

The Goodwin-Niering Center for Conservation Biology and Environmental Studies

The Goodwin-Niering Center for Conservation Biology and Environmental Studies is an interdisciplinary academic 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 issues of environmental sustainability by including the arts and humanities in addition to the sciences and social sciences. Experts involved in the Center include anthropologists, art historians, economists, historians, mathematicians, philosophers, psychologists and political scientists as well as scientists specializing in botany, biology, chemistry, geology and physics.

The mission of the Center is to foster an understanding of biological diversity, the integrity of natural ecosystems and other fundamental environmental issues both in the College community and in the public. Its programs foster an understanding of the interaction between people and ecosystems, with special emphasis on the political, social and economic factors that influence natural resource use by different cultures worldwide. The Center encourages the integration of environmental themes into courses and student projects in the social sciences, humanities, arts and natural sciences, and develops resources to support faculty and student research. It supports the Connecticut College Environmental Studies Program, the Environmental Model Committee and other campus environmental initiatives.

The Goodwin-Niering Center was endowed in May 1999 with a generous lead gift from Connecticut College alumna and former trustee Helen Fricke Mathieson '52 and her husband Drew Mathieson. It was their wish that the center be named to honor Richard H. Goodwin, Katharine Blunt Professor Emeritus of Botany, and William A. Niering, Lucretia L. Allyn Professor Emeritus of Botany. Niering and Goodwin have collectively given over 100 years of service to Connecticut College. Both have made enormous contributions to the field of ecology and conservation of natural areas in the state of Connecticut and across the nation. The Center is a direct outgrowth of the early ecological studies pioneered largely by Goodwin and Niering, much of it taking place in the College's own Arboretum.

Connecticut College's geographic setting on the Thames River and Long Island Sound, coupled with the 750-acre Arboretum, provides an ideal location for environmental teaching and research. Over 24 courses in 12 departments emphasize ecological and environmental subjects. Lectures, conferences, seminar classes and student/faculty research opportunities are all part of Center activities. The Goodwin-Niering Center facilities include a Geographic Information Systems (GIS) computer laboratory. Here students learn to use computer technologies to analyze complex spatial data and to apply GIS techniques in environmental research, planning and management.

Certificate Program

The Goodwin-Niering Center Certificate Program is designed to enhance the undergraduate experience with a strong concentration on environmental issues. Available to students in any major, it enables those who are ready for an additional academic challenge to cultivate their interest in environmental topics through coursework, an internship or research experience, and a senior integrative project. It is appealing to those who wish to blend their interest in the environment with a non-science major, and will be of particular interest to students planning careers in environmental policy, law, economics or education. The Center's goals in creating this opportunity are to educate an ever-greater number of students about fundamental contemporary environmental issues and to encourage the integration of environmental themes into teaching and scholarship across the liberal arts curriculum.

Program Goals

1. Objectively assess and effectively marshal information to understand contemporary environmental problems – assessed with critiques of books, report on an environmental conference, and senior project report.
2. Integrate information and concepts about environmental issues from different disciplines and perspectives to achieve a creative and innovative synthesis – assessed with report on an environmental conference and senior project report.
3. Understand connections among components of complex environmental systems – assessed with critiques of books, report on an environmental conference, and senior project.
4. Develop effective presentations that have high levels of rigor and clarity, and that facilitate dialogue among faculty and students - assessed with oral presentations on internship and senior project.
5. Draw connections between practical and theoretical learning – assessed with written and oral reports on internships.

Program Components

The Certificate Program consists of coursework, conferences, and seminars designed to prepare students for their internships and senior integrative projects. Interested students will be matched with a Center advisor who will help them prepare for the application process and develop a program proposal.

1. Application:
Students apply for the Certificate Program in the first semester of their sophomore year and must have a 3.0 cumulative GPA. Under unusual circumstances, a student with a strong proposal but a low GPA (minimum 2.8) might be accepted into the program on a conditional basis. A 3.0 GPA must be achieved no later than the end of the junior year in order for the student to continue in the program.
2. Course Requirements:
Students participate in a customized program of courses:
 - ES110 Environmental Studies as a Natural Science or ES111 Environmental Studies as a Social Science is taken in the freshman or sophomore year. Students with an AP score of 4 or 5 in Environmental Studies may substitute another ES listed course.
 - Three additional courses are selected to prepare the student for a summer internship or research project and a senior integrative project. These courses are chosen in consultation with the Center advisor and may also count for major, minor or general education requirements.
 - Certificate Seminars (ES290, ES395 or 396, ES495 and 496) are taken during the spring semester of the sophomore year, one semester of the junior year and both semesters of the senior year, prepare students for their internships and senior integrative projects. These two-credit seminars provide opportunities for in-depth discussion of current environmental issues with invited speakers; sharing of information among students with diverse interests; and practical assistance in the planning of internships and projects and in the written and oral presentations of the results. Each semester the seminar has a different environmental theme. These seminars are also specifically designed to foster a peer-to-peer learning situation in which students who have gained expertise in their chosen area of environmental interest by their senior year share their knowledge with the class. The senior students provide a significant portion of the course content. Students from each of the classes benefit from their interactions at different stages of their Certificate Program and from their participation as a member of a team with shared experiences over a three-year period. Credits cannot be counted towards the general education requirements or the environmental studies major.

3. **Conference Requirement:**
Students are expected to be active participants in workshops and special events sponsored by the Goodwin-Niering Center each year. They also attend the biennial Elizabeth Babbott Conant Interdisciplinary Conference on the Environment. A five-page paper will be due two weeks after the end of the conference.
4. **Internship/Research Project:**
Students will participate in an approved environmental internship or a faculty supervised research project for eight to ten weeks during the summer after their junior year. This experience will be funded but does not carry any academic credit. Students are required to participate in CELS workshops during their sophomore and junior years in order to maintain eligibility for a funded internship. The Center staff and faculty will assist the student in finding and selecting an internship or research project that is closely related to the student's planned senior integrative project.
5. **Senior Integrative Project:**
A project that integrates the summer experience with the rest of the student's Certificate Program may be completed as a one or two-semester individual study, or an honors thesis in the major field. Public presentation of the results is required. The final grade for the senior integrative project is the responsibility of the faculty advisor who supervised the study.

Application Process

Interested students will complete a preliminary application at a meeting held in the fall of their sophomore year. The students provide brief descriptions of their environmental interests, internship possibilities, and ideas for a senior integrative project. This information is used by the Center to match students with a Center advisor who will assist them through the application process. The applicant should also contact his/her pre-major or major faculty advisor for assistance in planning the senior integrative project.

The program application should include the following:

- A completed application form
- Two letters of recommendation by faculty
- An academic transcript
- A resume
- A program proposal that includes five distinct elements:
 - Personal essay about the student and why s/he would like to participate in the Certificate Program
 - A description of the student's general academic program and possible study away plans
 - A description of how the three additional courses will prepare the student for the summer internship or research project and the senior integrative project
 - A proposed internship or research project
 - A brief description of the proposed senior integrative project

The program application must be completed online through the student's e-Portfolio and submitted by November of the sophomore year.

Approval Process

The Application Review Committee will review the applications and determine whether to accept, reject or request modifications. The committee chairperson will notify students of the status of their application and will be available for consultation to students who receive conditional approval. Students who receive

conditional approval must meet all requirements no later than the end of their junior year in order to continue in the program. Upon admittance into the program, students are asked to complete a student acceptance form.

The Application Review Committee is responsible for approving any changes in the student's program. Students studying away during the junior year must make arrangements to obtain all necessary approvals.

- Requests for changes in approved courses must be made and approved in writing.
- A summer internship or research project must be secured by April of the junior year. The student must submit an internship learning agreement for approval prior to leaving for the internship (students studying away in the spring will need to complete this process in the fall). Students must obtain the signature of the faculty advisor who will supervise their senior internship project prior to submitting the internship learning agreement.
- Students must submit a proposal for the senior integrative project by April of the junior year. Project advisor approval and, where appropriate, departmental approval must be secured first.
- In the fall of the senior year any modifications to the senior integrative project must be submitted for approval. Project advisor approval must be secured first.
- Students who study away in their junior year, during the spring semester when the Center's biennial conference is offered, must petition to attend a different conference and submit a conference program for approval.
- A syllabus must be submitted for any course used for the Certificate Program that is not taken at Connecticut College.

Certificate Internship

An important component of the Certificate Program is a summer environmental internship or research project. The purpose of the internship is to offer students experiences that have a positive impact on their intellectual, professional and personal development through exposure to work environments that they might not otherwise encounter as an undergraduate. It is expected that students will be offered access to stimulating ideas and people in their field of study and be given substantive, meaningful work to do that will assist them in achieving their goals. Students will prepare for the internship by completing a customized program of academic courses including the Certificate Seminar.

The Center will assist students in finding an environmental internship or research project in the summer following their junior year, and will provide a \$3,000 stipend for an eight to ten-week full-time position. All students must complete the mandatory sophomore and junior sessions offered by CELS in order to retain eligibility for a funded internship. Students are expected to negotiate an agreement with prospective employers prior to commencing the internship, but need to understand that they may need to renegotiate the agreement once they have started work. It is important that employers understand what students desire to get out of the work experience and that they agree to a project that furthers the student's research and/or educational interests. Students also must have a clear understanding of their employer's expectations and the benefit of the internship to the organization. Students who choose to do their environmental internship in a foreign speaking country, must demonstrate that they have adequate language skills to successfully complete their internship responsibilities. All students complete an internship learning agreement for approval by the Center, prior to leaving for the summer. Students are advised not to commit any funds until they have received approval by the Center. On their return, they will refine the relationship between their summer experiences and their senior integrative project. The Center will expect an evaluation of the student by their sponsor upon completion of the internship. The students will complete an internship questionnaire and reflection paper when they return to college in the fall.

Criteria for Certification

The following criteria have been established for certification:

- A minimum 3.0 GPA
- Successful completion of either ES110 Environmental Studies as a Natural Science or ES111 Environmental Studies as a Social Science with a grade of B or above
- Successful completion of three approved courses related to the internship and/or senior integrative project
- Successful completion of four semesters of the Certificate Seminar (ES290, ES395 or 396, ES495 and ES496)
- Successful completion of the internship or research project
- Attendance at the Center's environmental conference and successful completion of a five-page paper
- Successful completion of the senior integrative project
- Public presentation of the senior integrative project

Students who meet all requirements will receive their Certificate of Environmental Studies at a Recognition Ceremony prior to graduation.

Center Location and Resources

The Center is located in Room 109 of the Olin Science Center. We collect information on hundreds of internships related to the environment and make it available to students through the Connecticut College internship database, accessible through the web site. The Center web site at <http://goodwin-nieringcenter.conncoll.edu> contains detailed, current information on all of our activities. "Environmental CONNections," the Center's semiannual newsletter, links together alumni, current students and friends of the program. It is also available on the web site.

Faculty and Staff

	<u>Telephone</u>	<u>Post Office Box</u>
Douglas Thompson, Director	5016	5585
Glenn Dreyer, Executive Director	2144	5625
Jane Dawson, Associate Director	2385	5334
Diana Whitelaw, Associate Director	5217	5293
Janice Holland, Center Assistant	5417	5293
Amy Cabaniss, Campus Environmental Coordinator	5218	5276

Application Review Committee

Jane Dawson, Professor of Government, Chair
Glenn Dreyer, Director of Arboretum
Chad Jones, Assistant Professor of Botany and ES
Douglas Thompson, Professor of Physics
Diana Whitelaw, Associate Director
Wei Ying Wong, Post Doctoral Fellow

Center Fellows

Robert Askins, Professor of Biology
Sanjeeva Balasuriya, Assistant Professor of Mathematics
Robert Baldwin, Associate Professor of Art History
Anne Bernhard, Assistant Professor of Biology
MaryAnne Borrelli, Associate Professor of Government
Beverly Chomiak, Senior Lecturer in Physics
Jane Dawson, Professor of Government and ES
Ann Devlin, Professor of Psychology
James Downs, Assistant Professor of History
Glenn Dreyer, Director of Arboretum
William Frasure, Professor of Government
Pam Hine, Senior Lecturer in Botany
Chad Jones, Assistant Professor of Botany and ES
Colleen Kaczmarek, Lecturer in Chemistry
Manuel Lizarralde, Associate Professor of Anthropology and Ethnobotany
Stephen Loomis, Professor of Biology
Arlan Mantz, Professor of Physics
David Patton, Professor of Government
Peter Siver, Professor of Botany
Douglas Thompson, Professor of Geology
Derek Turner, Associate Professor of Philosophy
Gerald Visgilio, Professor of Economics
Diana Whitelaw, Associate Director
Wei Ying Wong, Post Doctoral Fellow
Marc Zimmer, Professor of Chemistry

Advisory Board

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Wendy Blake-Coleman '75, Office of Environmental Information, US EPA
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Linda Lear, '62, Environmental Historian, Connecticut College, Board of Trustees
Ralph Lewis, Connecticut State Geologist (Retired)
Helen Mathieson '52, Connecticut College Board of Trustees (Retired)
Edward Monahan, Director, Connecticut Sea Grant College Program (Retired)

Certificate Program Calendar 2009-2010

Sophomores

September

Attend an informational meeting and submit preliminary application.

Make an appointment with the Associate Director to discuss application requirements.

Register for all mandatory CELS workshops.

October-November

Meet with Center advisor and pre-major or major advisor to discuss application process, additional courses, proposed internship/research project and senior integrative project.

Register for ES110 or ES111, if neither course was taken as a freshman.

Submit completed application to the Center by November 16, 2009.

December

Students are notified of their application status by December 14, 2009.

If accepted into the program, complete a student acceptance form.

January

Register for all mandatory CELS workshops.

Commence spring semester Certificate Seminar on January 28, 2010.

February

Students with conditional acceptance submit a revised application by February 1, 2010.

April

Register for approved certificate courses.

May

Attend senior integrative project presentations in May, 2010.

Juniors

September

Commence fall semester Certificate Seminar on September 10, 2009.

Register for all mandatory CELS workshops.

October

Update e-Portfolio and begin Internship Contacts List.

Obtain approval for any changes in approved certificate courses before second semester registration.

November/December

Continue internship process and submit a preliminary internship learning agreement to Center by December 3, 2009 (spring study-away students only).

Secure written approval for individual study or honors study from faculty advisor who will supervise your senior integrative project and submit a preliminary proposal to the Center by December 3, 2009 (spring study-away students only). Be aware of departmental deadlines and requirements.

January

Register for all mandatory CELS workshops.

Commence spring semester Certificate Seminar on January 28, 2010.

March-April

Finalize internship process and submit internship learning agreement to Center by April 8, 2010.

Secure written approval for individual study or honors study from faculty advisor who will supervise senior integrative project and submit proposal to the Center by April 8, 2010. Be aware of departmental deadlines and requirements.

April

Obtain approval for any changes in approved certificate courses before registration.

May

Attend senior integrative project presentations in May 2010.

Seniors

September

Submit draft internship reflection paper and internship questionnaire to the Center by September 3, 2009.

Commence fall semester Certificate Seminar on September 10, 2009.

Submit final internship reflection paper to the Center on September 17, 2009.

Obtain project advisor's approval on any modifications to proposal for senior integrative project and submit to the Center on September 24, 2009.

January

Commence spring semester Certificate Seminar on January 28, 2010.

May

Present senior integrative project in May 2010.

Provide a copy of senior integrative project to the Center by May 13, 2010.

Attend Goodwin-Niering Center Certificate Recognition Ceremony on Saturday, May 22, 2010.