

Generation E

Students Leading for a Sustainable, Clean Energy Future

35 Ways students are creating a sustainable future at U.S. colleges and universities – cutting carbon emissions, saving resources and equipping the coming generation for a green energy economy.



National Wildlife Federation®
CAMPUS
ecology®

By Christina Erickson and David J. Eagan,
with a foreword by Julian Keniry

This idea-filled guide is for:

STUDENTS ... committed to sustainability and seeking innovative ideas from their peers

FACULTY AND STAFF ... looking for ways to better inspire and support their students

COMMUNITY AND BUSINESS LEADERS ... seeking insight into the priorities and interests of today's students

EVERYONE ... who desires a deeper understanding of the upcoming generation

A PUBLICATION IN CAMPUS ECOLOGY'S *CLIMATE AND SUSTAINABILITY SERIES*

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THE AUTHORS

Christina Erickson is the Sustainability Coordinator at Champlain College, and is the Eco-Reps Coordinator at the University of Vermont, where she is focusing her Ph.D. dissertation on the impact and effectiveness of Eco-Reps programs nationally.

David J. Eagan is an Outreach Specialist with the Nelson Institute for Environmental Studies at the University of Wisconsin-Madison.

Julian Keniry is Senior Director of Campus and Community Leadership at the National Wildlife Federation. She co-founded Campus Ecology in 1989.

If you have questions please call National Wildlife Federation at **703-438-6000** or **1-800-822-9919** or email Campus@nwf.org
And keep up with the latest at www.CampusEcology.org

COVER IMAGES

TOP: Waste separating station for the Whole Earth Festival at the University of California, Davis. Photo by Derek Downey

MIDDLE: Waynesburg University student group, the Green Samaritans, helping to construct and renovate hiking trails at Mammoth Caves National Park. Photo by Janet Paladino

BOTTOM: Students at Northland College installing a 2.1 kilowatt sun-tracking photovoltaic array for the college president's home. Photo by Northland College.

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OVERVIEW

Choosing the 35 topics for this guide was easy, though the list could easily have been much longer. Without looking very hard, projects initiated by student passion and commitment to sustainability on their campuses—and beyond—is readily apparent at hundreds of schools, and the numbers keep growing.⁴

Any initiative on campus is a team effort. It takes the right balance of administrative, staff, faculty *and* student input. Even changes made completely off the radar screen of students are typically made with them in mind, and over the past decades students have shown that they're paying attention. From protesting investments with links to abusive governments and lobbying for sweatshop-free college products to standing up for sustainability principles and climate-safe campus operations, students at schools large and small have voiced their concerns—and steered both opinion and policy in better directions.

But lately it's been different. The stakes are much higher. The call for change is both global and personal. Students have been among the first to realize that leading the way for sustainability is an investment in *their* long-term prospects too—in future work, in family and community life, and in both private and public realms. Students are picking up on the fact that a world safe for people and wildlife is one that will support not only their own lives and dreams, but those of countless others. They have long had a voice in what happened around them during their years of postsecondary schooling. But never has there been an organizing motivation like global warming and the related urgency to redirect society toward a clean energy future.

Colleges and universities exist to educate young people, and what better place to learn the concepts and skills they will need to thrive in both an economy and society that is rapidly shifting—by necessity—to a cleaner, greener way of thinking and acting? The topics and projects in this guide are indeed meant to serve as a “guide,” showing the myriad ways students have responded to the call to be part of the solution, to make a difference. They inspire our imagination of the possibilities that exist on almost every campus.

Topics range from renewable energy and conservation to dorm move-out programs; from campus food systems to creative funding. Examples are drawn from more than 160 schools in 46 states, from campuses public and private, urban to rural. Most of the projects featured are relatively new, which should make it easier for readers to find campus contacts and resources that will help them learn more about topics of interest.

While the focus of this guide is on case examples of students-in-action, it is written for all members of the campus community, every one of whom can make important contributions to campus sustainability efforts, including:

STUDENTS – Thousands are already engaged in sustainability leadership, and there are literally millions more (18 million attend postsecondary schools) who could gain valuable skills and practical knowledge by working on real-world campus projects. Students of every type—full-time, part-time, working, nontraditional, minorities—have much to offer and much to learn from the experience.

STAFF – Many employees in facilities, student housing, planning, food service, landscaping and many other fields are equally engaged in sustainability, plus they have the skills and savvy to operationalize just about any kind of project. Collaboration with students is often essential to a project's success.

FACULTY – Professors and instructors can help provide the platforms (course projects, capstone courses, independent study, graduate student research) by which students can conduct projects, plus they offer expertise and guidance and have considerable clout within their institutions.

ADMINISTRATION – Top decision makers wield influence and reward innovations, recognizing that sustainability leadership—in which students often play a crucial role—conveys benefits in many areas: campus operations, educational opportunities, institutional reputation and the bottom line.

COMMUNITY COLLEGES – Two-year colleges are where close to half of the nation's postsecondary students attend class and gain technical know-how, and where the number of students and programs geared toward the green collar economy is increasing steadily. At these schools, student engagement in campus and community sustainability is especially important because it provides much-needed practical job skills training for the emerging clean energy workforce.

This guide is a starting point, a snapshot of some of the best practices on campuses around the U.S. in which students have had a major role. Increasingly, the National Wildlife Federation and other voices for the environment need to hold up these examples to show how bright minds in a nurturing educational setting can bring about real change and provide leadership for others. We hope these stories spark new action on campuses everywhere.



funds of \$35,000 came from the Carleton Students Association, whose loan was matched by the college. In 2008, former student Jim Haughn, class of 1983, raised \$14,000 to add to the fund by riding his bike from Ohio to Northfield for his 25th class reunion. As of November 2008, the SRF was up to \$70,000. Proposed projects require a detailed application showing a payback of preferably less than six years to maximize the amount returned to grow the fund.

16. Class Gifts

As students prepare to graduate, their class often chooses to leave a gift for the institution as part of their class legacy. More frequently, students are deciding on gifts that have a sustainability message. And in at least one instance, an individual student made such a gift.

The class of 2008 at the **University of Delaware**¹¹⁸ provided a gift that went to support the completion of a greenhouse gas inventory and a campus sustainability website. The class of 2009 continued this theme, raising a record \$100,000 for solar panels to be installed on campus. As noted in the gift announcement, Heather Barron, senior associate director of annual giving, called the class “pioneers in the university’s efforts toward sustainability” who offer a positive role model for others. In 2008, seniors at **Williams College**¹¹⁹ (MA) broke tradition with their class gift (typically such gifts are unrestricted) by requiring that the money be used to create a new fund to support sustainability projects at their alma mater. At **Cornell University**¹²⁰ (NY) in 2006, a graduating senior who had been involved in campus renewable energy projects personally contributed \$10,000 to help fund a 15-kilowatt solar installation on Day Hall. The panels, the first to be installed at Cornell, have been used by many classes as an educational resource.



Contractor installs PV panels atop Day Hall at Cornell University, 2006.

(Cornell University Photography, photo by Lindsay France)

GREEN BUILDING

“Green” is one of the most widely used terms associated with campus sustainability projects. Generally meaning environmentally responsible or environmentally preferred, green building is an area where campuses have the opportunity to put the other type of “green”—meaning dollars—to work in ways that help promote a clean, sustainable economy. At schools nationwide, students are urging their administrations to put their “green” to good use by implementing policies for healthy, energy efficient, high-performing buildings.

17. Building Design and Construction

Campuses across the country are touting the many benefits of their latest green buildings¹²¹—including structures that are LEED certified (Leadership in Energy and Environmental Design)—especially their significant life-cycle savings. In some cases, students have been involved in different stages of the building process, from design planning to curricular connections. This is a huge and important arena for campus sustainability, of course, with buildings directly or indirectly responsible for 70–90% of a school’s carbon emissions. If more students can get involved in campus retrofit or new construction initiatives, they will become much better equipped to take action in future decades to help transform the nation’s stock of domestic, institutional and commercial buildings to energy efficient, healthy places to live and work.

Campus Buildings & Grounds Blog—Chronicle of Higher Education

For an entertaining “daily coverage of campus architecture, facilities and sustainability news”—including an extensive archives of past posts—see this popular blog by veteran Chronicle reporters Lawrence Biemiller and Scott Carlson. Stories cover new buildings, campus development plans, student initiatives and much more. See <http://chronicle.com/blog/Buildings-Grounds/4>

Northland College¹²² (WI) students co-designed a 114-student residence hall that opened in 1998, and which also serves as a teaching tool, providing everyday opportunities to learn about such things as energy efficient construction, renewable energy systems and composting toilets. **St. Lawrence University's**¹²³ (NY) Johnson Hall of Science earned a LEED-Gold certification in 2007. It was the first certification at that level for a college campus in New York. The resource-saving features of this 115,000-square-foot lab building were developed in a planning process that involved students and faculty throughout the design phase.

The **Georgia Institute of Technology**¹²⁴ took sixth place in the 2007 Solar Decathlon with its student-designed-and-built experimental house. The 800-square-foot structure was moved onto the campus in 2008 and is being used as a classroom and learning lab for sustainable power. Its 39 photovoltaic panels produce 3,600 watts of electricity, with panels on the roof tilting to catch the

sun in any season. A diverse group of more than 125 students were involved in the project from Georgia Tech's colleges of architecture, engineering, sciences and management. (The Solar Decathlon, sponsored by the U.S. Dept. of Energy, is held every two years with 20 teams competing. Most come from a single institution, but some are multi-school teams.)



Studio 804 architecture students at the University of Kansas designed and built this modular building, which became the new arts center in Greensburg.

(Photo: David McKinney / KU University Relations)

Student involvement in green buildings can also extend beyond the campus. A cohort of 22 **University of Kansas**¹²⁶ architecture graduate students saw an opportunity to help fellow Kansas residents affected by a spring 2007 tornado by designing and building prefabricated housing modules with green-design features such as wind turbines and solar-electric panels, thermal massing and geothermal heating. The seven modules were constructed in Lawrence, Kansas, and delivered to Greensburg, located 400 miles away, on the one-year anniversary of the tornado that devastated the town. The 1,600-square-foot "Sustainable Prototype" building, which now serves as an arts center, is a model for the people of the community of how building green might be achieved in homes and other structures. Upon its completion, the Arts Center became the first LEED-Platinum building in Kansas, as well as the first designed and built by students.

Although not directly tied to greening a particular campus, there are new outlets for student creativity in applying green building ideas elsewhere. The national Lifecycle Building Challenge, whose aim is to promote innovative ideas for buildings that can readily be deconstructed and their components reused, runs an annual contest for students and professional firms. Student winners in 2008 came from **Carnegie Mellon University** (PA), **Illinois Institute of Technology** and **Washington University in Saint Louis** (MO),¹²⁷ with Carnegie Mellon's Plug and Play design entry also winning the Best Greenhouse Gas Reduction Design award. Students at **Lafayette College**¹²⁸ (PA) received top honors among undergraduate students in the United States Green Building Council's Natural Talent Design contest, which challenges students and professionals to create a sustainable learning environment and revitalize park space in New York City.

GREEN PURCHASING

Colleges and universities are major purchasers of goods and services, which include custodial chemicals, food service supplies, office products and furnishings, bookstore merchandise, laboratory and research equipment, fleet vehicles, maintenance supplies and much more. In all of these areas, greener options are becoming more widely available as well as more cost-competitive. Copy paper with 100% post-consumer recycled content, for example, is now on par with virgin paper in both quality and cost. While individual purchases can be made with sustainability in mind, the preferred approach is for green products and purchasing to be required across the board in campus policies and contracts.