### GENERAL INFORMATION

**Program sponsor:** Princeton Environmental Institute  
**Position number:** C1ZHA2  
**Project title:** Investigating the Role of Oxygen in Wetland Methane Production  
**Organization/research group:** Zhang Lab  
**Primary location(s) of internship:** Princeton University, Guyot Hall  
**Additional cities and/or countries to be visited (if applicable):** n/a

**Note:** If this internship is located in a country with an International SOS risk rating of High or Extreme, final candidates must participate in a travel review process overseen by the Travel Oversight Group (TOG), and obtain safety guidance prior to departure. The University reserves the right to revoke support and funding for travel at any time there has been a significant deterioration in the safety and security conditions surrounding travel arrangements, or in the sector of the country, or countries, where travel is to occur.

### FACULTY SPONSOR(s)/HOST INFORMATION

**Name(s):** Xinning Zhang  
**University Department(s):** Geosciences  
**E-mail:** xinningz@princeton.edu  
**Phone:** (609) 258-2489  
**Website:** [https://scholar.princeton.edu/xinningz/home](https://scholar.princeton.edu/xinningz/home)

### INTERNSHIP/RESEARCH PROJECT INFORMATION

**Internship/project description:**  
This internship/project will investigate the biogeochemical mechanisms of methane production in wetlands, with emphasis on the role of oxygen in stimulating methane production. This project is in line with PEI's Carbon Mitigation Initiative. An overall aim of the work is to improve our understanding of the geochemical and microbiological processes that drive methane cycling in wetlands, emphasizing the environmental feedbacks relative to climate change.

**Student's role and responsibilities:**  
The student will have the opportunity/responsibility of environmental sample collection and processing for laboratory studies. Incubation of wetland soils will be carried out under different redox conditions to test the effects of temporal and spatial changes in oxygen on methane emissions over time. Samples collected during the experiments will include gas measurements with gas chromatography, characterizations of organic carbon using different techniques and extraction of nucleic acids (i.e., DNA and RNA) for microbial characterizations.
Internship/project learning objectives:
The main learning objectives will be:
1) The student will develop skills to design and set up environmentally relevant experiments.
2) The student will learn how to collect samples and analyze/integrate different types of geochemical and biological data.
3) The student will learn about opportunities available for future endeavors in the environmental sciences.

PROGRAM REQUIREMENTS
Academic background and any course pre-requisites:
No specific background or pre-requisites are required for this internship. The internship would benefit from an interest in environmental science, climate change research, microbiology and/or chemistry.
Technical skills:
All training will take place in the lab.
Additional training(s):
n/a
Equipment:
n/a
Physical demands:
Typical laboratory and field demands.
Language abilities/competencies (if applicable): n/a
Additional information about the internship/project:
Selected student will be required to complete lab safety and workplace safety trainings prior to the start of the internship.

INTERNATIONAL TRAVEL REQUIREMENTS (if applicable)
Visa(s) required? Yes □ No □ Research permit/pass required? Yes □ No □ Immunizations required? Yes □ No □

INTERNSHIP/PROJECT SUPERVISOR(S)
Name and title of primary supervisor: Jared Wilmoth, Postdoctoral Researcher
Email: jwilmoth@princeton.edu Phone: 304-685-3684
Name and title of additional supervisor, if applicable: n/a
E-mail: Phone:

PROGRAM DATES AND FUNDING INFORMATION
Weekly Stipend: $500 Number of Positions Available: 1
Tentative Start Date (mm/dd/yyyy): 06/10/2019 Number of Weeks: 10
Tentative End Date (mm/dd/yyyy): 08/16/2019 Note: PEI funding is for full-time work, 35 hours per week minimum, and for a period of at least 8 continuous weeks.

Application Deadline: January 11, 2019