Cassandra Wattenburger

SOIL AND PLANT HEALTH · MICROBIOLOGY · DATA SCIENCE

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Skills

Data Science	R, Python, 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.)
CORNELL UNIVERSITY | ADVISOR DR. DANIEL BUCKLEY

Ithaca, NY
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.)
IOWA STATE UNIVERSITY | ADVISORS DR. LARRY HALVERSON & DR. KIRSTEN HOFMOCKEL

Ames, IA
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
PACIFIC NORTHWEST NATIONAL LABORATORY | MENTOR DR. VANESSA BAILEY

Richland, WA
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
VACCINATION CONVERSATIONS WITH SCIENTISTS | DATA LEADERSHIP | CORNELL UNIVERSITY

Ithaca, NY
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 concernss, 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)
BUCKLEY LAB | CORNELL UNIVERSITY

Ithaca, NY
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
BUCKLEY LAB | CORNELL UNIVERSITY

Ithaca, NY
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
Ithaca, NY

Intergroup Dialogue Project | Cornell University
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
Ithaca, NY

Soil and Crops Sciences Graduate Student Association | Cornell University
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
Ithaca, NY

Careers Beyond Academia | Cornell University
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
Ames, IA

Microbiology Graduate Student Organization | Iowa State University
Aug. 2015 - 2017

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

Education

Cornell University, Ph.D. (in progress)
Ithaca, NY

Soil Science, Minors in Genomics and Microbiology
Jan. 2018 - Aug. 2023

Iowa State University, M.S.
Ames, IA

Microbiology
Sept 2015 - Dec 2017

Western Washington University, B.S.
Bellingham, WA

Cellular and Molecular Biology, Minor in Chemistry, Honors program
Sept 2010 - June 2014

Relevant Training

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