

# CURRICULUM VITAE

## Allison E. Mann, Ph.D.

Clemson University  
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### Research Interests

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Microbial and host interactions in the human oral and gut microbiome; development of bioinformatic pipelines for the analysis of large biomolecular datasets; evolution of the human oral microbiome; ancient DNA; human population genetics

### Academic Positions

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

### Education

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

B.A. Anthropology, University of Louisville, 2009

B.S. Sociology, University of Louisville, 2009

## Grants and Awards

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- 2017-2019 National Science Foundation #1650746 [co-PI] The impact of microeukaryotes in human microbiome evolution (\$25,184.00)
- 2018 University of British Columbia, Postdoctoral Research Day, 3<sup>rd</sup> 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

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- In Press* **AE Mann**, B Chakraborty, LM O'Connell, MM Nascimento, RA Burne, VP Richards. *Heterogeneous lineage-specific arginine deiminase expression within dental microbiome species*. Microbiology Spectrum
- 2023 VJ Mancilla, PN Braden-Kuhle, KN Brice, **AE Mann**, MT Williams, Y Zhang, MJ Chumley, RC Barber, SN White, GW Boehm, MS Allen. *A synthetic formula amino acid diet leads to microbiome dysbiosis, reduced colon length, inflammation, and altered locomotor activity in C57BL/6J mice*. Microorganisms. 10.3390/microorganisms11112694
- 2023 LM O'Connell, **AE Mann**, E Osagie, P Akhigbe, T Blouin, A Soule, O Obuekwe, A Omoigberale, RA Burne, MO Coker, VP Richards. *Supragingival mycobion of HIV-exposed-but-uninfected children reflects a stronger correlation with caries-free associated taxa compared to HIV-infected or uninfected children*. Microbiology Spectrum. 10.1128/spectrum.01491-23
- 2023 P Vonaesch, V Billy, **AE Mann**, E Morien, A Habib, JM Collard, M Dédé, N Kapel, PJ Sansonetti, L Parfrey. *The eukaryome of African children is influenced by geographic location, gut biogeography, and nutritional status*. MicroLife. 10.1093/femsml/uqad033
- 2023 **AE Mann**, LM O'Connell, E Osagie, P Akhigbe, O Obuekwe, A Omoigberale, C Kelly, the DOMHaIN Study Team, MO Coker, VP Richards. *The impact of HIV on the oral microbiome of children living in sub-Saharan Africa using a rpoC gene-fragment metataxonomic approach*. Microbiology Spectrum. doi.org/10.1128/spectrum.00871-23
- 2023 **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

- 2022 AM Tarone, **AE Mann**, Y Zhang, RR Zascavage, EA Mitchell, E Morales, TW Rusch, MS Allen. *The Devil is in the Details: Variable impacts of season, BMI, sampling site temperature, and presence of insects on the post-mortem microbiome*. *Frontiers in Microbiology*. 10.3389/fmicb.2022.1064904
- 2021 M Coker, P Akhigbe, E Osagie, N Idemudia, O Igedegbe, N Chukwumah, R Adebisi, **AE Mann**, L O'Connell, O Obuekwe, A Omoigberale, M Charurat, VP Richards. *Dental caries and its association with oral microbiomes and HIV in young children, Nigeria (DOMHaIN): a study protocol for a prospective study*. *BMC Oral Health*. 10.1186/s12903-021-01944-y
- 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**, 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 Kosciolk, 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

## Open Source Software Projects

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[Bubble Tree](#) Bubble tree generates a Cleveland-style dot plot or heatmap ordered by a corresponding phylogenetic tree. Written in Python and available through GitHub or as a Conda package.

[gcLenCorPlots](#) Generated summary statistics for read length and plots against read GC content from a fastq or fasta formatted file. Written in Python and available through GitHub..

[MDM Calculator](#) This R shiny app calculates the mutational distance of individual STR haplotypes from the calculated population modal haplotype (under construction)

[rpoCdb](#) rpoC gene database for oral microbiome metataxonomics (under construction).

## Scientific and Academic Activities

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*Present* Review Editor, Frontiers in Cellular and Infection Microbiology, Oral Microbes and Host

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

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- Fall 2022* Instructor of record (BIOL 1030). General Biology I, Clemson University
- 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

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- 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**

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- 2024 Mind the gap: Microbiome insights into tooth decay and oral health disparities. Biological Sciences Seminar Series, Clemson University
- 2021 Archaeogenetic detection of eukaryotes in host-associated microbial communities: challenges and considerations. Standards, Precautions & Advances in Ancient Metagenomics (SPAAM3)
- 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

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- 2023 Arginine deiminase, probiotics, and tooth decay. Clemson University Division of  
Research Symposium, Clemson, SC, USA
- 2023 Arginine catabolism by bacteria in the oral microbiome and the prevention of tooth  
decay. CUPDA Postdoctoral Research Symposium, Clemson, SC, USA
- 2022 HIV infection in children is associated with a more divergent and individualistic oral  
microbiome in late-stage caries development as compared to perinatally exposed and  
uninfected children. CSH Microbiome, Cold Spring Harbor, NY, USA
- 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, 82<sup>nd</sup> 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

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- 2021 Clemson Elementary School Science Fair Judge
- 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 elementary school. 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

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Peer Reviews	FEMS Microbial Ecology, The Journal of Infection in Developing Countries, Microbiome, The Journal of Medical Entomology, Scientific Reports, Frontiers in Microbiology, Frontiers in Ecology and Evolution, Science Advances, Journal of Archaeological Science, BMC Microbiology, PLOS Neglected Tropical Diseases, Microbial Ecology, PCI Archaeology, ISME
Grant Reviews	The Czech Science Foundation (GAČR), National Science Foundation (NSF)

## Skills

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**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. Familiar with relational database management, construction, and querying (MySQL). 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.

## Mentoring

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### Graduate Students

2022 – Present	Suzanne Crull
2019 – 2020	Viviana Mancilla
2018 – 2019	Vincent Billy
2014 – 2015	Kirsten Ziesemer

### Undergraduate Students

Present	Eduardo Yanez-Dera
2023 – Present	Haley Huynh
2022 – 2023	Ciara Amend
2023	Rachel Mchugh
2022 – 2023	Ashlyn Soule
2022 – 2023	Matthew Rowe
2021 – 2022	Colton Kelly
2018 – 2019	Rachelle Loo
2011 – 2012	Roxanne Leiter

## References

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Dr. Vincent P. Richards (+1 864 656 2207 | email: [vpricha@clemson.edu](mailto:vpricha@clemson.edu))  
Associate Professor, Clemson University, Department of Biological Sciences  
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Clemson, SC 29634

Dr. Michael Allen (+1 817 735 5038) | email: [michael.allen@unthsc.edu](mailto:michael.allen@unthsc.edu))  
Associate Professor, University of North Texas Health Science Center, Department of Microbiology, Immunology, and Genetics  
3500 Camp Bowie Blvd.

Fort Worth, TX, USA 76107

Dr. Laura Wegener Parfrey (+1 604 827 2214 | email: [lwparfrey@botany.ubc.ca](mailto:lwparfrey@botany.ubc.ca))  
Assistant Professor, University of British Columbia, Department of Botany & Zoology  
108-2212 Main Mall.  
Vancouver, BC, Canada V6T 1Z4

Dr. Cecil M. Lewis, Jr. (phone: +1 405 325-3415 | email: [cmlewis@ou.edu](mailto: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. Christina Warinner (phone: +1 617 495 1279 | email: [warinner@fas.harvard.edu](mailto:warinner@fas.harvard.edu))  
Assistant Professor, Harvard University, Department of Anthropology  
Peabody Museum 570  
11 Divinity Ave  
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