GEOFF ZAHN, PHD

Translational microbial ecology | Microbiomes and symbiosis

PROFESSIONAL APPOINTMENTS

Current | 2023 — **Associate Professor**
Utah Valley University — Orem, UT

2023 | 2017 — **Assistant Professor**
Utah Valley University — Orem, UT

Current | 2020 — **Private Consulting**
Forensic Bioinformatics — Various

2021 | 2018 — **Director of Environmental Biology**
GeoDataCrawler Research Institute — Athens, GA

2017 | 2015 — **Postdoctoral Associate**
University of Hawai`i at Manoa — Honolulu, HI

EDUCATION

2015 — **University of Arkansas**
Ph.D. in Biology — Fayetteville, AR

2010 — **Missouri State University**
B.S. in Ecology, Evolution, and Systematics — Springfield, MO

SELECTED FUNDING AND AWARDS

Total funding: $1,182,738

2023 | 2018 — **PI: Faculty-Mentored Experiences for Improving Undergraduate Biology Student Outcomes**
$972,287 — NSF (DUE – 1833880)

2022 — **College of Science Dean's Award of Excellence for Scholarship**
$2,750 — Utah Valley University

CONTACT INFO

gzahn@uvu.edu
github.com/gzahn
https://gzahn.github.io

SKILLS

Computational:

- **R**
- **Bash**
- **SQL**
- **Python**
- **Unix admin**
- **High-performance computing**
- **Metagenomics / Metabarcoding**

Wet-lab:

- **DNA** (extraction/prep/seq/*etc.*)
- **Culturing** (Fungi and 'Protists')
- **Microscopy** (BF/DIC/Fluor/SEM)
- **Soil analysis**
- **Microcosms**

Academic:

- **Course and program design**
- **Active learning**
- **Course-based undergraduate research**
- **Mentoring**
- **Lab management**
- **Grants management**

2020 **College of Science Dean's Award of Excellence for Scholarship**
$2,750
Utah Valley University

2019 **Presidential Fellowship for Faculty Scholarship**
$8,000
Utah Valley University

2018 | 2017 **PI: SEED: Engaging undergraduates in advanced research**
$30,000
Utah Valley University

2018 **PI: New methods to survey fungal endophytes in endangered cacti**
$2,550
Capitol Reef National Park

2018 **Co-PI: Assessing Undergraduate Research Teams at an Open Enrollment Institution**
$29,327
Utah Valley University

2016 **Translational Mycology Postdoctoral Award**
Plant conservation from a microbial perspective
Mycological Society of America

2015 **Co-PI: Restoration of endangered plants by manipulating foliar fungal symbionts**
$40,500
Oahu Army Natural Resources Program

2014 **Japan Society for the Promotion of Science Travel Award**
$750
Washington, D.C.

2013 **PI: The Importance of microbial interactions to soil carbon cycling on a warming planet**
$12,570
NSF (OISE-1308856) / JSPS (SP01363)

Current | 2017 **Student Mentee Funding Awards**
122 mentees funded from a variety of internal and external programs

TEACHING AND MENTORING

Designed a new Bioinformatics Degree Program
Experienced with univ. curriculum processes and accreditation

R for Biologists
Intro to R language and data science, including dataviz & modeling (designed and taught)

Bioinformatics Data Skills
Unix/Bash and HPC use for bioinformatics (designed and taught)

Mycology

Research-based mycology (designed and taught)

Microbiome Boot Camp

Advanced R, numerical ecology, community ecology, scientific writing (designed and taught)

Bioinformatics Capstone

Project-based (designed and taught)

Organismal Biology

Intro biology II (taught)

SYNERGISTIC ACTIVITIES

Mentorship

- Graduate committee member (4 MS, 3 PhD)
- Undergrad research mentor (38 students)
- Lab alumni

Societies & Service

- Editor of *Mycologia*
- Education Committee - Mycological Society of America
- IUCN Species Survival Group - Slime Moulds Specialist
- NSF GK-12 Teaching Fellow (2011-2012)

Collaborations

- National Univ. of Singapore
- Univ. of Hawaii at Manoa
- Stazione Anton Dorhn
- Washington State Univ.
- SUNY Syracuse
- PNNL
- SoftCell, Inc.
- Young Living, Inc.
- Oxford Univ.
- Univ. of Arkansas

Peer review

- NSF panel reviewer
- NSF GRFP
- BARD US-Israel Agr. Dev. Fund
- Journals:
  - Soil Biol. and Biochem. (Distinguished), PeerJ, Pedobiologia (Distinguished), Oikos, ISME Journal, Fungal Ecology (Distinguished), Molecular ecology, Ecology and Evolution, American Fern Journal, New, Phytologist, Phytobiomes

PUBLICATIONS

2023 **The core mangrove microbiome reveals shared taxa potentially involved in nutrient cycling and promoting host survival.**
Wainwright BJ, Millar T, Bowen L, Semon L, Hickman KJE, Lee JN, Yeo ZY, & Zahn G. *Environmental Microbiome* 10.1186/s40793-023-00499-5.

2023 **Inclusion of database outgroups reduces false positives in fungal metabarcoding taxonomic assignments.**
Rawson C, & Zahn G. *Mycologia* 10.1080/00275514.2023.2206931

2022 **Long-term soil fungal community recovery after fire is impacted by climate change.**
McGee S, Tidwell A, Riggs E, Veltkamp H, & Zahn G. *Western North American Naturalist*

2022 **Marker Genes (16S and ITS) Protocol for Plant Microbiome Analyses.**
Zahn G. *BIO-PROTOCOL* 10.21769/BioProtoc.4395

2022 **Global patterns in endemicity and vulnerability of soil fungi.**
Tedersoo L, Mikryukov V, Zizka A, Bahram M, Hagh-Doust N, Anslan S, Prylutskyi O, Delgado-Baquerizo M, Maestre FT, ... Abarenkov K. *Global Change Biology* 10.1111/gcb.16398

2021 **The Global Soil Mycobiome consortium dataset for boosting fungal diversity research.**
Tedersoo L, Mikryukov V, Anslan S, Bahram M, Khalid AN, Corrales A, Agan A, Vasco-Palacios A-M, Saitta A, ... Abarenkov K. *Fungal Diversity* 10.1007/s13225-021-00493-7

2021 **Examination of host-taxon, environment, and distance effects on leaf fungal endophytes in the dominant woody genus, Metrosideros, on O'ahu.**
Sur GL, Zahn G, & Stacy EA. *Fungal Ecology* 10.1016/j.funeco.2021.101093

2021 **Biogeographic structure of fungal communities in seagrass Halophilia ovalis across the Malay Peninsula.**

Quek ZBR, Zahn G, Lee NLY, Ooi JLS, Lee JN, Huang D, & Wainwright BJ. *Environmental Microbiology Reports* 10.1111/1758-2229.13003

2021 **Restoration of the mycobiome of the endangered Hawaiian mint Phyllostegia kaalaensis increases its resistance to a common powdery mildew.**

Egan CP, Koko JH, Muir CD, Zahn G, Swift SOI, Amend AS, & Hynson NA. *Fungal Ecology* 10.1016/j.funeco.2021.101070

2021 **Hawaiian Fungal Amplicon Sequence Variants Reveal Otherwise Hidden Biogeography.**

Tipton L, Zahn GL, Darcy JL, Amend AS, & Hynson NA. *Microbial Ecology* 10.1007/s00248-021-01730-x

2021 **Essential oil, insect, and microbe relationships in Juniperus osteosperma (Cupressaceae) trees killed by wildfire.**

Wilson T, Poulson A, Packer C, Carlson R, Davis R, Dey M, Owen N, Smalley S, Dodge R, ... Stevens M. *Phytologia*

2020 **Host age is not a consistent predictor of microbial diversity in the coral Porites lutea.**

Wainwright BJ, Zahn GL, Afiq-Rosli L, Tanzil JTI, & Huang D. *Scientific Reports* 10.1038/s41598-020-71117-4

2020 **Fungal communities living within leaves of native Hawaiian dicots are structured by landscape-scale variables as well as by host plants.**

Darcy JL, Swift SOI, Cobian GM, Zahn GL, Perry BA, & Amend AS. *Molecular Ecology* 10.1111/mec.15544

2019 **Fungal aerobiota are not affected by time nor environment over a 13-y time series at the Mauna Loa Observatory.**

Zahn G, Tipton L, Datlof E, Kivlin SN, Sheridan P, Amend AS, & Hynson NA. *Proceedings of the National Academy of Sciences* 10.1073/pnas.1907414116

2019 **Foliar fungi alter reproductive timing and allocation in Arabidopsis under normal and water-stressed conditions.**

Zahn G, & Amend AS. *Fungal Ecology* 10.1016/j.funeco.2019.04.002

2019 **Characterization of fungal biodiversity and communities associated with the reef macroalga Sargassum ilicifolium reveals fungal community differentiation according to geographic locality and algal structure.**

Wainwright BJ, Bauman AG, Zahn GL, Todd PA, & Huang D. *Marine Biodiversity* 10.1007/s12526-019-00992-6

2019 **Characterisation of coral-associated bacterial communities in an urbanised marine environment shows strong divergence over small geographic scales.**

Wainwright BJ, Afiq-Rosli L, Zahn GL, & Huang D. *Coral Reefs* 10.1007/s00338-019-01837-1

2019 **Seagrass-associated fungal communities show distance decay of similarity that has implications for seagrass management and restoration.**

Wainwright BJ, Zahn GL, Zushi J, Lee NLY, Ooi JLS, Lee JN, & Huang D. *Ecology and Evolution* 10.1002/ece3.5631

2018 **Seagrass-associated fungal communities follow Wallace's line, but host genotype does not structure fungal community.**

Wainwright BJ, Zahn GL, Arlyza IS, & Amend AS. *Journal of Biogeography* 10.1111/jbi.13168

2017 **Foliar microbiome transplants confer disease resistance in a critically-endangered plant.**

Zahn G, & Amend AS. *PeerJ* 10.7717/peerj.4020

2017 **Uncovering unseen fungal diversity from plant DNA banks.**

Datlof EM, Amend AS, Earl K, Hayward J, Morden CW, Wade R, Zahn G, & Hynson NA. *PeerJ* 10.7717/peerj.3730

2017 **Fungi associated with mesophotic macroalgae from the 'Au'au Channel, west Maui are differentiated by host and overlap terrestrial communities.**

Wainwright BJ, Zahn GL, Spalding HL, Sherwood AR, Smith CM, & Amend AS. *PeerJ* 10.7717/peerj.3532

2016 **The effects of amoebal bacterivory on carbon and nitrogen dynamics depend on temperature and soil structure interactions.**

Zahn G, Wagai R, & Yonemura S. *Soil Biology and Biochemistry*

2014 **Ecological distribution of protosteloid amoebae in New Zealand.**

Zahn G, Stephenson SL, & Spiegel FW. *PeerJ*

2014 **First records of Protosteloid Amoebae (Eumycetozoa) from the Democratic Republic of the Congo.**

De Haan M, Cocquyt C, Tice A, Zahn G, & Spiegel FW. *Plant Ecology and Evolution*

2011 **Pil1, an eisosome organizer, plays an important role in the recruitment of synaptojanins and amphiphysins to facilitate receptor-mediated endocytosis in yeast.**

Murphy ER, Boxberger J, Colvin R, Lee SJ, Zahn G, Loor F, & Kim K. *European Journal of Cell Biology*