

Research Internship in Panama: Ecology, Evolution and Behavior of Leaf-breeding Treefrogs

We seek highly motivated US and Latin American students to join us for the summer of 2009 as interns on our NSF-funded project "Fear, death, and life history switch points: cumulative effects of predation and phenotypic plasticity across three life stages."

SUMMARY: Internships are for 3 months of field research at the Gamboa Field Station of the Smithsonian Tropical Research Institute, in Panama with Professor Karen Warkentin of Boston University and Professor James Vonesh of Virginia Commonwealth University. They include a monthly stipend, funds for travel to the field site, and shared housing in Gamboa. We will hire 2-3 summer interns (~June–August, exact dates negotiable) and may also hire interns for later in the year (~September–November), pending additional funding. The research includes laboratory work in Gamboa, field work at local ponds, and large-scale mesocosm experiments with frog eggs, tadpoles, and metamorphs, and their natural enemies. The Warkentin and Vonesh lab team in Gamboa for the 2009 field season will include several graduate students and postdoctoral fellows as well as interns. Interns will be trained in animal behavior, evolutionary and population ecology, and tropical herpetology, and mentored on career development. The Smithsonian offers a diverse and intellectually rich international scientific community in a tropical rainforest environment.

BACKGROUND: Members of the Warkentin and Vonesh lab at STRI study predator-prey interactions and plastic anti-predator defenses in red-eyed treefrogs (and some other frogs). Red-eyed treefrogs hatch early to escape from egg-eating snakes and wasps, metamorphose early in response to predaceous giant water bugs, and delay metamorphosis in response to semi-aquatic spiders that eat froglets. Current research addresses how the consequences of plastic 'choices' at different life stages accumulate over the life cycle, and the relative importance of plastic responses to predators vs. direct predation mortality for population processes under different ecological conditions.

TRAINING: The interns will gain practical research experience, including participating in large collaborative experiments and conducting individual observations and/or experimental research. They will learn a substantial amount about the behavior, ecology, and natural history of leaf-breeding treefrogs and their natural enemies. They will also gain experience with appropriate methods for collecting and handling all of the animals to be used in the experiments, and with analytical methods and scientific computer software. Daily interactions with the Warkentin/Vonesh team will build a strong theoretical framework for the research, including the fundamentals of experimental design. The Gamboa Frog Seminar series, and well as seminars at STRI in Panama City will add breadth to their understanding of behavior, ecology and evolution and, more generally, tropical biology. This background, combined with the opportunity to make personal natural history observations and to discuss ideas with members of the Warkentin lab, should position the interns well to develop an individual research project after the internship.

ELIGIBILITY: Interns must be either US citizens or residents, or citizens of a Latin American country. Latin Americans may be undergraduate students or recent graduates. For summer 2009, US citizens/residents must be undergraduate students; we may have internship opportunities for recent US graduates during fall 2009. This program is not designed for students already in graduate school.

Interns will be selected based on merit, potential for the experience to benefit the intern, and potential for the intern to benefit the project. We will consider academic training and skills relevant to the research as well as personal suitability for working under field conditions and living in shared accommodations in Gamboa. We strive to create a diverse, congenial, and productive team each field season.

APPLICATION DEADLINES: For full consideration for summer NSF-funded internships, application materials must be received by **January 15, 2009**.

We will consider later applications for summer internships from students who have or are seeking their own funding from other sources (e.g. UROP, McNair, etc), or if we receive additional funding ourselves; email us to inquire.

Latin American students applying for STRI internships under Prof. Warkentin's sponsorship should send application materials to her *at least* two weeks prior to the STRI deadline for her review (earlier is better). The relevant STRI deadlines are Feb. 15, May 15 and Aug. 15.

**FOR MORE INFORMATION ON HOW TO APPLY
SEE THE WARKENTIN LAB WEBSITE
people.bu.edu/kwarken**

Informal inquiries prior to submission of applications are welcome: email Prof. Karen Warkentin (kwarken@bu.edu) or Postdoc. Michael McCoy (mwmccoy@bu.edu).