

Michael J. Sieler Jr.

Department of Microbiology
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EDUCATION

Oregon State University, Corvallis, OR <i>Ph.D. Microbiology, minor: Biological Data Sciences. GPA: 3.95</i>	Expected Summer 2025
Oregon State University, Corvallis, OR <i>B.S. Bioresource Research, options: Bioinformatics and Genomics. GPA: 3.82</i>	June 2020

RESEARCH APPOINTMENTS

Graduate Student Researcher , Mentor: Thomas J. Sharpton Research focus in host-associated microbiome stability to environmental stressors Department of Microbiology, Oregon State University	2020-Present
Phd Intern , Mentor: Lisa Bramer and Kelly Stratton Research focus in metabolomic data science and bioinformatics Pacific Northwest National Laboratory	2023-2024
Undergraduate Student Researcher , Mentor: Thomas J. Sharpton Research focus in zebrafish microbiome ecology and bioinformatics Department of Microbiology, Oregon State University	2018-2020
Undergraduate Student Researcher , Mentor: Taifo Mahmud Research focus in identifying novel antibiotic compounds Department of Pharmacy, Oregon State University	2017-2018

TEACHING APPOINTMENTS

Graduate Teaching Assistant General Microbiology Lab (MB 303, Spring) Human Microbiome (MB 436, Spring) Introduction to Microbiology (MB 230, Spring)	2022-2023 2021 2021
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FELLOWSHIPS & AWARDS

OSU Scholarly Presentation Award (\$600) <i>Oregon State University</i> Competitive funding to support graduate students presenting their research at professional conferences.	2024
NMDC Ambassador (\$1,000) <i>National Microbiome Data Collaborative</i> Recognized and received training for early career contributions for promoting and leading workshops on findable, accessible, interoperable and reusable microbiome research data and workflows.	2024 – 2025
ODFW Fish Health Graduate Research Fellowship (\$56,000) <i>Oregon Department of Fish and Wildlife</i> Recognized for research in Microbiology at Oregon State University, focusing on fish health issues to benefit Oregon's fish populations	2023 – 2025

Science Communication Fellow

2020 – Present

Oregon Museum of Science and Industry

Received certified training in informal science education and engagement with public audiences

ARCS Scholar (\$18,000)

2020 – 2023

ARCS Foundation

Recognized for early significant contributions to scientific research

SCIENTIFIC PUBLICATIONS

Keaton Stagaman, Alexandra Alexiev, **Michael J. Sieler Jr.**, Austin Hammer, Kristin D. Kasschau, Lisa Truong, Robyn L. Tanguay & Thomas J. Sharpton (2024). "The zebrafish gut microbiome influences benzo[a]pyrene developmental neurobehavioral toxicity". *Sci Rep*.

- Collected >1000 zebrafish embryos, exposed them to treatments (including germ-free derivation) and plated them; dissected >100 intestines and prepared intestines for DNA extraction; and contributed to the writing and editing of the manuscript.

Austin Hammer, Christopher Gaulke, Manuel Garcia-Jaramillo, Connor Leong, **Michael J. Sieler Jr.**, Jeff Morré, Yuan Jiang, Claudia Maier, Michael Kent, Thomas Sharpton, and Jan Fred Stevens (2024). "Gut microbiota metabolically mediate intestinal helminth infection in Zebrafish". *mSystems*.

- Designed figure displaying experimental design schematic.

Damon T. Leach, **Michael J. Sieler Jr.**, Kelly G. Stratton, Rachel E. Richardson, Jennifer E. Kyle, Young-Mo Kim, Josie G. Eder, Kristin M. Engbrecht, Athena A. Schepmoes, Bobbie-Jo M. Webb-Robertson, Lisa Bramer (2024). "Analyzing batch effect correction algorithms for small molecule data using ground truth from a designed experiment." *In review*.

- Contributed to statistical analyses, writing and editing the main manuscript text.

Michael J. Sieler Jr., Colleen E Al-Samarrie, Kristin D Kasschau, Zoltan M Varga, Michael L Kent, Thomas J Sharpton (2023). "Disentangling the link between zebrafish diet, the gut microbiome succession and *Mycobacterium chelonae* infection." *Anim. Microbiome*.

- Conducted gut microbiome statistical analyses; contributed to the preparation and editing of the manuscript; and prepared the figures.

Joseph A Szule, Lawrence R Curtis, Thomas J Sharpton, Christiane V Löhr, Susanne M Brander, Stacey L Harper, Jamie M Pennington, Sara J Hutton, **Michael J. Sieler Jr.**, Kristin D Kasschau (2022). "Early Enteric and Hepatic Responses to Ingestion of Polystyrene Nanospheres from Water in C57BL/6 Mice." *Front. Water*.

- Performed the gut microbiome and integrated statistical analyses; contributed to the preparation and editing of the manuscript; and prepared the figures.

Maude M David, Christine Tataru, Quintin Pope, Lydia J Baker, Mary K English, Hannah E Epstein, Austin Hammer, Michael Kent, **Michael J. Sieler Jr.**, Ryan S Mueller, Thomas J Sharpton, Fiona Tomas, Rebecca Vega Thurber, Xiaoli Z Fern (2022). "Revealing General Patterns of Microbiomes That Transcend Systems: Potential and Challenges of Deep Transfer Learning." *Msystems*.

- Contributed to writing and editing the main manuscript text.

Thomas J. Sharpton, Keaton Stagaman, **Michael J. Sieler Jr.**, Holly K. Arnold, Edward W. Davis II (2021). "Phylogenetic integration reveals the zebrafish core microbiome and its sensitivity to environmental exposures." *Toxics*.

- Contributed to data curation, writing and editing the main manuscript text.

PRESENTATIONS

- Connecting Microbiome Communities** 2024
Society for Industrial Microbiology and Biotechnology San Diego, California
"Modelling the Gut Microbiome's Resistance and Resilience to Climate Change and Infection in Zebrafish"
- 9th Conference on Beneficial Microbes** 2024
University of Wisconsin Madison, Wisconsin
"Modelling the Gut Microbiome's Resistance and Resilience to Climate Change and Infection in Zebrafish"
- 5th Annual MANA Conference** 2023
Metabolomics Association of North America (MANA) Columbia, Missouri
"Choice of batch correction method is an important factor in small molecule study"
- Zebrafish Husbandry Workshop** 2022
Aquaculture San Diego, CA (virtual)
"Effects of diet on growth and the microbiome"
- 3rd International Fish Microbiota Workshop** 2021
Chinese Academy of Agriculture Sciences Beijing, China (virtual)
"Zebrafish laboratory diets differentially alter gut microbiota composition"

PANELS

- 9th Conference on Beneficial Microbes** 2024
University of Wisconsin Madison, Wisconsin
"The Importance of Inclusive Practices in Microbiome Science"

Workshops

- Connecting Microbiome Communities** 2024
Society for Industrial Microbiology and Biotechnology San Diego, California
"NMDC: Microbiome Metadata Mastery and Research Training: Equipping the Next Generation of Researchers Across Academia, Government, and Industry"

POSTERS

- 80th Annual OPHA Conference** 2024
Oregon Public Health Association Corvallis, OR
"The Human Gut Microbiome at the Intersection of Public Health and Social Equity"
- ARCS Annual Scholar Event** 2022
ARCS Foundation Portland, OR
"How do external environmental factors impact the gut microbiome to influence host health?"
- 2nd International Fish Microbiota Workshop** 2019
University of Oregon Eugene, OR
"The gut microbiome drives Benzo(a)pyrene's impact on zebrafish behavioral development"
- College of Agriculture Science Showcase** 2019
Oregon State University Corvallis, OR
"The gut microbiome drives Benzo(a)pyrene's impact on zebrafish behavioral development"

ADDITIONAL SKILLS & TRAINING

- **Programming Languages:** R, Python, C# (Unity), Git, HTML, CSS, C++, UNIX/LINUX
- **Statistics and Data Analytics:** multivariate regression, Bayesian modeling, model building and selection, data visualization
- **Bioinformatics:** 16S sequencing, transcriptomics, batch effect correction algorithms, DADA2, Phyloseq, Mothur, HMMER, FastTree
- **Molecular Biology:** zebrafish husbandry, DNA extraction, PCR, gel electrophoresis
- **Other:** Microsoft Office Suite, Adobe Photoshop and Illustrator
- **Languages:** English (Native), German (B2), Spanish (A1)

PROFESSIONAL AFFILIATION & SERVICE

Pernot Microbiology Summer Camp - Camp Mentor <i>Department of Microbiology, Oregon State University</i> Supervised 20 high school students from historically underrepresented backgrounds in learning laboratory techniques.	2022, 2024
Food and Nutrition Special Interest Group Member <i>Oregon Public Health Association</i>	2023-Present <i>Portland, OR</i>
Microbes and Social Equity Working Group Member	2022-Present
Microbiology Graduate Student Association President <i>Oregon State University</i>	2022 – 2023 <i>Corvallis, OR</i>