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# The University of Connecticut Climate Action Plan:

*Guiding the Path Toward Carbon Neutrality*



*Storrs Campus  
August 2009*

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## *Section 5:* **Education, Research & Outreach**



# Education, Research & Outreach

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*Chapter cover photo was taken by UConn undergraduate student Emily Moser (2006-2007 UConn Environmental Expressions contest winner in the Photography category).*

## Introduction

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The American College and University Presidents Climate Commitment reinforces the concept that the campus is a living, learning laboratory – both inside the classroom and out. The Commitment therefore requires signatories to address how they will integrate concepts of environmental sustainability and climate change awareness into day-to-day operations and educational activities.

The University of Connecticut has a strong commitment to the integration of environmental principles into the student learning experience. As a land and sea grant institution, UConn is committed to active engagement with the larger community as well as the promotion of the state's economic development and well-being through the advancement of new science and the protection of natural resources. Furthermore, the most recent academic plan, *Our World, Our People, Our Future: The University of Connecticut Academic Plan 2009-2014*<sup>1</sup>(<http://www.academicplan.uconn.edu/>), identifies the environment as one of three 'focus areas of excellence.' The Academic Plan specifically calls for the development of 'a university plan to reduce our carbon footprint that involves university staff, students and faculty as well as community members and leaders.'

This section illustrates several examples of how the University is integrating climate change and environmental sustainability concepts into academic, research and outreach efforts. The examples that follow are meant to serve as a starting point to stimulate discussion and action. While the recommendations focus primarily on *undergraduate* education our plan also includes sections on graduate education, research, and public outreach. However, **the Academic Plan remains the University's primary guidance document regarding the University's vision for academic, research, and outreach endeavors.**

## Undergraduate Education

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The University's Academic Plan notes that, 'problems of environmental sustainability cannot be addressed solely by grasping the scientific principles that lead to technical solutions. Successful resolution also requires understanding their ethical, social, legal, and cultural implications from a global perspective.' Similarly, climate change is a complex issue and the ramifications of inaction will spread beyond direct environmental consequences. Educating how social factors influence climate change drivers and solutions, as well as teaching how to understand climate change impacts on societal patterns are important aspects of interdisciplinary environmental education.

The Academic Plan calls for the University to leverage our emerging excellence in environmental studies to offer focused programs that will enhance the ability of our students to understand and solve critical environmental and ecological issues. Similarly, the Plan recognizes that learning cannot be a static process, isolated from 'real world' experiences. Based upon the guidance provided by the Academic Plan, several programs designed to improve campus environmental awareness are currently in development, including:

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<sup>1</sup> The University's Academic Plan can be downloaded at <http://www.academicplan.uconn.edu/>.

- **Development of an interdisciplinary Environmental Studies undergraduate program.**

A subcommittee of the Provost's Environmental Committee is currently exploring the development of an undergraduate Environmental Studies, BA program. The essential feature of the proposed Environmental Studies (ES) major is the interdisciplinary examination of the relationship between humans and the environment. Drawing from resources in the College of Liberal Arts and Sciences, the College of Agriculture and Natural Resources, the School of Engineering, and the School of Fine Arts, students would be introduced to varying ideas about nature across cultures and time periods, as expressed in policy, works of intellectual history, and creative responses to the environment. Under the proposed ES program, students will study, debate, and articulate current issues of global citizenship, including environmental justice, sustainability, and the communication of environmental concerns to the public.

If developed, it is recommended that the proposed program include at a minimum one or more courses related to climate change, and preferably, an individual concentration relating to climate science and developing an understanding of global climate change.

- **Establish an environmentally themed living and learning community.**

Learning Communities comprise a research-proven means of pedagogy and engaged learning. Learning Communities allow students to take what they have learned in the classroom (theory) and apply it (practice) to campus, community, and/or world problems. The size and scope of learning communities varies, but they all require faculty leadership and a strong academic component that could include one or two credit seminars and/or course clusters related to an individual community's theme.

Building on a rich tradition of learning communities, the University's first interdisciplinary, environmentally themed living and learning community, EcoHouse, opened in Fall 2009. EcoHouse has the capacity to house approximately 120 students, and is designed to connect students across academic disciplines who share an interest in environment issues (*e.g.*, environmental economics, sustainable agriculture, nature writing, etc.) Residents participate in a seminar course that acquaints them with environmental issues and resources on the UConn campus and in the local community. Through hands-on experience 'greening' the infrastructure of the residence hall, to guided nature hikes, to faculty led discussion, students are immersed in interdisciplinary environmental learning.

It is recommended that the leaders of EcoHouse work with campus climate change experts to develop climate change related programs for the students participating in EcoHouse. Building improvement efforts should be tied into educational opportunities designed to increase student understanding of their carbon footprint.

- **Establish a UConn sustainable farming living-learning experience for students.**

Food systems form the basis of societies. Many individuals, however, have become increasingly disconnected from their food sources. There is a growing awareness of the need to reexamine and redefine how we produce and distribute our food.

Interest in sustainable agriculture has grown tremendously at the University of Connecticut over the past several years. The University's Dining Services now runs Local Routes, a program devoted to increasing the use of locally produced food sources. The University also boasts a highly successful student-run on-campus garden led by the EcoGarden Club. In addition, membership of the newly formed Real Slow Food student group at the University has increased at an unprecedented rate.

Given this demonstrated interest in sustainable agricultural systems, a group of faculty and staff have developed a proposal for a student-run sustainable agriculture living-learning experience. As of Spring 2010, a farmhouse on Spring Manor Farm has been renovated and is housing the first undergraduates involved in the program!

Given the University's existing strengths in agricultural education and climate change education, it is recommended that the advisory group developing this initiative ensure the inclusion of faculty members with expertise in these areas (e.g., climate change science, agricultural science, food policy). Proposed academic opportunities should strive to cultivate an increased understanding of climate change and the potential impacts on global food production systems.

In addition to the above programs, the University can further improve environmental awareness and expand climate change understanding through the following recommended actions and programs:

- **Expand the number of introductory energy courses available to students.**

Introductory level and 1-credit elective courses are an excellent way to introduce students to energy-themed sustainability concepts such as energy generation and conservation. In particular, this is a valuable way to reach new students who may be more amenable to behavioral changes. These courses should be taught without assumption of prior knowledge and should encourage exploration of interdisciplinary subject matter. An excellent starting point would be working with First Year Programs (FYP) to identify faculty members interested in developing such courses and the Academic Center for Entering Students (ACES) to help with the promotion of these courses to new students.

- **Encourage senior design projects or Honors theses that increase campus energy efficiency and/or conservation.**

To further enhance the student learning experience while reducing the campus carbon footprint, the University should strive to support the development of student projects that directly contribute to campus energy efficiency and conservation. The development of low-cost, basic support tools, such as the following, would assist with this goal:

- Develop a list of faculty energy expertise and distribute to students interested in conducting campus research.
- Create an online clearinghouse of faculty-proposed student research projects.
- Develop a small grant program to fund student projects that will lead to demonstrable energy savings for the University.

- **Expand the University's academic offerings related to sustainable design and green building.**

It is recommended that the University provide students with learning opportunities that match the University's own sustainable development goals. Expanding academic offerings related to sustainable design and green building will provide students with an opportunity to learn about current development practices in the design and construction fields, and to graduate with the education necessary to implement these principles throughout the country.

It is specifically recommended that the University develop one or more classes in sustainable design, and expand offerings over time toward the long-term goal of establishing an undergraduate minor or certificate program in sustainable design.



- **Involve students in campus greening through the identification of research and educational opportunities.**

It is recommended that the University leverage student interest in the 'campus greening' process by organizing hands-on projects, through which students would assist with the implementation of green building renovations across campus (e.g. green roof installations). Relevant student organizations, such as the EcoGarden Club and the Green Building Club, should be involved in order to encourage student leadership in the organization and implementation of appropriate campus projects (e.g., the creation of a sustainable dwelling project). By encouraging the integration of student research into campus greening efforts, the University will be acting to directly advance the field of green building.

- **Develop a green job training program; integrate with campus renewable energy and energy efficiency efforts.**

The green job market is expanding at an unprecedented rate. According to the Pew Charitable Trusts, between 1998 and 2007, growth in the emerging clean energy sector grew nearly two and half times faster than overall job growth. Universities that do not quickly position themselves to capitalize on this opportunity may lose highly qualified students and faculty to better situated institutions. In 2008 ten new faculty members with research interests focusing on alternative and/or renewable energies were hired under the University's Eminent Faculty Program. The program, which is a public-private partnership between the University, UTC Power, the Northeast Utilities Foundation and Fuel Cell Energy, is designed to promote economic development and help build the industry's future energy workforce.

To remain competitive and on the forefront of renewable energy and related research, it is recommended that the University continue to expand upon existing resources and programs to ensure that our students leave prepared to enter this new workforce.

- **Develop a student-led building energy audit program.**

Development of a student energy audit program would not only provide a hands-on learning experience for students, but also will provide the University with an inexpensive, ongoing method of identifying building inefficiencies. Students would be trained to conduct basic energy audits and work with campus professional staff, students to document energy use, identify inefficiencies, and develop recommendations for corrective actions or improvements.

- **Identify and explore unique research and education opportunities related to the University's forest holdings.**

The University's forest resources are currently undervalued from both an economic and academic standpoint. It is recommended that the University identify and pursue activities related to the UConn Forest holdings that would not only increase campus carbon sequestration but also provide additional environmental, academic, social and economic benefits. Existing and proposed examples include:

- *Development of a lifecycle-based forestry process.* Create a lifecycle process where forest products are produced on campus by UConn students. Properly conducted small-scale harvesting and production can result in substantial carbon sequestration and other silvicultural benefits. Portions of the UConn forests could be managed to provide a continuous supply of hardwood lumber to the University Facilities Carpentry shop. This would not only provide a sustainable example of locally grown products being

incorporated into the University's activities, but sequester carbon in long-term durable products (while new trees grow to repeat the process). Such a project would serve as a unique educational opportunity for students as well as an educational example for local industry and the forest landowners in the state that own 83% of Connecticut's forests. Costs and revenues, land impacts, biological and ecological responses and social and educational impacts of forest management activities could easily be tracked and studied, involving further involvement opportunity for students investigating questions of sustainability across a range of disciplines, including the natural and social sciences.

Additional research opportunities relating to plants, animal habitat, forest hydrology, soils, diseases, resource economics, and other fields are also possible.

- **Increase the number of environmentally-themed study abroad and international exchange program opportunities available to students.**

It is recommended that the University work to assist the campus Study Abroad Office to specifically identify and market programs that cultivate an increased understanding of global environmental issues, in particular climate change. In addition, the University should encourage partnerships with institutions abroad to facilitate faculty participation in international exchange programs and conferences.

## Graduate Education

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Graduate students provide an important academic lattice that connects faculty to undergraduate and play central roles in both research and undergraduate education at UConn by serving as primary instructors in laboratories and discussion sections, mentors for undergraduate research, and role models across the academic spectrum. The University's Academic Plan (*Our World, Our People, Our Future: The University of Academic Plan 2009-2014*) includes provisions to strengthen the university's capacity and commitment to graduate training. Virtually all of the recently completed strategic plans for colleges and schools across the University seek to bolster graduate programs through redirection of internal funds, increases in the number of graduate students supported on external awards, and capital campaigns and other fund-raising efforts focused on increasing resources available to graduate education.

The University's academic plan identifies environmental research and education as core areas for investment and growth in the coming decade. Numerous department, college, school, and interdisciplinary efforts are underway that will either directly or indirectly address graduate education in energy, sustainability, environmental science, social and health impacts, and other matters relevant to the University Climate Action Plan. As an example, UConn's Center for Environmental Sciences and Engineering makes 15-25 annual awards to graduate students engaged in multidisciplinary environmental research. Recently graduate students from across the University formed an environmental club called Green Grads, whose initiatives focus on sustainability and environmental justice.

To help advance UConn's Academic and Climate Action Plans, it is recommended that the University:

- Support and nurture the development of interdisciplinary research and teaching initiatives tied to climate change, sustainability, and related environmental issues that foster linkages across the biophysical sciences, social and health sciences, engineering, humanities, and fine arts.
- Work with the administration and UConn Foundation to secure dedicated support for graduate research and teaching assistantships at the interface of biophysical sciences and social sciences, with a focus on climate change, energy, and sustainability.
- Identify funds to support the efforts of faculty to garner new external funding (e.g. training grants) for graduate research and education. For example, the administration could support such efforts by providing teaching relief, strategic matching dollars, or committing other types of matches likely to increase the competitiveness of promising new proposals.
- Initiate an annual graduate (and undergraduate) symposium on climate research.

## Research

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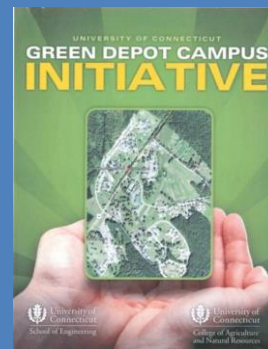
A transformative Climate Action Plan for the University must significantly expand the University's commitment in the basic science and human dimensions of climate change. Climate change research involves understanding the human and natural causes of climate change, as well as the consequences of climate change to all facets of the environment (e.g., air, water, soils, biota), including socioeconomic and health impacts. The University's academic plan emphasizes the need for expanded interdisciplinary research related to the environment, and research related to climate change provides an important opportunity for advancing this objective.



The University already has a strong tradition of environmental research, including numerous faculty members focused on climate change science and modeling as well as alternative energy and distribution systems. In addition to working within home departments, many faculty members are affiliated with the interdisciplinary academic centers and institutes at the University that focus on environmentally related research and outreach. These include the Center for Environmental Sciences and Engineering (CESE), the Center for Clean Energy Engineering (C2E2), the Center for Land Use Education and Research (CLEAR), Connecticut Sea Grant, and the Center for Integrative Geosciences. Faculty members from these and other academic units are increasingly involved in developing interdisciplinary projects to address the drivers and impacts of climate change, which integrate research and graduate education. Other initiatives at the University that advance understanding and awareness of climate-related issues include the interdisciplinary Edwin Way Teale Lecture Series on Nature and the Environment and a multidisciplinary environmental engineering colloquium jointly sponsored by the Environmental Engineering Program and CESE. Although environmental research related to climate change and the environment is very strong at the University, a single institutional structure to facilitate and coordinate interaction among faculty involved in climate and other environmentally related research does not currently exist.

Thus, it is recommended that the University:

- Continue to support the development and improvement of climate-related research programs across the University.
- Provide greater support for scholarly activities that bring together social scientists and biophysical scientists, with a goal of understanding the causes, dynamics, and consequences of climate change to all facets of the biosphere, including humans.
- Establish an institutional structure that would foster and facilitate collaborative, interdisciplinary environmental research across colleges/schools and disciplines, including biophysical sciences, social sciences, engineering, humanities, and fine arts.



UConn's Depot Campus is a 440-acre parcel located two miles from the Storrs campus. Most utilities on the property are near the end of their life and will need to be replaced or upgraded in the near future.

Given the opportunity to redefine this parcel, the School of Engineering, CANS, CLAS, and C2E2 are working together on a proposal titled *Green Depot Campus Initiative*. This initiative will research clean and efficient energy systems capable of operation utilizing a multitude of conventional and renewable fuels ranging from hydrogen to biomass and hydrocarbons. The project's holistic approach will facilitate technology transfer and collaborative research into green energy sources, smart storage, sequestration of CO<sub>2</sub> and reduction of the generation of other greenhouse gases, as well as water management.

Initially planned to validate and demonstrate a one megawatt (MW) system that will emulate a local community, the campus will be developed to allow for engineered scaling up to five MWs. The campus will utilize power generation based upon adaptive fuel switching and energy storage to assist in utility load leveling using a smart grid.

- Support opportunities for the University's campus to serve as a research laboratory for developing and testing theories, methods, and technologies that promote carbon neutrality and more efficient resource use. Examples include:
  1. The Green Depot Campus Initiative, which seeks to develop and demonstrate clean and efficient energy systems capable of utilizing a multitude of conventional and renewable fuels on the University's Depot Campus, leading to the first self-sustaining green campus in the nation (see box above).
  2. Research projects that track attitudes and behaviors within the campus community (particularly students) to study behavioral and attitudinal responses to different programs and interventions designed to promote carbon neutrality.
- Develop a multidisciplinary visiting scientist program that finances "mini-sabbaticals" by two scientists each year, with a purpose of supporting interactions with faculty members and students who working in the broad area of climate-change research.
- Develop closer ties or partnerships with state and federal agencies that have a focus on the environment in general, and on climate-related research in particular.
- Develop and pursue funding opportunities for endowed chairs or eminent faculty positions with a focus on climate change research.

The University's Academic plan emphasizes the need for expanded interdisciplinary research. The University already has a strong tradition of environmental research, including numerous faculty members focused on climate change science, modeling, alternative energy and distribution systems. It is recommended that the University continue to support the development and improvement of these programs as outlined in the Academic Plan.



#### Understanding the Environment for a Sustainable Future

With a mission to lead and promote multidisciplinary research, education and outreach in env.sciences, engineering, policy, and sustainability, the **Center for Environmental Sciences and Engineering (CESE)** comprises over 150 environmental scholars in all major Colleges and Schools at UConn.

Through its *Multidisciplinary Environmental Research Awards for Graduate Students Program*, **CESE** supports innovative research that transcends disciplinary boundaries, funding projects on alternative energy and climate-change modeling, impacts, and policy.

Through its *Faculty Awards Program*, **CESE** supports research, education and outreach, funding projects on microbial fuel cells, hydro-ecological responses to climate change, and UConn's first interdisciplinary graduate course in environmental sustainability.

**CESE** initiated a state-of-the-art *BioFuels Testing Laboratory* to provide researchers, producers, distributors, and consumers with scientific assurance that biofuels meet quality standards with minimal negative environmental impacts.

**CESE** houses the *Environmental Commons*, a collaborative from academia, government, and the private sector to explore contemporary environmental issues. **CESE** also hosts the *Atmospheric Sciences Group*- faculty dedicated to research and education on climate change causes and consequences.

## Outreach

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Outreach efforts increase awareness of climate change and environmental sustainability. In particular, outreach efforts can influence behavioral changes on and off campus. To ensure the most efficient use of resources, assessments should be performed before and after the implementation of outreach programs in order to track changes in behavior and therefore gauge the effectiveness of a given activity.

The following actions and programs are recommended outreach programs to further increase campus environmental sustainability and climate change awareness:

- **Integrate green building and low impact design efforts into university education and outreach efforts.**

‘High profile’ buildings are useful locations to not only demonstrate the University’s commitment to reducing our carbon footprint, but also to educate the community. Athletic facilities, entertainment facilities, and residence halls, in particular, are spaces that are occupied by large groups of individuals. By advertising and labeling these buildings’ “green” features (e.g., with signage and/or energy dashboards), individuals who otherwise might not be exposed to concepts of climate change and environmental sustainability can be interactively educated.

Residence halls, in particular, should be perceived as opportunities to develop living-learning laboratories. Student competitions, similar to the University’s annual EcoMadness residence hall competition, provide active learning opportunities for students, while providing additional incentives to improve efficiency. Similarly, making real time monitoring of energy and water use in residences visible to the public throughout the year, can help to make residents more aware of their footprint while at UConn. EcoHouse, the environmentally themed living-learning community that opened fall 2009, will serve as an excellent learning platform for transforming current residence halls to living-learning laboratories.

- **Develop a department/building monitor program to identify opportunities to increase energy efficiency and conservation.**

Identify staff or faculty to serve as a department or building energy monitors. Currently, many buildings have ‘building managers’ who serve as a point contact in the case of interruption to building services (e.g. electricity, water) to assist with communication to building occupants. The proposed ‘energy monitors’ would expand upon the existing system, training monitors to not only identify and report energy-related problems in their assigned building, but also to communicate energy conservation practices to building occupants.

- **Place energy dashboards in highly trafficked campus buildings.**

Electronic displays, also called energy ‘dashboards’, are an important tool in energy conservation outreach and education. Dashboards are highly visible reminders to building occupants that energy is a valuable resource. By arranging a series of dashboards throughout campus, occupants are able to compare their building’s energy use with real-time data from other buildings on campus. These dashboards can also be integrated with regular PSA-type energy saving ‘tips.’ Dashboards will also inform campus visitors and potential students that UConn is serious about energy conservation.

- **Increase the number of in-residence hall education opportunities and projects.**

College students are bombarded with messages and information throughout the course of the academic year. Ensure that energy conservation remains a concern and is regularly practiced within the residence halls through increased energy conservation outreach efforts. Increase the availability and diversity of sustainable living and energy conservation trainings and resources available to hall directors and community assistants. Individual halls should be encouraged to approach the task of increasing energy awareness in unique and different ways.

- *Conduct regularly scheduled energy conservation challenges within the residence halls.* Since fall 2006, the University has conducted an annual 3-week energy and water conservation challenge in the residence halls. (See 'UConn Case Study: EcoMadness.')
- *Implement housing-based educational/demonstration opportunities.* The University is fortunate to have a wealth of faculty and staff expertise relating to renewable energies, including solar, geothermal, biofuels, and fuel cell technology. While a significant portion of UConn students are directly enrolled in an academic program which will increase their awareness and knowledge of these technologies, the vast majority are not. Therefore, in order to reach a wider audience, encourage residential life-research partnerships that result in housing-based education and demonstration opportunities.
- *Develop a student eco-rep program.* Identify a group of students to serve as energy and water monitors in their residence halls. These individuals will work closely with Residential Life staff as well as facilities staff to identify inefficiencies in building utility systems (e.g. leaks, malfunctioning lights) and to identify and implement programs and activities focused on encouraging student behavioral changes. These students may serve voluntarily, for independent research credits, or for a small stipend.

- **Work with Athletics to incorporate renewable energy displays into campus athletic events.**

Athletic events draw large volumes of people, including potential students and campus donors, to the campus and off-campus University facilities. By powering athletics lighting with nearby renewable energy demonstration units (e.g. solar, fuel cell, biomass, wind) the University can not only reduce its carbon footprint and energy demand, but can also educate thousands more individuals each year about renewable energy technologies and campus sustainability efforts.

- **Establish additional on-campus gardens for UConn community members.**

On-campus gardens provide an excellent opportunity for students to learn about food production and agriculture, teach organic and low-impact farming techniques, build community, and encourage healthier eating and activity patterns. Presently, the EcoGarden Club operates a highly successful on campus garden. Unfortunately, the garden is located on the fringes of campus, and as a result, many students may remain unaware of this opportunity. Furthermore, it is important to educate not only those students who are passionate about food production and local agriculture, but perhaps, more importantly, those who are not. Passive education can be achieved by locating community gardens in high visibility areas on campus. The University

should seek to provide additional community garden opportunities for community members within the campus core. The residence hall experience, in particular, could be greatly enhanced through the development of a complex garden. The newly established EcoHouse, which is located near the campus core, would serve as an excellent pilot location.

- **Identify additional opportunities to purchase, produce, and serve locally-grown food sources.**

Over the past few years, the University has rapidly expanded and promoted the use of locally-grown food sources, including those grown or harvested right here on the main campus. Honey, cage-free eggs, cheese and ice cream are just some of the food products produced here at the Storrs campus. In addition, the Forestry and Wildlife Club of the Natural Resource and the Environment (NRE) Department works with university faculty and Cooperative Extension educators to produce locally grown maple syrup. In 2006, Whitney Dining Hall became the home of the award-winning Local Routes Program, which sources and serves local sustainable foods, including honey from a campus apiary. The previously mentioned EcoGarden Club works with the Local Routes Program to provide campus-grown produce to the dining halls throughout the growing season. The Workgroup commends the University and the individuals responsible for the local, sustainable food efforts to-date and encourages the eventual expansion of these ideals to all dining halls on campus.

- **Develop and expand existing transportation-based education and outreach programs.**

The University should work to expand existing transportation-based education and outreach programs. These programs should be designed to promote a pedestrian and bicycle friendly campus and discourage the use of personal vehicles (*e.g.*, cars, trucks, etc.) In particular the University should:

- Work with University Communications to expand existing outreach programs regarding the available alternative transportation options on campus.
- Develop a campus bicycling safety and education campaign.
- Work with on-campus athletic programs (*e.g.*, Bodywise, UConn Outdoors) to develop campus walking and bicycling challenges, bicycle related giveaways and workshops related to bicycle safety and maintenance.

## Conclusion

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As mentioned previously, the University's Academic Plan is the official guidance document regarding campus education, research, and outreach efforts. While the Academic Plan places a high priority on ensuring environmental education, the proposed actions above are specifically recommended to increase campus awareness of climate change, personal carbon footprint, and related environmental sustainability issues. This is not an exhaustive list. The University is encouraged to identify and pursue additional opportunities as they present themselves.

## UConn Case Study: Annual 'EcoMadness' Residence Hall Competition



Since the fall of 2006, UConn has held student "EcoMadness" competitions. During these competitions, residence halls compete against each other to achieve the greatest water and energy savings over a three week period. Residential areas are selected to target the greatest number of first-year students possible. Water and energy use is monitored before and during the competition. Data is then compiled and the amount of water and energy saved per person and per day is calculated for each building.

In 2008, **building energy use was reduced, on average by approximately 10%** by those buildings participating in the EcoMadness competition. **The largest reduction achieved was a 28.3% decrease in total building energy use over the 3-week period.** Water use was reduced by just under 6% on average, with the highest reductions achieved approaching 10%.

The UConn Office of Environmental Policy (OEP) and Resident Life Office advertised extensively for the competition. Articles were published before, during, and after the competition in the student newspaper, a daily publication on campus. The University also held evening environmental awareness events throughout the competition; students who attended earned additional points for their building, which were factored into the final standings.

The most successful means of advertising was getting students to volunteer as an "**Eco-Captain**" for their residence hall. Eco-Captains were trained by UConn OEP staff and were responsible for spearheading the initiative within their building. Eco-Captains served as a source of motivation to their peers, leading various activities during the three weeks, including a door-to-door CFL light bulb giveaway and weekly postings displaying building rankings. As further incentive, the Eco-Captain deemed "Best Motivator" was also given an individual prize.

*Important Lessons Learned.* EcoMadness is an evolving program. Important "lessons learned" to-date include:

- **Involve the residence hall Community Assistants (CAs).** These individuals possess important knowledge about key building features, and potential student leaders within their communities. As paid University staff, CAs also have the ability to communicate directly with supervisors in Residential Life and/or Facilities Operations about issues such as leaking faucets, or malfunctioning lights.
- **Get early buy-in from your Residential Life Office and Facilities Operations Department.** Working with Residential Life and Facilities early on in the process ensures a smooth communication process. Staff members were allowed input into the competition design process and were informed that outside individuals would be working with the students living in the residence halls.
- **Ensure adequate *unique* advertising to draw attention to the program.** On college campuses, students are constantly bombarded with messages from competing arenas. Planning unique advertising and outreach events such as the door-to-door CFL giveaway and evening community events, allows for direct, dynamic communication with students.

