Michael Sieler

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WORK EXPERIENCE

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
  - **Publish 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 **deep learning** and **ML** to elucidate underlying mechanisms governing gut microbiome structure

SIDE PROJECTS

Virtual Fish – Browser based educational video game to share scientific research to students

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

Spotify Genre Visualization – Interactive R Shiny app to **explore metadata** in a 100,000+ Spotify song database

- Tools used: R, R-shiny, Kaggle

Microbial Bioinformatics Hub – Open-source site to **share bioinformatic research** knowledge, methods & tools

- Tools used: Sphinx/ReadTheDocs, HTML/CSS, Git

SKILLS

Programming: R, Python (OOP, Numpy, TensorFlow), C# (Unity), Git, Unix/Linux, SQL, command line tools, HTML, CSS, C++, LaTeX, Markdown
Analysis: hypothesis testing, multivariate linear regression, machine learning, model building and testing, big data query, data management, data visualization
Bioinformatics/Lab: 16S sequencing, metagenomics, zebrafish husbandry, PCR
Other: Microsoft Office Suite, Adobe Photoshop & Illustrator
Languages: German (C1), Spanish