



## Research Experience for Undergraduates (REU) in Plant-Herbivore Interactions, Summer 2010



### Overview

Summer REU students will work on a large, multi-year research project addressing the effects of herbivores on plant population dynamics. The project involves a combination of greenhouse/lab and field experiments with *Solanum carolinense* and its insect herbivores. REUs will have the opportunity to join faculty, post-docs, and other students in work related to the large field experiment. In collaboration with a faculty or post-doc mentor, they will also design and carry out an independent project, which may be associated with the large experiment or a different project. Possible topics for REU projects include (but are not limited to) plant or insect responses to density, plant resistance or tolerance to herbivory, and plant demography.

Research will occur May-September 2008 and is based at Florida State University (FSU) in Tallahassee, Florida. Dates are somewhat flexible, but REUs must commit to at least 10 weeks of full time work. The REU will receive a generous stipend plus travel and housing. In addition, we will organize regular REU student activities (such as seminars, field trips, and social events) in collaboration with other REU projects at FSU.

### The project

Knowledge about what controls plant population size is fundamental to our understanding of natural systems, and is also at the root of applied problems with invasive and weedy species. While the importance of competition with other plants is widely recognized, the effect of herbivores on plant populations is more contentious. Our goal is to fully characterize herbivore effects on the population dynamics of a plant by incorporating effects of herbivores on both population growth rates and density dependence (change in growth rate with plant density) across the life cycle of the plant. We are using a combination of density manipulation experiments and demographic modeling to investigate whether and how insect herbivores affect population dynamics in the perennial herb *Solanum carolinense*. This work is a collaboration between Stacey Halpern (Pacific University), Nora Underwood (Florida State University), and Brian Inouye (Florida State University). (See faculty website addresses below.)



Hiking on the coast



REU experiment in progress



## **Application details**

The ideal candidates will have: (a) completed relevant coursework, such as ecology, animal behavior, entomology, plant biology, math modeling, or field biology; (b) serious potential interest in a career that includes biological research; (c) reliability, attention to detail, people-skills, and self-motivation. Research experience is not required, but please include if relevant (including independent projects for courses). REU students must be US citizens or residents, and cannot have graduated college. For this project, you must also be willing & able to work outside in the hot, humid conditions of a Florida summer.

We encourage and will give priority to applications from students from groups underrepresented in science (students of color, first-generation college students, etc.).

Please submit an application including: (1) an application form; (2) a letter addressing your qualifications and career goals, (3) resume or cv, (4) college transcripts (unofficial Ok), and (5) names and contact information for at least 2 references who can speak to your training or experience in biology or research (listing on the application form is sufficient).

We strongly prefer applications to be submitted via e-mail. Review of applications will begin February 15. Send applications to both Stacey Halpern (shalpern@pacificu.edu) & Nora Underwood (nunderwood@bio.fsu.edu). We will contact your references directly, but please let them know that we may request a written reference (which may be submitted to us via e-mail).

If you need to send anything via US mail, please send to:

Stacey Halpern  
Biology Department  
Pacific University  
Forest Grove, OR 97116

For further information, please visit:

[www.pacificu.edu/as/biology/faculty/halpern.cfm](http://www.pacificu.edu/as/biology/faculty/halpern.cfm)

[www.bio.fsu.edu/~nunderwood/homepage/](http://www.bio.fsu.edu/~nunderwood/homepage/)

<http://bio.fsu.edu/~binouye/>