

Campus Sustainability Leaders: Winners of the Eighth Annual AASHE Awards

Ted Mero

Tucked beneath a canopy, amid 800 acres of forestry at the base of the North Carolina's Great Craggy Mountains, the people of Warren Wilson College understand the value of a sustainable environment.

Tom LaMuraglia, the school's supervisor of landscape services, has helped take down many of the 190 trees, mostly old oaks that have died from age, drought, and other ailments on Warren Wilson's 62-acre core campus.

But what to do with the other thousand trees on campus?

"We decided that to keep them alive we needed to do an inventory so we had a better handle on what trees we had, what they were doing for us, and all the positive metrics that go along with that," LaMuraglia says.

Thanks to a successful grant, LaMuraglia and his 50-student landscaping crew successfully measured and catalogued 1,153 trees, identifying 135 unique tree species, which collectively sequester 12 tons of carbon annually and store 480 tons of carbon in their wood.

Warren Wilson's project was recognized as one of seven award winners at the 2013 AASHE Conference, named the Best Case Study from a Four-Year Graduate Institution with 10,000 or Fewer Full-Time Students.

"We know by species and tree by tree what the carbon sequestration and storage is, and we can now bring that into our inventory in a way that's direct and meaningful," notes Stan Cross, Warren Wilson's sustainability coordinator.

The school's honor is shared by dozens of Warren Wilson students, who contributed more than 600 combined work hours to complete the

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project, a product of the school's student work program. Every student does 15 hours of work per week on the campus grounds.

"Students are continuously applying what they are learning in the classroom, but they are also learning all kinds of new skills not associated with their degree," Cross explains. "You can be a philosophy major who goes to your philosophy class at 10 o'clock, then goes to your work shift on the plumbing crew where you are working on a cistern system to catch water off the greenhouse to water the plants."

As one might expect, much of the campus work is related to the surrounding trees, work that will now be enhanced as the result of the school's award-winning research. The findings will help LaMuraglia and his team determine strategies to improve the health and extend the lives of existing trees, while also determining the most environmentally beneficial trees to plant in the future.

"The info we got for this was just over the top," LaMuraglia says. "And we now have a baseline for academics to get involved to use this for lots of avenues of study."

Undergraduate Student Research Winner—Oberlin College

Sometimes energy savings can be found through the simplest of changes.

At Oberlin College in Ohio, a team of students employed a community-based social marketing model to research student behaviors and identify steps to push the campus closer to carbon neutrality.

After tracking and ranking various student behaviors over the winter, the research team's findings produced several low-hanging fruit, identifying small behavior changes that could significantly reduce the institution's carbon footprint.



Warren Wilson College student winners, Swannanoa Valley, North Carolina

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“We noticed that most students didn’t really care what their laundry setting was on,” notes Aaron Kozloff, a behavioral research fellow on the project. “We realized students wouldn’t really care if they started using cold water.”

The next step was to spread the word to help alter student behaviors.

“We have a laundry magnet with a little logo that says ‘cool is clean,’” research intern Daniella Mostow says. “People didn’t realize why cold was better. We are working to turn off (the hot water setting) of every laundry machine in every dorm, except one. We wanted to leave one so people can actually make a choice and create a habit of using cold water once they leave Oberlin.”

Other implementations in the works include automatic shower timers and a better student understanding of the heating and cooling systems in their dorm rooms.

As Oberlin works to reach its goal of carbon neutrality by 2025, the buzz created on campus by the student group’s work has helped illustrate that behavioral changes must coincide with technological advancements to truly advance sustainability.

“Winning this award shows the whole campus how appreciated the work we are doing is,” Mostow asserts. The Oberlin College student winners include: Aaron Neale Kozloff, Daniella Mostow, Alexander Deeter, Bridget Flynn, and Cindy Frantz.

Graduate Student Research Winner—University of Hawaii at Manoa

At the University of Hawaii, more than 1,000 students reside in the Hale Aloha residence halls. Imagine the amount of energy use those buildings use.

Graduate student Stephen Brewer did, and helped orchestrate the Kukui Cup in 2011, an advanced energy challenge that combines real-time energy feedback, energy education, multiple forms of incentives, and gamification techniques to support positive changes in energy behavior.

Brewer conducted three experiments to evaluate the challenge: energy literacy, energy use, and challenge participation.

Brewer measured the energy literacy of a random sample of Hale Aloha residents using an online energy literacy questionnaire adminis-



Oberlin College student winners, AASHE conference, Nashville

tered before and after the challenge. He found “The best team reduced its energy use during the challenge by 16 percent,” Brewer explains. “However, team energy conservation did not appear to correlate to participation in the challenge, and there was no evidence of sustained energy conservation after the challenge. The problems inherent in assessing energy conservation using a baseline call into question this common practice.”

Brewer’s research generated several contributions, including: a demonstration of increased energy literacy as a result of the challenge, the discovery of fundamental problems with the use of baselines for assessing energy competitions, the creation of two open source software systems, and the creation of an energy literacy assessment instrument.



Graduate student winner, Stephen Brewer, AASHE conference, Nashville

Student Sustainability Leadership Award—University of Minnesota, Twin Cities, and University of Minnesota, Morris

Anyone who says young people don’t have a voice in the political process need look no further than the University of Minnesota’s Next Generation Environmental Leaders group for evidence to the contrary.

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University of Minnesota student leadership award winners, AASHE conference, Nashville

In 2012, the group was invited by Governor Mark Dayton's Energy Advisor Ellen Anderson to organize a statewide Next Generation Environmental Congress that would allow the group to share goals and models with state leadership. The initiative was an effort to potentially impact statewide sustainability policy.

After months of meetings, the nearly 200 student attendees at the Next Gen Congress helped produce three main ideas, shared with leaders across the state:

1. Sustainable agriculture will reinvigorate rural Minnesota and encourage and incentivize healthy and local crops to be grown for direct consumption.
2. Modernizing our transportation system will reduce the need for cars by increasing public transportation options and bike trails.
3. A clean energy economy based on community economic development, energy efficiency, and renewable energy will also reduce greenhouse gas emissions.

During the group's presentation time, the team led a panel featuring emerging youth leaders, who spoke on themes regarding fuel poverty, climate change, and new models for community energy. Different students read aloud concerns and ideas collected from students from across the state from different schools, colleges, and universities, including many outside the University of Minnesota system.

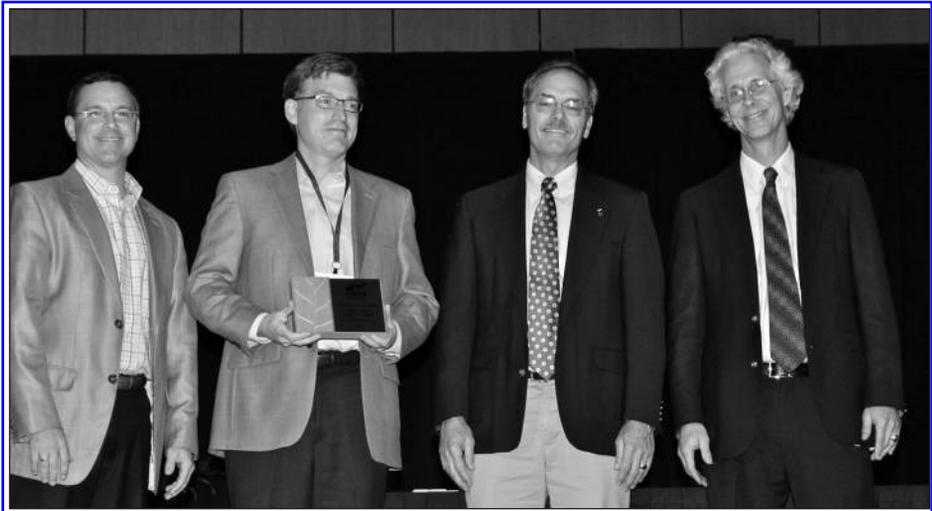
Anderson concluded: "The youth voice played a key role in this event. Their presentation was powerful and shaped the tenor of our conversation throughout the day."

Best Case Study from an Associate's College with 5,000 or Fewer Students—Southern Maine Community College

Southern Maine Community College, located in South Portland, Maine, was recognized in the Best Case Study category for their thermal exchange HVAC system—a system that will reduce the release of carbon dioxide by 80,345 pounds per year.

The college installed a sea water heat exchange system in Casco Bay, Maine during the renovation of their Lighthouse Building in 2010-11. The system comprises a cupronickel, or copper-nickel, underwater "ship keel cooler" heat exchanger that resides under the building's adjacent pier just below the lowest tide level. Cupronickel is highly resistant to corrosion in seawater. The system then works with six- and eight-ton geothermal heat pumps that, in turn, heat and cool the Lighthouse Building.

The winners report that the new system reduces costs by 33 percent during the heating season and 27 percent during the cooling season, resulting in an annual savings of \$10,605.



Southern Maine Community College award winners, AASHE conference, Nashville

The winners report that the new system reduces costs by 33 percent during the heating season and 27 percent during the cooling season, resulting in an annual savings of \$10,605 (compared to a standard oil-fired boiler and air-cooled chiller). The system is four times more efficient than a standard system and the team projects the return on their initial investment—about \$978,500—to be 7.9 years.

According to the report's authors—Scott Beatty, dean of administration for Southern Maine Community College; Robert Klinedinst, principal at Harriman, an architecture and engineering firm in Auburn, Maine; and David Reinheimer, senior mechanical engineer at Harriman—some of the lessons learned include the benefits of collaboration for such a project.

“The seawater HVAC system is just the latest example of Southern Maine Community College’s ongoing initiative to transform its campus into a college leader in sustainable practices,” Beatty says. “While our approach is opportunistic since there is no formal sustainability plan, staff, or dedicated funding, the AASHE award shows that we are succeeding through our creativity.”

Best Case Study from an Associate’s College with More Than 5,000 Students—Metropolitan Community College

Metropolitan Community College (MCC) in Omaha brought together a trifecta of sustainable solutions for its award-winning project—solar power, horticulture, and culinary arts.

MCC describes the project as a hands-on learning experience for solar students, which also generates energy that benefits the joint efforts of horticulture and culinary arts students as they bring food from farm to table.

Elements of the project include:

- A solar lab completed in 2012 that utilizes solar electric, solar hot water, and passive solar power
- The horticulture greenhouse, co-located next to the solar lab and heated by solar hot water during winter months
- An aquaponics system that grows plants and fish using the lab’s solar power
- An interdisciplinary weather station, for use by horticulture and solar energy students to monitor the effects of weather and temperature on solar energy collection and garden production
- The bistro student garden, co-located with the solar lab and cultivated by horticulture and culinary arts students
- New credit classes featuring sustainability topics for diploma- or degree-seeking students in solar energy, horticulture, and culinary arts programs
- New noncredit classes for community members
- A co-located urban farmyard with bees, rabbits, pigeons, and backyard chickens

The multi-pronged project, which began to take shape in 2010 after the college received a Nebraska Energy Office grant, allows for students interested in many different points of sustainable development to learn on campus. They can study sustainable energy, multiple

2013 AASHE Winners and Finalists

Student Sustainability Leadership Award

Winner

- Natalie Hoidal, Elizabeth Just, Christy Newell, Patty O’Keefe, and Juan Medina-Bielski—University of Minnesota, Next Generation Environmental Leaders group

Finalists

- University of Oregon: Team “LiveMove”
- Eureka College: Student Alliance for a Greener Environment

Student Research on Campus Sustainability Award

Undergraduate Winner

- Aaron Kozloff, Daniella Mostow, and Alex Deeter—Oberlin College, for their paper “Analysis of Student Behaviors Impacting Carbon Emissions through Community-Based Social Marketing Research”

Graduate Winner

- Robert Stephen Brewer—University of Hawaii at Manoa, for his dissertation “Fostering Sustained Energy Behavior Change and Increasing Energy Literacy in a Student Housing Energy Challenge”

Finalists

- University Minnesota, Twin Cities: Elizabeth Turner, for her thesis “Envisioning the Carbon-Neutral Campus: Planning for Reduced Energy Consumption at St. Olaf College”
- University of California, Santa Barbara: Matthew O’Carroll, Kathryn Cole, Rebecca Dorsey, Dane Johnson, Briana Seapy, and Jewel Snavelly, for their thesis, “University of California, Santa Barbara Water Action Plan”

Campus Sustainability Case Study Awards

Associate College Winner (with 5,000 or fewer full-time students)

- Southern Maine Community College: “Harnessing Seawater: An Innovative Thermal Exchange HVAC System”

Associate College Winner (with 5,000+ full-time students)

- Metropolitan Community College (Omaha, NE): “Solar Power, Horticulture and Culinary Arts Integration Project”

Four-Year or Graduate Institution Winner (with 10,000 or fewer full-time students)

- Warren Wilson College (NC): “Tree Inventory and Carbon Sequestration/Storage Analysis”

Four-Year or Graduate Institution Winner (with 10,000+ full-time students)

- Dalhousie University (Nova Scotia, Canada): “College of Sustainability: Transforming a Campus for Sustainability Education”

Finalists

- Foothill College: “Sustainable Learning Community”
- Stanford University: “Advanced Climate Action: Stanford Energy and Climate Plan”
- University of Florida: “Sustainable Packaging at the University of Florida”
- University of Iowa: “Saving Iowa’s Remaining Natural Jewels—An Ecological Restoration and Renewable Energy Partnership”

More information on the award winners and finalists can be found at: <http://conference.aashe.org/2013/awards>.

types of solar power, sustainable food systems, urban agriculture, and small market farming. Since the project’s completion, MCC has added six diplomas in solar energy technology. Daniel Lawse, campus sustainability coordinator for MCC, and Krystal Overmyer, MCC’s public relations specialist, authored the report on the award-winning project.



Metropolitan Community College award winners, AASHE conference, Nashville



Dalhousie University award winners, AASHE conference, Nashville

Best Case Study from a Four-Year or Graduate Institution with More Than 10,000 Full-Time Students—Dalhousie University

Some universities and colleges work to infuse sustainability principles into their various academic offerings. Others are crafting and developing sustainability-centered degrees.

The College of Sustainability at Dalhousie University (Nova Scotia, Canada) is building the best of both worlds, offering a double major structure that affords undergraduates an opportunity to complement a more traditional field of study with a major in Environment, Sustainability, and Society (ESS).

The ESS major was first launched in 2009 and in four years of operation has engaged more than

15,000 Dalhousie students, with 100 graduates to date and 500 students currently pursuing the major.

The first year of the program is oriented around students understanding sustainability through specific issues and case studies in the world. The second year involves them in a problem-based learning class that focuses on sustainability-based issues in Halifax, Nova Scotia, the school's urban home, working in teams to problem solve around urban issues like food and transportation. The teams then form recommendations for improvements that they often present to the local city council. The students also work in a simulation-based learning class, looking at these same issues on a global level, as they simulate stakeholder roles and conduct research in a decision-making context at an international level.

In students' third year, they participate in a campus living lab, and in the fourth year, the capstone course involves student teams of five or six working with a community partner to identify problems or develop research strategies around a local issue, ultimately working through an action plan under the partnering body's leadership.

During these four years, students are balancing this work with their traditional major, which can be varied, running from computer science to journalism.

"This work brings a pretty powerful model for introducing ways of teaching that are better suited to the nature of sustainability challenges," says Steven Mannell, a Dalhousie professor and the director of the Sustainability College. "This is an attempt to make a complement to traditional teaching while drawing from the strengths of what universities are already doing."

Mannell says that winning the AASHE award will only help them expand the program, as he hopes that every Dalhousie undergraduate will ultimately get the opportunity to pursue this double major.

"Having that peer validation shows people that this is something substantive and worth looking at," Mannell asserts. "Innovation in academia is often looked at with some skepticism, so external validation helps."

Chevrolet sponsored the 2013 AASHE awards as part of their Campus Clean Energy Campaign. More information on the campaign and future opportunities for students can be found at: <http://www.chevrolet.com/culture/article/carbon-footprint-reduction.html>.