Seeking field assistant for summer 2018

Field assistant for summer 2018

Overview: Two research groups at Duke University are seeking a shared research assistant for fieldwork in plant and insect ecology and evolution. This is a unique experience for students enthusiastic about plant ecology to gain experience working on two different projects in one summer! The projects are non-overlapping in time; there is opportunity for leisure time between project dates, or if the technician desires to stay at the field station for the duration of the summer, start dates for project 2 are flexible.

Location: Our research is conducted at and around the Rocky Mountain Biological Laboratory, located in southwestern Colorado (www.rmbl.org). We will provide all transportation to and from the field station and from the station to research sites.

Dates: June 18 - June 29 (project 1) and July 16 - August 10 (project 2; somewhat flexible) 2018

For a PDF version of the project descriptions, please visit: http://bit.ly/RMBLfield18

Project 1 Summary: The time of the year when a plant begins to grow, produces flowers, and loses its leaves is important for successful reproduction, survival, and potentially future growth. Plants rely on environmental cues, such as temperature and the amount of sunlight, to time these life cycle events. Therefore, the time when a plant begins to flower can be very sensitive to climate change. For example, snow has been melting earlier in the season in sub alpine regions than the recent past as a result of warming temperatures. Since the time of flowering for some plants occurs shortly after snow melt, they track these warm temperatures and emerge or flower earlier in the season. Interestingly, not all plants respond similarly to the same environmental signals; some flowering species do not flower any earlier. As each plant species responds differently to earlier snow melt, species that didn’t flower together in the past have the potential to overlap now. If plant species grow and flower at the same time, they could compete for resources (water, nutrients, soil). Our research examines the link between climate change, the timing of life cycle events in plants, and how they compete for resources. We propose to manipulate flowering phenology of plants in resource competition experiment. We will observe how competition for soil and light resources between two co-flowering species changes under early snow melt conditions. The results from this research have the potential to help us predict how climate change may affect species interactions in the future. For more information, visit: http://rebeccadalt.weebly.com/research-projects.html

Project 2 Summary: In the Mitchell-Olds lab at Duke University (https://sites.duke.edu/tmolab/), we study plant evolution, ecology, and genetics. We are broadly interested in understanding how the diverse traits present in natural plant populations have arisen via natural selection, and what the consequences of trait variation are for ecological interactions. Much of our research is centered around understanding how chemical anti-herbivore defenses have evolved in the wildflower species Boechera stricta. We have ongoing experiments monitoring how interacting selective pressures of herbivore consumption and drought stress influence the evolution of defensive chemicals, and for discovering the genetic basis of plant chemistry as well as other complex traits (e.g. flowering time, mutualistic plant-insect associations, plant architecture, fitness). Our
technician would help with data collection and experimental maintenance on both of these projects (see “Expectations” below).

Expectations: The field assistant will be asked to aid in data collection, entry, and analysis for both projects. This includes assisting in demographic data collection on perennial plants, assessing phenology of plants in pre-existing plots (project 1) and measuring plant survival, growth, flowering, reproduction, and herbivore damage, as well as taking environmental measurements such as soil moisture (project 2). Fieldwork can be strenuous and often involves long days in the sun and hiking. Applicants with previous experience doing fieldwork are encouraged to apply, but no prior experience is required and we will happily train first-timers with a strong interest in ecology.

In addition to helping with fieldwork five days per week, the technician will be expected to be an active participant in the research community, which includes attending weekly seminars at RMBL, attending in a weekly lab meeting, and participating in discussions about scientific articles and ongoing research projects in the lab.

Compensation: This is an unpaid position, although housing and travel expenses will be provided. Transportation from RMBL to all field sites will be provided (car or hiking). The technician will be required to pay for their own food expenses, but all other costs (housing and station fees) will be covered.

Application: Please send a short cover letter and resume to both Rebecca Dalton (rmd34@duke.edu) and Lauren Carley (lnc14@duke.edu) by March 20, 2018.

Links:
www.rmbl.org
rebeccadalt.weebly.com
sites.duke.edu/tmolab/