical Anthropologists, Society for American Archaeology

Mentoring

Graduate Students: Kirsten Ziesemer (OU), Viviana Mancilla (UNTHSC), Vincent Billy (UBC)
Undergraduate Students: Roxanne Leiter (UofL), Rachelle Loo (UBC), Colton Kelly (CU)

References

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Dr. Cecil M. Lewis, Jr. (phone: +1 405 325-3415 | email: cmlewis@ou.edu)
Professor, The University of Oklahoma, Department of Anthropology
Laboratories of Molecular Anthropology and Microbiome Research
Stephenson Research and Technology Center
101 David L. Boren Blvd.
Norman, OK 73019

Dr. Michael Allen (+1 817 735 5038) | email: michael.allen@unthsc.edu)
Associate Professor, University of North Texas Health Science Center, Department of Microbiology,
Immunology, and Genetics
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