The Drinkwater Lab in the Department of Horticulture has funding to support the purchase of materials and supplies for an Undergraduate Honors Thesis. The funding recipient(s) would join an interdisciplinary team of ecosystem ecologists, economists, and sociologists who are collaborating on a multi-institution NSF sponsored project aimed to reduce the environmental impact of agricultural management. The ecosystem science component of this project focuses on carbon and nitrogen cycling in agricultural systems, with the goal of reducing nitrogen loss from agricultural lands. We emphasize rotational diversity to ecologically manage carbon and nitrogen cycles to enhance soil quality and provide energy and nutrients for crop growth. The sociology and economic components of this research address how institutions and policy constrain the decisions of land managers. In particular, what structures promote the dominant agricultural management framework, and what structures promote the emergence of ecological management approaches.

Ongoing projects in the Drinkwater Lab include: 1) conducting farm nutrient budgets in conventional and organic agroecosystems in NY and PA, 2) understanding how plant species diversity affects below-ground processes, 3) assessing N-fixation rates across a soil quality gradient using N15 isotope techniques, 4) comparing N process dynamics across conventional and organic agroecosystems using N15 isotope techniques, 5) applying models to compare alternative agroecosystem management scenarios. Sample ecosystem projects compatible with the time-frame of an undergraduate honors thesis include: 1) use of molecular techniques to assess the effects of management practices on the rhizobial diversity in nodules of N-fixing plants, or 2) study of the relationship between plant diversity and soil microbial diversity.

Undergraduates are encouraged to develop independent projects related to assessing the ecological and economic viability of agroecosystem management. Projects addressing the cycling of carbon or nitrogen, the dynamics of agricultural institutions, or the assessment of agricultural economic policy are all relevant to the goals of this project. Dr. Laurie Drinkwater (Horticulture) and Dr. Steven Wolf (Natural Resources) are the principle investigators for this project; students working with other Cornell mentors will be given equal consideration for this funding opportunity. A maximum of $2000 is available to fund student research.

Application procedures:
1) 500 word summary of your research interests
2) 200 word summary describing your research interests in relation to your post-graduation goals.
3) curriculum vitae outlining your academic and work experience
Please send the application documents or further inquiries regarding this funding opportunity to Christina Tonitto (ct244). The application review period is March 1 - March 17, 2006.

Applicants may be eligible to participate in work study opportunities in the Drinkwater Lab and are encouraged to apply for stipends (such as the Undergraduate Summer Research program). The CALS undergraduate research website is appended below, including key dates.

CALS Funding Opportunities:
http://www.cals.cornell.edu/Undergraduate_and_Graduate_Grants.cfm
DEADLINE FOR SUBMISSION OF PROPOSALS:
CALS Charitable Trust, Hatch, Morley, and PCCW: OCTOBER 7, 2005
Boller, Kieckhefer, and Mellon: FEBRUARY 17, 2006
Undergraduate summer research (Morley and Dextra funds): MARCH 17, 2006