

Michael J. Sieler Jr.

Department of Microbiology
Oregon State University
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EDUCATION

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

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

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

FELLOWSHIPS & AWARDS

NMDC Ambassador <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 – Present
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ODFW Fish Health Graduate Research Fellowship <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
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Science Communication Fellow <i>Oregon Museum of Science and Industry</i> Received certified training in informal science education and engagement with public audiences	2020 – Present
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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 zebrafish embryos, exposed them to treatments (including germ-free derivation) and plated them; dissected 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 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 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

9th Conference on Beneficial Microbes

University of Wisconsin

2024

Madison, Wisconsin

"Modelling the Gut Microbiome's Resistance and Resilience to Climate Change and Infection in Zebrafish"

5th Annual MANA Conference

Metabolomics Association of North America (MANA)

2023

Columbia, Missouri

"Choice of batch correction method is an important factor in small molecule study"

Zebrafish Husbandry Workshop

Aquaculture

“Effects of diet on growth and the microbiome”

2022
San Diego, CA (virtual)

3rd International Fish Microbiota Workshop

Chinese Academy of Agriculture Sciences

“Zebrafish laboratory diets differentially alter gut microbiota composition”

2021
Beijing, China (virtual)

PANELS

9th Conference on Beneficial Microbes

University of Wisconsin

“The Importance of Inclusive Practices in Microbiome Science”

2024
Madison, Wisconsin

POSTERS

80th Annual OPHA Conference

Oregon Public Health Association

“The Human Gut Microbiome at the Intersection of Public Health and Social Equity”

2024
Corvallis, OR

ARCS Annual Scholar Event

ARCS Foundation

“How do external environmental factors impact the gut microbiome to influence host health?”

2022
Portland, OR

2nd International Fish Microbiota Workshop

University of Oregon

“The gut microbiome drives Benzo(a)pyrene’s impact on zebrafish behavioral development”

2019
Eugene, OR

College of Agriculture Science Showcase

Oregon State University

“The gut microbiome drives Benzo(a)pyrene’s impact on zebrafish behavioral development”

2019
Corvallis, OR

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

PROFESSIONAL AFFILIATION & SERVICE

Pernot Microbiology Summer Camp - Camp Mentor

Department of Microbiology, Oregon State University

Supervised 20 high school students from historically underrepresented backgrounds in learning laboratory techniques.

2022, 2024

Food and Nutrition Special Interest Group

Member

Oregon Public Health Association

2023-Present

Portland, OR

Microbes and Social Equity Working Group

Member

2022-Present

Microbiology Graduate Student Association

President

2022 – 2023

