



Postdoc Position at University of Hawai'i at Mānoa

The recently established Soil Microbiome Lab (SMiL, <https://smil.bio/>) in the Pacific Biosciences Research Center (PBRC, <https://www.pbrc.hawaii.edu/>) at the University of Hawai'i at Mānoa (UHM, <https://manoa.hawaii.edu/>) is seeking a highly motivated postdoctoral researcher to work on a National Institutes of Health (NIH)-funded study on soil-borne human pathogens' distribution and environmental control in Hawaiian soils. A synopsis of the project is attached at the end. Potential future projects aligned with the incumbent's interests and expertise can be developed to address connections between the soil microbiome and human health.

We are seeking applicants with expertise in one or more of the following areas:

- Microbial ecology – generating/analyzing high-throughput -omics data and microbial isolation/enrichment from environmental samples.
- Protist ecology – isolation/enrichment from environmental samples and/or metabarcoding for community surveys.
- Microbial interactions – data mining or lab-based experiments to understand interspecific microbial interactions.
- Ecosystem, soil, or microbial system modeling.

Applicants should meet the following minimum qualifications:

- A Ph.D. in Biological Sciences, Environmental Sciences, or a related field at time of hire.
- Research experience in one or more of the following fields: microbiome science, microbial ecology, microbiology, soil science.
- Wet lab/bench experience and knowledge of laboratory safety.
- Coding skills for high-throughput sequencing data analysis, statistical analysis, and data visualization.
- Evidence of scientific productivity, including peer-reviewed publications.
- Proficiency in science communication with strong writing and oral communication skills.
- Ability to work independently and as a productive team member, including mentoring experience.
- Willingness to conduct field research and the ability to work in rugged field conditions.
- Willingness to work with BSL2 microbial pathogens under proper protective measures.

The postdoc will have the opportunity to develop collaborations with other PBRC and UHM labs, including the Center for Microbiome Analysis through Island Knowledge and Investigation (C-MĀIKI; <https://www.c-maiki.org/>), as well as research groups in other US institutions. Pay is commensurate with UHM policy and experience. The expected start date is flexible within the range of November 2024 to March 2025, but we are willing to accommodate the incumbent's



academic plans to the extent possible. The appointment is initially for one year, with the possibility of extension for an additional 1-3 years based on acceptable progress, funding, and project needs.

Application will be accepted via the [RCUH career portal](#) (Job ID #224747) till November 15th, 2024, or until the position is filled.

Interested parties should contact Dr. Maggie Yuan (myuan2@hawaii.edu) for questions with the below-listed materials.

- A brief cover letter outlining your background relevant to the project and how you meet the minimum qualifications.
- A current CV with a list of three potential references and their contact information.

The University of Hawai'i is an equal opportunity/affirmative action institution and is committed to a policy of nondiscrimination based on race, sex, gender identity and expression, age, religion, color, national origin, ancestry, citizenship, disability, genetic information, marital status, breastfeeding, income assignment for child support, arrest and court record (except as permissible under State law), sexual orientation, domestic or sexual violence victim status, national guard absence, or status as a covered veteran.

Project Synopsis

Soil is one of the largest reservoirs of biodiversity and harbors many pathogens of public health concern. Yet the ecology of these pathogens in the context of the soil microbiome is often unclear. The bacteria *Legionella spp.* are the causal agents of environmentally acquired severe pneumonia known as legionellosis. *Legionella* proliferate in aquatic and moist soil environments, often in association with free-living amoebae. How climate change affects *Legionella's* distribution and association with amoebae hosts in soil has not been systematically evaluated.

In pursuit of establishing a framework for soil-borne pathogens' risk assessment based on soil microbiome (biotic) and environmental (abiotic) controls on their persistence and proliferation, this project aims to: 1) investigate the distribution of *Legionella* and host amoebae in terrestrial environments along temperature and precipitation gradients for risk predictive mapping, and 2) test if these climate factors control *Legionella*–amoebae associations, which contribute to infectivity. We will perform microbial surveys of terrestrial samples from steep environmental gradients on O'ahu using both meta-omics and isolation/enrichment techniques and conduct lab manipulative experiments to address these aims.