

PhD Research Opportunity, starting Summer/Fall 2015
Rubenstein School of Environment and Natural Resources, University of Vermont

Position: PhD in agricultural resilience and ecosystem services

Project Overview

As climate changes increasingly affect agriculture, farmers and policy makers are challenged by how to best address climate change mitigation and adaptation. Central to this challenge is developing agroecosystems that do not degrade water quality, increase landscape flood resiliency, and mitigate agriculture's contribution to greenhouse gas emissions, all while remaining economically viable. This interdisciplinary project aims to evaluate the ecological and economic impacts of alternative agricultural management practices with the goals of enhancing agricultural ecosystem services and resilience to climate change. We seek a student to work with our team to quantify and model carbon and nutrient storage and loss in conventional and alternative agricultural management systems (pasture and cropland). This work will allow us to investigate the potential for agricultural systems to both be productive (from the farmer's perspective) and provide valuable services including water purification and climate regulation.

Responsibilities

Duties will include identifying novel study questions within the larger project and working with our team of scientists, graduate and undergraduate students to quantify carbon, nutrient and water fluxes from agricultural sites that directly compare conventional and alternative management systems. Site flux measurements include overland, belowground, and gaseous losses of water and nutrients. Because climate change has large impacts on precipitation patterns and wintertime dynamics (e.g., large rainfall events, mid-winter warm periods, spring thaw), fieldwork may occur throughout all four seasons, *with a particular focus on late fall through early spring losses*. The student will also work with a biogeochemical ecosystem model to determine the large-scale impacts of these management practices.

Applicants must be comfortable working independently and in inclement weather, operating field equipment and storing and processing water, soil and greenhouse gas samples after they are obtained. This position includes guaranteed funding for four years, which may be extended via teaching assistantships.

Qualifications

- The student should demonstrate a strong interest in hydrology and biogeochemistry.
- Applicants must be accepted to UVM through the standard admission process.
- The student should have a master's degree in ecology, plant and soil science, hydrology, environmental sciences (or related field) or have equivalent work experience.
- While not required, priority will be given to applicants with experience in water quality sampling, greenhouse gas sampling, using and maintaining lab equipment, and/or ecosystem modeling.

Application

Interested applicants should submit a letter of interest (including relevant research interests), names and contact information of three references, and CV to Carol Adair.

Carol Adair
RSENr, University of Vermont
Carol.Adair@uvm.edu, 802.656.2907
<http://adairlab.weebly.com/>
<http://www.uvm.edu/rsenr/cadair/>