

Michael J. Sieler Jr.

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EDUCATION

Oregon State University, Corvallis, OR

Expected Summer 2025

Ph.D. Microbiology, minor: Biological Data Sciences. GPA: 3.95

Oregon State University, Corvallis, OR

June 2020

B.S. Bioresource Research, options: Bioinformatics and Genomics. GPA: 3.82

RESEARCH APPOINTMENTS

Graduate Student Researcher, Mentor: Thomas J. Sharpton

2020-Present

Research focus in host-associated microbiome stability to environmental stressors
Department of Microbiology, Oregon State University

Phd Intern, Mentor: Lisa Bramer and Kelly Stratton

2023-2024

Research focus in metabolomic data science and bioinformatics
Pacific Northwest National Laboratory

Undergraduate Student Researcher, Mentor: Thomas J. Sharpton

2018-2020

Research focus in zebrafish microbiome ecology and bioinformatics
Department of Microbiology, Oregon State University

Undergraduate Student Researcher, Mentor: Taifo Mahmud

2017-2018

Research focus in identifying novel antibiotic compounds
Department of Pharmacy, Oregon State University

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.

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 writing and editing of the manuscript; and prepared the figures.

Scientific publications continued on next page.

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.

IN-PREP & UNDER REVIEW PUBLICATIONS

Michael J. Sieler Jr., Colleen E Al-Samarrie, Kristin D Kasschau, Michael L Kent, Thomas J Sharpton. "Modelling the zebrafish gut microbiome's resistance and sensitivity to climate change and infection" *BioRxiv*.

- Designed and conducted experiment; conducted gut microbiome statistical analyses; contributed to the writing and editing of the manuscript; and prepared the figures.
- **GitHub Repo:** https://github.com/sielerjm/Sieler2025_ZF_Temperature_Parasite

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. "Analyzing batch effect correction algorithms for small molecule data using ground truth from a designed experiment." *In-prep*.

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

Emilee Lance, **Michael J. Sieler Jr.**, Colleen E Al-Samarrie, Kristin D Kasschau, Michael L Kent, Thomas J Sharpton. "Investigating the interaction of host genetics and parasite burden on the microbiome in zebrafish". *In-prep*.

- Contributed to statistical analyses, writing, and editing of the manuscript

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

University of Wisconsin

"The Importance of Inclusive Practices in Microbiome Science"

2024

Madison, Wisconsin

WORKSHOPS HOSTED

Connecting Microbiome Communities

Society for Industrial Microbiology and Biotechnology

"Microbiome Metadata Mastery and Research Training: Equipping the Next Generation of Researchers Across Academia, Government, and Industry"

2024

San Diego, California

Microbiology Department

Oregon State University

"NMDC: Metadata Standards and Submission Portal for Multi-Omic Analysis"

2024

Corvallis, OR

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

TEACHING APPOINTMENTS & MENTORSHIP

Graduate Teaching Assistant

General Microbiology Lab (MB 303, Spring)

2022-2023

Human Microbiome (MB 436, Spring)

2021

Introduction to Microbiology (MB 230, Spring)

2021

Mentorship

Ph.D. Rotational Students

2024-Present

FELLOWSHIPS & AWARDS

OSU Scholarly Presentation Award (\$600)

Oregon State University

Competitive funding to support graduate students presenting their research at professional conferences.

2024

NMDC Ambassador (\$1,000)

National Microbiome Data Collaborative

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)

Oregon Department of Fish and Wildlife

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 (\$1000) <i>Oregon Museum of Science and Industry</i> Received certified training in informal science education and engagement with public audiences	2020 – 2022
ARCS Scholar (\$18,000) <i>ARCS Foundation</i> Recognized for early significant contributions to scientific research	2020 – 2023

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, 2025*
Food and Nutrition Special Interest Section Founding Section 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>

ADDITIONAL SKILLS & TRAINING

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