GENERAL INFORMATION

Program sponsor: Princeton Environmental Institute

Position number: B1CST

Project title: Climate Change, Plant-Pollinator Interactions and Hummingbird Color Vision in the Rocky Mountains

Organization/research group: Stoddard Lab

Primary location(s) of internship: Rocky Mountain Biological Laboratory (RMBL), Gothic, Colorado

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): Mary C. Stoddard

University Department(s): EEB

E-mail: mstoddard@princeton.edu

Phone: 609-258-6337

Website:

INTERNSHIP/RESEARCH PROJECT INFORMATION

Internship/project description:

We study wild Broad-tailed Hummingbirds at the Rocky Mountain Biological Laboratory in Gothic, Colorado. These migratory hummingbirds are critical pollinators of wildflowers at this high-elevation montane site (2,900 m). Changes in the timing of snow-melt (attributed to climate change) in recent years have contributed to shifts in the timing of floral bloom. Changes in flower phenology are likely to impact pollinators: the arrival of hummingbirds at their breeding site in the Rockies might be mismatched with floral bloom. Our goal is to obtain a clearer picture of hummingbird pollination behavior. Which flowers do hummingbirds visit, and how does this change throughout the summer, as different species of wildflower become available? How does color vision influence hummingbird behavior? We will use camera traps to quantify the diversity of flowers and the frequency of visitation, and we will observe birds in color vision experiments to understand their visual ecology.

Student's role and responsibilities:

We seek a highly motivated, independent student who is eager to work in a rustic but stunning mountain field environment. Responsibilities will also include assisting with ongoing Stoddard Lab research projects at the Rocky Mountain Biological Laboratory. We are particularly looking for a student who is interested in natural history and excited to study ecology using new technology (LEDs, cameras, software, computer programming). Our work is highly collaborative. The student should be enthusiastic about working with a team on multiple projects, including observing birds during behavioral experiments.
**Internship/project learning objectives:**

At the end of the summer, the student should have a rich understanding of the ecology and natural history of hummingbirds in the Rocky Mountains. The student should have gained experience planning experiments, collecting and analyzing data, observing wild animals, and working with a team. The student will also have the opportunity to improve coding skills (R, Matlab).

**PROGRAM REQUIREMENTS**

**Academic background and any course pre-requisites:**

Rising sophomore or junior with a strong interest in ecology, evolution and the environment. Coursework in ecology and/or evolution preferred. Computer science background welcome, but not required.

**Technical skills:**

Excellent organizational skills required. Interest in animal behavior, birds, flowers and natural history preferred, as well as an interest in using technology (including cameras, software and programming).

**Additional training(s):**

n/a

**Equipment:**

Student must bring a laptop.

**Physical demands:**

Student should be comfortable working outdoors every day for ~8 hrs/day. There will be long periods of observing birds, which requires patience and attention to detail.

**Language abilities/competencies:**

**Additional information about the internship/project:**

The participating student will need to complete Health and Safety for Animal Workers (IACUC) training 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:** Mary C. Stoddard

**Email:** mstoddard@princeton.edu

**Phone:**

**Name and title of additional supervisor, if applicable:** RMBL staff, TBD

**E-mail:**

**Phone:**

**PROGRAM DATES AND FUNDING INFORMATION**

**Weekly Stipend:** $500

**Number of Positions Available:** 1

**Tentative Start Date (mm/dd/yyyy):** 06/04/2019

**Number of Weeks:** 8

**Tentative End Date (mm/dd/yyyy):** 07/30/2019

**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