

# Michael Sieler

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## Summary:

- Data scientist with 5+ years combining advanced molecular and statistical methods to study the gut microbiome

## WORK EXPERIENCE

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### Oregon State University

*Graduate Research Assistant*

**Sept. 2020 – Present**

*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

*Undergraduate Student Researcher*

**Nov. 2017 – Present**

*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

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### Oregon State University

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

**Expected June 2025**

*Corvallis, OR*

### Oregon State University

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

**June 2020**

*Corvallis, OR*

## RESEARCH PROJECTS

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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

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[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

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**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, metagenomics, zebrafish husbandry, PCR

**Other:** Microsoft Office Suite, Adobe Photoshop & Illustrator

**Languages:** German, Spanish