FALL 2006 NEWSLETTER

ENVIRONMENTAL **C**NNECTIONS

ALUMNI ENVIRONMENTAL ACHIEVEMENT AWARD TO NATIONAL GEOGRAPHIC'S ALLEN CARROLL '73

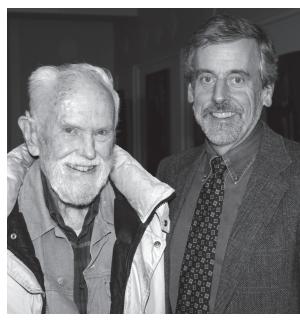
ON NOV. 2, 2006 an audience of 60 faculty, students and members of the local community welcomed Allen Carroll back

to Connecticut College to receive the Center's prestigious Alumni **Environmental Achievement** Award. Allen was one of the early Human Ecology majors at Connecticut College, and also one of the pioneering males at what had been a women's college for the previous six decades. After graduating magna cum laude in 1973, Allen stayed in the area and worked for the Connecticut DEP while training himself in design, illustration, and cartography. He later moved to the Washington DC area where he worked as a free lance graphic designer before joining the National Geographic Society in 1983. He served the Society in a variety of positions in the map division and the art department and is currently chief cartographer and executive vice president of National Geographic Maps.

The Alumni Environmental Achievement Award recognizes graduates who have made significant contributions to environmental research, education or conservation. After a short presentation about the four previous award recipients by the Center's Harrison Director, Robert Askins, Dean of the Faculty Francis L. Hoffmann presented the award to Allen.

The rest of the evening was spent very enjoyably with Allen's humorous and insightful summary of his career path and current projects. In spite of his early love for maps, he had no idea he would end up

with a professional career in cartography. While he was a student at Connecticut College, he "lived" in the Arboretum and



Richard Goodwin, Katherine Blunt Professor Emeritus of Botany with Alumni Environmental Achievement Award Recipient Allen Carroll '73

eventually created a beautifully illustrated map of it, probably his first formal cartographic creation. According to Carroll: "Conservation is all about geography; you have to know where things are to keep them alive and well."

One of the topics Allen touched on was geotourism, which he defined as tourism that sustains or enhances the geographical character of a place—its environment, heritage, aesthetics, culture, and the well-being of its residents. He

mentioned a number of geotourism projects underway at National Geographic, including: Appalachia, the

Suwannee River, Baja California, the Arizona-Sonora Desert, and Norwegian Fjords.

Carroll then detailed an idea they are working on with assistance from The Nature Conservancy to create a World Conservation Base Map which includes a "geo-portal" for conservation professionals, and a World Atlas of Conservation for interpreting conservation maps and data. He recommended two websites on these topics: http://www. conservationcommons.org/ http://www.conservationmaps. org/index.jsp.

An upcoming National Geographic project is an Encyclopedia of Ecosystems and Open Space, to be created in partnership with Nature Serve (http:// www.natureserve.org/). This will be a comprehensive, web-based resource designed to provide printed maps and booklets to help users find answers to questions like: What ecosystems are

here? What rare species might occur here? How much land is under protection? Green Maps have many important stories to tell and the need for them is increasingly urgent.

Carroll summed up his presentation by saying that his studies at Connecticut College gave him conviction, and that was tremendously useful to him. To Allen Carroll "geography is about changing and saving the world; not just about memorizing the State Capitals."



GOODWIN-NIERING CENTER FOR CONSERVATION BIOLOGY & ENVIRONMENTAL STUDIES

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STEERING COMMITTEE

Robert Baldwin, Art History Phillip Barnes, Zoology Anne Bernhard, Biology Beverly Chomiak, Physics Jane Dawson, Government Ann Devlin, Psychology William Frasure, Government Harold Juli, Anthropology Manuel Lizarralde, Botany & Anthropology Stephen Loomis, Biology Arlan Mantz, Physics Peter Siver, Botany Douglas Thompson, Physics Derek Turner, Philosophy Scott Warren, Botany Marc Zimmer, Chemistry

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Established in 1993, the Goodwin-Niering Center for Conservation Biology & Environmental Studies 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.

SUMMER SUSTAINABILITY INTERN

AS THE SUSTAINABILITY INTERN in the summer of 2006, I was involved with several campus environmental initiatives; including the first application of the campus Green Building Policy to a major renovation project; documenting greenhouse gas emissions; inventorying the amounts of campus trash and recyclables; and working in the student organic garden.

My role during the first phase of renovations to Hamilton and Marshall residence halls was to work closely with construction managers to document efforts toward using environmentally sustainable products and construction techniques. While the Green Building Policy does not require that we seek LEED (Leadership in Energy and Environmental Design) certification, we used the LEED credits as guidelines, and green building standards and materials were implemented as much as possible.

Another environmental initiative I focused on was documenting the total campus greenhouse gas emissions over

the past year. I worked with many college officials to collect necessary data to add to the previously constructed greenhouse gas inventory, in order to create a comprehensive study encompassing the emissions of the last 16 years. This was done to provide the college with an overview of the areas to target to help reduce our impact on the environment.

Working closely with Jim Luce, Grounds Supervisor, I was able to construct an inventory of trash and recyclables produced by the college during the past year. My favorite summer project involved working in the garden started by the Connecticut College student club, SPROUT. Getting my hands in the soil and providing the summer residents with fresh vegetables offered an experience incomparable to any other. This garden initiative has blossomed into a full fledged force, changing the way people think about food on campus.

— Elizabeth Parillo '07



Hamilton House during summer 2006 renovations.

EXPLORING THE FEASIBILITY OF A WIND TURBINE FOR CAMPUS

DURING THE FALL 2006 semester, Global Energy Concepts (GEC) of Seattle, Washington, undertook a wind feasibility study for Connecticut College to determine if an on-campus wind turbine would be a practical means of generating electricity. Commissioned by the campus Environmental Model Committee (EMC), the goals were:

- perform a detailed site inspection
- establish the estimated wind resource
- evaluate turbine site conditions
- determine project scale

The EMC decided to have the wind feasibility study conducted in two phases. Phase I quantified the amount of wind available on campus and indicated what scale turbine, if any, would be practical to place on campus. Phase II, if needed, would have examined regulatory, economic, engineering, environmental and esthetic issues associated with the project.

Based on the data gathered in Phase I, GEC did not recommend a wind turbine on campus. While the campus experiences significant wind resources at times, our site is at the minimum range for a 100 kW wind turbine to be economically feasible. In addition to low wind, other site limitations presented in the GEC report are:

■ Site Availability — There are few sites on campus where a turbine could be



Glenn Dreyer (l) and consultants review campus maps for wind feasibility study

located. This is due to several factors including occupied space, visual impact, a safety zone set-back requirement, and electrical connection access.

Energy Generation — A 100 kW wind turbine would supply only enough energy to compensate for about 1% of the college's energy demand. A smaller

turbine would provide a negligible contribution.

The EMC is currently discussing alternative renewable energy options such as Renewable Energy Certificates and solar panels to offset our more than 16,000,000 kWh annual campus electrical consumption.



Noah Fralich '07 with parents and guests.

GOODWIN-NIERING Center Honors CERTIFICATE STUDENTS

ON SATURDAY OCT. 14, 2006, President Higdon's Inauguration Day and the College's Annual Fall Weekend celebration, the Goodwin-Niering Center hosted a dinner to honor its certificate students. Parents, families, advisors, faculty, friends and trustees turned out to enjoy good food and camaraderie. After dinner, the seniors provided brief presentations on their summer internships and introductions to their Senior Integrative Projects. (Additional photos on page 8.)



(l-r) Seniors Christine Monahan, Jesse Taylor-Waldman, Noah Fralich, Sara Jayanthi

ENVIRONMENTAL PSYCHOLOGY CERTIFICATE SEMINAR COURSE THEME

THE THEME of the fall 2006 Certificate Program seminar class was "Nature in Mind: Concepts and Perspectives in Environmental Psychology." Amy Cabaniss, Campus Environmental Coordinator, and Psychology Professor Ann Sloan Devlin developed the program. The semester started off with a wonderful rustic dinner in Buck Lodge where Rachael Towers '02 Certificate Program Alumna, gave a presentation on Horticultural Therapy. At the next meeting Amy provided a brief overview of the field of environmental psychology. Professor Devlin's first presentation emphasized the Biophilia Hypothesis and the work of Stephen and Rachel Kaplan, whose research investigates the role of nature in human well being, including attention restoration. A second presentation focused more on the role of nature in the built environment, including its use in health care facilities. M.J. Raleigh, from Antioch New England Graduate School, presented work from a clinical perspective on the restorative effects of the natural environment. Participation by the seven seniors and five juniors included a series of well-received group presentations at the end of the semester. The four topics handled by the student teams were "The Role of Nature in the Built Environment," "Restorative Effects of the Natural Environment," "Behavior Change for Environmentally-responsible Behavior," and the "Role of Culture in Understanding Human-Environment Relationships."

WELCOME TO THE CERTIFICATE CLASS OF 2009!

The Goodwin-Niering Center is pleased to welcome the following 12 sophomores into the Certificate Program.

Sarah Ayres: History

Rebeccah Beachell: Government

Tyler Dunham: Environmental Studies

Hans Eysenbach: International Relations

Richard Hederstrom: Ethnobotany

Maya Jacobs: Environmental Studies

Jeffrey Nemec: Philosophy

Katherine Sacca: Environmental Studies

Michael Seager: International Relations

Jamey Smith: Biology/Environmental

Studies

Andrew Watts: Government

Samantha Wright: Environmental Studies

CERTIFICATE PROGRAM GUEST LECTURE SERIES: RACHAEL TOWERS '02

RACHAEL TOWERS JOINED the Certificate Program seminar class on Sept. 7, 2006 in Buck Lodge, where her remarks

about Horticultural Therapy served as a perfect introduction to this semester's theme of Environmental Psychology.



Rachael volunteers

part time at the North Carolina Botanical Garden, where she works with the Horticultural Therapy program. Hort Therapy is based on the idea that working with plants can provide physical and emotional benefits for those involved. Rachael works with people who have some sort of limiting disability or problem, including mental illness, and brain and spinal cord injuries. They also work with the mentally challenged, elderly people who have some memory/hearing/sight impairment or who are just "slowing down." Most of the work focuses on projects that are not only interesting for participants, but also serve a function for the garden. The participants, who might otherwise be marginalized in society, can become active and contributing members of the community. A big project they have just started involves creating culturally-themed vegetable gardens including Japanese, Native American, Hispanic, and African-American plantings.

Rachael Towers was a Religious Studies major and earned the Center Certificate in Environmental Studies with her project involving the spiritual aspects of New England Native American Ethnobotany. She is currently working towards accreditation by the American Horticultural Therapy As-

sociation (www.ahta.org).

STUDENT AND FACULTY RESEARCH COLLABORATIONS, SUMMER '06

EACH SUMMER, students and faculty collaborate on research projects. The following are those conducted during the summer of '06 on environmental or ecological subjects:

Ecology and Conservation of Early Successional Birds on Powerline Rights-of-Way: Corrine Folsom, Stephen Rossiter '09, and Visna Ngov '07; Professor Robert Askins (Biology)

Diversity of Denitrifying Bacteria in a Restored Salt Marsh: Jeff Bender '07; Professor Anne Bernhard (Biology)

Diversity of Nitrogen Fixing Bacteria in a Restored Salt Marsh: Molly Goettsche '07; Professor Anne Bernhard (Biology)

Relationship between Potential Nitrification Rates and Varying Vegetation Sites in Barn Island Salt Marsh, CT: Nicole Moin '07; Professor Anne Bernhard (Biology)

Bacterial Community Structure and Diversity in a Restored Salt Marsh: Lazaros Yiannos '07; Professor Anne Bernhard (Biology)

Biotic Survey & Inventory of Lakes and Ponds along Eastern North America: Sara Jayanthi '07; Professor Peter Siver (Botany)

Taxonomy and Morphology of the Diatom Genus Stenopterobia: Lee Camfield '06; Professor Peter Siver (Botany)

Biodiversity of Lakes and Ponds along the East Coast of North America: Sara Jayanthi '07, Lee Camfield '06, and Harrison Mackenzie '09; Professor Peter Siver (Botany)

Trophic Conditions of Connecticut Lakes: Sara Jayanthi '07, Lee Camfield '06, and Harrison Mackenzie '09; Professor Peter Siver (Botany)

Production, Vegetation Patterns, and Fine Scale Elevation Changes in the Response to Experimental Nutrient Enrichment of a Marsh-Estuary System, Plum Island: Aaron Wheeler '08 and Maegan Hoover '08; Professor Scott Warren (Botany).

Lieutenant River Phragmites Control: Adam Campos '08; Professor Scott Warren (Botany)

broaden faculty participation in the Center. An award was made to Professor Baldwin to develop a new course "Garden

support for new

initiatives to

increase and

New Center Faculty

Robert W. Baldwin, Associate Professor of

Art History, joined the Goodwin-Niering Center

Steering Committee during spring semester,

2006; a direct result of the latest grant from

the A.W. Mellon Foundation which included

PROFILE

to Wilderness: Nature in Western Art from the Renaissance to Modernity," which



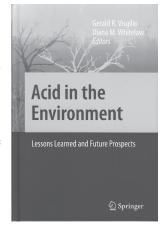
Professor Baldwin's greatest expertise lies in nature depictions from 1300-1700, which gives him a solid background for developing expertise in the period from 1700-1970. About one third of the new course will cover Renaissance and Baroque Art with more emphasis on the 18th, 19th, and 20th centuries. Topics will include Romanticism and the new wilderness imagery, Realism and the new agrarian reality of Courbet, Millet, and others, Impressionism and the crisis of a suburban "nature," Symbolism and the retreat into fantastic or primitivist natures (Van Gogh, Gauguin, Hodler's alpine scenes), Expressionism, Surrealism, and the shift from nature to abstraction or imagination (Marc, Kandinsky, Georgia O'Keeffe). The course will end with Earth Art and the new environmentalism of the 1960s and 70s. Professor Baldwin joined Connecticut College in 1985. He specializes in Renaissance and Baroque art, early modern cultural studies, mercantile culture in Renaissance art and literature; landscape in European art and literature. 1350-1700: music in European art, literature, and society, 1400-1700; and gender and art. He is the author of a textbook, A Critical History of Western Art, 1300-2000. His current research projects include three extensive anthologies of primary source writings on music, nature, and gender from antiquity to 1700.

will be offered for the first time in fall of 2007.

CONFERENCE PROCEEDINGS PUBLISHED

Acid in the Environment: Lessons Learned and Future Prospects, is now available from Springer Publishing. A compilation of presentations from the Center's 2005 conference, the book was edited by Diana Whitelaw and Gerald Visgilio, associate directors of the Center. All five previous Center conferences also resulted in either books or dedicated issues of professional journals. From the publisher:

"Acid deposition is a large scale, long term environmental problem with more significant ecological impacts than previously anticipated. Today we recognize that resolution involves a perplexing set of policy issues, since the sources of pol-



lution are often hundreds of miles away, and can only be accomplished through international cooperation, often at a global scale.

Acid in the Environment: Lessons Learned and Future Prospects presents a broad approach to the study of acid deposition, exposing readers with a scientific background to significant policy issues and those with a policy orientation to impor-

tant ecological impacts. The book raises important questions that will serve as a springboard for discussion between diverse groups of teachers and students, concerned citizens and legislators, and scientists and policy makers."

CERTIFICATE CLASS 2007 INTERNSHIPS AND SENIOR PROJECTS

DURING THE SUMMER of 2006, the sixth class of certificate students participated in a diverse range of internships, spanning the globe from Maryland to Madagascar, with topics including environmental policy, science, sustainability, and public health and safety. After returning to college in the fall, the students wrote internship reflection papers detailing their experiences. Read more about our Certificate Seniors at http://goodwinnieringcenter.conncoll.edu/seniors.html. Excerpts from the students' papers are offered below.

NOAH FRALICH, a German Studies major worked for the Wuppertal Institute for Climate, Environment and Energy in Berlin, Germany. The Wuppertal Institute is primarily focused on environmental policy research for governments, businesses and and non-profits.

My main project involved research on the contemporary literature pertaining to the correlations between the effectiveness of implementation of environmental policy and levels of democracy. This topic was both extremely theoretical as well as highly practical and, most importantly, very relevant to today's political atmosphere, at least in Europe.

It turns out that the language of politics is extremely dense and it's hard to separate out the issues from the formality, which can be frustrating and also time consuming. The internship gave me the chance to reevaluate the direction my studies might go and to reassess what my interests really are.

Noah's senior project will focus on the development of the wind energy industry in Germany with respect to the Renewable Energy Sources Act in 2000 and the Kyoto Protocol.

DAVID HECHT, a Government major, interned at Atrium Environmental Health and Safety Services of Reston, Virginia. Atrium offers solutions for a wide array of environmental and safety problems to industrial clients, commercial property owners, construction and engineering companies, academic institutions, municipal governments, public utilities clients, and government agencies.

During my internship I worked on three main projects. The first project was testing



for Legionella contamination at a federal facility in Washington DC. During this project I conducted a visual walkthrough to discover all pos-

sible contamination sites and then sampled them. The second project involved testing of indoor air quality and possible mold contamination at a hospital in Virginia. For the third project I conducted analysis on welding exposure data for an upcoming court case. I looked at thousands of pieces of data and conducted a wide array of statistical analyses that attempted to identify whether a particular plaintiff's exposure to manganese during welding operations was significant enough to cause Parkinson-like symptoms.

My objectives for the past summer were to learn about how government and business deal with health and environmental issues. My internship experience with Atrium Environmental Health and Safety Services was an extremely valuable experience and helped me meet these objectives.

For his senior integrative project, David will explore nuclear power in the United States, specifically, how the federal government could provide incentives for energy companies to build nuclear plants and help reduce carbon emissions.

SARASWATI JAYANTHI worked for Dr. Peter Siver as a research assistant in his Freshwater Ecology Lab. The focus of the lab research was the use of silica covered microscopic algae as biological indicators

of environmental change in freshwater ecosystems. This summer, the lab group traveled to Newfoundland, Canada to sample 32 lakes on the southeastern and central coast of the province.



The environment of each lake was thoroughly assessed through water, sediment, and periphyton collection. Periphyton is a mix of algae and microorganisms that are bound together and live on top

of a variety of substrates in freshwater and marine ecosystems. About one day a week we stayed in the lab and during that time we processed the samples we had collected.

During my internship, I learned a great deal about how slight changes in the surrounding environment can adversely affect a lake's water quality. Each lake we studied had been disturbed by a type of human interference, including acid rain, deforestation, road construction, and increased residential development.

Sara, an Environmental Studies major, will do her senior thesis on how certain anthropogenic activities can have adverse effects on lake environments.

REBECCA MASON, also an Environmental Studies major, interned at Garden Harvest, a non-profit, sustainable and organic farm located in Baltimore County, Maryland. Its mission is to provide poor and hungry people with nutritious organic food without harming the environment.



I was in charge of feeding and caring for animals every day, ear tagging animals and sending in registrations to the necessary associations, deciding when to move animals to a new field depending on land and vegetation conditions. Additionally I would lead volunteer groups of adults and children, from one person to 120 people, to carry out tasks such as planting, seeding, mulching, and harvesting while trying to impart some knowledge about sustainable and organic farming.

My experiences this summer made me want to teach both farmers and consumers about the organic and sustainable methods used on the farm at Garden Harvest. If enough producers and consumers became passionate about the future well-being of the environment and the human race, there

would be enough power and perseverance to switch to an alternate food production system for the country.

For her senior project, Rebecca plans to research and interview a variety of organic and sustainable farmers, from local family farms to some of the bigger, well known producers of sustainable produce and organic products in the U.S. She would like to create a pamphlet for either farmers considering adapting sustainable and organic techniques or consumers looking to see why there is such a huge movement to go organic.

CHRISTINE MONAHAN interned for ONG Azafady, a Malagasy non-governmental organization based in Fort Dauphin, Madagascar. ONG Azafady, supported by a British charity of the same name, is dedicated to the sustainable development of the southeastern Anosy region of Madagascar.



My work included constructing home vegetable gardens for families and teaching them how to properly care for them, building more fuel efficient clay stoves, cleaning beach front land and replanting it with fast growing trees that would hinder erosion, collecting assorted seeds to be replanted in ONG Azafady's tree nursery, teaching environmental and English classes to local children, mapping the location of endangered trees in rainforests around Ste Luce and editing a satellite map of Fort Dauphin with GIS technology for use by an American organization which is trying to install wind turbines in the area. We also spent about two weeks building a school in the village of Hovatraha.

Over the past three years of study focused on International Relations, I have come to realize how important it is to have first hand knowledge of whatever situation you are dealing with if you want to manage it properly. At a precarious time like this, when the developing world is desperate to catch up but it is unclear just how much old-fashioned development the environment

can continue to support, we cannot afford more mistakes. By working in Madagascar this summer, I have a better understanding of why it is often so hard to make progress in the developing world.

For her senior integrative project, Christine will focus on the concept of sustainable mining to determine what conditions are necessary for a country to properly manage its natural resources, and specifically for sustainable mining to actually be successful, if at all possible. Christine plans to apply the conclusions of her analysis to Madagascar, where a large-scale mining project is just beginning.

JESSE TAYLOR-WALDMAN worked for The Nature Conservancy (TNC) in Vermont. TNC, a land trust organization founded in 1951 in the United States, is the largest conservation organization in the world. Its basic mission is to preserve the animals, plants, natural communities and general biodiversity of life by protecting the lands and waters they need to survive.

My position with TNC was working as a River Continuity Technician along the West River in southern Vermont. I was responsible for surveying road-stream crossings in support of a project to assess the status of river continuity in the Connecticut River Watershed. My internship helped me meet my objective of learning more about how a conservation group such as TNC operates. I got an inside look at how the elements of field work, data collection, coordination with state agencies, and project management all tied in to create a successful and meaningful project.



Jesse, an Environmental Studies major, will focus his senior integrative project on the role that non-governmental organizations play in land conservation, both historically and at present. He plans to concentrate on three of the largest and most well known environmental conservation

organizations: the Nature Conservancy, the Sierra Club, and the World Wildlife Fund, to compare the approaches taken by these organizations, and analyze the success of each with respect to its mission.

Also an Environmental Studies major, JENNIFER VASQUEZ interned at the Lead Poisoning Prevention Program at Montefiore Hospital, Bronx, New York. This program addresses all aspects of childhood lead poisoning from diagnosis

and treatment to education and research. Their mission is to treat lead-poisoned children and their families and to educate families at risk, other medical providers and



local, state and national legislators and policy makers.

I helped run a lead clinic where many disadvantaged families go to learn about the effects of lead poisoning and about what can be done to help prevent further exposure to this toxin. Many of these families are not able to pay for the visit to the hospital and many do not have insurance to cover their child's treatment. However, the lead program does not turn down any families that need to get treated. A lot of the families that went to the lead clinic did not speak any English and I helped translate for the families and the doctors.

While I knew that lead poisoning was still a problem, I did not know that there were still thousands of children being intoxicated. This internship helped me realize that I truly want to work with environmental toxins with a special focus on how they affect children.

Jennifer learned during her internship that many of the clinic patients were pregnant mothers and that lead is passed to the fetus. For her honors study, Jennifer will examine lead poisoning in zebra fish; particularly the survivability and the hatchability of the zebra fish eggs after the adult zebra fish are exposed to lead. She plans to test the hypothesis that magnesium ions added to zebra fish tanks reverse and prevent lead poisoning, and will compare the effects of calcium and of magnesium, to determine which element is more successful at eliminating lead from the fish.

MORE PHOTOS FROM THE CENTER'S OCTOBER 14 DINNER.



Dr. Edward Monahan, Center Advisory Board (l) with Professor and Mrs. Gerald Visgilio.



Helen Mathieson'52, Center Advisory Board member and Glenn Dreyer, Center Executive Director.

