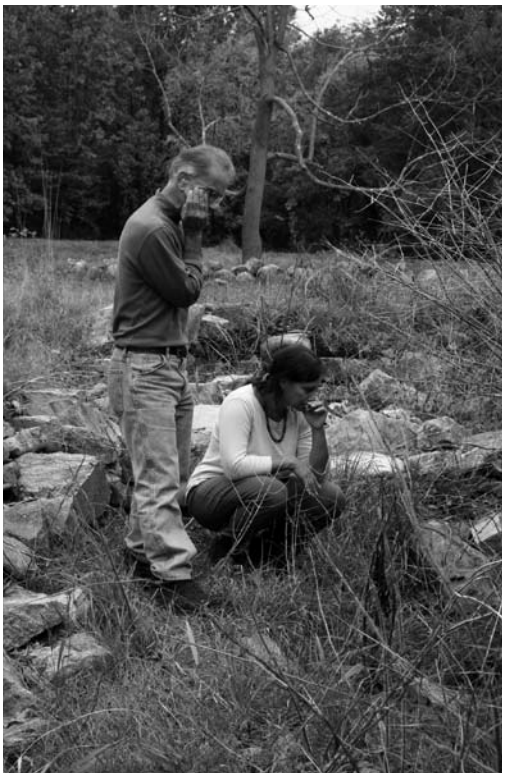
Clockwise from top:

Art student in Drawing Fundamentals class near Native Plant Collection Entrance

Introduction to Evolution students take photos in the Gries Conifer Collection.

Culture, Politics and the Environment class discussion in the Gries Conifer Collection

State Archeologist Nick Bellantoni and Visiting Anthropology Instructor Rae Gould contemplate the Bolles farmhouse foundation.



TEACHING *and* RESEARCH

MANY COLLEGE COURSES, particularly in the natural sciences, use the Arboretum on a regular basis. This year a number of new classes added regular visits to the Arboretum. Professor Pam Marks uses the Native Plant Collection for Art 211, which includes an outdoor painting component. She also brings her Art 205 Drawing Fundamentals class for a landscape unit that explores texture and spatial indicators in drawing.

Also for the first time Professor MaryAnne Borrelli's Government 493A, Culture, Politics and the Environment, participated in a tour of the Native Plant Collection and discussion on managing natural areas led by Glenn Dreyer.

Professor Doug Thompson's Environmental Studies 410 class, Environmental River Restoration, used the intermittent stream that runs through the meadow restoration project area north of Benham Avenue to understand how to successfully restore a stream and its surrounding habitat. The students surveyed and analyzed the deeply cutting stream and proposed restoration methods that would reduce erosion of the channel by slowing and spreading the water. They performed tracer particle analysis, learned to survey land and utilized various mathematical models to develop a plan for improving the stream course. The resulting study will be very useful for developing grants to fund the recommended restoration process.

In Biology 103, Introduction to Evolution, Professor Phil Barnes' students each completed a project on adaptation in which they began by taking photographs of an organism in the Arboretum or greenhouse and then described an evolutionary adaptation demonstrated by that species. For each animal or plant, they considered how the adaptation benefits the species and what tradeoffs in other aspects of its form or function were necessary for the adaptation to evolve.

Other courses that regularly use the Arboretum continued to do so, including:
Bio 105 – Organisms
Bio 207 – Ecology
Bio 215 – Invertebrate Biology
Bio 224 – Animal Behavior
Bot 115 – Classical and Current Topics in Botany
Bot 117 – Introduction to Ethnobotany
Bot 205 – Plants, Protists and Fungi
Bot 225 – Systematic Botany and the Local Flora
Bot 308 – Methods and Theories of Ethnobotany
Bot 494k – Ecological Restoration
ES 111 – Environmental Studies as a Social Science
ES 115 – Introduction to Physical Geology
ES 210 – Hydrology
ES 312 – Introduction to Vector-Based GIS
ES 313 – Introduction to Raster-Based GIS

In a new research project begun this year, Glenn Dreyer and environmental studies Senior Lecturer Beverly Chomiak worked with Lindsay Michel '08 on an environmental studies individual study project in which she collected all existing deeds for Arboretum property north of Gallows Lane, then translated the written deeds into parcel maps. The long-term goal is to assemble the parcels into maps that depict land ownership at different periods in history from the time they first came into private ownership starting in 1733 to the present. A second aspect of Lindsay's project was to create maps of stone walls and building foundations in a 26-acre portion that was the center of a farm established by Samuel Bolles in 1763. The farm functioned until the house burned in 1943, shortly before the College acquired the property. The walls, their intersections and openings were characterized in great detail based on the work of University of Connecticut geologist Dr. Robert M. Thorson, after which Lindsay created database and GIS files for analysis.

Conversations with Visiting Instructor Jason Mancini and Professor Manuel Lizarralde led to the idea of using the Samuel Bolles Farm as a focus for interdisciplinary research in archeology, history, anthropology and environmental studies. Dreyer met on site with Mancini, Lizarralde, Chomiak, history Professor Lisa Wilson, architectural studies Professor Abby Van Slyck, visiting archeologist Rae Gould and Waterford

Town Historian Robert Nye to explore using the site for various teaching and research projects. In fall, Wilson focused part of her freshman seminar, "The Whaling City: Early America, the View From New London," on the history of people who owned land that became part of the Arboretum. The class participated on an interpretive field walk to the Bolles Homestead site with Dreyer. While involving students in research on the history of the people who once lived here and their land, the group is also collecting an archive of relevant documents including deeds, wills, probate records and maps. State Archeologist Nick Bellantoni examined the Bolles Farm house and outbuilding foundations in October and recommended an inspection by an architectural historian.

Students from other institutions also utilize the Arboretum. This year two Coast Guard cadets collected multiple water samples from a small raft they paddled in the Arboretum Pond. UConn Professor Julia Kuzovkina's Urban Forestry class has visited the campus and Arboretum for the past three years for a two-hour walking discussion about woody plants with Glenn Dreyer.

Two of Professor Chad Jones' research projects on invasive species used the Arboretum. One centers on the plant *Geranium robertianum*, which he began growing in the greenhouse from seed collected from many different geographic locations. The second project looks at the distribution of woody invasive plants in the Arboretum utilizing the long-term vegetation survey data set as well as current fieldwork with students.

Chad Jones, Glenn Dreyer and Dr. Nels Barrett '78 of the U.S.D.A. Natural Resources Conservation Service initiated a long-term floristic study of the Arboretum's meadow restoration project that was seeded in 2006. Sampling to identify and quantify all plants growing in plots in both a planted area and a nearby unplanted meadow area was conducted primarily in August 2008. Many specimens were collected and identified, and they will be added to the botany department's Graves Herbarium.

Students in the Introduction to Geographic Information Systems course taught by Beverly Chomiak often use the Arboretum for their projects and thus add important information to an expanding geographic data set. Projects this year included:

- Distribution of Japanese Barberry Sites in the Connecticut College Arboretum in New London, Connecticut, Farrell W. Thayer '09
- Red Cedar Distribution in the S. Bolles Farm Site, Tori Hallowell
- Rubber-sheeting of 1934 Orthophotos to Existing Structures in the Connecticut College Arboretum, Adam Campos '08
- Distribution of Skunk Cabbage (*Symplocarpus foetidus*) in Connecticut College Arboretum, New London, CT, Xuefeng Peng '10
- Using GIS Solar Radiation Tools to Map the Potential for Solar Panels on the Connecticut College Campus, Leia Crosby '09

reports and papers

Michel, Lindsay. 2008. Stonewalls: A Stacked History of Land Use and Ownership in the Connecticut College Arboretum. Individual Study Report.

ES 410. 2008. A Study and Proposal for the Restoration of Mamacoke Brook. A group report by the course participants.

Opposite page:

Professors Anne Bernhard, Chad Jones and Sarah Melissa Witiak prepare for a pond lab in Bio 205, Ecology.

This page clockwise from top left:

Students in the Environmental River Restoration course survey the streambed in the meadow restoration project area.

Lindsey Michel '08 and Professor Chomiak assess a stone wall near the Bolles Farm site.

Dr. Nels Barrett '78 surveys a plot for Meadow Restoration project.
Early American history freshman seminar visits the Bolles farm site.