**GENERAL INFORMATION**

**Program sponsor:** Princeton Environmental Institute

**Position number:** W1TW1

**Project title:** Floating Wetland Nutrient Removal Study

**Organization/research group:** The Watershed Institute - Department of Science and Stewardship

**Primary location(s) of internship:** Pennington, NJ

**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):** Steven Tuorto, PhD - Director of Science and Stewardship

**University Department(s):** The Watershed Institute - Department of Science and Stewardship

**E-mail:** stuorto@thewatershed.org

**Website:** thewatershed.org

**Phone:** 609-737-3735

**INTERNSHIP/RESEARCH PROJECT INFORMATION**

**Internship/project description:**

Floating wetlands are a water quality restoration tool of increasing interest, yet calculated values for their impact on nutrient and TSS removal have mostly been estimates. It has been estimated that the microbial and plant-root surface area available to perform nutrient removal in a floating wetland is close to 175 times that of a natural wetland, but little to no empirical evidence of actual impact exists. During the falls of 2017 and 2018 The Watershed Institute installed three different floating wetlands at the Meadow Lakes assisted living community in East Windsor as a beta-test to try to draw down the nutrients in an effort to abate the chronic algal blooms of these water bodies, and more installations are planned for the spring of 2019. In 2019 this project will use this island deployment to conduct comprehensive studies to quantify both the potential and actual impacts of floating wetlands comparing measurement from the deployed islands with aquarium based simulations.

**Student's role and responsibilities:**

Research analysis on existing floating island literature; aid in the construction, deployment, and maintenance of additional floating wetlands; design and construct both floating and "natural" aquarium-based simulated wetlands; perform visual and chemical assessments of both the actual and simulated islands; assimilate collected data for the creation of a floating wetland nutrient-uptake budget.
Internship/project learning objectives:
The student should gain a general knowledge of watershed science and health. They will gain the skills of monitoring biological, chemical and bacterial water quality, and how to use the associated field and lab equipment. They will become experienced in communicating their knowledge to a broad constituency that the Watershed Institute interacts with including: residents at farmers markets and tabling events; high school age watershed summer academy students; adult learners in the watershed summer teachers’ academy.

PROGRAM REQUIREMENTS

Academic background and any course pre-requisites:
Introductory biology or environmental science or equivalent.

Technical skills:
None; willingness to learn freshwater science field and lab skills/techniques and do minor amounts of manual labor involved with constructing, deploying, and maintaining the floating islands; experience wading and boating/kayaking in water a plus.

Additional training(s):
n/a

Equipment:
n/a

Physical demands:
See technical skills for the types of activities that will be required.

Language abilities/competencies (if applicable): n/a

Additional information about the internship/project:
The Intern may be called upon to assist with other science projects at the organization or public education programs such as assisting with the annual Watershed Butterfly Festival.

INTERNSHIP/PROJECT SUPERVISOR(S)

Name and title of primary supervisor: Steven Tuorto, PhD - Director of Science and Stewardship

Email: stuorto@thewatershed.org
Phone: 609-737-3735

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): 05/27/2019
Number of Weeks: 12 (flexible)

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