

Schuyler D. Smith

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Summary

My recent studies have investigated how anthropomorphic activities impact environmental microbiomes through DNA and other biological data. Previously, I have worked in plant genetics labs where I conducted molecular characterizations and developed tools and pipelines for marker identification and analysis. I hope to find a career where I can apply my passion for data science into a position with great environment and a fulfilling purpose, while continuing to learn and expand my skills and understanding.

Education

Ph.D.	Bioinformatics and Computational Biology Iowa State University, Ames, IA	2021
M.S.	Plant Breeding and Quantitative Genetics Texas A&M University, College Station, TX	2015
B.S.	Genetics Iowa State University, Ames, IA	2012

Publications

- Schuyler D. Smith**, J Lee, A Howe. *Relationships within microbiome communities of lakes enable formation of harmful algal blooms*. In development Q1 2022.
- Schuyler D. Smith**, Choi, J., Howe, A. *Diversity of Antibiotic Resistance genes and Transfer Elements-Quantitative Monitoring (DARTE-QM): a method for sequencing microbiome functional profiles*. Accepted by Communications Biology 2021.
- Yu, W., Lawrence, N. C., Sooksa-Nguan, T., **Smith, S.D.**, Tenesaca, C., Howe, A. C., Hall, S. J. *Microbial linkages to soil biogeochemical processes in a poorly drained agricultural ecosystem*. 2021.
- Schuyler D. Smith**, Colgan, P., Yang, F., Rieke, E.L., Soupir, M.L., Moorman, T.B., Allen, H.K., Howe, A. *Investigating the dispersal of antibiotic resistance associated genes from manure application to soil and drainage waters in simulated agricultural farmland systems*. 2019.
- Schuyler D. Smith** *phylosmith: an R-package for reproducible and efficient microbiome analysis with phyloseq-objects*. 2019.
- Choi, J., Rieke, E.L., Moorman, T.B., Allen, H.K., **Smith, S.D.**, Howe, A. *Practical implications of erythromycin resistance gene diversity on surveillance and monitoring of resistance*. 2018.
- Schuyler D. Smith**, Heffner, E., Murray, S.C. *Molecular analysis of genetic diversity in a Texas maize breeding program*. 2015.

Applicable Skills

Proficient:

R	Shell (BASH)	Markdown	MacOS
C++	HTML	Linux	Slurm
python	TeX	Windows	HTCondor

Familiar:

Git	Microsoft Office	CSS	AWS
Make	OpenRefine	SQL	Docker
NextFlow	R-Shiny	Tableau	TravisCI

Experience

Graduate Research Assistant - Ph.D. Genomics and Environmental Research in Microbial Systems Laboratory Iowa State University - Ames, Iowa	2017 – 2021
Graduate Research Assistant - Ph.D. Potato Breeding and Genetics Laboratory University of Wisconsin - Madison - Madison, Wisconsin	2015 – 2016
Biological Science Technician - Internship Arid-Land Agricultural Research Center. United States Department of Agriculture - Maricopa, Arizona	2014
Graduate Research Assistant - M.S. Maize Breeding and Genetics Program Texas A&M University - College Station, Texas	2013 - 2015
Maize Breeding Intern Huxley Research Station. Monsanto Company - Huxley, Iowa	2012
Maize Product Trait Development Intern – 6 month Willmar Research Station. DuPont Pioneer - Willmar, Minnesota	2011
Undergraduate Research Assistant Soybean Genomics Laboratory - Graham Lab. United States Department of Agriculture - Ames, Iowa	2010 - 2011

Selected Workshops, Seminars, and Talks

Data Carpentry: Genomics, Oklahoma State University, online	2021
Software Carpentry: Shell, Git, R for Reproducible Scientific Analysis, University of Idaho, online	2021
Data Carpentry: Ecology, Merck & Co., online	2020
Data Carpentry: Genomics, George Washington University, Washington, D.C.	2020
Data Carpentry: Ecology, Merck & Co., Upper Gwynedd, PA	2019
Girls in Science Initiative, Science Center of Iowa, Des Moines, IA	2019
phyloSMITH: an R-package for reproducible and efficient microbiome analysis with phyloseq-objects. Basel, Switzerland.	2019
Co-Occurrence Networks Analysis for Environmental Microbiomes. ISME, Leipzig, Germany.	2018
Predictive Plant Phenomics. NSF Research Traineeship (NRT) Annual Meeting, Arlington, Virginia.	2018
Introduction to Data Analysis, Iowa State University, Ames, IA	2017 & 2018
Iowa State BCB Data Analysis Language Workshops Introduction to Unix	2017 & 2018
Iowa State BCB Data Analysis Language Workshops Introduction to Python	2017
Data Analyses for Metagenomic Advances in Microbial Ecology, Kellogg Research Station, Hickory Corners, MI	2017 & 2018
Examining Antibiotic Resistance Gene (ARG) horizontal transfer and introduction through farmland soil microbiomes as a result of modern farming practices. Annual Front Range Computational & Systems Biology Symposium: Microbiome. Fort Collins, Colorado.	2017
Genotyping by Sequencing for Autotetraploid Species. International Conference on Quantitative Genetics. Madison, Wisconsin.	2016