

# Cassandra Wattenburger

SOIL AND PLANT HEALTH · BIOINFORMATICS · DATA SCIENCE

706 Bradfield Hall, Cornell University, Ithaca NY, 14853, USA

☎ 1 (509) 391-0841 | ✉ [cjwattenburger@gmail.com](mailto:cjwattenburger@gmail.com) | 🏠 [cjwattenburger.rbind.io](http://cjwattenburger.rbind.io) | 📱 [cwatt](https://www.linkedin.com/in/cwatt)

## Skills

**Data Science** R, Python, SQL, Git, GitHub, reproducible workflows, data manipulation/visualization, -omics data  
**Statistics** descriptive, linear & mixed models, regression, k-means clustering, Gaussian mixture models  
**Lab and Field** experimental design, field & greenhouse experiments, high-throughput sequencing library prep

## Work Experience

### RESEARCH

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

*Ithaca, NY*

CORNELL UNIVERSITY | ADVISOR DR. DANIEL BUCKLEY

*Jan. 2018 - present*

- Researched the role of bacterial population dynamics in soil carbon cycling and sequestration in agricultural systems
- Developed algorithms and statistical tools to estimate bacterial taxon growth and death from -omics data sets
- Employed clustering methods to identify overarching characteristics of bacterial growth and death in soils

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

*Ames, IA*

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

*Sept. 2015 - Dec. 2017*

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

#### 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 carbon cycling
- Responsibilities included culturing, cloning, DNA and protein extraction, qPCR, GCMS operation

### DATA SCIENCE

#### Data Leader

*Ithaca, NY*

VACCINATION CONVERSATIONS WITH SCIENTISTS | DATA LEADERSHIP | CORNELL UNIVERSITY

*Mar. 2022 - present*

- Created reproducible analysis workflow in R Markdown and GitHub
- Processed and prepared data collected by phone-banking software to derive insights regarding COVID vaccine rates, common vaccination concerns, and phone-banking efficacy, visualized findings
- Collaborated with other data leaders to identify analysis priorities and data limitations
- Communicated findings to broader leadership and organization members

#### Server Administrator (Linux)

*Ithaca, NY*

BUCKLEY LAB | CORNELL UNIVERSITY

*Jan. 2022 - present*

- Created step-by-step server on-boarding instructions and made accessible via GitHub
- Created new user accounts and managed access to files and data stored on server
- Wrote general-use scripts in bash, Python, and Jupyter Notebook for common needs

#### GitHub Repository Manager

*Ithaca, NY*

BUCKLEY LAB | CORNELL UNIVERSITY

*Jan. 2018 - present*

- Responsible for organizing and making accessible Buckley lab protocols and scripts
- Wrote and updated standard operating protocols in markdown using version control

## LEADERSHIP AND COMMUNICATION

### IDP Fellow

INTERGROUP DIALOGUE PROJECT | CORNELL UNIVERSITY

*Ithaca, NY*

*Aug. 2021 - present*

- Organized and facilitated workshops to teach Cornell students, post-docs, and staff listening and communication skills
- Taught communication across difference, strategic and generative questioning, and social identity recognition

### President & Treasurer

SOIL AND CROPS SCIENCES GRADUATE STUDENT ASSOCIATION | CORNELL UNIVERSITY

*Ithaca, NY*

*Aug. 2019 - 2022*

- Created and managed budgets as Treasurer, lead association activities as President
- Coordinated external speaker visit to Soil and Crop Sciences section seminar series
- Planned and hosted 2020 and 2021 Soil and Crops Sciences graduate student recruitment and tour events, virtually and in-person

### Advisory Board Member

CAREERS BEYOND ACADEMIA | CORNELL UNIVERSITY

*Ithaca, NY*

*Aug. 2020 - 2021*

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

### President & Treasurer

MICROBIOLOGY GRADUATE STUDENT ORGANIZATION | IOWA STATE UNIVERSITY

*Ames, IA*

*Aug. 2015 - 2017*

- Created and managed budget as Treasurer, lead monthly meetings as President
- Organized and volunteered in science outreach events for lowan students
- Invited and hosted Interdepartmental Microbiology program seminar speakers

## Education

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

SOIL SCIENCE, MINORS IN GENOMICS AND MICROBIOLOGY

*Ithaca, NY*

*Jan. 2018 - Aug. 2023*

### 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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2022	<b>Intro. to Bayesian Statistical Methods</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2022	<b>Missing Data</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2021	<b>Exploratory Factor Analysis</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2021	<b>Carpentries Instructor</b> , certification to teach programming workshops	<i>The Carpentries</i>
2021	<b>Statistical Learning</b> , audit, 10 week course, supervised and unsupervised methods	<i>edX Stanford</i>
2020	<b>Collaborative and Reproducible Data Science in R</b> , 2 credit graduate-level course	<i>Cornell U.</i>
2020	<b>Linear Models: Regression and ANOVA</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2020	<b>Repeated Measures</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2020	<b>Intermediate Statistical Analysis Using R</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2018	<b>Principle Components Analysis</b> , Cornell Statistical Consulting Unit workshop	<i>Cornell U.</i>
2017	<b>Data Wrasslin' in R</b> , R tidyverse and tidy-data principles workshop	<i>Iowa State U.</i>
2017	<b>Data Visualization</b> , R and ggplot2 basics workshop	<i>ESA</i>
2016	<b>Statistical Design and the Analysis of Experiments</b> , 4 credit course	<i>Iowa State U.</i>
2015	<b>Statistical Methods for Research Workers</b> , 4 credit course	<i>Iowa State U.</i>