

# Cassandra Wattenburger

MICROBIOLOGY · SOIL AND PLANTS · DATA SCIENCE

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## Skills

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**Lab and field** experimental design, field sampling, greenhouse experiments, next-gen sequencing, qPCR  
**Data Science** R, Python, Git, Github, reproducible workflows, data management and visualization  
**Statistics** linear models, multivariate modeling, permutation approaches, bioinformatics

## Experience

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### RESEARCH

#### Graduate Research Assistant (Ph.D.)

*Ithaca, NY*

CORNELL UNIVERSITY | ADVISOR DR. DANIEL BUCKLEY

*Jan. 2018 - present*

- Researched the role of bacterial growth dynamics in soil carbon cycling
- Developed method and statistical algorithm to measure bacterial species growth in soils using amplicon sequencing and an internal standard

#### Graduate Research Assistant (M.S.)

*Ames, IA*

IOWA STATE UNIVERSITY | ADVISORS DR. LARRY HALVERSON & DR. KIRSTEN HOFMOCKEL

*Sept. 2015 - Dec. 2017*

- Researched impact of agricultural practices on maize root-associated microbial communities
- Designed and conducted greenhouse and field-based experiments
- qPCR measurement of bacterial and archaeal amoA gene in agricultural soils
- Analyzed root-associated 16S and ITS amplicon sequence data

#### Laboratory Technician

*Paterson, WA*

COLUMBIA CREST WINERY

*July - Sept. 2014*

- Collected and processed samples of fresh and fermenting wine grapes
- Conducted brix, pH, and turbidity tests

#### Research Intern

*Richland, WA*

PACIFIC NORTHWEST NATIONAL LABORATORY | MENTOR DR. VANESSA BAILEY

*Summers 2010 - 2014*

- Managed and conducted various research projects related to the role of soil microbial communities in soil carbon cycling
- Culturing, cloning, DNA extraction, qPCR, GCMS operation

### LEADERSHIP

#### Advisory Board Member

*Ithaca, NY*

CAREERS BEYOND ACADEMIA | CORNELL UNIVERSITY

*Aug. 2020 - present*

- Guided Careers Beyond Academia programming
- Designed and presented webinars for professional development, including professionalism and data visualization
- Organized and hosted career panels

#### President & Treasurer

*Ithaca, NY*

SOIL AND CROPS SCIENCES GRADUATE STUDENT ASSOCIATION | CORNELL UNIVERSITY

*Aug. 2019 - 2021*

- Lead association activities
- Created and managed budgets
- Coordinated external speaker visit to Soil and Crop Sciences section seminar series
- Planned and hosted 2020 Soil and Crops Sciences graduate student recruitment and tour events, virtually

## President & Treasurer

MICROBIOLOGY GRADUATE STUDENT ORGANIZATION | IOWA STATE UNIVERSITY

Ames, IA  
Aug. 2015 - 2017

- Created and managed budget
- Organized and volunteered in science outreach events for local and state-wide students
- Invited and hosted Interdepartmental Microbiology program seminar speakers

## MANAGEMENT

### Undergraduate Supervisor/Mentor

IOWA STATE UNIVERSITY & CORNELL UNIVERSITY

Various  
Aug. 2015 - present

- Interviewed, trained, and mentored five undergraduate researchers in molecular biology techniques, data analysis, and programming
- Supervised undergraduate honors thesis research
- Provided career advice, support, and letters of recommendation

### Github Repository Manager

BUCKLEY LAB GITHUB REPOSITORY

Ithaca, NY  
Jan. 2018 - present

- Organized, edited, and updated standard operating protocols in the Buckley Lab GitHub repository

### Newsletter Editor

CAREERS BEYOND ACADEMIA | CORNELL UNIVERSITY

Ithaca, NY  
Jan. 2018 - Aug. 2019

- Published monthly newsletter distributed to an audience of over 400 via MailChimp
- Interviewed Cornell students and staff for spotlight pieces

## Education

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### Cornell University, Ph.D. (in progress)

SOIL SCIENCE, MINORS IN GENOMICS AND MICROBIOLOGY

Ithaca, NY  
Jan. 2018 - present

### Iowa State University, M.S.

MICROBIOLOGY

Ames, IA  
Sept 2015 - Dec 2017

### Western Washington University, B.S.

CELLULAR AND MOLECULAR BIOLOGY, MINOR IN CHEMISTRY, HONORS PROGRAM

Bellingham, WA  
Sept 2010 - June 2014

## Relevant Training

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- 2021 **Carpentries Instructor**, certification
- 2021 **Statistical Learning**, audit, 10 week course, supervised and unsupervised methods
- 2020 **Collaborative and Reproducible Data Science in R**, semester-long course
- 2020 **Linear Models: Regression and ANOVA**, Cornell Statistical Consulting Unit
- 2020 **Intermediate Statistical Analysis Using R**, Cornell Statistical Consulting Unit
- 2018 **Principle Components Analysis**, Cornell Statistical Consulting Unit
- 2017 **Data Wrasslin' in R**, R tidyverse and tidy-data principles
- 2017 **Data Visualization**, R and ggplot2

The Carpentries  
edX Stanford  
Cornell U.  
Cornell U.  
Cornell U.  
Cornell U.  
Iowa State U.  
ESA