

Two Ph.D. Opportunities in Understanding Drought Biogeochemistry of N oxide emissions from Mediterranean soils

Degree Opportunity: Two Ph.D. students will be hired as part of the Binational Agricultural Research and Development (BARD) project in collaboration between the University of Tennessee, Knoxville (UTK) and Ben-Gurion University of the Negev (BGU, Israel).

Preferred start date: Spring 2022 for UTK (one Ph.D. position) and immediately for BGU, Israel (one Ph.D. position). Positions will remain open until filled.

Project Leads: Dr. Debasish Saha, Assistant Professor (Biosystems Engineering & Soil Science (BESS) Department, UTK); Dr. Sean Schaeffer, Associate Professor (BESS, UTK); Dr. Sindhu Jagadamma, Assistant Professor in (BESS, UTK); and Dr. Ilia Gelfand, Assistant Professor (BGU, Israel)

Project Description: The project will employ field, laboratory, and modeling methods in understanding the impacts of drought timing and intensity on soil N oxide (nitric oxide and nitrous oxide) emissions from soil with different physical properties. The project will use advanced isotopic and molecular tools to gain deeper understanding of microbial N cycling processes in response to varying wetting-drying patterns.

Position Requirements:

Ideal candidate for the **UTK location** should have:

- MS degree in soil science, ecology, environmental science, agronomy, or related fields
- Knowledge of soil physics (water and gas transport) and coupled soil carbon-nitrogen-water biogeochemical cycling regulating soil greenhouse gas (GHG) emissions
- Experience in field and laboratory studies on soil GHG fluxes
- An ability to work independently to undertake hypothesis-driven research as well as working in a diverse team environment
- A valid (non-probationary) US driving license

Desirable Skills:

- Experience in quantifying abundance of keystone N cycling genes
- Experience in working with N¹⁵ isotope in studying soil N cycling/N₂O emissions
- Strong background in statistical analysis using R or SAS, and experience in using DayCent for simulating GHG gases is a plus

Ideal candidate for the **BGU (Israel) location** should have:

- MS degree in soil science, chemistry, ecology, environmental science, agronomy, or related fields
- Experience in field measurements of GHG fluxes and soil properties
- Willingness to learn new concepts and techniques

How to Apply: Interested candidates should contact Dr. Debasish Saha (dsaha3@utk.edu) for the Ph.D. position at the UTK (USA) site and Dr. Ilia Gelfand (igelfand@bgu.ac.il) for the Ph.D. position at the BGU (Israel) site. Please include a copy of your transcripts, latest CV, and contact information of three references to your email.