

STERLING LEE WRIGHT

POSTDOCTORAL SCHOLAR | COLLEGE OF HEALTH SOLUTIONS | ARIZONA STATE UNIVERSITY

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EDUCATION

PhD	Penn State University, Anthropology <i>Committee:</i> George Perry, Mary Shenk, Emily Davenport, Jake Nabel, Laura Weyrich (Chair)	May 2024
MA	Oklahoma University, Anthropology <i>Advisor:</i> Courtney Hofman	May 2019
BA	University of Texas at Austin, Classical Archaeology Graduated with special honors	May 2016
BS	University of Texas at Austin, Psychology	May 2016

POSITIONS HELD

2024-present	Postdoctoral Scholar, Arizona State University, Phoenix, AZ
2019-2024	Graduate Research Associate, Penn State University, University Park, PA
2022	R&D Data Scientist and Bioinformatics Intern, IDEXX Laboratories, Remote
2017-2019	Graduate Research Associate, Oklahoma University, Norman, OK
2017	High School Biology Teacher, Shoemaker High School, Killeen, TX

FUNDING TRACK RECORD

\$46,310.72

External

• 2023 AABA Pollitzer Award	\$500
• 2022 American Institute for Southeast European Studies Fellowship	\$3,000
• 2021 National Geographic Early Career Grant (EC-85596R-21)	\$5,000
• 2020 Summer Institute in Statistical Genetics Scholarship	\$600
• 2020 Pennsylvania Space Grant Consortium	\$5,000
• 2015 Balkan Heritage Foundation Scholarship	\$1,000

Internal

• 2024 PSU Anthropology Hill Pre-Comprehensive Award	\$2309.00
• 2024 PSU Anthropology Department Student Travel Award	\$400
• 2023 PSU One Health Microbiome Center Travel Grant	\$500
• 2023 PSU Anthropology Hill Post-Comprehensive Exam Award	\$3,222.22
• 2023 Penn State Graduate Student International Travel Award	\$1,500
• 2023 Penn State Research and Graduate Student Office (RGSO)	\$2,000
• 2023 PSU Anthropology Department Student Travel Award	\$400

• 2022 Huck Life Sciences Symposium Poster Award	\$150
• 2022 Penn State Microbiome Center DAWG Award	\$5,000
• 2022 PSU Anthropology Department Student Travel Award	\$400
• 2021 PSU Anthropology Department Student Travel Award	\$400
• 2021 Hill Fellowship Training Award	\$648.00
• 2021 RGSO PSU Anthropology Department	\$400
• 2020 2 nd Place PSU Microbiome Center Video Contest	\$1,000
• 2020 Liberal Arts Teaching and Research Scholarship	\$1,000
• 2020 Hill Fellowship Training Award	\$1,220
• 2020 University Park Allocations Committee Grant	\$319
• 2020 PSU Microbiome Center Travel Grant	\$300
• 2019 PSU Anthropology Department Student Travel Award	\$400
• 2019 Opler and Opler Scholarship	\$500
• 2019 Opler Memorial Scholarship	\$650
• 2018 Robberson Student Travel Grant	\$1,180
• 2018 Robberson Research Grant	\$850
• 2018 Opler Memorial Scholarship	\$450
• 2018 Robberson Research Grant	\$500
• 2018 Graduate Senate Student Research Grant	\$687.50
• 2018 Graduate Senate Student Travel Grant	\$637.50
• 2017 Graduate Senate Student Research Grant	187.50
• 2015 Masters McCarthy Scholarship	\$1,000
• 2014 Velma Box Scholarship	\$1,000
• 2012 Top-ten percent scholarship	\$2,000

PUBLICATIONS

Peer-Reviewed Articles

* indicates corresponding author

<i>In prep</i>	Wright, S. L.* , Skelly, E., et al. “The intricate interplay between industrialization processes and the dental calculus microbiome.”
<i>In prep</i>	Wright, S. L.* , et al. “Laboratory methods matter: Extraction and library preparation protocols impact oral microbiome recovery from archaeological dental calculus.”
2024	Wright, S.L.* , Rayfield, K.M., Singleton, R.R., Hughes, K., Soficaru, A., Crețu, C., Huang, L., Wu, S., Reinberger, K.L., Rabinowitz, A. and Hofman, C.A., 2024. Ancient DNA and paleoproteomic analysis on Roman Imperial-era individuals from Histria, Romania. <i>Journal of Archaeological Science: Reports</i> , 56, p.104510.
2024	Eisenhofer R., Wright, S. L.* , and Weyrich L. S. “Benchmarking a targeted gene enrichment approach to reconstruct ancient microbial communities.” <i>PeerJ</i> . doi: 10.7717/peerj.16770.

- 2023 **Wright, S. L.***, Știrbu, Franceska-Cristina, “Exchanging genes and goods: How ancient DNA can potentially illuminate complex mobility patterns in the Black Sea region.” *Centrul de Istorie Comparată a Societăților Antice*.
- 2023 Gancz, A.S., **Wright, S.L.** and Weyrich, L.S., 2023. Ancient human dental calculus metadata collection and sampling strategies: Recommendations for best practices. *American Journal of Biological Anthropology*. (10.1002/ajpa.24871).
- 2023 Gancz, A.S., Farrer, A.G., Nixon, M.P., **Wright, S. L.**, Arriola, L., Adler, C., Davenport, E.R., Gully, N., Cooper, A., Britton, K. and Dobney, K., 2023. Ancient dental calculus reveals oral microbiome shifts associated with lifestyle and disease in Great Britain. *Nature Microbiology*, 8(12), pp.2315-2325.
- 2021 Gancz A, **Wright, S. L.**, et al. “The Millions of Microbial Reasons You Need to Brush Your Teeth.” *Frontiers for Young Minds*. <http://doi.org/10.3389/frym.2021.605224>.
- 2021 Farrer, A. G., **Wright S.L.**, et al. “Effectiveness of Decontamination Protocols When Analyzing Ancient DNA Preserved in Dental Calculus.” *Scientific Reports* 11(1). Nature Publishing Group: 7456. <http://doi.org/10.1038/s41598-021-86100-w>
- 2021 **Wright, S. L.***, Keith Dobney, and Laura S. Weyrich. “Advancing and Refining Archaeological Dental Calculus Research Using Multiomic Frameworks.” *STAR: Science & Technology of Archaeological Research* 7(1). Routledge: 13–30. <https://doi.org/10.1080/20548923.2021.1882122>
- 2017 **Wright, S.***, “The Long and Complicated Relationship between Humans and *Yersinia pestis*,” *Sapient: The Undergraduate Journal of Biological Anthropology*, vol. 5, 2017, pp. 4-9.

REPORTS

1. **Wright, S.**, R. Singleton, K. Hughes, K. Rayfield, T. Honap, N. Dagtas, C. Monroe, S. Wu, L. Huang, and C. Hofman. “Sequencing dental calculus and dentin from Histria: Genetic analysis of dental calculus and teeth from Roman burial contexts 2nd-6th centuries CE” (2020).
2. Monroe, C., C. Hofman, R. Austin, and **S. Wright**. “Sequencing Mitochondrial Genomes from Montpellier, James Madison’s Plantation Home: Genetic Analysis of Teeth from Non-Burial 18th-19th century Archaeological Sites” (2018).

CONFERENCE PAPERS

1. “Using the ancient DNA in dental calculus to understand the effects of urbanization across the Black Sea region”, Annual Meeting for Archaeological Institute of America, Chicago, Illinois, 2024.
2. “Quantifying the effects of urbanization on the health of ancient populations with the oral microbiome,” 4th International World of Microbiome Conference, Sofia, Bulgaria, 2023.

3. “*Quantifying the effects of urbanization on the health of ancient populations with the oral microbiome*,” 10th Meeting of the International Society for Biomolecular Archaeology (ISBA10), Tartu, Estonia, 2023.
4. “*Navigating the Landscape of Authentication Tools in Ancient Metagenomics: Towards Establishing Common Practices*,” SPAAM5 Meeting (Standards, Precautions, and Advances in Ancient Metagenomics), Tartu, Estonia, 2023.
5. “*Exchanging genes and goods: How ancient DNA can illuminate complex mobility patterns in the Black Sea region*,” 11th Annual Session of the Centre for Comparative History of Ancient Societies, online, 2023.
6. “*The Ancient Oral Microbiome in the Caucasus*,” 92nd Annual Meeting of the American Association of Biological Anthropologists, Reno, NV, 2023.
7. “*Exploring the Biomolecular Preservation at Histria, a Greco-Roman site along the Danubian Frontier*,” 1st International Congress on Roman Bioarchaeology, Virtual, 2022.
8. “*The Ancient Oral Microbiome in the Caucasus*,” 87th Annual Meeting for the Society for American Archaeology, Chicago, IL, 2022.
9. “*Removing the Unwanted: Comparing Decontamination Protocols for Ancient Dental Calculus Research*,” SciX 2021 Conference, Providence, RI, 2021.
10. “*The integrity of biomolecules across the oral matrix at Histria, Romania*,” 86th Annual Meeting for the Society for American Archaeology, 2021.
11. “*The integrity of biomolecules across the oral matrix at Histria, Romania*,” 85th Annual Meeting for the Society for American Archaeology, 2020. *cancelled due to COVID19 pandemic.
12. “*Biomolecular Preservation in Dental Calculus from the Teotihuacan Ritual Landscape*,” 84th Annual Meeting for the Society for American Archaeology, 2019.
13. “*Exploring the biological heritage of enslaved people at James Madison’s Montpelier through ancient DNA analysis*,” 83rd Annual Meeting for the Society for American Archaeology, 2018.
14. “*The Long and Complicated Relationship between Humans and Infectious Diseases*,” 118th Annual Meeting for the Archaeological Institute of America, 2017.
15. “*The Long and Complicated Relationship between Humans and Infectious Diseases*,” Eta Sigma Phi’s Undergraduate Research Symposium for the Classics Department at the University of Texas at Austin, 2016.
16. “*The Long and Complicated Relationship between Humans and Infectious Diseases*,” University of Texas at Austin’s Research Week, 2016.
17. “*Six Degrees of Cyrus: Applying Network Analysis to Herodotus*,” Texas Digital Humanities Consortium, 2014.

INVITED LECTURES

1. “*Investigating microbial dialogues from archaeological dental calculus*,” One Health Microbiome Center’s Spring 2024 seminar series, 2024.
2. “*Talking to the dead in new ways: How biomolecular archaeology is changing our understanding of the past*,” 1st edition of the “Nicolaus Olahus – Connecting History” series, Virtual, 2023.

3. “*Listening to the dead in new ways: Investigating the biomolecular preservation at Histria*,” American Institute of Southeast European Studies (AISEES), 2021.
4. “*Socialist Archaeology? Is it Worth Saving?*” University of Texas Antiquities Action Conference: Global Initiatives Towards Cultural Heritage Preservation: Who Owns the Past, 2016.

POSTERS

1. “*Quantifying the effects of urbanization on the health of ancient populations with the oral microbiome*,” 39th Annual Graduate Exhibition for Penn State University, University Park, Pennsylvania, 2024.
2. “*The Ancient Oral Microbiome in the Caucasus*,” Graduate Student Exhibition, Pennsylvania State University, University Park, PA, 2024.
3. “*Insights into the oral microbiome of ancient Georgia and its response to urbanization*,” 10th International Symposium on Biomolecular Archaeology, Tartu, Estonia, 2023.
4. “*The Ancient Oral Microbiome in the Caucasus*,” 6th Annual Huck Life Sciences Symposium, University Park, PA, 2022.
5. “*Effectiveness of decontamination protocols when analyzing ancient DNA preserved in dental calculus*,” Ancient Biomolecules of Plants, Animals, and Microbes (virtual), 2021.
6. “*Biomolecular Preservation in Dental Calculus from the Teotihuacan Ritual Landscape*,” 8th International Symposium on Biomolecular Archaeology, Jena, Germany, 2018. (https://www.shh.mpg.de/1070374/isba2018_programm.pdf)
7. “*Demystifying Teotihuacan Through the Microbiome*,” 1st Oklahoma Archaeology Conference, 2018.

SERVICE

Peer Reviewer

- *mSystems*
- *Ecology and Evolution*
- *Frontiers in Cellular and Infection Microbiology*
- *PeerJ*
- *Gut Microbes*
- *Scientific Reports*

Positions in Scholarly Organizations

- 2023-2024 Workshop Chair, DAWG
- 2022 Data Organizer, DAWG (Data Analysis Working Group)
- 2021 Conference Coordinator, SPAAM3 (Standards, Precautions, and Advances in Ancient Metagenomics)

Other Academic Service

- 2022-present **Coordinator** for the microArch Bioinformatics Office Hours
- 2023 **Volunteer** for the 92nd Annual Meeting for the AABA
- 2023 **Coordinator** for the International Congress on Roman

- 2022 Bioarchaeology (ICORB) **Volunteer** for the 87th Annual Meeting for the SAA
- 2021-present **Mentor** for Student Affairs Interest Group (SAIG) for the AIA
- 2020-2021 **Social Chair** for AGSA at Penn State,
- 2020 **Student organizer**, Penn State Center Kickstart Workshop
- 2019-2020 **Vice President**, Anthropology Graduate Student Association at Oklahoma

TEACHING EXPERIENCE

Penn State University, University Park, PA

Intro Bio Anthropology (ANTH 21)	SP 2023	Instructor of record
Human Genetics (ANTH/BIOL 460)	FA 2022	Teaching Assistant
Intro Bio Anthropology (ANTH 21)	SP 2022	Instructor of record
Cultural Diversity (ANTH 45N)	FA 2021	Instructor of record

Shoemaker High School, Killeen, Tx

Biology	SP 2017	Instructor of record
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MENTORING

Graduate students:

2022-2024	Iyunoluwa Ademola-Popoola (PSU, Department of Anthropology)
2022-2024	Crystal Crabtree (PSU, Department of Anthropology)
2021-2024	Christine Ta (Penn State University, Department of Anthropology)
2020-2024	Franceska Stirbu (University of Bucharest, Department of Biology)
2020-2023	Grace Bowland (Penn State University, Department of Anthropology)

Undergraduates

2022-present	Grace Blaha (Penn State University, Department of Anthropology)
2021-present	Elizabeth Dyess (EWU, Department of Anthropology)
2021-present	Meghan Malloy (Penn State University, Department of Anthropology)
2021	Samantha Muller (Penn State University, microArch Research Group)
2018-2019	Karissa S. Hughes (University of Oklahoma)

WORK-RELATED EXPERIENCES

Professional Development

Precision Nutrition and AI Bootcamp	Arizona State University	2024
The Graduate Online Teaching Certificate	Penn State University	2020
Next-Generation Sequencing intern	UT at Austin	2016
Cultural Resource Management Technician	Williams Self Associates	2016
McCombs Business Certificate	UT at Austin	2014

Archaeological Field Work

Archaeogeneticist, Histria Multiscalar Archaeological Project, Romania, 2023
Archaeogeneticist, Histria Multiscalar Archaeological Project, Romania, 2022
Archaeogeneticist, Lisbon, Portugal, September 2021
Archaeogeneticist, Tbilisi, Georgia, August 2021
Archaeogeneticist, Beidaud, Romania, August 2021
Archaeogeneticist, Histria Mapping Archaeology Project, Histria, Romania, 2021
Archaeogeneticist, Histria Mapping Archaeology Project, Histria, Romania, 2018
Archaeogeneticist, Plaza of the Columns Complex, Teotihuacan, Mexico August 2018
Field and osteo lab participant, Archaeotek, Odorheiu, Romania Jun-Jul 2016
Fieldwork participant, IFR/Balkan Heritage Foundation, Stobi, Macedonia Jun 2015

PROFESSIONAL AFFILIATIONS

- Member, Penn State Microbiome Center, 2019-Present
- Member, American Institute of Southeastern European Studies, 2019-Present
- Member, Society for American Archaeology, 2017-Present
- Member, American Association of Biological Anthropology, 2022-Present
- Member, Archaeological Institution of Archaeology, 2012-Present

OUTREACH

- 2020-present **Guest lecturer**, Skype a Scientist, Online, 12/20-present. I meet with K-12 audiences on a continual basis to discuss various topics, ranging from basic concepts about the microbiome and ancient DNA research to my personal experiences on how I became a scientist.
- 2023 **Guest lecturer**, “*Explore STEM! for Students with Disabilities (Ages 14-21)*”, Texas Workforce Commission Vocational Rehabilitation Division and Central Texas College. Online. I taught important microbiome concepts to students with disabilities.
- 2021 **Volunteer**, “Make Things Happen”, iLearn schools. Engaged with K-5 students about the importance of the microbiome in human health.
- 2020 **Volunteer**, Community Education Extended Learning (CEEL) Program, State College, PA 09/19-03/20. This program is led by anthropology students in the Penn State Anthropology Department. It is designed to increase the understanding of basic concepts of anthropology for K-5 students. The program provides monthly meetings.
- 2020 **Volunteer**, Harrisburg Career Day, Harrisburg, PA 03/20. At this event, I designed and led a session for low-income high school students in the Harrisburg area to educate them on the importance of the microbiome. I spearheaded two hands-on activities to engage the students about the importance of microbes to human health.
- 2019 **Session Chair**, Oklahoma University Undergraduate Research Day, Norman, OK 04/19. Natural Science Division Award Judge

- 2018-2019 **Volunteer mentor**, Communities After-School Program(CASP), Norman, OK 08/17-05/19.

WEB CONTENT

- “Open Wide: The Oral Microbiome,” YouTube video for the Penn State Microbiome Center Video Contest (2020).
<https://www.youtube.com/watch?v=HC5pv73SzWw&t=1s>
- “Exploring the Biomolecular Preservation at Histria, a Greco-Roman site along the Danubian Frontier,” YouTube video for ICORB conference:
<https://www.youtube.com/watch?v=3hpWYCg6TAg>
- GitHub page for DAWG: <https://github.com/DAWGPSU>

WORKSHOPS AND SEMINARS

1. *Phylogenomics for the Novice Learner* for the DAWG Spring Series. Organized by Sterling Wright.
2. *Breaking New Ground in Southeastern Europe with Innovative Strategies: Research by Emerging Scholars* for the Annual Meeting for the Archaeological Institute of America in 2023, Chicago, Illinois. Organized by Sterling Wright and Erina Baci.
3. *Intro to Bioinformatics for Microbiome Analysis*, a workshop organized by Sterling Wright to bring together soil microbiologists across Romania to learn about microbiome analyses and shotgun metagenomics.
4. 2023 Attended “Phylogenomics”, Physalia Courses, online.
5. 2021 Attended “Introduction to Palaeogenomics – concepts, methods and applications of ancient human and non-human DNA data”, Transmitting Science, online.

LANGUAGES

Romanian: Novice reader and conversationalist.

CERTIFICATES

The Graduate Online Teaching Certificate, Penn State University (2020)

Business certificate, McCombs School of Business, University of Texas at Austin (2014)

RELEVANT SKILLS

Computational: I am proficient in Python, R, and Linux/Unix. Extensive experience with database management, construction, and querying. Competent with the application of several bioinformatic programs and pipelines for the analysis of microbiome, genome, and proteome (LCMS) datasets, such as MALT, MEGAN, Jupyter Notebooks, Azure, GoogleCollab, and QIIME2.

Molecular Biology: I have worked in two ancient DNA and modern laboratories. My molecular laboratory skills include DNA extraction and purification, Illumina metabarcoding and metagenomic library preparation, gel electrophoresis, and quantitative PCR. I have been trained

to work in a modern BSL-2 molecular laboratory and an ISO-6 dedicated clean room designed for ancient DNA research.