

Inside & ONLINE



Wildcats howl

Crimson men's soccer breaks the UNH unbeaten streak in a well-played match-up.

Page 7



Fictional Byron

Radcliffe Fellow talks about his ambitious trilogy of novels about Lord Byron.

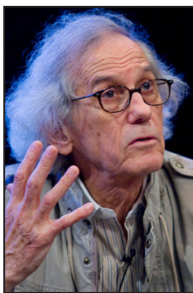
Page 9



Education debate

Advisers to the presidential candidates find common ground in education debate.

Page 11



Christo's schemes

Artists Jeanne-Claude and Christo win award for negotiation — and share some trade secrets.

Page 15

Three Harvard faculty net MacArthur fellowships

By Alvin Powell
Harvard News Office

Three biologists — one current and two future faculty members at Harvard — have won MacArthur Foundation “genius” grants, \$500,000 no-strings-attached awards intended to encourage creativity, originality, and innovation in a broad array of fields.

The winners are Assistant Professor of Neurobiology Rachel Wilson at Harvard Medical School; Susan Mango, who was recently appointed professor

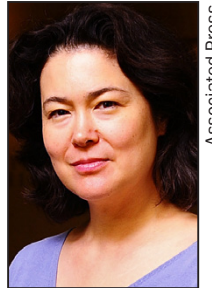
of molecular and cellular biology in the Faculty of Arts and Sciences (FAS); and Kirsten Bomblies, who will be an assistant professor in the Department of Organismic and Evolutionary Biology, also at FAS. Both appointments are effective July 1, 2009. Mango is currently a professor at the University of Utah. Bomblies is currently at the Max Planck Institute for Developmental Biology, in Tubingen, Germany.

“It’s a big shock. Unlike all the other grants and

(See *MacArthurs*, page 8)



Wilson



Mango

Associated Press

Associated Press



Kris Snibbe/Harvard News Office

Harvard Forest: 3,500 acres, global impact

By Steve Bradt
FAS Communications

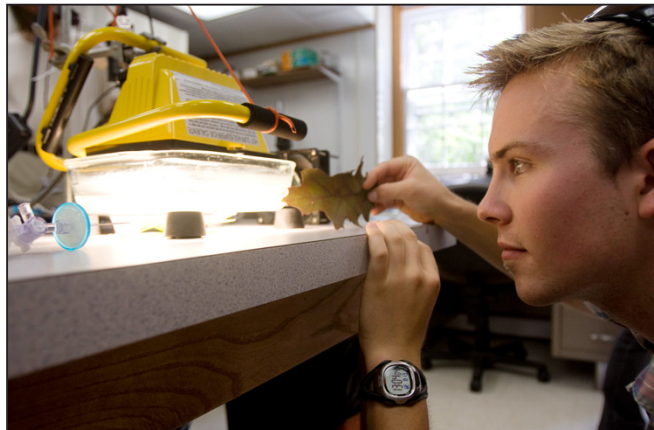
Harvard may be rooted in Cambridge, but it has a lot more roots in the small north-central Massachusetts town of Petersham.

That’s where you’ll find the woods, streams, and fields of the Harvard Forest, a 3,500-acre research and teaching facility that’s been part of the University for more than a century. Having been closely monitored since 1907 — and with a provenance dating to a Colonial farm established in the mid 1700s — the history of this tract is likely better-documented than that of any other forest in the United States.

New England’s forests have a centuries-long history of destruction and resurrection, with a landscape that has veered from thickly wooded in the 18th century to mostly farmland in the 19th century and back to substantially wooded today. The much-researched Harvard Forest helps scientists apply the lessons of the region’s forest history to the environmental challenges faced by forests today.

(See *Forest*, page 16)

Kris Snibbe/Harvard News Office



College senior James Onstad, who conducted research this summer at the Harvard Forest, checks an experiment measuring the rate of water evaporation from leaves.

Forest



(Continued from page 1)

“Overall, this forest offers a very positive message for New England about the resilience of our forests,” says David R. Foster, the forest’s director and a senior lecturer on biology in the Faculty of Arts and Sciences (FAS). “The Harvard Forest can teach us much about the history and diversity of natural landscapes.”

Since becoming director of the forest in 1990, Foster has worked assiduously to knit together what had been isolated islands of conservation land in north-central Massachusetts into a more coherent block, the better to support research and maintain native flora and fauna. Today, the map of this area at the head of the Quabbin Reservoir — the body of water that supplies much of metropolitan Boston’s drinking water — is a patchwork of land owned not only by Harvard but also by the Commonwealth of Massachusetts, the Trustees of Reservations, MassAudubon, and other conservation-minded organizations.

Since 2005, Foster and colleagues have led an initiative called “Wildlands and Woodlands: A Vision for the Forests of Massachusetts,” endeavoring to protect 1.5 million new acres of Bay State forestland. When combined with the existing 1 million acres of protected land in the commonwealth, the cumulative acreage would total roughly half the area of Massachusetts.

“We’ve already seen Massachusetts emerge as a leader in reclaiming the Northeast’s fragmented landscape,” Foster says. “We hope ‘Wildlands and Woodlands’ will spur new conservation finance tools to safeguard the economic, ecosystem, and quality-of-life benefits of forests.”

The Harvard Forest’s 45 permanent employees — ranging from ecologists to a sawyer who runs a Depression-era sawmill and cuts wood to heat the forest’s buildings — are continually supplemented by a steady stream of visiting scientists from New England and beyond. At any given time, upward of 100 scientists — many from Harvard but most from elsewhere — may be conducting research. The researchers are drawn to Petersham, population 1,180, by these woods, wetlands, and Harvard Pond. Collectively, the scientists form the Harvard Forest Long Term Ecological Research Program, part of the largest ecology research effort funded by the National Science Foundation (NSF).

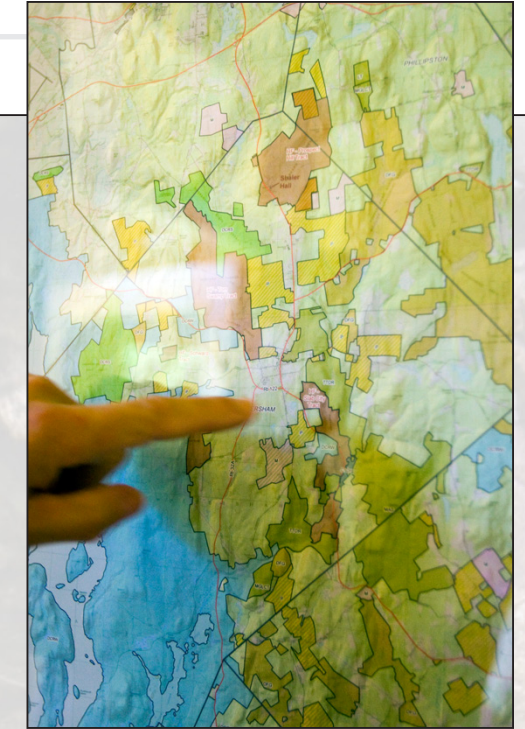
It’s not just professional scientists at Harvard Forest, which plays host each summer to some 25 undergraduate researchers, most of whom hail from other universities. A dozen of these junior scientists are supported for 12 weeks apiece by NSF’s Research Experience for Undergraduates (REU) program. The Harvard Forest’s REU program, in operation continuously since 1986, is not only one of the longest-running nationwide but also among the most extensive in the biological sciences at a single site.

With so many scientists around, the forest’s facilities are abuzz with research projects.

On a recent day, visiting scientists Wyatt Oswald of Emerson College and Matts Lindbladh of Sweden were in a lab sampling from an 8-meter core of mud extracted from the bottom of Little Willey Pond in Strafford, N.H. This core,



A pole (far left) to measure snow depth is part of a project to predict snowfall in the Harvard Forest. Staff scientist Julian Hadley (left) peers up at the forest’s 70-foot Hemlock Tower, whose equipment measures the water and carbon dioxide output of a 200-year-old conifer grove. A salamander (below) enjoys its mossy Petersham perch. A local map (right) shows the patchwork of conservation land at the head of the Quabbin Reservoir.



representing some 12,000 to 13,000 years of pond deposition, will be studied for pollen, minerals, and organic matter to reconstruct New England’s forest history, providing evidence of climate change, human activity, and disturbances such as fires or hurricanes.

Out in the woods, Emery Boose, the forest’s information manager, pointed out another research project, launched this spring. A tract of red pine planted in the 1930s — and starting to suffer natural decline owing to its age — has been clear-cut and outfitted with two different types of enclosures to exclude deer and moose. The project will study the effects of grazing by both species on forest regrowth.

Deeper into the forest, staff scientist Julian Hadley was manning air-monitoring equipment mounted atop a 70-foot metal structure known as Hemlock Tower. These experiments, intended to measure and track the output of water and carbon dioxide by the surrounding grove of 200-year-old conifers, illuminate the important role of forests in maintaining the Earth’s carbon cycle.

Nearby is an apparatus placed by a Bridgewater State College professor who makes snowfall predictions and uses cameras to monitor from afar the accumulation of snow in the forest. Other measurements are being taken at streams that feed into the Quabbin, so scientists can examine how precipitation and transpiration affect water flow and water chemistry.

Researchers with the University of Massachusetts have outfitted 25 area moose with GPS collars to track the gangly woodland dwellers, whose numbers have grown steadily in northern Massachusetts. The Harvard Forest is even seeing signs of resettlement by bears, which not long ago were found only in the most remote areas of far northern New England.

With all this data gathering, the Harvard Forest is intensively wired to relay data back to scientists in Cambridge or even thousands of miles away. Backed by ample computing power, automated equipment gathers and archives climate data five times a second, making it available internationally in real time.

With so many people monitoring his woods from afar, one of Foster’s current priorities is making the Harvard Forest wireless, eliminating the trouble-prone wiring running beneath dirt paths throughout the woods. Rodents and other critters, it seems, like to gnaw on the wires.

The Harvard Forest is located about an hour’s drive west of Cambridge, Mass. From the Alewife T station, follow Route 2 west for approximately 60 miles to Exit 17. Turn right off the ramp onto Route 32 south; the Harvard Forest is 3 miles ahead on the left.

The Harvard Forest’s 42 miles of trails are free and open to the public year-round. The Fisher Museum, specializing in displays of New England forest ecology and land-use history, is open weekdays from 9 a.m. to 5 p.m. and weekends through October from noon to 4 p.m.

Additional information is available at <http://harvardforest.fas.harvard.edu>.

Related article
Freshmen reconnect with land,
www.hno.harvard.edu/gazette/2000/03.02/forest.html



Director David R. Foster (far left) touts the solar panels installed to power a new shed used by forest maintenance workers. Visiting scientist Wyatt Oswald (left) collects mud for a study of pollen, mineral, and organic matter deposition over more than a millennium.



Views of Harvard Pond (far left), a half-mile-long body of water within the Harvard Forest, and a clearing (left), which was outfitted earlier this year with enclosures to study the effects of deer and moose grazing on forest regrowth, illustrate the beauty of the area.

Photos Kris Snibbe/Harvard News Office

steve_bradt@harvard.edu