ENVIRONMENTAL CINNECTIONS



The Class of 2002, top row left to right: Leys Bostrom, Maria Sinnamon, Hannah Shayler, Marjorie Lundgren, Rachael Towers, Emily Templin. Front row: Jessica Schwartz and Laura Rowe.

CENTER HOLDS RECOGNITION CEREMONY FOR FIRST CERTIFICATE CLASS

FAMILY, FRIENDS, FACULTY, Advisory Board members, President Norman Fainstein, Dean of Faculty Helen Regan, and other distinguished guests attended the first recognition ceremony for graduates of the Environmental Studies Certificate Program. Flowers from the Arboretum and the Garden of Remembrance (see page 8) were arranged by Arboretum Horticulturist Jeff Smith. Student projects were displayed and champagne, desserts, and conversation topped off the celebration.

The ceremony began with a welcome and introduction by Director Robert Askins, who went on to highlight the Center's recent events and progress. Associate Director Gerald Visgilio discussed the Certificate Program and how it "provides for a stimulating collaboration of ideas from economists, ethicists, political scientists, ecologists and scientists." He

also commented on how much he had learned from the students and their projects. Assistant Director Diana Whitelaw introduced the students, stating, "each student has excelled in the program. Between them they have created three unique individual projects and five honors theses. They have certainly set a very high standard for future classes to follow." Glenn Dreyer, Executive Director, gave the students their certificates and introduced the guest speaker, Richard Goodwin, Professor Emeritus of Botany and co-founder of the college's Environmental Studies Program. Goodwin discussed the origins of the Environmental Studies program and creation of the Arboretum.

The recognition ceremony allowed the students to briefly discuss their senior integrative projects and future plans. The sen-

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NEW SPECIES OF MICROORGANISM NAMED AFTER WILLIAM NIERING

By Dr. Peter Siver

TWENTY-TWO YEARS AGO, while using an electron microscope for a completely different objective, I stumbled upon a whole cell of what turned out to be a scaled chrysophyte named Mallomonas crassisquama. Scaled chrysophytes are a group of single-celled, microscopic freshwater organisms that have evolved a cell covering made of many plates called scales. The scales are manufactured by the cell out of glass and it remains a mystery how these seemingly simple organisms can assemble the many ornate scales into a highly ordered arrangement outside of their cell membrane. The sculpturing of the plates, and the ordered sequence overlying the cell of M. crassisquama, is what captured my imagination.

That specimen of *Mallomonas crassisquama* changed my professional life forever. After all, being a recent Ph.D. with a specialty in physiological ecology of green algae, I knew absolutely nothing about chrysophytes.

Its funny what a person can become excited about. For me, it has been these fascinating creatures that hang out in tiny glass houses. One of the special qualities about Bill Niering was that he seemed to get excited about every aspect of the natural world, even the algae! One day he came in and peered into the microscope at a sample from the Arboretum pond, turned to me and said "what a nice specimen of Oedogonium." I had not told him what I was looking at and I am sure most aquatic scientists would have said "what's that?" Bill later revealed to me that he had studied algae in college and distinctly remembered that one genus. He always seemed interested in what I was looking

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GOODWIN-NIERING CENTER FOR CONSERVATION BIOLOGY & ENVIRONMENTAL STUDIES

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Established in 1993, the Goodwin-Niering Center for Conservation Biology & Enironmental Studies (CCBES) is an interdisciplinary program that draws on the expertise and interests of faculty and students in the liberal arts to address contemporary ecological challenges. The Center strives to integrate all areas of learning to deal with the issues of sustainability and the natural environment. Building on a scientific understanding of the natural world, the Center invites the social sciences, the humanities and the arts to help understand and solve difficult environmental issues.

FROM THE DIRECTOR

Robert A. Askins

This spring we celebrated the successful establishment of the certificate program in environmental studies as we graduated our first class. On May 9 the graduating seniors gave formal presentations on their senior projects. We invited the Advisory Board, which is a group of eight alumni, former faculty, college trustees, and environmental experts who advise us on our programs, to meet that afternoon and then attend the student presentations. Faculty, students and Advisory Board members also gathered for dinner that evening.

Just three years ago, the Goodwin-Niering Center faculty were meeting frequently to plan the certificate program. The goal was to recruit students from a wide range of disciplines and help them apply their education to an environmental issue. Practical experience during a summer internship would lead into a senior individual study or honors thesis on a related topic. The proposal was approved at the April faculty meeting. A week later I was invited to a meeting at the Andrew W. Mellon Foundation in New York to discuss new initiatives in environmental studies at colleges and universities. One of the foundation's highest priorities, as it turned out, was to develop effective multidisciplinary approaches to environmental education. Consequently we wrote a grant proposal for the newly approved certificate program, and the following September we received a \$298,000 grant to initiate the program and sustain it for the first five years.

A key goal of the certificate program is to involve students with a wide range of majors in environmental research. Although several of the students in our first class were environmental studies majors who had completed field projects in ecology, there were also students who approached environmental issues with the tools they had gained from concentrations in anthropology, photography, political science or religious studies. As a result we had a series of presentations with an impressive range of approaches and styles. All of the presentations had been perfected with help from a faculty adviser and from students and faculty in the weekly certificate seminar course.

Another key date was May 24, when the graduating seniors received their environmental studies certificates in a ceremony in Blaustein Humanities Center. Richard Goodwin, Professor Emeritus of Botany, gave an engaging talk on the history of environmental studies at Connecticut College. It was especially appropriate that our first class of certificate students invited Professor Goodwin to speak at their graduation ceremony. He has played a critical role in developing and supporting the environmental program at Connecticut College.

The Center staff and faculty wish the graduating seniors success and look forward to hearing about their accomplishments in the future.

PLEASE HELP US CONSERVE! In order to cut down on paper and general costs we'd like to recommend you read our newsletter on the web at http://ccbes.conncoll.edu. Please contact us at 860-439-5417 or ccbes@conncoll.edu to be removed from our hard copy mailing list.





RECOGNITION CEREMONY

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iors had previously presented talks on their integrative projects to the public on May 9th, when the Center Advisory Board and Steering Committee were present to offer help and suggestions. The seniors also had the opportunity to receive advice and discuss employment opportunities with the Advisory Board members during a dinner break.

After graduation Leys Bostrom will return to the Costa Rican organic banana plantation where she interned last summer. In the fall, she hopes to find work with a children's or women's advocacy group in Boston. Marjorie Lundgren will attend graduate school at Wesleyan University in Middletown, Conn. Laura Rowe hopes to do biodiversity research in Cambridge, Mass. or Washington, D.C. and attend graduate school the following year. Jessica Schwartz plans to work for an environmental consulting firm in Boston, Mass., followed by graduate work in a related subject. Hannah Shayler will continue her research at the Connecticut College Freshwater Ecology Lab. Maria Sinnamon will work on a Master's degree at Brown University in Providence, R.I. Emily Templin plans to work with GreenCorps, a field school for environmental organizing in Boston, Mass. Rachael Towers is looking for an internship in North Carolina.

The Center was proud to honor this hard-working, distinguished group of students for their achievements and we are confident that they will be successful in their future endeavors. Congratulations! More information on our first certificate class can be found on the web at http://ccbes.conncoll.edu/class2002.html.



Top: Certificate Recognition Ceremony guest speaker Dr. Richard Goodwin. Bottom: Emily Templin '02 presents her senor integrative project to the public on May 9. Right: Helen Mathieson '52 and Dr. Richard Goodwin, members of the Center's Board of Advisors.



GOODWIN-NIERING CENTER CERTIFICATE PROGRAM JUNIOR INTERNSHIP PLANS AND PROJECTS CLASS OF 2003

STEFAN APSE

Major: Philosophy Minor: German Internship: Information Bureau of Biodynamic Farming in Uberlingen,

Senior Integrative Project: "A Study in Bio-dynamic Farming and Anthroposophy"

Stefan will learn about the philosophy and science of Rudolf Steiner through his independent reading and discussions with the members of a bio-dynamic farm. He hopes that his experience will enable him to understand this philosophy while applying it to life. Stefan's senior integrative project will examine the connections between bio-dynamic farming and anthroposophy.

Health, Inc. in North Haven, Conn., and the Connecticut College Philosophy Department

Senior Integrative Project: "Decisions Involving the Future and Environmental

How can environmental ethics deal with the issue of decisions involving the future? Philosophical literature on personal identity, future generations, the future environment, the land ethic, ecofeminism, and deep ecology will be examined in Lauren's honors thesis. She will investigate whether the strength of environmental ethical theories depends on how well they are able to consider the future.

Conservation Education"

An exploration of children's response to applied conservation educational methods without the use of textbook and mathematical approaches, and how this can be applied at the state and national level. Data on children's learning patterns will be collected for the creation of a guide that schools could follow in order to incorporate conservation into the curriculum. Lindsey's honors thesis will compare conservation education in the United States and five other countries.

SARAH LATHROP

Internship: Littlewood Organic Farm

Senior Integrative Project: "The Role of Nature in Literature"

An examination of the role of nature in the works of Emily Dickinson, Robert Frost, Theodore Roethke, Henry David Thoreau, and Ralph Waldo Emerson. During her internship on an organic farm in Vermont, Sarah will hike and explore the surrounding woods in order to glean the observations that will aid in her reflection upon the literature. She will keep a journal of her

thoughts and discoveries on the farm, in the natural areas of Vermont and on the

in Plainfield, Vt.

Major: English Minor: Religious

relevant literature.

Internship: Roughing It Day Camp in

Impact of the Physical and Social Summer

MOLLY LIPPMAN

Lafayette, Calif.

Major: Human Development

Senior Integrative Project: "The

Camp Environment on Children's

Attitudes Toward the Environment"

Development and Environmental

This study seeks to integrate Human

Studies by examining how the attitudes

about the natural environment change

in children attending a summer camp.

Camper surveys, staff and parent inter-

views, and personal observations and

notes will be used in Molly's research.

SCOTT EPSTEIN

Major: Environmental Studies Minor: Psychology Internship: U.S. EPA, New England Regional Laboratory in Chelmsford, Mass.

Senior Integrative Project:

"Water Quality: The Transition from Local Pollution to Domestic Laws to International Regulations"

Scott's honors thesis will begin by examining field and laboratory data from the Clean Charles 2005 project and the New England Wadeable

Streams (NEWS) project. The data will then be examined in light of domestic policy on water quality.

KATHERINE JONES

and Lauren Hartzell.

Major: Environmental Studies Internship: Appalachian Mountain Club in Boston, Mass.

Class of 2003. Top row left to right: Scott Epstein, John Traversi,

Daisy Small, Kassie Rohrbach. Front row: Vetri Nathan, Katie Jones

Senior Integrative Project: "Leave No Trace: An Ethical Analysis of Whether To, and How To, Experience the Outdoors" An examination of the established wilderness ethic of "Leave No Trace." Are its origins anthropocentric or nonanthropocentric? Katie will then defend wilderness experiences by explaining how they should be carried out in accordance with the "Leave No Trace" ethic.

Senior Integrative Project: "Environmental Law and the Protection

JARED FERTMAN

Philadelphia, Penn.

Major: Environmental Studies

Internship: U.S. EPA Region III Wetlands Enforcement Division,

of Wetlands"

A study of EPA's role in the prevention and mitigation of environmental pollution in wetlands. Jared will study the applicable laws to determine if additional environmental legislation is necessary.

LINDSEY KRAVITZ

Major: Environmental Studies Minor:

Internship: Mystic Aquarium in Mystic, Conn.

Senior Integrative Project: "Study of

LAUREN HARTZELL

Majors: Environmental Studies and Philosophy

Internship: Environment and Human



Class of 2003. Top row left to right: Lauren Hartzell, Molly Lippman, Kassie Rohrbach, Kate Driscoll, Stefan Apse. Front row: John Traversi, Jared Fertman and Vetri Nathan.

VETRI NATHAN

Majors: Zoology and Italian Internship: Conservation Education Center (CEC) of the Bombay Natural History Society in Bombay, India

Senior Integrative Project:

"Environmental Education and Awareness in India"

Environmental education and awareness in India is still in the initial stages of development. Vetri's goal is to bring the world of marine biology to the school

children in Bombay who are not usually exposed to it. The goal of his senior integrative project will be to develop an exciting and stimulating curriculum for a course on the basics of marine biology for future use by the CEC in Bombay.

KASSIE ROHRBACH

Major: Gender and Women's Studies Internship: Center for Resource Solutions in San Francisco, Calif. Senior Integrative Project: "Women and the Environment"

An examination of the connections between the oppression of women, race and socioeconomic class, and the degradation of the environment. Kassie hopes to interview and do research on female environmental activists and develop personal narratives of each woman's experience. Her senior integrative project will analyze the connections between their work, politics, and lifestyles.

DAISY SMALL

Majors: Botany and Environmental Studies

Internship: Vegetation Surveys in Southeastern Connecticut Natural Areas at Connecticut College

Senior Integrative Project: "Controlled

Burning as a Method for Restoring Pitch Pine Forests: Model Sand Plain Communities"

In this project Daisy will study pitch pine (*Pinus rigida*) sand plain communities in several regions and compare them to a community at the Hopeville Pond Preserve. What should a healthy pitch pine-sand plain community look like in terms of structure, species composition, and other factors? Daisy's honors thesis will assess the goals and methods for the Connecticut DEP's controlled burn program.

JOHN TRAVERSI

Major: Zoology

Internship: New England Aquarium in Boston, Mass.

Senior Integrative Project: "The Use of the Operant Conditioning Training Method on Marine Animals to Answer Environmental and Biological Questions" This project will explore animal training techniques and their application to understanding both the natural history and the ecology of marine animals. John will conduct three experiments using a sea turtle, two harbor seals and a California sea lion, along with a review of the literature, to show how operant conditioning can be used to answer biological and environmental questions.

CLASS OF 2002 SENIOR INTEGRATIVE PROJECTS

LEYS BOSTROM

"Hidden From View: A Closer Look at Banana Production in Costa Rica" Academic Supervisor: Ted Hendrickson

MARJORIE LUNDGREN

"Site and Environmental Characteristics Influencing Invasion of Ten Exotic Plant Species in Central and Southern New England"

Academic Supervisors: Christine Small and Glenn Dreyer

LAURA ROWE

"Intellectual Property Rights in the K-Economy: Use and Protection of Indigenous Knowledge" Academic Supervisor: Manuel Lizarralde

JESSICA SCHWARTZ

"Long Term Changes (1952-1992) in the Vegetation of the Bolleswood Natural Area, Connecticut College, New London" Academic Supervisors: Christine Small and Scott Warren

HANNAH SHAYLER

"Biodiversity of the diatom genus Brachysira (Bacillariophyceae) in the Ocala National Forest, Florida" Academic Supervisor: Peter Siver

MARIA SINNAMON

"The Response in Water Quality and the Propagation of Pollution Sensitive Taxa of the Naugutuck River Due to the Upgraded Waterbury Wastewater Treatment Plant"

Academic Supervisor: Douglas Thompson

EMILY TEMPLIN

"Mobilizing Support for School Environmental Health Issues: A Study of Connecticut Movements in New London, Lyme-Old Lyme, and Litchfield" Academic Supervisor: Jane Dawson

RACHAEL TOWERS

"Spiritual Aspects of Native New England Ethnobotany"

Academic Supervisor: Manuel Lizarralde

CLASS OF 2004

WELCOME TO OUR SOPHOMORES

EMILY COOKE

Major: Architectural Studies

MATTHEW ELLIOTT **Major:** English/Philosophy

MICHELLE GORHAM **Major:** Environmental Studies

GUTHRIE JONES

Major: Environmental Studies

MELISSA MYLCHREEST

Major: English

THEODORA STITES

Major: Anthropology/Government

JOEY SOLOMON

Major: Psychology

SPIRITUAL ASPECTS OF NATIVE NEW ENGLAND ETHNOBOTANY

by Rachael Towers '02

MY SENIOR INTEGRATIVE

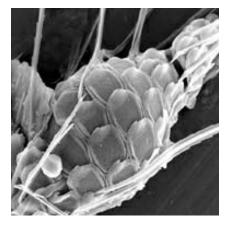
project allowed me to bring together the knowledge I acquired in my major field, religious studies, and the experiences I had during my summer internship at the Mashantucket-Pequot Museum and Research Center. The internship allowed me to focus on my interest in ethnobotany, learning from both library research and botanical studies done in the field. For my senior project I studied religious aspects of the ethnobotany of pre-Colonial native New England tribes.

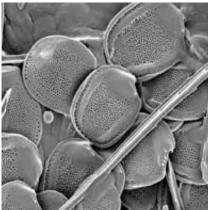
I found countless examples of the roles that plants play in the spiritual lives of native New England tribes. I began with the role of plants in yearly calendrical cycles because it exemplifies the reasons plants are so important. In cultures that are closely integrated with the natural environment, and whose survival depends on knowledge of the environment, it is nearly impossible to ignore the cyclical changes in nature. These changes, including the changes in plants, become imbued with deep spiritual meaning. I also studied the mythology of regional tribes, finding that in many cases plants are a significant focus in a myth. For example, many myths describe the origins of important plants, as when creator spirits bestow plants as gifts or when a hero figure sacrifices his or her life in order to bring about the growth of important crop plants. I also studied the role of plants in magic, ceremonies, and prayers.

In examining the ways in which Native American religious life has been interpreted by non-Natives over the years, I found that the interpretations have reflected both very positive and very negative attitudes towards native spirituality. The most negative views were propounded by scholars of religion who followed the 'religious evolution' school of thought. The idea of religious evolution sees all religions as falling somewhere on a scale of intellectual development; some reflect a very primitive and inferior way of thinking while others reflect a highly developed and superior mind. On the low end of the scale were 'primitive religions,' which included Native American traditions as well as other indigenous traditions. At the peak

were monotheistic religions like Christianity, which were practiced (not coincidentally) by the scholars who formulated this theory. Many scholars now recognize religious evolution as a flawed and highly ethnocentric theory; however, many of the underlying prejudices against indigenous religious traditions persist among other scholars and the general public. On the other hand, many from both the academic and religious worlds view Native American traditions favorably, praising them for their holistic world view which links spiritual well-being with physical health, emotional health, and environmental concern. The downside to this positive view is that Native religions are often usurped by non-Natives who have no connection whatsoever to a Native culture, and thus the integrity of a particular Native culture is no longer intact. This co-opting of Native traditions by non-Natives is referred to as 'cultural' or 'religious imperialism.'

Having studied these two views of Native American spirituality, and finding that neither is beneficial to the tribes or to non-Natives who sincerely wish to understand these traditions, I sought to find an interpretation of Native American spirituality that was beneficial to both. I found my example in ecopsychology, the developing branch of traditional psychology that focuses on the connection between mental health and one's environment. Many ecopsychologists have studied Native American religious traditions, including ethnobotanical aspects, and have shown that psychological well-being is promoted by their underlying ideologies (i.e., the holistic view that all aspects of human life and the universe are sacred, rather than the Western religious ideology that confines sacredness to a supernatural, 'other' realm). These ecopsychology studies do not encourage non-Natives to adopt Native practices, but instead to reconsider their own and their society's conceptions on sacredness and the earth. This interpretation of Native American religious traditions benefits Natives, because it promotes a positive view without usurping the culture, and non-Natives, because it provides a way to understand the positive aspects of other cultures and the negative aspects of their own.





Mallomonas nieringii — A new species of scaled chrysophyte

NEW SPECIES continued from page 1

at and often came into the laboratory just to "take a peek", but would stay for an hour. Even though he never published on the algae, I decided to name a new species of scaled chrysophyte, *Mallomonas nieringii*, after Bill Niering not only because of the impact he had on several generations of ecologists, but because he cared. Interestingly, Bill had seen pictures of this organism, known to date from only a handful of closely clustered ponds on outer Cape Cod, before he passed away. It seemed fitting to name such a rare but intriguing organism after Bill Niering.

CERTIFICATE PROGRAM GUEST LECTURE SERIES

The 2001 Alumni Environmental Achievement Award Winner DAVID FOSTER '77: THE ECOLOGIST AS HISTORIAN

HOW DO WE UNDERSTAND landscapes? What is the landscape's history? Dr. David Foster '77 suggests an interdisciplinary approach to this question through the use of history, ecology, and conservation. Current ecological research and environmental planning integrate historical studies to aide future decision-making.

An example of this approach can be found in Foster's book "Thoreau's Country: Journey Through a Transformed Landscape." The book uses Henry David Thoreau's journal writings as an historical study of the conservation and ecology of the New England Landscape. Thoreau traveled extensively in New England and wrote about the landscape at that time in his daily journals.

David Foster returned to Connecticut College as a guest speaker for the Center Certificate Seminar and Biology Seminar Series and also to receive the prestigious Alumni Environmental Achievement Award from the Goodwin-Niering Center. This award recognizes and celebrates alumni who have made significant contributions to all categories of environmental endeavors, including research, education, conservation and activism. Foster was a Botany and Religious Studies major at Connecticut College, naming Professors Richard Goodwin, Bill Niering and Scott Warren as his mentors. He developed his appreciation for history during his time here. He is currently the Director of the Harvard Forest and faculty member in the Department of Organismic and Evolutionary Biology at Harvard University and also serves on the Advisory Board for the Goodwin-Niering Center. Foster has conducted research in the boreal forests of Labrador, Sweden and Norway and the tropical forests of Puerto Rico. He is interested in the impact of human and natural disturbances in forest ecosystems and how this research can be applied to the conservation and man-



David Foster '77

agement of natural resources. He also serves on the boards of the Temperate Ecosystem Directorate of the U.S. Man and The Biosphere Program, The Conservation and Research Foundation and on the editorial boards of Ecosystems and Northeastern Naturalist.

Past Center Alumni Environmental Achievement awards were received by Judith Irving '68, a documentary filmmaker, and Linda Lear '62, an environmental historian.

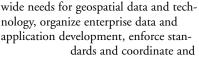
Wendy Blake-Coleman '75: NEW HORIZONS IN ENVIRONMENTAL MANAGEMENT

WHEN DATA ARE COLLECTED

for a research project, the data are used specifically for that particular project and

are not considered for other uses. What if the information could be shared with someone else who uses the data for an entirely different project? The value of the data increases, and the research becomes more beneficial and relevant to a number of topics. Wendy Blake-Coleman '75 is helping to develop a network with other scientists to disseminate data for use in all government agencies. Her

lecture "New Horizons in Environmental Management: How Geospatial Data and Tools are Expanding the EPA Perspective" explained how the National Geospatial Program was formed to recognize agency-



influence investments. Her presentation was a prime example of the current trend of using an integrated approach to environmental studies. Blake-Coleman works with the Office of Environmental Information, Geospatial Team and serves on the Goodwin-Niering Center Advisory Board. After her lecture, Blake-Coleman met with the certificate stu-



dents for an in-depth discussion on current environmental topics and employment opportunities with the EPA. Two certificate students are currently doing internships with the EPA (see page 4).

REMEMBRANCE GARDEN IS CREATED FOR THE VICTIMS OF SEPTEMBER 11

The remembrance garden was planted by students, faculty and staff to serve as a quiet place to contemplate the memories of those who died in the attacks of September 11, 2001. Funded by the class of 1997 and designed by College Horticulturalist Jeff Smith, it contains at least six different varieties of lilacs, a traditional memorial flower, as well as other flowering and ornamental shrubs. Over five hundred red tulips were donated to the garden by Home Depot. It will also contain a small patio, retaining wall and benches, along with a plaque dedicating



Lilac flowers in the Remembrance Garden.

the garden to those who died. A formal dedication is being planned for this coming September. Special thanks go out to all those who participated in the funding and design.

The remembrance garden was initiated by Daisy Small '03, who also aided in its design, planning, and construction. Daisy is a junior in our Certificate Program (see page 5).