**Summer 2010 Bucknell University**  
**Undergraduate Internships in Ecology & Evolution**  
- Abrahamson Laboratory -

**Internships in Evolutionary Ecology**

We are seeking highly motivated undergraduate students to participate in research projects that investigate the ecology and evolution of speciation processes of herbivorous insects. There are two major projects from which students can gain hands-on research experiences. First, we are investigating the genetic divergence and gene flow between the populations of tumbling flowering beetles that use different goldenrod host plants. The aims of this project are 1) to characterize the level and the pattern of genetic divergence within the beetle and 2) to test how local ecological factors (e.g., climatic factors, host abundance, and competition) affect speciation processes, particularly gene flow, of the beetle. We are using microsatellite DNA markers to explore these questions.

Second, we are examining mechanisms that reduce gene flow between populations, specifically adult emergence timing of herbivorous insects. The herbivore larvae develop within particular host plants so their emergence timing can vary depending on host-plant phenology. This project involves a greenhouse cage experiment where the semi-natural environment allows beetles to mate and lay eggs. Thus, we will test the potential of differential emergence timing between the host-associated populations to create a temporal reproductive barrier. We know that one beetle host-associated population always emerges earlier than the other but we do not know whether this allochronic emergence serves as an effective reproductive barrier. We are using microsatellite DNA markers to examine level of gene flow through parentage analyses.

We prefer summer interns who wish to continue their summer research experience for credit during the academic year. Internships provide $3,200 for a 10-week summer commitment. We currently have an active research group of ten students and three Ph.D. mentors.

For more information, please contact Dr. Warren Abrahamson, warren.abrahamson@bucknell.edu or Dr. Mizuki Takahashi, mizuki.takahashi@bucknell.edu in the Department of Biology, Bucknell University, Lewisburg, PA 17837. For more information about the Abrahamson lab group’s research, visit our web site at: http://www.facstaff.bucknell.edu/abrahmsn/.

**Applications must be submitted by Friday, March 5, 2010.** Internship awards will be announced on Friday, March 12, 2010. Awardedes must confirm acceptance by March 29, 2010.
Summer 2010
APPLICATION FOR SUMMER RESEARCH INTERNSHIP
ABRAHAMSON LABORATORY

Fill in the information requested below and return the completed form and proposal to Dr. Abrahamson warren.abrahamson@bucknell.edu or Dr. Takahashi mizuki.takahashi@bucknell.edu, Department of Biology, Bucknell University, Lewisburg, PA 17837 by March 5, 2010.

Name ________________________________________________________

Age _________________________ Birth Date ________________________________

College year completed as of the end of this spring semester (So/Jr) __________________________

Campus mailing address ____________________________________________

____________________________________________________________________________

Phone ____________________ Home address ______________________________________

____________________________________________________________________________

Overall GPA _____________________ Science GPA ______________________________

List your science courses (with grades) ____________________________________________

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What is your planned profession after graduation? _________________________________

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What jobs or internships have you had that have given you an interest or expertise in biological research? _________________________________

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Name & e-mail address of your academic adviser ________________________________

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Names & e-mail address of two professors willing to provide a recommendation for you ____________

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Attach a 2-3 page description of your proposed research plans
(This must be developed in consultation with Dr. Abrahamson and Dr. Takahashi prior to submission).