Michael Sieler

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Summary:
• Data scientist with 6+ years combining advanced molecular and statistical methods to study the gut microbiome

WORK EXPERIENCE

Pacific Northwest National Laboratory **June 2023 – Present**
Bioinformatics & Data Science Intern *Richland, WA*

- Quantitatively evaluate 10 common **batch correction methods** for metabolomic analysis

Oregon State University **Sept. 2020 – Present**
Graduate Research Assistant *Corvallis, OR*

- Contribute to 8+ **quantitative research** projects by **statistically analyzing** 1000's of microbiome samples
  - **Published research** findings in 3 peer-reviewed papers, 4 talks & posters at international conferences
- Conduct laboratory experiments and statistical pipelines in **R** and **Python** to advance data-driven research goals
- Demonstrate leadership by coordinating **cross-laboratory scientific experiments** with 10+ researchers

Oregon State University **Nov. 2017 – Present**
Undergraduate Student Researcher *Corvallis, OR*

- **Develop novel research methods** to analyze 1000's of zebrafish embryos for gut microbiome experiments
- Assist Ph.D. students and post docs research projects by identifying 10+ putative antibiotic compounds

EDUCATION

Oregon State University **Expected June 2025**
Ph.D. Microbiology, minor Biological Data Sciences. GPA: 3.95 *Corvallis, OR*

Oregon State University **June 2020**
B.Sc. Bioresource Research, options Bioinformatics and Genomics. GPA: 3.82 *Corvallis, OR*

RESEARCH PROJECTS

Combine high-throughput **molecular, computational and statistical strategies** to understand how environmental factors (e.g., diet, toxins, pathogens) impacts gut microbiome to influence host health.

- Investigate **multivariate interactions** between diet, toxins and pathogens on gut microbiome composition
- **Quantitatively** assess gut microbiome resilience to anthropogenic impacts (e.g., antibiotics, climate change)
- Apply **machine learning** to elucidate underlying mechanisms governing gut microbiome structure

SIDE PROJECTS

Sim Fish – Browser based **educational video game** to teach students about fish husbandry and research

- Fulfill USDA grant deliverables to **communicate scientific research** to broader audiences
- Tools used: C#, Unity, Git

SKILLS

Programming: R, Python, C# (Unity), Git, Unix/Linux, SQL, HTML/CSS, C++, LaTeX, Markdown
Data Analysis: hypothesis testing, multivariate linear regression, machine learning, model building and testing, big data query, data management, data visualization (R Shiny)
Bioinformatics/Lab: 16S sequencing, metabolomics, metagenomics, zebrafish husbandry, PCR, GC/LC-MS
Other: Microsoft Office Suite, Adobe Photoshop & Illustrator
Languages: German, Spanish