



SUMMER RESEARCH PROGRAM IN ECOLOGY-2005

Harvard Forest - Harvard University

Petersham, Massachusetts
<http://harvardforest.fas.harvard.edu/>

May 31 – August 19, 2005

Harvard Forest offers an exciting program for up to 30 undergraduate students and recent graduates to collaborate with scientists conducting ecological investigations for 12 weeks during the summer of 2005.

Program Description: Each student will participate in an on-going research project with a researcher from Harvard University, The Ecosystems Research Center of the Marine Biology Laboratory, Woods Hole Research Center among other institutions. Responsibilities may include field sampling, laboratory studies, data analysis and scientific writing. In addition, students attend weekly seminars and workshops given by nationally known scientists on topics regarding ecosystem research, career planning, ethics of research, and graduate school preparation. At the end of the summer, students will develop their research results, prepare an abstract, and present their findings at a student research symposium. Academic credit may be arranged with the student's home institution.

Research Projects: Harvard Forest research focuses on the effects of natural and human disturbances on forest ecosystems, including global warming, hurricanes, forest harvesting and invasive organisms on forested ecosystems. Researchers come from many disciplines and specific projects center on population and community ecology, paleoecology, land-use history, aquatic ecology, biogeochemistry, ecophysiology and atmosphere-biosphere exchanges. Summer 2005 projects details and researchers are detailed at the Harvard Forest website <http://harvardforest.fas.harvard.edu/education/reu/reu.html>.

Harvard Forest: The Forest is located in central Massachusetts about 70 miles west of Boston. The 3000-acre site lies in the Transition Hardwood-White Pine-Hemlock forest region, and includes a variety of forests and wetlands. Facilities include greenhouses, herbarium, computer laboratory, library, archives, the Fisher Museum of Forestry and laboratories for nutrient analysis, physiological and population ecology, tree-ring and pollen analysis. More information about the Forest is available at <http://harvardforest.fas.harvard.edu/>

Compensation: Students are paid a stipend of \$4200 for the 12-week session which runs from May 31 through August 19, 2005. Excellent housing and a full meal plan are included as part of the program.

Application process: By **March 4, 2005**, send an application, two letters of recommendation, an essay and resume to: Summer Program, Harvard Forest, P.O. Box 68, 324 N. Main Street, Petersham, MA 01366. **Applications, project descriptions and additional information are available at <http://harvardforest.fas.harvard.edu/education/reu/reu.html>.**

Questions? Please refer to the FAQ section on the above referenced link or contact hfapps@fas.harvard.edu

Summer 2005 Research Projects

Complete project description available at
<http://harvardforest.fas.harvard.edu/education/reu/mentors.html>

Invasive Plants, Pests & Pathogens

- Ecological and historical aspects of invasion in the exotic species, *Alliaria petiolata*, in New England.
- Disturbance histories as a predictor of habitat invasibility in a mosaic landscape: Cape Cod National Seashore
- Life history parameters and range expansion of hemlock woolly adelgid infestations
- Ecosystem analyses of hemlock woolly adelgid outbreaks in southern New England
- The influence of recent forest harvesting and historical land-use on forest composition and invasive species distributions

Plant Biology, Population and Community Ecology

- Plant population biology and evolutionary ecology
- Who eats whom? Structure of food webs and nutrient dynamics of carnivorous pitcher plants.
- Ecological and physiological correlates of hemlock woolly adelgid herbivory in *Tsuga canadensis* (eastern hemlock)

Large Experiments and Permanent Plot Studies

- Ant diversity in southern New England: effects of hemlock decline and hemlock removal
- Hemlock removal experiment: initial responses
- Fifteen years of vegetation response to an experimental hurricane
- Temperate forest responses to climate warming

Historical and Retrospective Studies

- Long-term history of vegetation in New England

Atmospheric Chemistry and Soil Carbon and Nitrogen Dynamics

- Long-term soil respiration at the Harvard Forest
- Effects of management on forest carbon storage
- Carbon and water exchange of eastern hemlock and deciduous forests: differences between forest types, responses to climate, and probable effects of hemlock mortality

Aquatic Studies

- Forecasting stream ecosystem responses to a regional landscape disturbance: indirect ecological consequences of the removal of eastern hemlock from New England forests

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