

Michael J. Sieler Jr.

Department of Microbiology
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EDUCATION

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| 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

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| 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

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| 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

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| 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

2022

Aquaculture
"Effects of diet on growth and the microbiome"

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

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 disadvantaged backgrounds in learning laboratory techniques.

2024

Food and Nutrition Special Interest Group
Advocate
Oregon Public Health Association

2023-Present
Portland, OR

Microbes and Social Equity Working Group
Member

2022-Present

Microbiology Graduate Student Association
President
Oregon State University

2022 – 2023
Corvallis, OR