THE FLORIDA STATE UNIVERSITY
COLLEGE OF ARTS & SCIENCES

Graduate Research Assistant Position, Mason Lab, Florida State University

The Mason lab is looking for a graduate student seeking a Ph.D. to join a collaborative project between Dr. Mason at Florida State University and Dr. Casciotti at Stanford University aimed at determining microbial pathways that lead to nitrous oxide production across an oxygen gradient in the world's most productive upwelling system – the northern Benguela Upwelling System (nBUS). The project is funded by National Science Foundation and offers a graduate research assistantship with tuition and a competitive stipend available for three years in the Department of Earth Ocean and Atmospheric Science at Florida State University.

Sources of nitrous oxide, a potent greenhouse gas, to the atmosphere involve the activity of microbes (bacteria and archaea) in the ocean, particularly where oxygen is scarce. Although high nitrous oxide fluxes have been observed in the Eastern Tropical Atlantic, such as the nBUS, little research has focused on this ecosystem. The lack of measurements, combined with a limited understanding of the microbial pathways that lead to nitrous oxide production, creates uncertainty in predictions about future ocean emissions of nitrous oxide. Therefore, this project has two specific objectives, with the first being to determine the spatial distribution of nitrous oxide production rates and mechanisms using ^{15}N tracers and natural abundance isotope and isotopomer analyses (Casciotti). The second objective is to determine the relationship between dissolved oxygen concentrations and microbial community structure, microbial function and metabolic activities that lead to nitrous oxide production, resolving the active microbial pathways that lead to the observed isotopic data from the first objective (Mason). The molecular data will also inform the interpretation of the isotopic data, further resolving nitrous oxide source mechanisms and activity.

A successful candidate is expected to have an undergraduate degree in a related field. Previous experience with microbial ecology is desirable but not a prerequisite for the position. Interested candidates should send a cover letter and CV to Dr. Olivia Mason at omason@fsu.edu. More information about the Mason Lab can be found at https://www.oumasonlab.com/. The anticipated start date for this position is Fall or Winter 2022.

Florida State University is an Equal Opportunity/Access/Affirmative Action Employer and complies with the Americans with Disabilities Act. All eligible candidates are invited to apply for position vacancies as appropriate. Florida State University is a public records agency pursuant to Chapter 119, Florida Statues.