

Geoff Zahn, PhD

Translational mycology | Plant-Microbe symbiosis

Current roles

- PI of Zahn microbial ecology lab (6 current students)
- Associate editor of *Mycologia*
- Mycology & Bioinformatics Teacher
- Bioinformatics consultant
- PhD committee member (3 students)
- Associate Department Chair (Biology)
- Director of Undergraduate Bioinformatics Degree
- R package developer
- National Microbiome Data Collaborative Champion

Professional Appointments

2024 –

Visiting Faculty – Dartmouth College

2023 – Current

Associate Professor – Utah Valley University

2017 – 2023

Assistant Professor – Utah Valley University

2015 – 2017

Postdoc Associate – University of Hawai`i at Manoa (Amend Lab)

Education

2015 PhD Biology (Protist-bacterial interactions)
University of Arkansas

2010 BS Ecology (Fungal genetics thesis)
Missouri State University

Selected Funding

(Total funding: \$1,373,494)

Pending funding

Collaborative Research: Burning questions in microbial ecology: Ecological mechanisms that control microbiome transplant outcomes

Co-PI | NSF DEB | \$1,448,000

S-STEM: Faculty-Mentored Experiences for Improving Undergraduate Biology Student Outcomes

PI | NSF DUE | \$1,495,000

Myco-Ed: Mycological Curriculum for Education and Discovery

Senior Personnel | JGI

Current funding

Molecular predictors of mangrove holobiont assembly

Writer/Senior Personnel | Singapore MOE (IG20-SI003) | \$180,000

Faculty-Mentored Experiences for Improving Undergrad Biology Student Outcomes

PI | NSF (DUE – 1833880) | \$972,287

GEL: Using neural networks to link host expression and microbiome assembly

PI | UVU Grants for Engaged Learning (GEL-007) | \$30,000



Contact Info

gzahn@uvu.edu ✉

github.com/gzahn 🐙

[Lab website](#) 🏠

[ORCID Profile](#) 🆔

Skills

Computational:

R / Bash / Python

Unix admin

High-performance computing

Metagenomics

Metatranscriptomics

Wet-lab:

DNA / RNA

Microbial culturing

Microscopy (Fluor/SEM)

Greenhouse

Microcosms

Academic:

Course and program design

Lab management

Grant management

Active learning

CUREs

Mentoring

Statistical methods:

RandomForest

lmer

vegan

neuralnets

tensorflow

xgboost

edibble

igraph / SpiecEasi

DeSeq2

Ten Selected Relevant Publications

[Google Scholar Profile](#) | 33 Publications | H-index: 14 | i10-Index: 17 | *mentee

1. Wainwright BJ, Millar T*, Bowen L*, Semon L*, Hickman KJE*, Lee JN, [Zahn G](#). **The core mangrove microbiome reveals shared taxa potentially involved in nutrient cycling and promoting host survival.** *Environmental Microbiome*. 2023
2. Rawson C*, [Zahn G](#). **Inclusion of database outgroups reduces false positives in fungal metabarcoding taxonomic assignments.** *Mycologia*. 2023
3. Mikryukov, V., Dulya, O., Zizka, A., ... [Zahn, G.](#) ... Tedersoo, L. **Connecting the multiple dimensions of global soil fungal diversity.** *Science Advances*. 2023
4. [Zahn G](#). **Marker Genes Protocol for Plant Microbiome Analyses.** *BIO-PROTOCOL*. 2022
5. Sur GL*, [Zahn G](#), Stacy EA. **Examination of host-taxon, environment, and distance effects on leaf fungal endophytes in the dominant woody genus, *Metrosideros*, on O'ahu.** *Fungal Ecology*. 2021
6. Darcy JL, Swift SOI, Cobian GM*, [Zahn GL](#), Perry BA, Amend AS. **Fungal communities living within leaves of native Hawaiian dicots are structured by landscape-scale variables as well as by host plants.** *Molecular Ecology*. 2020
7. [Zahn G](#), Amend AS. **Foliar fungi alter reproductive timing and allocation in *Arabidopsis* under normal and water-stressed conditions.** *Fungal Ecology*. 2019
8. Wainwright BJ, [Zahn GL](#), Zushi J*, Lee NLY, Ooi JLS, Lee JN*, et al. **Seagrass-associated fungal communities show distance decay of similarity that has implications for seagrass management and restoration.** *Ecology and Evolution*. 2019
9. [Zahn G](#), Tipton L, Datlof E*, Kivlin SN, Sheridan P, Amend AS, et al. **Fungal aerobiota are not affected by time nor environment over a 13-y time series at the Mauna Loa Observatory.** *PNAS*. 2019
10. [Zahn G](#), Amend AS. **Foliar microbiome transplants confer disease resistance in a critically-endangered plant.** *PeerJ*. 2017

Selected Presentations

Invited

- Translating mentored undergraduate research into student retention and success**
NSF S-STEM Symposium 2023
- Less content, more context: Research as pedagogy in undergraduate mycology courses**
Mycological Society of America 2022
- Who's there and who cares: the how and why of fungal community structure**
University of Arkansas/Missouri State University 2018
- Plant conservation from a microbial perspective**
O'ahu Army Natural Resources Program 2016

Contributed

- Metagenomic Tools for Mycobiome Analyses in Model vs. Non-Model Systems**
Mycological Society of America 2023
- Aquatic Plant-Associated Fungi Along an Urbanization Gradient**
Mycological Society of America 2023



Code contributions

[CommunityAssemblR](#)
[Microbiome Workshop](#)
[R for Biologists](#)
[Custom Unix tools](#)
[QIIME Database builder](#)
[Bioinfo Data Skills Course](#)

Collaborations

National Univ. of Singapore
Joint Genome Institute
Universiti Malaysia Terengganu
Universiti Malaya, Kuala Lumpur
Univ. of Hawai'i at Mānoa
Oxford Univ.
Univ. of Arkansas
Univ. of Nevada, Las Vegas
Okanagan College
University of Colorado, Anschutz
Stazione Anton Dorhn
Washington State Univ.
SUNY Syracuse
Univ. of Colorado, Denver
Pacific NW National Lab
Univ. of Colorado, Denver
SoftCell, Inc.
Young Living, Inc.

Outreach

Stockman Grass Farmer [Magazine](#)
ScienceNews [Article](#)
Hawaii [News Now](#)
Science fair judge (annual)
NSF GK-12 Fellow (6th-grade)
Mycological art

Teaching and Mentoring

Designed and director of Undergrad Bioinformatics Degree Program

Instructor of record for:

Mycology	(Research-based course)
R for Biologists	(Data analysis/vis/modeling)
Bioinformatics Data Skills	(Bash/HPC/Unix admin)
Microbiome Boot Camp	(Numerical ecology/advanced R)
Organismal Biology	(Majors' intro course)

Research mentor

3 PhD students (committee member)
2 MS students
38 Undergraduate students (thesis advisor)

Director of NSF S-STEM Biology Program (UVU)

Career and academic mentor to 41 NSF Scholars
Manage scholarship budgets and purchasing

Awards

College of Science Deans Award of Excellence for Scholarship (UVU, 2020 & 2022)
Presidential Fellowship for Faculty Scholarship (UVU, 2019)
Translational Mycology Award (MSA, 2016)
Various travel awards (MSA, JSPS, ISME, Yale-NUS)

Societies and Service

Associate Editor of *Mycologia*
Education Committee - Mycological Society of America
Consortium of Fungi
Champion, National Microbiome Data Collaborative
Mangrove Microbiome Initiative
International Society for Microbial Ecology
Mycological Society of America
International. Society for Fungal Conservation
Japan Society for the Promotion of Science Alumni Assoc.
Genetics Society of America
Council for Undergraduate Research
NSF GK-12 Teaching Fellow (2011-2012)
Faculty senator - UVU (2017-2020)
Program and course development (Univ. of Arkansas, Utah Valley Univ.)
Faculty search committees (Chair 1x, Member 6x)
Associate department chair – Utah Valley University (2023 – 2024)

Invited Reviewer

NSF Panel and *ad hoc* reviews
NSF GRFP
BARD US-Israel Agricultural Development Fund
Journals:

<i>Soil Biol. and Biochem. (Distinguished)</i>	<i>Pedobiologia (Distinguished)</i>
<i>ISME Journal</i>	<i>PeerJ</i>
<i>Oikos</i>	<i>Fungal Ecology (Distinguished)</i>
<i>Molecular Ecology</i>	<i>Ecology and Evolution</i>
<i>American Fern Journal</i>	<i>New Phytologist</i>
<i>Phytobiomes</i>	<i>Microbiology Spectrum</i>
<i>PNAS</i>	<i>PLOS Computational Biology</i>



Public Data Sets

[Metrosideros fungi](#)
[Coral microbiomes](#)
[Post-Fire soil fungi](#)
[Plant virus genomic database](#)
[Seagrass fungi](#)
[Lignin-decomposing fungi](#)
[Urban aquatic plant fungi](#)

R package developer

