



GREEN SCHOOLS / GREEN CAMPUS UPDATE NEWSLETTER

Using Energy Efficiency to Strengthen Education



April/May 2009

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ALLIANCE TO
SAVE ENERGY

Creating an Energy-Efficient World

WATT'S NEW

Interview with Future Industry Leader, Desirae Early

PG&E Employee and Former Green Campus Intern

Desirae Early – once a Green Campus Program intern, today a project manager of Customer Energy Efficiency at Alliance Associate Pacific Gas & Electric (PG&E) – shares her experiences interning with the Alliance's Green Campus program, which empowers interns to lead energy efficiency initiatives and provides them with the skills and knowledge needed for careers in energy efficiency.

Alliance: *What projects were you assigned as a Green Campus intern?*

Desirae Early: I started working on the Green Campus program my freshman year at the University of California Berkeley and continued through my senior year. I worked on a variety of programs, and was the team leader at Berkeley my sophomore and senior year.

Early on, I started and established an energy competition between the residence halls called Blackout Battles that still runs every semester. I also helped to start the Green Room, Green Apartment and Green Suite, a trio of demonstration areas that educate students about sustainable living, and the impact that college students can make in their daily lives. I co-taught several semesters of the Energy DeCal course, which taught students about energy; I also coordinated light bulb exchanges in the residence halls, worked on "Shut the Sash" campaigns to decrease energy use in campus laboratories, and started a project to install vending miser occupancy controls on campus vending machines. During my senior year I co-founded the Building Sustainability @ Cal program, which included a class on energy efficiency and gave students experience doing lighting audits, waste audits, water audits and occupancy surveys to develop sustainability plans for eight campus buildings.

Alliance: *What do you do now as project manager of Customer Energy Efficiency at PG&E?*

DE: I work on our energy efficiency programs for the retail and hospitality segments. Much of my work involves managing projects to reduce energy use in buildings through retrofits, new construction and retrocommissioning projects. These involve lighting retrofits, installing energy management systems, retrofitting HVAC equipment, optimizing building controls and using modern designs and technologies to gain energy savings. As a project manager, I work with engineering companies, architecture firms, customers and many internal departments to move projects along. I also work on strategic planning for the retail and hospitality segments and support technology deployment and marketing outreach.

Alliance: *How do you think your experience with Green Campus prepared you for a position in energy efficiency?*

DE: I had minimal knowledge about the energy efficiency field before working on the Green Campus program. It was through Green Campus that I first became knowledgeable about something as simple as using CFLs. Throughout my involvement in Green Campus, I learned a lot about different technologies, especially in regards to lighting, and how to show the value of energy efficiency. In addition, I also learned about the barriers to energy efficiency, such as facilities that do not pay energy bills, quality perceptions for lighting technologies and the idea that energy efficiency is too costly.

One of the most valuable things I gained was the ability to communicate effectively. Starting Green Campus projects typically involved coordination between many areas of campus, from students, to faculty, to all of the different departments. I quickly found that these groups tend to work in silos. I was able to work on projects that involved coordination and buy-in from historically separate groups. This experience has been instrumental to many subsequent positions I have taken on, and is critical for almost all 'green' careers.

Alliance: *Would you recommend the program to students looking into 'green' careers?*

DE: It depends on what type of green career you are looking for. If you have *any* interest in energy efficiency or energy conservation, or even green building, then I definitely recommend the program. There are few other places where you can get hands-on experience working on energy efficiency projects, and the skills and knowledge you gain with Green Campus are immense.

The skills needed to start and run projects are valuable in any career field, especially environmental career fields. The types of challenges you see in the Green Campus Program are similar to challenges faced by the entire environmental field. As an intern, you are also able to work on a variety of things through Green Campus, including event planning, developing marketing material, energy savings calculations, writing newsletters, teaching classes and presenting at conferences. You also are connected to a vast network of students working on similar projects throughout California, which are great connections for starting a green career.

Florida Green Schools Program Widely Publicized

Rapidly Growing Program Attracts Media Attention

Ballooning from 15 schools in the 2007-2008 school year, to just under 50 in '08-'09, the Florida Green Schools program, run in conjunction with Dream in Green, is turning heads, and saving energy. In the first year of implementation, 15 schools were able to save 653,000 kilowatt-hours of electricity -- a savings of \$150,000. The results are still out on this year's savings, but we're optimistic that schools will continue to produce results.

See below for extensive local coverage of the FL Green Schools Program.

[Progress Ohio | Dennis Spisak's Blog: Miami-Dade County schools go green -- and save money](#)

By Dennis Spisak

Nonprofits Dream in Green and Alliance to Save Energy have partnered with Ransom Everglades School over the past two years to host the Green Schools Challenge, a series of workshops designed to help local schools reduce electricity use, plant trees to sequester carbon and establish recycling programs.

[It really is easy being 'green'](#)

Sun-Sentinel.com - Fort Lauderdale,FL,USA

In partnership with the National Alliance To Save Energy, this project challenges and empowers students, faculty and staff to reduce their school's carbon footprint through reduction in energy, waste and water.

[Florida Schools Take Green Very Seriously](#)

By Green Idea Lab

Every year, more schools across the country are doing their part to protect Mother Earth by practicing green initiatives that conserve energy, cut their carbon dioxide footprints and promote environmental awareness.

['Green education' taking off in Florida](#)

Tampabay.com - St. Petersburg,FL,USA

In total the 15 participating schools last year helped recycle more than 87,000 pounds of paper and conserve more than 653,000 kilowatt-hours of electricity, a savings of \$150,000. MAST Academy in Key Biscayne also reduced its energy costs by 12 percent since the beginning of this school year.

[Miami-Dade County schools go green -- and save money](#)

MiamiHerald.com - Miami,FL,USA

Parent Dana Kulvin helped the K-8 center launch a "Watt Watchers" student group that patrols empty classrooms to make sure lights and computers are off. Similar "lights-out" initiatives have resulted in huge energy savings for other schools. George Washington Carver Middle School saved almost \$40,000 last year.

Horace Mann Elementary Awarded as Top Energy-Saving DC School

All Saving Energy in DC Schools Recognized at End of Year Celebration

Students and teachers who participated in the Saving Energy in DC Schools (SEDS) program this year were recognized for their great work at the program's [end-of-year ceremony](#) on May 7 at the Koshland Science Museum. In attendance were councilmembers Mary Cheh (Ward 3) and Harry Thomas Jr. (Ward 5), Alliance Vice President of Programs and Development Brian Castelli and Commissioner Rick Morgan from the DC Public Service Commission.

The Alliance to Save Energy and the District Department of the Environment awarded four schools for their exemplary efforts in three areas. First place for overall energy audit report went to Horace Mann Elementary School, and was presented by James H. DeGraffenreid, Jr., CEO of Washington Gas, an Alliance Associate; while second place went to Oyster Adams Elementary School. Capital City Elementary School received best curriculum Key Elementary School received best outreach. Horace Mann will receive a real-time energy monitoring system for placing first in the overall audit report category. [Video highlights of SEDS's first year are available online.](#)

We're also put together a [concise and entertaining compilation video](#), available for viewing on the web.

GREEN SCHOOLS & GREEN CAMPUS INNOVATIONS

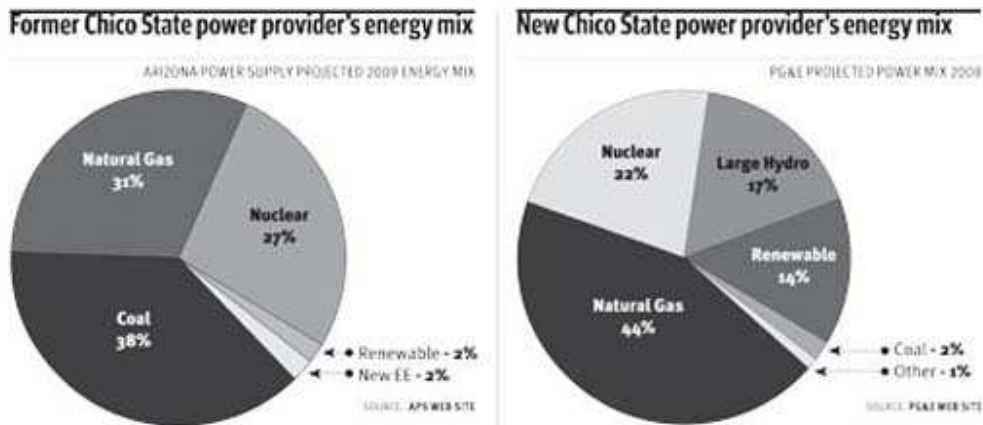
Chico State Switches Power Vendors, Ups Renewable Fuel Mix

Pacific Gas and Electric to Power Campus, Renewable Use up 12%

Article adapted from an article in Chico State's "The Orion", written by Megan McCourt)

Though Chico State is claimed to be one of the greenest college campuses, until recently the majority of its energy came from non-renewable energy sources.

As of April 1, the juice that runs Chico State has been coming from the Pacific Gas and Electric Company, a power provider that uses significantly less coal-based power than the university's former energy provider.



The former provider uses non-renewable sources of coal and natural gas for more than two-thirds of their energy mix, but now more than half of the resources used in the current PG&E power mix are climate neutral and/or renewable, according to the PG&E Web site. Nuclear power and large hydroelectric power make up the greater part of the climate neutral energy.

"On average, approximately 50 percent of the electricity delivered to the 15 million Californians we serve emits no carbon," according to the PG&E Web site.

In addition to the power Chico State purchases, approximately 7 percent of its energy comes from solar panels installed on the roofs of Acker Gym and Yolo Hall. The panels can produce about 300 kilowatts of energy an hour on a sunny day, she said.

The campus goal is to move toward increased energy efficiency, reducing emissions, and implementing more renewable energy sources. "It's important to realize that sustainability is a moving target,"

Sustainability Coordinator Halli Bovia said. "It will be difficult to ever reach there; we're just always going to be striving further and further for it."

Though complete sustainability is not currently a viable option for the university, many groups, such as the Chico State Green Campus Program, work to save energy around campus through a multitude of strategies and events.

Green Campus is heading a variety of power saving programs.

The list includes an energy conserving challenge, a conservation competition, the Sustainability House, an energy-efficient residence hall, and Power Save - a computer program that puts machines in a low-energy sleep and helping conduct energy audits.

Making vending machines around school more energy efficient is another project the group is working on. There are currently three Vending Misers - sensors attached to vending machines - used on campus, which power down the lighting when no one is around - and another 10 to be installed this semester.

The Vending Misers were purchased with some of the money from a \$50,000 rebate the group received from PG&E for the energy savings they generated with the power management software, she said. The money is used for a variety of sustainability projects around campus, including the misers, which cost about \$200 each, but lead to \$100 savings a year.

"After we buy the misers, we probably have about \$30,000 left," Green Campus Team Lead Shannon York said. "We don't want to use it for frivolous things; we want to use it for more energy savings for the university."

A main focus of Green Campus is getting students to apply what they learn in their daily lives.

"It's all about behavior changes with the students, that's what it starts with," said Haley Gilmore, Green Campus secretary and treasurer. "We want students to take what they learned from us home and start implementing power management software on their own computers, using power strips, turning off the light and using natural light."

NY Green Schools Students Host Sustainability Fair at Edison HS

Local Rochester Companies Share Sustainability, Career Message

On April 13th, students at the Edison Complex gathered to take part in a Sustainability Fair, sponsored by the Green Schools Team. As the students gathered inside the library, they went to view the various businesses represented at the event.

Home Depot led the charge with workers from the local stores sharing the advantages of embracing "environmentally friendly" challenges, starting with light bulbs. After sharing those benefits with the students, many students stopped to hear a presentation about the various job opportunities that were available with Home Depot.

Other local companies like the Sierra Club continued sharing the “sustainability” message as the students went to their area to view their displays and ask questions. Bruce Knapp, from M E Engineering was on hand to share information on the responsibilities of being an engineer.

As students continued their trip around the fair, they stopped to see displays set up by CEI, Clark Patterson Lee, the Environmental Protection Agency, as well as the products that were on display from SunKing. Before leaving the fair, the students made sure that their raffle tickets were placed in the basket. Maven Technologies, one of many partners working with the Edison Green Schools Team, donated a laptop computer for the winner of the raffle. The enthusiasm and excitement was very visible on the face of Ethan Ketterer, co-leader of the Edison Green Schools Team.

Humboldt State Students Fight Light Pollution

Stadium Lighting Retrofit to Save \$7,500/year

Article adapted from an article in Humboldt State's "Now", written by Jessica Lamm)

The student-led Humboldt Energy Independence Fund has granted \$75,000 for a Green Campus Program proposal to upgrade the Redwood Bowl stadium lighting at Humboldt State University and slash electricity consumption and light spillage.

The proposal, named the Relight the Redwood Bowl project, will finance the purchase of new fixtures that focus light directly on to the field. The number of lighting fixtures will drop by 40 percent. Green Campus estimates a savings of \$186,221 and a reduction of 1,525,000 kilowatt-hours over a 25-year period.

“It’s going to be really amazing when everyone at every football game sees the impact of what we’re doing on campus,” says HEIF student manager Jeffrey Steuben.

Even community members absent from the games will notice a change. The new lighting system is guaranteed to reduce light spillage by 50 percent to the benefit of human and wildlife populations alike.

A lighting structure seen from HSU’s Redwood Bowl. On the field, Sonoma State University softball players warm up ahead of the NCAA Division II West Region Championships. *Humboldt State University*

The idea for the Relight the Redwood Bowl project had been on the table for a long time, says Green Campus Coordinator Sarah Schneider, but a lack of funding left it to stagnate. With the inception of HEIF, Green Campus was able to leverage enough funding from HEIF and Plant Operations combined to turn the idea into reality.

HEIF is a student fee-based fund that finances student-designed energy production, efficiency and education projects. “Since its inception, HEIF has empowered students to make actual effective change on campus through energy-related projects,” says Schneider. “This program enables us to demonstrate our capacity for creativity and professionalism, while working toward institutionalizing sustainability and energy efficiency.”

Since 2008, HEIF has granted more than \$260,000 to a variety of student-designed projects, including a solar photovoltaic array for the Old Music building, retrofits to the heating and ventilation system of the Science D and E buildings, two intern positions focused on building energy, and equipment for a solar radiation monitoring system on the library roof.

“Many students are getting great skills out of HEIF; they’re funding their own education and training as well as working to save the environment,” says Steuben.

Installation of the PV array and the retrofits to the HVAC system will also commence this summer, again by student interns under the contractor guidance.

The energy fund is a prime example of environmental responsibility and student initiative at HSU. Schneider points out that, “it also helps students connect with faculty, staff, and administrators in a more collaborative manner.”

Student HEIF committee member Nathan Chase says that HEIF “exemplifies the Humboldt student body’s ‘can do’ attitude and high professionalism.”

Campus Dishwasher Retrofit at Cal Poly SLO Saves Three-Quarters of a Million Gallons of Water Annually

Green Washing Takes On A Whole New Meaning

Student interns with the Alliance to Save Energy’s Green Campus Program and California Polytechnic State University’s Campus Dining successfully identified and installed an energy and water efficient replacement of the campus main dishwashing machine, resulting in an annual savings of 736,920 gallons of water, 9,321 therms of natural gas and an annual cost savings of \$16,647.

In early 2008 Green Campus interns responded to a request from Campus Dining to identify a replacement of the nearly fifty-year-old main dishwasher. Through extensive research the interns identified multiple energy efficient models that could meet the dishwashing demand for the campus’ main dining hall. Analysis of the possible replacements was completed through manufacturer’s specs, while the owner/maintenance manual was used to analyze the old machine.

While the models under scrutiny displayed little difference in electrical savings, due to more powerful pumps, significant savings were recognized in water and heating. Newer commercial dishwashing units use nearly half the water of the existing dishwasher, which in turn leads to a large savings of natural gas used to heat the water from an initial 60°F to a final rinse temperature of 180°F.

By October 2008, Green Campus completed its analysis and recommended Campus Dining move forward with procurement of the Stero STPCW-ER-21. Based on the students’ analysis, Campus Dining purchased the new dishwasher, which was installed over the 2009 spring break. Campus Dining is now in discussion with Green Campus to identify a replacement of the campus auxiliary machine. Green Campus interns are pushing for the most energy efficient model and looking to combine this model with the campus wide elimination of cafeteria trays.

SCHOOL & CAMPUS RESOURCES

Cost of Leaving Computers on Overnight: \$2.8 billion

New Report Estimates Nationwide Price Tag

Most people don't think about the cost of leaving a computer on overnight, but all the power wasted while computers are sitting idle overnight adds up, and one study has finally tried to measure it. The tally: An estimated \$2.8 billion wasted on excess energy costs each year in the U.S. alone.

On a CO2 basis, that's 20 million tons of carbon dioxide, about the amount produced by 4 million cars on the road.

The full report is available for download at <http://www.1e.com/energycampaign/index.aspx> (scroll down to "PC Energy Report US 2009").

To put the wasted energy in perspective, the study provides the data in terms you can better understand: If you run a company with 1,000 PCs left on overnight, you can save about \$28,000 a year if they are turned off after hours. That's not chump change.

According to the National Center for Educational Statistics, as of 2005 the average school had 154 computers. That's still a potential savings of over \$4,000/year - just by turning off computers overnight.

Classroom Earth Professional Development Grants

Earn Graduate Credits and Incorporate EE into Classes

Want to learn how to teach about the environment in your subject area? Classroom Earth will award 20 professional development grants to high school teachers across the country. Recipients will take two online courses in environmental education offered by the University of Wisconsin, Stevens Point. These highly-praised courses will help teachers incorporate environmental topics to create interactive, science-based, and informative lessons for their high school classrooms. Through the courses, teachers can earn graduate-level credits.

Deadline: June 13, 2009, visit <http://www.classroomearth.org>.