

# Geoffrey L. Zahn, Ph.D.

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<http://geoffreyzahn.com>

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

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

## PUBLICATIONS

**Geoffrey Zahn**, Rota Wagai, Seiichiro Yonemura. 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. In review, June 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. *Top-down control of soil bacterial communities by amoebal predation is influenced by warming*. In review, June 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

<b>2014 – 2015</b>	Course Development – Online Biology Lab University of Arkansas
<b>2013</b> May – Aug.	International Research – Soil Physiology and Ecology National Institute for Agro-Environmental Sciences, Tsukuba, Japan
<b>2013 – 2016</b>	IUCN Species Survival Commission – Myxomycete group
<b>2012</b> Jul. – Aug.	Field Research – Tropical Lichen Ecology Organization for Tropical Studies, Costa Rica
<b>2011 – 2012</b> Jun. – May	National Science Foundation GK12 Teaching Fellow University of Arkansas; Owl Creek Middle School, Fayetteville, AR
<b>2010</b> Jan. – Dec.	Undergraduate Research Assistant – Forest Fire Ecology Missouri State University Dept. of Biology
<b>2009</b> Jan. – Dec.	Undergraduate Research Assistant – Molecular Genetics Missouri State University Dept. of Biology

#### **TEACHING EXPERIENCE**

Principles of Biology (Honors Undergraduate)  
Comparative Botany (Graduate level)  
Mycology (Graduate level)  
Experimental Design (Undergraduate)  
6<sup>th</sup> Grade Science and Math (NSF GK-12 Teaching Fellow)

#### **SYNERGISTIC ACTIVITIES**

<b>2016</b>	Hawaii GENE-ious K-12 Curriculum Development
<b>2014</b>	Ten Thousand Microscopes Beta Tester – K-12 Content Generator
<b>2011 – 2015</b>	Judge – NWA Regional Science Fair
<b>2008 – 2009</b>	James River Basin Partnership Science Committee, Springfield, MO
<b>2007</b>	Research Technician Missouri State University Greenhouse
<b>2006</b>	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