Boiology Department

*Curriculum vitae of*

**Geoffrey L. Zahn, Ph.D.**

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**PROFESSIONAL APPOINTMENTS**

**2017** Assistant Professor

Utah Valley University

Department of Biology

**2015 - 2017** Postdoctoral Research Associate

University of Hawaii at Manoa – Department of Botany

Lab of: Dr. Anthony Amend

**EDUCATION**

**2015**  PhD in Biology – Microbial and Molecular Ecology

University of Arkansas, Fayetteville, AR, USA

Dissertation: "The Functional and Distributional Ecology of Mycetozoans under Changing Edaphic and Climatic Dynamics"

Advisor: Dr. Frederick W. Spiegel

**2010** Bachelor of Science in Biology – Ecology, Evolution and Systematics

Missouri State University, Springfield, MO, USA

**RESEARCH INTERESTS:**

Microbial community responses/feedbacks to climate change

Linking local microbial and molecular dynamics to global biogeochemical cycles

Plant-Microbe interactions

The ecology and ecosystem services of protists and fungi

Factors that shape microbial community formation and function

**PUBLICATIONS**

Datlof EM, Amend AS, Earl K, Hayward J, Morden CW, Wade R, **Zahn G**, Hynson NA. (2017) Uncovering unseen fungal diversity from plant DNA banks. PeerJ 5:e3730 <https://doi.org/10.7717/peerj.3730>

Wainwright BJ, **Zahn GL**, Spalding HL, Sherwood AR, Smith CM, Amend AS. 2017. Fungi associated with mesophotic macroalgae from the ‘Au‘au Channel, west Maui are differentiated by host and overlap terrestrial communities. PeerJ 5: e3532.

**Geoffrey Zahn,** Rota Wagai, SeiichiroYonemura. 2016. The effects of amoebal bacterivory on carbon and nitrogen dynamics depend on temperature and soil structure interactions. *Soil Biology and Biochemistry*, 94: 133-137. DOI: 10.1016/j.soilbio.2015.11.021

**Geoffrey Zahn**, Steven L. Stephenson, Frederick W. Spiegel. 2014. Ecological distribution of protosteloid amoebae in New Zealand. *PeerJ* 2:e296; DOI 10.7717/peerj.296

Miriam De Haan, Christine Cocquyt, Alex Tice, **Geoffrey Zahn**, Frederick W. Spiegel. 2014. First records of Protosteloid Amoebae (Eumycetozoa) from the Democratic Republic of the Congo. *Plant Ecology and Evolution,* 147:1, 85-92

Erin R. Murphy, Jacob Boxberger, Robert Colvin, Suk Je Lee, **Geoffrey Zahn**, Fred Loor, Kyoungtae Kim. 2011. Pil1, an eisosome organizer, plays an important role in the recruitment of synaptojanins and amphiphysins to facilitate receptor-mediated endocytosis in yeast. *European Journal of Cell Biology*, 90:10, 825-833

In review **Geoffrey Zahn**, Anthony Amend. Total foliar microbiome transplants confer disease resistance and survival to a critically-endangered Hawaiian endemic. In review, January, 2017.

**Geoffrey Zahn**, John Shadwick, Fred Spiegel. Protosteloid amoebae as a flagship group for investigating the global distribution of naked amoebae. In review, January 2016.

In preparation **Geoffrey Zahn**, Anthony Amend, Patrick Sheridan, Erin Datlof, Nicole Hynson. A decade of air samples from Mauna Loa Observatory reveal widespread global dispersal patterns in major fungal lineages. In preparation, January 2017.

**TECHNICAL REPORTS**

Geoffrey Zahn, Anthony Amend. 2017. Role of fungal endophytes and epiphytes in endangered

species conservation. O'ahu Army Natural Resources Program Year-End Report ([PDF LINK](https://github.com/gzahn/Profile/blob/master/Phy_Ara_9_16_report.pdf))

Geoffrey Zahn, Anthony Amend. 2016. Molecular assessment of wild Achatinella mustelina diet. O'ahu Army Natural Resources Program Year-End Report ([PDF LINK](https://github.com/gzahn/Profile/blob/master/A_Must_4_16_report.pdf))

Geoffrey Zahn, Anthony Amend. 2015. Molecular assessment of wild Achatinella mustelina diet. O'ahu Army Natural Resources Program Year-End Report ([PDF LINK](https://github.com/gzahn/Profile/blob/master/A_Must_2015_report.pdf))

**CODE CONTRIBUTIONS AND TUTORIALS** <https://github.com/gzahn/tools>  
  
 <http://geoffreyzahn.com/blog-archive>

**PRESENTATIONS**

Invited Seminars:

**2015 “***Effects of belowground trophic complexity on carbon cycling under changing climatic and edaphic conditions”* Joint Genome Institute, Walnut Creek, CA, USA

**2015** *“The functional and distributional ecology of mycetozoans under changing edaphic and climatic dynamics”* Climate Impact Research Center, Abisko, Sweden

**2014** “*Public science literacy and targeted environmental initiatives*” NWA Environmental Programs Symposium

**2014** “*The functional and distributional ecology of slime molds in a changing climate*” NIAES, Tsukuba, Japan

**2013** “*The Ecology of Soil Mycetozoa*” Japan Agency for Marine-Earth Science and Technology, Yokosuka, Japan

**2012** “*The Mycetozoans*” Organization for Tropical Studies, Las Cruces, Costa Rica

Posters and Talks:

**2016** “Fungal endophytes and pathogens in endangered hawaiian endemics: Plant conservation from a microbial perspective” Mycological Society of America, Berkeley, CA, USA

**2014** “*Amoebae in warming soils: interactive effects of the microbial food web and environmental factors on nutrient cycling in a changing climate*” A2C Research Symposium, Fayetteville, AR, USA

**2014** “*The interactive effects of protozoan predation pressure and environmental factors on carbon and nitrogen cycling in soils under warming conditions”* International Society for Microbial Ecology; Seoul, South Korea

**2014** “*Application of high-throughput sequencing may explain carbon dynamics under predation and warming gradients via soil community shifts”* JSPS Multidisciplinary Science Forum 4; Washington, D.C., USA

**2014** “*Using metagenomics and metatranscriptomics to uncover mechanisms of soil communities’ effects on carbon cycling under warming conditions*” DOE Joint Genome Institute – Microbial Genomics and Metagenomics Workshop; Walnut Creek, CA, USA

**2013** “*The Role of Soil Amoebae in Nutrient Cycling on a Warming Planet*” Graduate University for Advanced Studies; Sokendai, Japan

**2011** “*The Protosteloid Amoebae of New Zealand*” Mycological Society of America; Fairbanks, AK, USA

**2010** “*Pil1’s Role on Regulating Membrane PIP2 Level”* INBRE Conference; Fayetteville, AR, USA

**2010** “*The Effects of Prescribed Fire on Overwintering Fungal Abundance and Diversity: A Baseline Study*” CNAS Undergraduate Research Symposium; Springfield, MO, USA

**2009** *“Endocytic Roles of Pil1, the Main Organizer of Eisosomes”* Arkansas INBRE Research Conference; Fayetteville, AR, USA

**AWARDS AND FUNDING**

**2016** Mycological Society of America - Translational Mycology Award ($2,500)

"Plant conservation from a microbial perspective"

**2015** Oahu Army Natural Resources Program Rare Plant Management ($40,500)

Co-Investigator and Writer - "Restoration of critically endangered Hawaiian native plants by understanding and manipulating foliar microbial symbionts"

**2014** Japan Society for the Promotion of Science (JSPS) Alumnus Travel Award ($750)

**2014** Dept. of Energy Joint Genome Institute IMG Workshop Travel Award ($425)

**2013** JSPS Summer Research Fellowship (JSPS-SP01363) ($12,500)  
 Co-P.I. - "The Importance of Microbial Interactions to Soil Carbon Cycling on a Warming Planet"

**2013** NSF EAPSI Grant (OISE-1308856) ($5,070)  
 P.I. - "The Importance of Microbial Interactions to Soil Carbon Cycling on a Warming Planet"  
  
**2013** *Clean Air – Cool Planet* Climate Fellowship ($5,000)

**2011** Mycological Society of America Travel Award ($350)

**2011** NSF GK-12 Fellowship ($30,500)  
 "Inquiry and Innovative Thinking by Design"

**PROFESSIONAL DEVELOPMENT**

**2015 -- 2016** Endangered species conservation – Collaboration with US Army Environmental Division and the 'Oahu Natural Resources Program, Hawaii

**2014 – 2015**  Course Development – Online Biology Lab

University of Arkansas

**2013** International Research – Soil Physiology and Ecology

May – Aug. National Institute for Agro-Environmental Sciences, Tsukuba, Japan

**2013 – 2016** IUCN Species Survival Commission – Myxomycete group

**2012** Field Research – Tropical Lichen Ecology

Jul. – Aug. Organization for Tropical Studies, Costa Rica

**2011 – 2012** National Science Foundation GK-12 Teaching Fellow

Jun. – May University of Arkansas; Owl Creek Middle School, Fayetteville, AR

**2010** Undergraduate Research Assistant – Forest Fire Ecology

Jan. – Dec. Missouri State University Dept. of Biology

**2009** Undergraduate Research Assistant – Yeast Genetics

Jan. – Dec. Missouri State University Dept. of Biology

**MENTORING AND TEACHING EXPERIENCE**

Mentorship

Undergraduate student mentor (7 students)

Graduate Student Mentor (4 Masters, 3 PhD)

Courses

Online Biology Lab (Non-majors) - Developed Course / Instructor of Record  
 Principles of Biology (Honors Undergraduate) - Teaching Assistant

Comparative Botany (Graduate level) - Teaching Assistant

Mycology (Graduate level) - Teaching Assistant

Experimental Design (Undergraduate) - Instructor

6th Grade Science and Math (NSF GK-12 Teaching Fellow)

**ACADEMIC AND OTHER SOCIETIES (Active participant)**

International Society for Microbial Ecology

Mycological Society of America

International Society for Fungal Conservation

Japan Society for the Promotion of Science Alumni Association

International Union for Conservation of Nature (IUCN) – Species Survival Group (Myxomycetes)

**SYNERGISTIC ACTIVITIES**

**2016** Research spotlight at 2016 IUCN Congress - "Using fungi to save endangered plants"

**2016** Hawaii GENE-ious K-12 Curriculum Development

**2014** Ten Thousand Microscopes Beta Tester – K-12 Content Generator

**2011** – **2015** Judge – NWA Regional Science Fair

**2008** – **2009** James River Basin Partnership Science Committee, Springfield, MO

**2007** Research Technician - Missouri State University Greenhouse

**2006** Volunteer Ecologist - Reserva Bosque Nuboso Santa Elena, Costa Rica