Botany Department

*Curriculum vitae of*

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

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**http://geoffreyzahn.com**

University of Hawaii Manoa 3190 Maile Way, Room 101

Honolulu, HI, 96822, USA

[zahn.geoff@gmail.com](mailto:zahn.geoff@gmail.com)

Phone: +001-417-738-6487

+001-479-575-7393

**PROFESSIONAL STATUS**

**Current** Postdoctoral Research Associate

University of Hawaii at Manoa – Botany Department

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:**

Factors that shape microbial community formation and function

Plant-Microbe interactions

Microbial community responses/feedbacks to climate change

The ecology and ecosystem services of protists and fungi

Linking local microbial and molecular dynamics to global biogeochemical cycles

**SKILLS**

Software:MS Office Suite, Adobe Photoshop, R, Minitab, SPSS, EcoSim, PC-Ord, Phylip, BioEdit, MEGAN, mothur,  
MG-RAST, ARB, IMG/M (cert. user), JMP, QIIME (cert. user), Basic Perl/Python, Phylip, Galaxy, SigmaPlot, Shell scripting, Git

Techniques: Soil nucleic acid extraction, NG library prep and sequencing, RT-PCR, Fluorescent microscopy, Microbial culture curation, Primer design, Soil microcosms, Cryopreservation, Bioinformatics, IR gas analyses, Stable isotope analyses, Greenhouse management, Field work (Ozarks, Alaska, Costa Rica, Hawaii, Sweden, Japan)

**PUBLICATIONS**

**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**, John Shadwick, Fred Spiegel. Protosteloid amoebae as a flagship group for investigating the global distribution of naked amoebae. *Journal of Eukaryotic Microbiology*. In review, March 2016.

**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

**Geoffrey Zahn**, Sandeep Sharma, Burt Bluhm. (In preparation). High-throughput sequencing reveals temperature- and predator-mediated microbial community shifts correspond to observed carbon and nitrogen dynamics in a forest soil. *Soil Biology and Biochemistry.* In review, March 2016.

**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:

**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

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

**2014** Dept. of Energy Joint Genome Institute IMG Workshop Registration

**2013** JSPS Summer Research Fellowship (JSPS-SP01363)

**2013** NSF EAPSI Grant (OISE-1308856)

**2013** Clean Air – Cool Planet Climate Fellowship

**2011** Mycological Society of America Travel Award

**2011** NSF GK-12 Fellowship

**PROFESSIONAL EXPERIENCE**

**2015 -- 2016** Endangered snail and plant 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 GK12 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 – Molecular Genetics

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

**TEACHING EXPERIENCE**

Principles of Biology (Honors Undergraduate)

Comparative Botany (Graduate level)

Mycology (Graduate level)

Experimental Design (Undergraduate)

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

**SYNERGISTIC ACTIVITIES**

**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

**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

Young Permafrost Researchers Network

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

**LANGUAGES AND PROFICIENCY**

English Native Fluency

Spanish Working Proficiency

German Elementary Proficiency

Japanese Elementary Beginner

**RECENT COLLABORATORS**

Burton H. Bluhm

University of Arkansas – Plant Pathology

Anthony Amend

University of Hawaii – Botany

Nicole Hynson

University of Hawaii – Botany

Frederick W. Spiegel

University of Arkansas – Biology

Rota Wagai

NIAES Japan – Carbon and Nutrient Cycling Division

Seiichiro Yonemura

NIAES Japan – Division of Agro-Meteorology

Robert Lücking

Botanic Garden and Botanical Museum Berlin-Dahlem

Joel A. Mercado-Diaz

University of Chicago – Committee on Evolutionary Biology