

Cardinal Green

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The Sustainable Stanford Quarterly Newsletter



In this issue	1
Be Cardinal Green Campaign Series - Recap and Summer Preview	1-2
Sustainability Evaluation Season Begins - Stanford in Guide to Green Colleges	2
Office and Laboratory Equipment Rebates Now Available to Help Departments Save Energy and Money	3
Earth Day Celebration Draws A Crowd	4
Student Story: Project Kickback Targets Shoe Disposal and Reuse	4
Student Story: Farm Stand Reflections	5
Student Story: Union Underground's Grand Opening Highlights Art & Sustainability	5
New Graduate School of Business Buildings Now Open	6
Initial Photovoltaic Installation Goes Live at Knight Management Center	7
Sustainable Commute Options Available for Knight Center Occupants	7
3,340 Pounds of CO ₂ Avoided on Bike to Work Day	8
Green Fund Projects Make Great Strides	8-9

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In This Issue

As the academic year comes to a close, my teammates and I are humbled and inspired when we reflect upon how much the Stanford community has shown interest in sustainability. We continue to be motivated by your requests to create actionable avenues to engage in environmental sustainability, and we now offer Cardinal Green Campaigns, rebate programs, student Green Fund projects, and growing opportunities for dialogue. As we say farewell to another year and an outstanding group of graduates, we ask whether the culture of sustainability thrives at Stanford to the point where it leaves an imprint on the experience of every student? We know we can do more with campus behavior and daily actions. As the Office of Sustainability and its academic partners embark on the strategic vision and planning for the next decade, we will make a concerted effort to ingrain sustainability in the campus experience. All of us have a stake in making the culture of sustainability a reality, and everyone has a role. Read on and let us know what you think. We end this year with sincere thanks to our academic, operational and student group partners for their outstanding support, guidance and goodwill.

[Fahmida Ahmed](#), Office of Sustainability



Be Cardinal Green Campaign Series — Recap and Summer Preview

The Be Cardinal Green campaign series, a group of six annual, goal-driven campaigns designed to focus attention and awareness to major sustainability topics on campus, has met with positive results and enthusiasm. [Turn Off For Break](#) during Winter Closure contributed to more than \$200k of avoided utility costs during the two-week curtailment period. The [We Recycle, Stanford Wins!](#) RecycleMania campaign helped the university achieve some all-time personal best



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scores for waste diversion and recycling. Through online water action reports, the [Tell Your Water Tale](#) campaign provided an opportunity for the community to get involved in identifying opportunities for additional landscape irrigation efficiency and water conservation on campus.

Starting in mid-June, the [One Less, Save More](#) campaign will make it easy and rewarding to purchase goods and services in ways that minimize negative impacts on the environment. Did you know that schools and departments at Stanford purchased 87,944 reams of office paper last year? If laid end-to-end, the paper trail would stretch for 15 miles! Did you know that Stanford placed 29,490 separate office supply orders last year? More than 40% of those orders were under \$50 and required 780 truck deliveries to campus! Consuming less, consolidating orders, and choosing reusable and high recycled content products available on [SmartMart](#) will make a big difference. Starting June 13th, we invite you to [take the campaign pledge](#) to show your commitment to sustainable purchasing.

To learn more about the campaign and how you can help, please join representatives from Sustainable Stanford and Procurement for an informational webinar on June 14th at 11 a.m. To sign up, [click here](#) and select “register” to complete the process.

Sustainability Evaluation Season Begins — Stanford in Guide to Green Colleges

The Office of Sustainability completes major third-party sustainability evaluations and surveys throughout the spring and summer. The first organization to publish its 2011 results, the Princeton Review, in partnership with the U.S. Green Building Council, included Stanford in its annual [Guide to Green Colleges](#). The handbook profiles the 311 schools out of 703 that scored 80/100



or better on a 50-question sustainability survey. Stanford scored 97 points and has been included in the publication for the second consecutive year. For more information on the 2011 guide and the survey methodology, please see the Princeton Review's [recent press release](#).

In addition to the Princeton Review survey, Stanford participates in evaluations and rating systems administered by Sierra Magazine, the Sustainable Endowments Institute (SEI), and the Association for the Advancement of Sustainability in higher Education (AASHE). Results from Sierra's Cool Schools Survey are expected this summer. SEI elected to take a sabbatical from offering a broad sustainability survey this year as it coordinates more with other 3rd-party organizations, but Stanford will be included in the group's upcoming report, Greening the Bottom Line. The Office of Sustainability and other partner organizations across campus are currently engaged in preparing responses for the university's first AASHE STARS program submission, due later this year.

Final RecycleMania Results

Stanford's final national standings in [RecycleMania](#) include personal best scores in seven of eight categories and reflect a per capita landfill tonnage of 115 lbs, down from more than 160 lbs/person in the 2007 competition:

Gorilla Prize	- 2nd
Grand Champion	- 116th
Per Capita Classic	- 16th
Waste Minimization	- 176th
Paper	- 11th
Cardboard	- 12th
Bottles & Cans	- 16th
Food Service Organics	- 17th

Please visit the [campaign webpage](#) for a more detailed review of this year's competition and results.



Stanford's Energy Story: Present and Future



WOODS INSTITUTE
FOR THE ENVIRONMENT
STANFORD UNIVERSITY

The March 28th [Energy Seminar](#) featured speakers from the Department of Sustainability and Energy Management. They presented the three key prongs of the balanced approach that has shaped Stanford's long range energy and climate plan—high energy efficiency standards in new buildings, energy conservation in existing buildings, and a greener and more flexible energy supply. The presentation also touched on the untapped potential of behavioral programs to motivate individuals to conserve energy. More information, including the presentation file and recording can be found [online](#).

Office and Laboratory Equipment Rebates Now Available to Help Departments Save Energy and Money

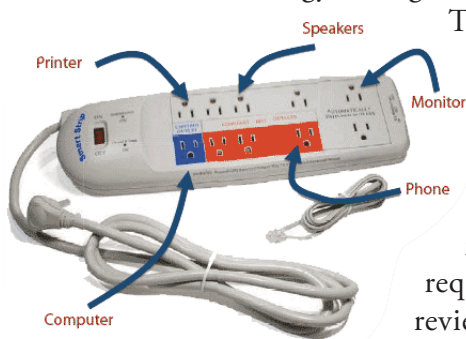
Cash for Clunkers Freezer Retirement Program

Sustainability and Energy Management (SEM) and the School of Medicine (SOM) have again partnered to offer financial incentives to labs that put DNA and RNA samples into room temperature storage and dispose of old ultra-low temperature freezers. The FY11 Cash for Clunkers program makes it easier for researchers to try room temperature storage technology and earn rebates up to \$13,000. Funding is available on a first-come, first-served basis so visit the [SOM sustainability page](#) today to learn more about sustainable alternatives to frozen sample storage and download an application form. Researchers outside SOM can earn cash back through ERP Express for Lab Equipment. An application form with details and an FAQ sheet are available [online](#). Groups can also [download the program flyer](#) suitable for posting in all campus laboratories.



ERP Express for Office Equipment Program

Sustainability and Energy Management (SEM) recently launched the [ERP Express for Office Equipment](#) rebate program, which incentivizes departments to purchase and install small energy-saving devices like Smart Strips and appliance timers.



The new FY11 offering supports the [Building Level Sustainability Program](#), a platform for Stanford's Schools and Departments to educate occupants and implement sustainability practices at the building level via individual action and engagement. For more details on available rebates, eligibility requirements, terms, and conditions please review the [online application form](#). Questions can be directed to ERPexpress@stanford.edu.

Earth Day Celebration Draws A Crowd

Sustainable Stanford celebrated Earth Day outside the main VisionEarth tent in White Plaza on Friday, April 22, 2011. The Office of Sustainability joined forces with Parking and Transportation Services, PSSI/Stanford Recycling Center, and the water conservation group to host a number of tables at the event.

The team showcased program highlights and explained opportunities for the campus community to engage with Sustainable Stanford through the [Be Cardinal Green](#) campaign series.

Delicious cake, t-shirt raffles, and new buttons were unveiled during the event, and visitors from all sectors of the Stanford community stopped by to learn more about Sustainable Stanford's programs. The successful celebration was offered in partnership with [BeWell](#), [Vision Earth](#), and the [Haas Center for Public Service](#).



LBRE Leads By Example with BLSP

Over the past two years, Building Level Sustainability Program pilot projects completed in 14 buildings have shown a sustained reduction in electricity consumption 20% with an average simple payback period of less than 9 months.

At present there are 2 additional buildings with implementation underway, and 91 buildings have been identified as future program candidates.

To lead by example, Stanford's Land, Buildings & Real Estate (LBRE) group will roll out the program in a number of buildings over the summer.

Stay tuned for progress updates, results, and announcements throughout the summer and fall!

Student Story: Project Kickback Targets Shoe Disposal and Reuse

by *Dimitar Vlahov, Graduate Student*

Project KickBack, a first-of-its-kind campus-wide competition during the last three weeks of spring quarter, encourages Stanford students, faculty, and staff to turn used shoes into generous prizes worth a total of \$1,000. Participants sign up online in one of two categories—as individual contestants or as teams of four or more—then they simply bring shoes no longer needed to convenient collection points during certain pre-scheduled time slots. All collected shoes will be disposed of responsibly through recycling or reuse. This student initiative was inspired by some alarming facts—Americans buy 2 billion pairs of shoes per year and more than 95% of those shoes end up in landfills, contaminating soils and groundwater. Project KickBack hopes to pave the way for innovative used shoe collection methods and reduce the volume of landfill waste. For more information, and to sign-up for the competition, please visit <http://www.project-kickback.com>.



Make your shoes' last mile
WORTH WHILE

Employee Drive-Alone Rate Hits Record Low!

The 2011 Stanford Commute Survey results are final, and the university's drive-alone rate for employees dropped to 46 percent! This is a reduction from last year's drive-alone rate of 48 percent and a significant improvement from the 72 percent drive-alone rate recorded in 2002. Among the alternative transportation modes used by employees, Caltrain, bicycling, and carpooling continue to be the most popular.

The increased use of alternative transportation is credited to Stanford commuters, who are committed to improving their health, protecting the environment, and increasing their savings. For more information on alternative transportation options, programs, and incentives, please visit <http://transportation.stanford.edu/>.

Student Story: Farm Stand Reflections

By Caroline Hodge '12

Two years ago, I was lucky enough to land a job doing something I love — growing and selling food grown with heart. Every Friday, I take off my student hat to work at our farm stand in front of Y2E2. I ring up orders for a mixed group of members from the Stanford community: friends from my classes, campus librarians, and engineering professors. I converse with customers about both the intellectual and the practical, the environmental implications of factory-farmed eggs and the tastiest way to cook up kale (my go-to recommendation: kale chips! Tear the leaves up into little pieces, stick them on a baking sheet for 20 minutes at 400 and enjoy!). I am proud when I can tell customers I know where the produce they are buying comes from, how it was grown, when it was harvested, and what it looks like in the field. Most of all, I am proud to tell them that Stanford cares enough about sustainability and community to put resources into a campus farm and farm stand.



Student gardener
Caroline Hodge

Student Story: Union Underground's Grand Opening Highlights Art & Sustainability

By Nicole Greenspan '12 and Nicole Gaetjens '12

Union Underground, a space that houses Stanford's new free store Clothes Loop, a used clothing and housewares store, and Prévoir, a new student art gallery, held its grand opening celebration on Friday, May 20th. The event was a great success, with hundreds of attendees and lots of excellent feedback.



Clothes Loop provides an opportunity to give and/or grab clothing and useful housewares for free. It aims to improve the current options for the community to obtain and discard reusable items, such as clothing and housewares, in a sustainable way, rather than purchasing new materials or dumping reusable products into the landfill. The store will be open daily from 12 pm to 4 pm for the duration of the 2011 spring quarter. The success of this pilot period will determine the store's future growth.

Union Underground represents an extension of VisionEarth, encouraging collaboration between the arts and sustainability. The store also functions as an educational resource for identifying reuse options at Stanford.

New Graduate School of Business Buildings Now Open

Story contributed by Barbara Buell, Director of Communications, Marketing Programs

On April 29, 2011, the Stanford [Graduate School of Business \(GSB\)](#) opened the [Knight Management Center](#), a new facility of 8 buildings around 3 quads designed to support an innovative MBA curriculum put in place in 2007. The center is expected to achieve an [LEED](#) Platinum® rating, the highest certification for environmental sustainability from the U.S. Green Building Council.

Filled with light and the latest technology, the 360,000 square-foot facility underscores what is taught in many of the Stanford GSB's electives, such as Environmental Entrepreneurship and Environmental Science for Managers and Policy Makers, as well as in core classes covering sustainability across business functions and in its MBA/MS Environment and Resources joint degree program.

Sustainable features of the buildings include:



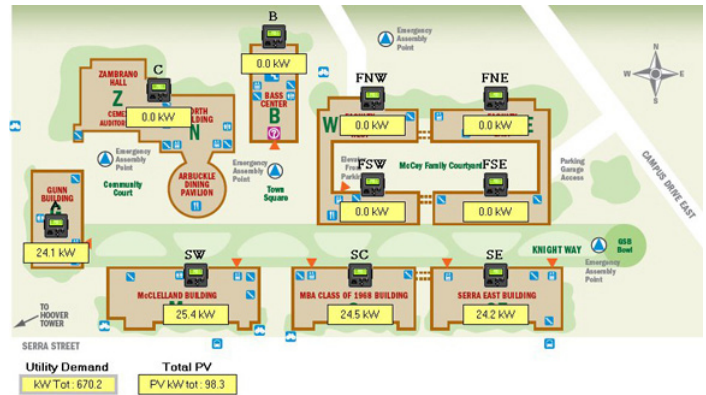
Dedication ceremonies for KMC in the main courtyard

- The relatively narrow dimensions of the classroom buildings and floor-to-ceiling glass maximize the amount of daylight and significantly reduce the need for electric lighting.
- 90% of interior work spaces are illuminated by daylight and room lights turn off automatically when a room is emptied, reducing the electricity load.
- Photovoltaic panels on the roof will generate 500,000 kWh per year, harvesting enough solar energy to power 12.5% of the complex's energy demand.
- The KMC's eight buildings will exceed current state [energy](#) standards by 45%. More efficient under-floor air distribution systems have replaced forced air systems, and air-handling units recapture waste heat and redistribute it where needed. During summer months, the building will use automated skylights and windows to release the hot air of day and draw in cool air overnight.
- The center will use rainwater or re-circulated gray water to reduce potable [water usage](#) for sewage conveyance by 80%.
- Landscape plans were developed with sustainability in mind. More than 60 trees were removed from the site, boxed during construction, and then replanted at the center. Wisteria vines climb up the roof-like trellis surrounding the circular Arbuckle Dining Pavilion, allowing for shaded outdoor dining outside. Trees line a path along Knight Way, which draws the rest of the Stanford campus into the business school area. As Stanford does throughout the campus, KMC uses native and drought-tolerant plantings to reduce the need for irrigation. Fifty percent of the site is devoted to open space.
- The Arbuckle Dining Pavilion uses a radiant floor heating and cooling system.
- [Recycled](#) materials are used extensively. Use of low or no volatile organic compound-emitting materials throughout the buildings ensures exceptional indoor air quality.

Initial Photovoltaic Installation Goes Live at Knight Management Center

by Rich Bitting, Associate Director, Power Systems

The first phase of the solar photovoltaic (PV) system at the Graduate School of Business' new Knight Management Center is now operational. The GSB contracted with Solar City to provide a PV system rated for a peak output of 355 kW. At present, 4 of the 8 buildings have systems in operation. The remaining 4 systems are under construction and will be completed over the next 2 months. The electrical output of the systems is connected to the campus electrical system and will offset the normal electrical consumption of the buildings.



Screenshot from Stanford's SCADA system showing the real-time electrical consumption and generation from KMC buildings



Gil Masters stands near a PV array on the KMC roof. Photo credit: Scott Gould

The new GSB system is by far the largest installation on campus. Recently, two new systems at the Huang Engineering Center (HEC) and the Nanoscale Science and Engineering buildings went into operation. These two systems are both rated at approximately 26 kW peak output. A dashboard located in the HEC lobby shows the operation of the PV systems along with current building electrical load and other interesting features of the two buildings.

Other campus PV systems and associated peak power ratings include: Y2E2 (12.5 kW), Hoover House (40.8 kW), Reservoir #2 (30 kW), Jasper Ridge (20 kW), and Synergy House (7.5 kW).

Sustainable Commute Options Available for Knight Center Occupants

By Rachel Maiss, TDM Coordinator

The Graduate School of Business (GSB) moved to the new Knight Management Center in April. Because sustainability was a top priority in its development, occupants of the Knight Management Center have many sustainable transportation options available to them.

Parking & Transportation Services (P&TS) conducted outreach to help occupants understand their options. P&TS also created a special web page to describe [transportation options at the Knight Management Center](#).

There are [Marguerite](#) stops, as well as two [Zipcars](#), located directly adjacent to the Knight Management Center on Serra Street. Additionally, most Stanford [vanpools](#) park or stop near the Knight Management Center. Parking Structure 7, which is located below the Knight Management Center, contains convenient carpool parking and a new bicycle storage cage. Many bicycle racks are available outside the parking structure as well.

3,430 Pounds of CO₂ Avoided on Bike to Work Day

by Ariadne Denton Scott, Bicycle Program Coordinator

On May 12th, 2011, more than one thousand Stanford commuters celebrated Bike to Work Day by riding to campus. Nine energizer stations were set up around campus, and a total of 1,117 bicyclists were counted between the hours of 6:30AM and 9AM. More than 500 bicyclists who stopped at energizer stations reported riding a cumulative total of 3,611 miles on Bike to Work Day, averaging 6.7 miles per commute trip. As a result, 3,430 pounds of CO₂ emissions were avoided.**



Bike to Work Day riders stop at an energizer station in White Plaza

Stanford's commitment to bicycling is reflected by its designation as the first and only [platinum-level Bicycle Friendly University](#) by the League of American Bicyclists. In honor of Stanford's platinum status, all riders that signed log sheets on Bike to Work Day were entered into a drawing to win one of five sets of platinum-colored panniers (side bags). In addition, riders were encouraged to take the [Stanford Bike Safety Pledge](#), and were entered into a drawing to win a free bike donated by the Campus Bike Shop. To date, over 800 bicyclists have signed the pledge and committed to wearing a helmet for every ride (even short trips) and following the rules of the road.

**The per mile emissions factor used for automobiles is 0.431 kg CO₂/mile (or 0.950 lb CO₂/mile). This is based upon an average passenger vehicle fuel economy of 20.4 mpg (2006 figure from US Bureau of Transportation Statistics)

Green Fund Projects Make Great Strides

Stanford's Student Green Fund awards small grants to students for innovative projects designed to create a more sustainable campus. As the academic year draws to a close, the Office of Sustainability congratulates this year's Green Fund grant recipients! A full FY11 project report will be available online this summer.

iWater

- Designing a smart-phone compatible application that allows users to report resource inefficiencies on campus
- First phase will target landscape irrigation
- A wireframe prototype is expected at the end of spring quarter

Union Underground - Clothes Loop Thrift Store

- Improves available options for the Stanford Community, especially students, to engage in reuse of essential items like clothing, books, and general supplies
- Established ClothesLoop, a student-managed "freestore" housed in the basement of Old Union, a hub for art and sustainability on campus
- Celebrated ClothesLoop grand opening in May
- Open daily from noon to 4 p.m.

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Sustainability- An Avenue for Service at Stanford

The three pillars of sustainability—environment, economy, and equity—all provide rich opportunities for service. At Stanford, students can engage in a variety of sustainability-based service programs, made possible through a partnership between Sustainable Stanford and the [Haas Center for Public Service](#). To learn more about these opportunities, including the impact of the CEE/ES 109 Greening Buildings and Behavior course, be sure to read the sustainability article featured in the most recent issue of the [Haas Center's e-Commons newsletter](#).



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Green Events Consulting

- Utilizes a team of trained student consultants who encourage voluntary student organizations to make their events as “green” as possible while simultaneously educating the students and campus about sustainable behavior
- Recent projects include Stanford Splash and Relay For Life
- Featured in the AASHE Student Diary Series



Students pose in front of one of the GEC informational posters before a campus event.

Graduate Student Collective Garden

- Facilitates a completely organic garden that exclusively grows open-pollinated heirloom plants using fully organic methods to address problems, such as rodent and insect damage.
- Harvested more than fifty pounds of vegetables from the winter crop
- Held a seed-starting workshop in April to educate a diverse group of new gardeners from several programs, followed by an heirloom seed and plant exchange

Green Roof Project

- Building an 180 sq-ft pilot roof with the help and support of Greensulate LLC, the University Architect/Campus Planning and Design department, and a core team of four students
- Secured materials from all major suppliers, including several generous material donations
- Design and construction method completed
- Final location and permission to proceed granted

Smoothie Bike

- Students for a Sustainable Stanford Climateers group acquired two smoothie-making bicycle kits and use them as an innovative tool to raise awareness about personal energy consumption
- Find Smoothie Bikes at campus-wide events and weekly at the Stanford Produce Stand
- Systems will soon be in place to rent the bikes out to other campus groups



GLC member Marielle Price pedals her way to a perfect smoothie!
Photo Credit: William Greenbaum