



Posting: Postdoc in Microbial Ecology of Plant-Microbial Interactions

Location: Lawrence Livermore National Lab

The Physical and Life Sciences Directorate at LLNL is seeking a postdoctoral researcher to join our team studying plant-microbial interactions for sustainable bioenergy, with an emphasis on rhizosphere- and mycorrhizal-microbiome interactions. The researcher will conduct greenhouse and field experiments to investigate the fundamental mechanisms underpinning plant-associated symbioses, and will use a suite of tools including stable isotope probing (SIP)-targeted metagenomics, metabolomics, and isotopic imaging (NanoSIMS) of microorganisms associated with plants and soil. The appointment will support the LLNL Bioenergy Scientific Focus Area (SFA), a large DOE-OBER supported multidisciplinary team studying microbiome interactions and their system-scale consequences for biomass productivity, resource balance, and the functionality of surrounding microbial communities. Primary analytical resources include a high-throughput SIP robotics pipeline, Cameca NanoSIMS 50, high performance computing, and active collaborations with UC Berkeley, NC State, Noble Research Institute, LBNL, JGI, and EMSL. Expected start date is March – August 2018. LLNL postdocs are fully supported for 2 years; a 3rd year is contingent upon initial progress. 25% of the postdoc's time is supported for professional development, training, and new project development. The postdoc will be mentored by staff scientists Erin Nuccio and Jennifer Pett-Ridge.

Essential Duties

- Design and implement experiments to characterize interactions between plants and microbial symbionts (fungal and bacterial, and address problems in sustainable bioenergy, soil carbon cycling, and plant-microbial interactions.
- Develop and pursue innovative research using ¹³C, ¹⁵N, and ¹⁸O stable isotope analyses combined with 'omics molecular analysis.
- Collaborate with other scientists and technical personnel.
- Perform independent research and lead new projects in the area of environmental microbiome research and isotope-enabled methods development.
- Publish research results in peer-reviewed scientific or technical journals and present results at external conferences, seminars, and/or technical meetings.

Qualifications

- PhD in Microbial Ecology, Plant Biology, Microbiology, Biogeochemistry or related field and demonstrated experience.
- Demonstrated ability as an independent and innovative experimentalist; experience in designing, running, and analyzing data from plant or soil microbial ecology studies.
- Experience with plant-fungal interactions, metabolomics, or stable isotope probing techniques highly desired, but not required.
- Skilled with bioinformatics and microbial community statistical analyses.
- Publication record in well-regarded refereed journals.
- Demonstrated experience in written and verbal communication skills necessary to deliver presentations and prepare written publications, and reports.

Interested parties should contact Erin Nuccio (nuccio1@llnl.gov)

NOTE: This is a two-year term appointment with the possibility of extension to a maximum of three years. Eligible candidates are recent PhDs within five years of the month of the degree award at time of employment offer. Pre-Employment Drug Test: External applicant(s) selected for this position will be required to pass a post-offer, pre-employment drug test.

