Michael J. Sieler Jr.

Microbiome Scientist | Data Enthusiast | PhD Student at OSU

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SUMMARY

- Microbiome scientist with 5+ years of experience developing molecular, computational, and statistical research methods
- Robust data analytic skills in multivariate statistics and machine learning to drive research experiments forward
- Demonstrated abilities to collaborate and take leadership in multi-laboratory experiments
- Experienced in written and oral communication across scientific and public audiences

EDUCATION

Oregon State University
Ph.D. in Microbiology, minor in Biological Data Science*   *Expected 2025*

Oregon State University
B.Sc. in Bioresource Research, options in Bioinformatics and Genomics   2020

WORK EXPERIENCE

MJSieler Consulting - Owner   May 2022-Present
- Designed, developed, and deployed educational video game software for clients
- Educational software used to fulfill research grant deliverables for communicating science to the public
- Tools used: C#, Unity

RESEARCH EXPERIENCE

Developed high-throughput molecular biological and statistical pipelines to interrogate gut microbiome
- Designed and implemented procedures to process 1,000+ zebrafish embryos to analyze their microbiomes
- Tools used: DADA2 (16S sequencing), R (data cleaning, statistical analysis, visualization)

Measure resilience of gut microbiome to chronic exposure of antibiotics
- Exposed 140 adult zebrafish to low and high doses of antibiotics
- Tools used: DADA2 (16S sequencing), R (data cleaning, statistical analysis, visualization)

Investigate the joint interaction effects of pathogen exposure and diet on gut microbiome succession
- Fed 180 zebrafish three commonly used laboratory diets and exposed half to a common pathogen
- Tools used: DADA2 (16S sequencing), R (data cleaning, statistical analysis, visualization)

Meta-analysis of zebrafish gut microbiomes phylogeny
- Identified relevant studies and datasets to include in meta-analysis
- Tools used: Python (data cleaning)

Built and maintain Microbial Bioinformatics Hub to collaboratively share microbiome bioinformatic resources
- Open-source, collaborative space for researchers and students to find, learn and share knowledge, methods and tools related to analyzing microbiological data
- Tools used: GitLab (version control), Sphinx and Read the Docs (web hosting, documentation)

Technical Skills

- **Programming Languages**: R, Python, C# (Unity), Git, HMTL, CSS, C++, UNIX/LINUX
- **Statistics and Data Analytics**: multivariate regression, machine learning, model building and selection, visualization
- **Bioinformatics**: 16S sequencing, metagenomics, DADA2, Phyloseq, Mothur, HMMER, FastTree
- **Molecular Biology**: zebrafish husbandry, DNA extraction, PCR, gel electrophoresis
- **Other**: Microsoft Office Suite, Adobe Photoshop and Illustrator, Blender

For a full list of my publications, please see michaelsieler.com/en/latest/Publications/publications.html