

2006-08 Energy Efficiency Portfolio Monthly Report Narrative

Program Implementer Name: Alliance to Save Energy
Program Name: Green Campus Program
(UC/CSU/IOU Energy Efficiency Partnership)
Program Month: November 2008

1. **Program description**

The Alliance to Save Energy's Green Campus Program is a student-oriented education and outreach program that fosters environmental stewardship by raising awareness about the relationship between energy and the environment on University of California and California State University campuses. Through its activities, the Green Campus Program seeks measurable energy savings on the campuses which it serves.

The Green Campus Program is implemented by the Alliance to Save Energy, its subcontractors (hereafter referred to collectively as "Alliance Green Campus team members"), and paid student interns ("Green Campus interns").

The Alliance to Save Energy operates on nine campuses through the UC/CSU/IOU Energy Efficiency Partnership's Training and Education budget: Humboldt State University, CSU Chico, Cal Poly San Luis Obispo, UC Berkeley, UC Santa Cruz, UC Merced, UC San Diego, and San Diego State University. In addition, funds from the UC/CSU/IOU Energy Efficiency Partnership's Training and Education budget also supplement programs at UC Santa Barbara, CSU San Bernardino, Cal Poly Pomona and UC Irvine. These campuses are located in the SCE, SCG, SDG&E, and PG&E service territories.

Administrative activities (describe)

Green Campus team members conducted weekly check-in conference calls with interns at all Green Campus schools and made site visits to UC Berkeley, San Diego State, and UC San Diego in order to discuss ongoing projects and track action items.

On November 14th, the Alliance Education Team met with Finance Director, Shoshana Levy and SCE Program Manager Carlos Hernandez and SCE Program Analyst Connie Li-David to discuss and streamline invoice reporting procedures through the end of the year. Outcomes of the meeting included setting the deadline to complete November and December invoices, and establishing the remaining 2008 budget and 2009 bridge period budgets for both the Green Schools and Green Campus Programs.

2009 Green Campus Energy Efficiency Summit

This month, a large amount of Alliance staff time was spent organizing preliminary logistics for the Green Campus Energy Efficiency Summit, which will be held January 24 – 26 in Irvine. The final invitation list was devised and 'Save the Date' announcements were sent out on November 26. The Alliance Direct Implementation Team also began developing a process agenda for the event, which follows the following framework:

- Saturday, January 24th: Informal Intern welcome banquet and introductions.
- Sunday, January 25th: Intern training day and evening welcome reception for Interns and stakeholders.

- Monday, January 26th: Best practices showcase, project planning, and keynote address at UC Irvine campus.

Invitations with more information will be sent out to invitees in early December. During December, the Team will also finalize the agenda and distribute speaking invitations to interns and outside experts in the energy efficiency and workforce education and training fields.

This Way to Sustainability Conference

On November 7 – 8th, Green Campus Project Manager Renee Lafrenz and Senior Program Associate Jennifer Alvarez attended This Way to Sustainability at Chico State University. They were joined by Interns from Chico, Humboldt, Cal Poly SLO and UC Merced. Ms. Alvarez made a presentation on Friday that featured the workforce education and training aspects of the program and project case studies (**see attached**). The session was co-facilitated by SEI Program Manager Morgan King, and approximately **25 people** were in attendance. It was advertised with the following description:

Green Workforce Development: Pathways to preparing the next generation for green collar jobs (with Alliance Staff Jennifer Alvarez)

As the Green Revolution gains momentum, economically stressed communities are searching for new employment and business development opportunities. There is a need to train a new generation of "green collar" workers to ensure that emerging green businesses and organizations have the employees they need to grow the green economy. Morgan King and Jennifer Alvarez explore pathways of green workforce development.

Using the Green Campus internship program model, Ms. Alvarez introduced ways that other colleges can engage staff, administrators, and students in workforce education and training through student led projects and campaigns. These include academic integration through “on the job” technical training and analysis; job shadowing and mentorship building; utilizing the statewide intern and alumni network; and professional development skills training and opportunities. Mr. King highlighted Strategic Energy Innovations’ Awareness for Communities about Energy (ACE) program, a high school energy efficiency education program training students to conduct audits of small businesses and share their knowledge with the local community including senior citizens, parents, and other community members.

Mr. King also facilitated the following session with former Green Campus Intern and current Chico faculty member Bret Bosma, attended by 5 people:

Fostering Sustainability in the Campus Residential Setting - Displaying building energy consumption for behavior change and sustainability education. Students Taking Action on Campus: California State University, Chico (with ex-Intern and current Chico GCP stakeholder Bret Bosma)

Education is critical to explaining the dynamics of energy reduction, but inspiring people to conserve is especially challenging if they don't pay the energy bill! Real-time energy monitoring displays can help—by allowing building occupants to see how energy and other resources are being consumed, thus encouraging behaviors. Presentation concludes with a tour of real-time monitoring in Lassen and Shasta residence halls.

For more information about the addition Intern sessions at the conference, see the Marketing section below.

AASHE Conference

On November 9 – 12th, ASE Vice President for Education Merrilee Harrigan and Project Manager Renee Lafrenz attended the AASHE Conference in Raleigh, NC. They were joined by Interns from Chico and UC Santa Cruz as well as stakeholders from a number of Green Campuses. Ms. Lafrenz made a presentation on Monday that featured the workforce education and training aspects of the program and project case studies (**see attached**); approximately **50 people** were in attendance. Ms Harrigan and Ms Lafrenz attended a meeting of national leaders in community college sustainability to highlight the California Green Campus successes and how that might be leveraged in community colleges.

BECC Conference

On November 17 – 19, ASE Vice President for Education Merrilee Harrigan, Director of California Education Programs Jo Tiffany and Green Campus Project Manager Renee Lafrenz attended the Behavior, Energy and Climate Change conference in Sacramento, CA. Ms. Lafrenz made a presentation on Wednesday that featured the workforce education and training aspects of the SCE Green Campus Program and highlighted Green Campus project case studies including fume hood competitions, office energy audits, network based power management and academic integration (**see attached**); approximately **20 people** were in attendance. Ms Tiffany and Ms Harrigan also attended a meeting at the CEC at which they discussed the Green Campus and Green Schools Programs in the context of the CPUC's WET and MEO initiatives.

UC Merced

This month, Interns received notification that Facilities will provide Green Campus with office space in the modular offices on campus as of the first week of December. Interns prepared and organized materials to move into the space. To maintain their office, they will have to confirm their usage of it with Facilities at the beginning of each academic year.

Direct implementation activities (describe)

Intern Implementation Budget

See **attached November 2008 Intern Implementation Budget Summary** to gauge the status of the implementation budgets for each Green Campus.

CFL Exchanges

2007-08 Academic Year to Date (i.e., since August 1, 2007), Green Campus has exchanged a total of **19,484 CFLs**. During November, Green Campus interns in the SCE, PGE, and SDGE territories exchanged a total of **428 CFLs provided by SCE**. November CFL exchanges break down as follows:

CFLs Provided by SCE

SCE – 197
PGE – 231
SDGE – 0

CFLs Provided by Others

SCE – 0
PGE – 0
SDGE – 0

UC Berkeley

Fall “Shut the Sash” Fume Hood Competition

This month, the Green Campus team launched the fall “Shut the Sash” fume hood competition from November 7 - December 7. Interns designed fliers and posters to demonstrate the energy intensity of lab fume hoods, one of which is approximately equivalent to the energy usage of three households. If occupants achieve a total energy savings goal of 5% or 8%, the whole building will be rewarded a fruit and cheese, or a fruit, cheese, and wine party respectively (NOTE: Funding for this event has been provided by a grant through Bears Breaking Boundaries). Overall savings results will be calculated next month.

Green Department Certification

On November 26th, Green Campus Interns met with Sustainability Director, Lisa McNeilly to discuss the development of a department-level green certification standard. Departments will earn points for sustainable attributes based on criteria the team puts together. Additionally, the team determined that some practices should be made mandatory such as creating a “Green Team,” which would meet at least once a semester to develop a plan of action. Departments can also earn extra points for particularly innovative ideas of their own. The team will brainstorm energy efficient standards in the next few months.

Vending Misers

This fall, the Green Campus Team continued monitoring the vending misers on machines throughout campus. Vending misers are occupancy sensor devices that power down machine lights in low traffic areas in order to save energy. The devices regulate the internal temperature of the machine to keep the drinks cold, and power on the machine light when occupants are close by to see them. Vending misers are installed in four buildings, including Soda, Kroeber, Cory, and Davis Halls. The team will continue to work closely with the Associated Students of the University of California (ASUC), Coca-Cola Bottling, and USA Technologies as this project progresses.

BS@C URAP Campus Equipment Inventory

This month, Green Campus interns began working with the Building Sustainability at Cal Undergraduate Research Apprenticeship Program (URAP) interns to perform an inventory for T-

12s, exit signs, appliances, and CRT monitors in all campus buildings, commencing with the College of Natural Resources. This inventory will directly assist UC Berkeley's strategic energy plan in identifying where changes can be implemented on campus to reduce energy usage through lighting retrofits. Each T-12 identified in this inventory will ultimately be replaced by the more energy efficient T-8 fluorescent lamps, contributing to reduced energy costs and greenhouse gas emissions. Green Campus plans to enhance their involvement in this project even further in the coming semester.

Humboldt

HSU CFL Distribution in November 2008

Event	Watts	Source	Amt. distributed
November Tabling Events (See Marketing below for details on this event)	23	SCE	208

Stadium Lighting Project

This month, Interns met with Director of Plant Operations Tim Moxon to discuss funding of the stadium lighting project (see October 2008 monthly report for background on this project). Mr. Moxon confirmed that the University will cover all costs associated with the project, including hardware, mounting, scaffolding and labor. In November, Mr. Moxon began drafting a project proposal to put out to bid to local electrical contractors that have previously done work with the University (including Neeper Electric and O&M Electric). Mr. Moxon expects to launch the bid in the next month and to select a contractor by early spring semester.

Below is a summary of activities that Interns and Mr. Moxon will look to complete in December:

- Interns will set up conference call with Mr. Moxon and Musco lighting to discuss logistics of shipping and installation and to clarify any questions regarding the proposal;
- Interns will conduct light meter readings on the field and track (under the existing lighting) before the end of semester;
- Interns plan to discuss PG&E rebate and incentive options with the Executive Director of the Redwood Coast Energy Authority David Boyd and local PG&E rep Robert Cherry and to compare PG&E rebate with Partnership rebate to optimize payback.

Office Energy Audits

This month, Interns completed energy audit reports for the offices of University Advancement, the Career Center, and the English Department's Writing/Computer lab. On November 20th, Interns delivered audit reports to the offices and spent time with office occupants going over each individual report and their recommendations. Interns identified a total annual savings of **28,872 kWh** if these offices were to implement the suggested changes, which included optimizing energy savings modes on computers and other office equipment, managing phantom loads, shutting off lights when not needed, eliminating equipment redundancies, and utilizing task lighting. **See HSU Cumulative Energy Audit Savings Chart, attached.**

Interns also provided the offices with a framed certificate and took pictures to congratulate them for their participation.

Eco-Art Exposition

See October 2008 monthly report for background on this project. This month, the Team decided to postpone the show until spring semester in order to attract additional applicants; all

current applicants were amenable to this change. Interns contacted The Student Access Gallery on campus to determine when they could schedule a showing next year; the Gallery indicated it still has open slots throughout the spring semester. Interns plan to conduct another outreach effort to solicit artists for the show in January.

Bundled Projects

See September 2008 monthly report for background on this project. This month, Interns followed up with Director of Plant Operations Tim Moxon to check on the status of implementation of the bundled projects (i.e., network-based power management and building monitoring based commissioning) and offer their ongoing assistance. The project stands as follows:

- HSU received a **\$79,000** check from the Partnership (covering 60% of the total rebate for the bundled projects). Mr. Moxon confirmed that a portion of the rebate will go into a fund for HSU Green Campus. In early spring semester, Interns will work with Mr. Moxon to determine the dollar amount and the process for creating and managing the fund.
- Mr. Moxon scheduled installation of the network based power management software to take place over winter break.
- Mr. Moxon received an extension (on behalf of HSU) from the Partnership into next semester (due to travel on the part of the engineer with Urfer Engineering, the firm conducting the MBCx project). Mr. Moxon and Interns ensured that the MBCx project will still take place in time to access the Partnership rebate.

UC Merced

Workforce Education and Training: Career Fairs

Also during this month, Interns continued to join the Admissions office to co-host informational tables at junior college and high school career fairs in the area in order to inform prospective students about UC Merced's sustainability efforts and opportunities in this field. In November, Interns participated in two tabling events with the Admissions office at high schools in Modesto and Stockton and spoke with a total of **170 prospective students** over the course of the two events.

Sustainability Committee

On November 20th, Interns Jessica Zenger and Rachael Bennett attended a meeting of the Chancellor's Advisory Committee on Sustainability. At this meeting, Ms. Bennett presented on Green Campus efforts thus far to develop a brochure and guided tour of sustainability sites on campus. Interns are currently engaged in collecting information and photos from the campus community to include in the brochure (see Sustainability Brochure activities below for more information). Interns expect to complete the brochure by February 2009, at which time the Sustainability Committee will finalize and print the brochure en masse.

As of November, the Committee engaged in the process of developing a series of sustainability goals and milestones for the university, to be reviewed on a quarterly basis to track the university's march towards sustainability. During the November meeting, Interns presented on two project ideas to include in the Committee's goals – *real-time energy monitoring and feedback in campus buildings*, and expansion of the *fume-hood napping campaign* (see Fume-hood Napping Project below for more information on this project). The Committee agreed to include both of these efforts in its list of sustainability goals for the remainder of this academic year and for the 2009-10 school year.

In December, Interns will meet with Energy Manager John Elliot to discuss these two projects and opportunities for implementation.

LED Tube Lighting

See September 2008 monthly report for background on this project. During the period of October 28 - November 3rd, Interns conducted a control experiment with a LED tube light fixture to measure heat waste (**see UCM LED Experiment Protocol, attached**). Interns downloaded temperature data from a HOBO® temperature data-logger and analyzed the data (**see UCM LED Results, attached**), which showed the temperature in the control setting averaging approximately 79 degrees Fahrenheit. Following the control experiment, Interns will study the LED lighting in a standard campus setting.

Also this month, Interns spoke with a professor on campus that has conducted similar experiments with lighting with the aim of calculating the release of waste heat. Interns scheduled a meeting with the professor in early December to review findings.

Academic Integration: Sustainability Brochure

In November, students in the ES 199 course completed two Statements of Work (SOWs) outlining their work to support the development of the Sustainability Brochure by gathering information from Facilities Management and Office of Student Life (**see UCM Brochure SOW I, attached**) and from Dining and Transportation and Parking Services (**see UCM Brochure SOW II, attached**). Interns and ES 199 students met with a total of six departments to gather information of campus sustainability efforts and scheduled meetings with the remaining departments in December. Interns and students also worked on developing a format and layout for the brochure and collecting key sustainability facts about the UCM campus.

Also in December, Interns will meet with the Office of the Chancellor to gather professional photographs suitable for the brochure. Interns expect to complete a draft of the brochure before the end of the semester.

Energy Audits

See October 2008 monthly report for more information on this project. This month, Interns developed an occupant survey and began interviewing those in the portables on the UCM campus (**see UCM Occupant Survey, attached**). The surveys will continue into December.

Also this month, Interns met with Energy Manager John Elliot to discuss accessing meter data from the portables. Mr. Elliot located the meter (the 19 portables share a single electrical meter) and showed the Interns how to read it. The portables are not on any automated EMS system so must be manually read. Upon the request of Mr. Elliot, Interns and ES 199 students read the meter daily throughout the month and shared the data with Facilities Management to apprise them of the energy performance of the portables. In December, Interns will analyze the meter data to determine the energy intensity (kWh per square foot) of the portables. Interns will also access energy data for the LEED certified library so as to compare the library's energy intensity to that of the portables. Interns will also develop educational displays to generate awareness of portable energy consumption to the campus community following the completion of the energy audits.

Also in November, Interns began walk-through audits to conduct load inventories inside the portables. The walk-through audits will continue through December, after which Interns will compile and analyze data and develop recommendations for portable occupants to reduce energy consumption.

Laboratory Fume Hood ‘Napping’ Project

This month, Interns presented on the fume-hood napping project to the Chancellor’s Advisory Committee on Sustainability and the following success to date in generating campus energy savings:

Metrics¹

• Number of fume hoods put into nap mode	3
• KWh (and \$) /cfm/year	39 (\$0.11)
• Therms (and \$) /cfm/year	.89 (\$1.00)
• CO2 /cfm/year (13.47#/therm + .524#/kWh) ²	32.4
• Cost/cfm/year (39*.11 + .89*1)	\$5.18

Consumption and savings

• Average cfm/year of an “awake” fume hood	645
• Average cfm/year of a “napping” fume hood (60% of awake)	258
• Savings (awake – napping)	387

Benefits

• Projected annual savings (3 fume hoods x387 cfm/yr)	\$4,009
	30,186 KWh
	689 therms
	25,078 lbs. CO2

The Committee realized the value of supporting and expanding this project across the campus based on these figures and agreed to publish the fume-hood napping project in their list of sustainability goals for this and next academic year. Interns were requested to continue working with Energy Manager John Elliot to establish a protocol for the project.

This month, Interns met with Mr. Elliot to discuss expanding the ‘Fume hood Napping’ campaign, which entails identifying unused or minimally used fume hoods in the campus laboratories to be taken off-line (see May 2008 monthly report for more information on this project). Mr. Elliot and Interns discussed a targeted effort to reach fume hoods in the instructional laboratories on campus in order to take them off-line over the winter holiday. Initial counts indicate that **20-24 fume hoods** could be taken off-line, which would thereby enhance the energy savings of this project seven to eightfold. In December, Interns will conduct an inventory of instructional lab fume-hoods and work directly with the Energy Manager to schedule the operation. Mr. Elliot indicated that the operation could take place as early as December 18th.

UC Santa Cruz

Campus Outreach – Earth Summit

This month, Interns attended an orientation meeting for the 8th annual Campus Earth Summit, to take place on February 26th, 2009. Considered the largest sustainability event on campus, the day-long Earth Summit brings together students, faculty and staff to develop long-term strategies for implementing consequential sustainability initiatives on campus. Attendees participate in workshops and affinity groups to develop plans for addressing energy, water,

¹ Based on information provided by UC Merced Energy Manager John Elliott for three fume-hoods taken offline in Spring 2008.

² Drawn from PGE assumptions available at <http://www.pge.com/about/environment/calculator/assumptions.shtml>

transportation, waste, purchasing, and other issues pertinent to the sustainability of the campus. Following the orientation meeting, Interns took initial steps to organize a workshop on campus energy efficiency. Interns also agreed to discuss co-facilitating a campus energy working group with Energy Manager Patrick Testoni.

Interns will continue to develop the workshop and working group in the coming months.

Lab Freezer Inventory

See September 2008 monthly report for more information on this project. In November, Intern Rachel Shiozaki submitted the inventory data she had collected on science laboratory freezers and refrigerators to Energy Manager Patrick Testoni, as part of an effort to swap out older units with higher efficiency, PG&E rebate supported units. **See UCSC Lab Freezer Inventory, attached.** Mr. Testoni will use the data collected by Ms. Shiozaki to determine swap-out opportunities for the laboratories, expected to take place in winter quarter.

Bi-level Outdoor Lighting

This month, Interns continued their efforts to support the retrofitting of existing outdoor lighting with LED bi-level fixtures. Interns completed an inventory by mapping the outdoor lighting on walkways in the Quarry Plaza, Kerr Hall, and Performing Arts (**see UCSC Performing Arts map, attached**), photographing existing lighting to be identified by Energy Manager Patrick Testoni and UCSC Lighting Supervisor Joe Salivista (**see UCSC Bi-Level Photos, attached**), and developing initial energy savings estimates based on the findings of the inventory (**see UCSC Bi-Level Savings Estimate, attached**).

Existing outdoor lighting consists of high pressure sodium (HPS) and metal halide fixtures ranging from 70 – 175 watts per fixture. Mr. Testoni identified a 115 W LED replacement for the 175 W metal halide fixtures and a 40W LED replacement for the 70W HPS fixtures. Interns and Mr. Testoni calculated an **estimated annual savings of 20,621 kWh based on the retrofit of 173 outdoor fixtures.**

In December and early winter quarter, Interns will work on the following next steps:

- Update estimates with accurate wattage and lamp type;
- Work on educational display;
- Use the Hobo data logger to make estimates of occupancy for each area;
- Expand map and estimates to include entire UCSC.

Energy Audits – Family Student Housing

This month, Interns met with Housing stakeholder Silas Snyder to discuss establishing an energy audit and assistance project in Family Student Housing (Note: In a meeting with Alliance Staff on October 31st, Mr. Snyder identified Family Student Housing as an area in need for energy conservation). This housing complex is occupied by families on fixed budgets and each family is responsible for paying their own utilities. Many of the families are international and may be unaware of the low-income assistance programs available through PG&E. According to Mr. Snyder, the buildings may also be in need of simple weatherization measures. Mr. Snyder and Interns discussed implementing the following:

- Conduct energy audits of the units and develop recommendations to share with residents and Housing;
- Educate residents of PG&E low-income assistance programs and weatherization efforts, and facilitate entry into these programs;
- Install CFLs;
- Implement other zero to low cost energy efficiency measures and outreach to curb lighting and plug load energy consumption.

In December, Interns will complete a Statement of Work (SOW) for this project, which is expected to begin in earnest at the beginning of the winter quarter.

Chico

Vending Miser

See September 2008 monthly report for background on this project. This month, Interns conducted an inventory of vending machines on campus to assess opportunities for installing VendingMisers®. **See Chico Vending Inventory, attached.** Interns identified a total of **19 machines** on campus, twelve of which are cold beverage. Interns assessed traffic around the machines, machine lighting usage, and space from the ceiling and from the outlet. Based on this assessment, Interns determined **eight machines** to be prime candidates for the first round of Vending Miser Installations.

Also this month, Interns installed a watt meter on a vending machine that has low traffic (Siskiyou Hall 1st floor). Interns left the watt meter on the machine for a week, with the following result:

Siskiyou Hall vending machine (without VendingMiser®):

1. Max Watts: 1472
2. KWh: 94.8
3. Days:Hours - 7:02
4. Energy Cost (to operate the machine for one week at \$0.14 per kWh): **\$13.28**

In December, Interns intend to install a meter on machines in the BMU and Plumas Hall in order to get an average energy consumption. Interns will also meet with advisors in order to access the team's fund (derived from a Partnership rebate award last year) to purchase twelve VendingMisers®. Interns expect to begin installation of the Misers in the beginning of the spring semester.

Energy Reduction Competition

This month, Interns held a semi-annual five-day energy competition between Shasta and Lassen residence halls. Interns and volunteers made posters announcing the event and providing energy saving tips (*see Chico Competition Flyer, attached*). At the beginning of the month, Interns conducted extensive outreach and marketing to prepare the residence halls for the competition.

The Halls share the same floor plan and residence population. They each also have their own real-time energy monitoring system, which display consumption data on a flat screen monitor in the lounges, allowing residents to track savings over the course of the competition (*see Chico Display photo, attached*). Residents could also track their dorm's energy performance online on the [Chico Green Campus website](#). By the end of the week Lassen Hall had used less energy than Shasta; however, following the competition Interns learned that construction workers had been pulling power from Shasta dorm for the construction of a new dining hall. Interns therefore hosted an ice cream party for residents from both dorms (instead of awarding a prize to the winning dorm) to celebrate everyone's effort in reducing their energy consumption. *See Chico Competition Evaluation, attached.*

At the end of this reporting period interns were working to identify energy savings resulting from the competition (by estimating construction power draw and comparing dorm energy performance to a baseline). These results will be reported next month.

Office Energy Audits

This month, Interns continued supporting student teams in conducting the energy audit portion of the SCOOP office sustainability consultations (see September 2008 monthly report for background on this project). Interns completed and presented the energy audit portion of the SCOOP reports for the *Department of Education, University Public Events, and Student Government offices*, which focused on eliminating phantom loads. *See Chico SCOOP Nov. Reports, attached*, for examples of this work.

Below are the identified annual savings for these offices if recommendations are implemented:

- Department of Education: **2,376 kWh**
- University Public Events: **800 kWh**
- Student Government: **500 kWh**

Sustainability House

This month, Interns met with Barbara Brautigam (Admin Support Coordinator/Advisor for the Honors Program at Chico State) to discuss how to advertise the Sustainability House to incoming students. Because the Konkow dorm (where the house is located) is considered "thematic" living, 4 of the 8 houses (including the Sustainability House) are for Honors students only. In order to be an Honors student, incoming freshman have to meet certain qualifications and apply directly to the Honors Program. They can then indicate on that application whether or not they would be interested in living at Konkow. Then, the Honors Program Coordinator personally calls each student that showed interest (and who was admitted into the program) to confirm their decision to live in Konkow. From there, she tries to match up students by major and interests and tries to keep the co-ed houses equal in the amount of males and females.

Until their meeting, Ms. Brautigam was unfamiliar with Green Campus and thought the "Sustainability House" was something that University Housing and Food Services (UHFS) had created. Ms. Brautigam expressed her desire to support Green Campus and its effort to recruit for the Sustainability House by channeling more information about the house to the applicants.

She also expressed her willingness to place students that demonstrate interest into the house.

In December Interns will assist with the following:

- **Provide information for the Honors Program website**, www.csuchico.edu/hnrs (Click on the Honors House tab). Interns will write a paragraph about the house and then have a direct link to the Sustainability House page on the Green Campus website.
- **Include information for the Honors Program application**. This is located on the website mentioned above (click on the Admissions tab and download application). On the last page of the application is a box for applicants to indicate their housing preference. Because of the limited space on this form, and because many have already been sent out this year, Interns will put a sentence or two on the application directing applicants to the Green Campus website to get more information.
- **Create a brochure**. Although the packets sent to potential applicants have already been sent out for next year, Interns will create a brochure to leave in the Housing Office. Ms. Brautigam also offered to distribute the brochure to incoming freshmen during New Student Orientation in the summer.

In December, Interns will develop the material listed above and submit to John Mahoney, Director of UHFS for approval prior to release.

Cal Poly SLO

Cal Poly SLO CFL Distribution in November 2008

Event	Watts	Source	Amt. distributed
Sustainability Mixer	23	SCE	23

Campus Outreach – Sustainability Mixer

In an effort to outreach to the campus community, Interns participated in a *Sustainability Mixer* on November 19th. This event offered a forum for students, mainly freshman, to discuss campus sustainability efforts and to get student organizations on campus. Green Campus Interns hosted an informational table alongside many other sustainability-focused clubs, such as the Zero Waste Club, the Hydrogen Energy Club, and the Fair Trade Club. Interns spoke with approximately **43 students**, seven of whom expressed interest and requested more information on applying for the internship opening. Also at this event, interns exchanged a total of **23 CFLs**.

Greeks Go Green

See September 2008 monthly report for more background on this project. This month, Interns completed a Statement of Work (SOW) for the Greeks Go Green project (**see SLO Greeks SOW, attached**). On November 19th, Interns met with the president of Sigma Kappa, Lauren Sweeney, to discuss the project and to conduct an initial assessment. Besides energy, Interns collected general information on water conservation, waste management, landscaping, and other aspects of the sorority's operations to share with other student groups (e.g., Zero Waste Club) that may participate in the Greeks Go Green project. **See SLO Greeks Assessment, attached.**

Interns, in cooperation with Sigma Kappa, also worked to institutionalize a position that is directly related to energy conservation and sustainable living within the sorority. Following training by the Interns, that individual will be responsible for reading meters and supporting the installation and implementation of energy efficiency measures. Interns expect that this kind of a

leadership position, to be filled by a member of the sorority, will help promote energy conservation and sustainable living within the house for years to come.

In December, Interns will initiate an energy audit of the sorority house and work with the president to identify and recruit an individual to the energy conservation position.

Green Wash Campaign

See October 2008 monthly report for background on this project. This month, Interns contacted key stakeholders regarding setting up a time to conduct an initial audit of the auxiliary dishwashing machine as well as the dishwashing machine located in Vista Grande. By the end of this reporting period, Interns had yet to hear back from stakeholders and therefore look forward to scheduling these audits in December. At that time they will also move forward with identifying energy efficient models to replace the two machines.

Vending Miser Inventory

See October 2008 monthly report for more information on this project. In November, Interns completed an inventory of vending machines on campus and identified a total of **32 non-refrigerated snack machines and 13 cold beverage machines**, suitable for a VendingMiser® installation. **See SLO Vending Inventory, and SLO Vending Map, attached.** Interns calculated that, once installed, the Misers will account for an annual savings of approximately **31,000 kWh. See SLO Vending Savings, attached.**

This month, Interns met with Energy Manager Dennis Elliot to discuss their findings. At this meeting, they learned that the campus has a number of used VendingMisers® in storage that could be re-installed and therefore reduce upfront cost of the project. In December, Interns will conduct an inventory of the total number of Misers in storage and will begin to seek approval for their installation from the various entities on campus that manage the machines. Interns expect that ordering additional Vending Misers, as needed, and installation of all the units will take place during winter quarter.

Green IT

See October 2008 monthly report for information on this project. This month, IT indicated that the Big Fix product will be ready for roll out across the campus starting at the beginning of the winter quarter. During this month, Interns began preparing a presentation that they will use to support their efforts to market the network-based power management tool to departments across campus. Since the product will be offered as a voluntary 'opt-in' to the campus (at \$7 per unit), the role of Interns will primarily be to conduct outreach and education to encourage departments to adopt the Big Fix product.

Interns expect to begin this marketing effort at the beginning of winter quarter.

Dorm Energy Competition

This month, Interns prepared to hold their second dorm energy reduction competition (in spring 2008, Interns held their first competition between three dorms, which had a combined savings of 8,271 kWh, 2,479 therms and 78,147 gallons of water in a six-week period. See May 2008 monthly report for more information). The competition will be expanded to **six dorms** in the winter quarter.

This month, Interns prepared a spreadsheet to track resource consumption of the competing dorms (**see SLO Competition Spreadsheet, attached**). Interns also began developing educational and outreach material to post in the competing dorms as well as website material

(NOTE: For this competition, dorm energy performance updates will be posted daily on the Green Campus website). On November 18th, Interns met with stakeholders in Housing in addition to six Community Student Directors (CSD) to discuss the upcoming competition. The stakeholders and CSDs expressed excitement and agreed to support the competition by assisting to engage all residents. Interns and CSDs plan to conduct educational activities featuring energy and water savings tips for dorm living. These include keeping unused lights off, washing full loads of laundry in cold water, and enabling computer sleep modes.

In December, Interns will continue planning and preparation efforts, and will determine the exact start/end dates for the competition.

UC San Diego

Energy Competition

Green Campus interns Susan Kram and Meredith Wong educated UCSD residents about energy conscious practices with the creative yearly tradition of hosting an energy saving competition. Tenaya and Tioga Halls in Muir competed against Argo and Blake Halls in Revelle College. The competition pitted the two teams against each other in a fierce battle of turning off lights, taking the stairs, and putting computers into standby mode. Students demonstrated their enthusiasm both with positive feedback when Green Campus interns handed out energy saving tips, as well as with their impressive display of energy savings.

Revelle started off strong and maintained a 10% lead throughout the three week competition. The final tally revealed Revelle as the overall winner with an 18% energy savings in comparison to the energy consumption of their buildings during same three weeks in 2007. Muir was close behind with a 15% reduction in energy use. The combined energy savings of the two teams during the 23 day period was equivalent to a **\$2434.47 reduction in energy costs**. Perhaps the success of the competition was due in part to the prizes offered to the students. Revelle, as the leading team at the halfway mark, received brownies to reward their efforts and the overall winner is to receive a private concert at their college with local rock band Long Live Logos. Green Campus looks forward to next year's competition as another opportunity for educational outreach to encourage long-term consciousness about residential energy use.

Fume Hood Competition

January 5 – February 6 Green Campus will be holding a "Shut the Sash" energy saving competition for the biology department labs at the Natural Sciences Building. The labs are challenged to close their sashes--the lowest average sash height will be awarded. Interns intend to track the metrics that this energy saving behavior will promote and report them in February.

San Diego State University

Greeks Going Green

In fall 2008, SDSU Green Campus Program initiated a dialogue with the campus Greek organizations to implement Greeks Going Green program. Greeks Going Green will be an independent registered student organization on campus with its own bylaws. SDSU GCP intern Rob Ellsworth worked on securing key contacts to introduce their plan of action during the past few months. Throughout the week of Nov. 17th-20th he made presentations to four SDSU Greek Councils, USFC, NPHC, IFC, and Panhellenics at their scheduled council meetings. These councils oversee different groups of fraternities and sororities, and comprise of members of said Greek chapters.

The presentation aimed at uniting Greek leaders to collaborate with other organizations to mobilize them into the direction of sustainable living. The idea is to create leadership opportunities by establishing a centralized body to disseminate information on sustainable living to educate and motivate the Greeks at SDSU by organizing community events. 15-20 members attended each of the four meetings. The team's intention is to motivate the Greeks to sustainable changes in their lifestyles to obtain measurable energy saving and contribute to the cause of sustainability to make SDSU an energy efficient campus. Panhellenic and IFC councils exhibited interest in this program. Their members not only want to be a part of Greeks Going Green, but also want to take leadership initiatives. Once the organization gains more support and members, the team will start energy competitions between residential Greek houses in an effort to reduce energy consumption.

Physical Plant Energy Assessment

SDSU Physical Plant Director Joe Patterson met the team at the recent CSUFM Conference in LA, at which he expressed his interest in our activities. He subsequently invited GCP intern Simarjeet Sahota to discuss the prospective partnership. They met on November 4th 2008 exchange information on the projects the team has completed. He then invited interns to do an energy assessment of Physical Plant Administrative offices. The first phase of energy assessment began on November 19th 2008; floor mapping was completed and surveys were distributed to the facility users. The assessment is slated to continue through the remainder of this semester.

2. Marketing activities (describe)

All Green Campuses completed newsletters during this reporting period in order to inform their campus stakeholders about their current projects (**see attached**).

UC Berkeley

The Big Save: Stanford vs. Cal Residence Hall Energy Competition

This fall, Green Campus Interns from Stanford University and UC Berkeley took their rivalry off the sports field and into the residence halls. The 2-month long competition began on October 1 and will continue through the end of November. Baselines were established using prior data from 2004-2007, and the winner will be determined using the highest per capita savings rate. Final savings results and the winner will be determined in December.

In addition, the internal Blackout Battles energy competition between the four residence halls (Unit 1-4) is underway. Final savings results of this competition will also be announced in December.

Humboldt State

Campus Outreach

In November, Interns hosted information tables on a weekly basis in the main campus quad. **230 people** visited the information table over the course of the month. Interns signed up **eight new volunteers**, gave away **5 power strips** and distributed **208 CFLs**.

This Way to Sustainability Conference

During this reporting period, Interns traveled to Chico to attend *This Way to Sustainability IV*, November 6th – 9th at CSU Chico. Besides attending various sessions on climate protection and

energy efficiency, Intern Sarah Schneider presented on the following:

Student Led Initiatives to Save Energy, The Green Campus Internship Course: How to integrate energy efficiency education into the classroom

Program coordinators offer an overview of successful Green Campus projects and discuss how to mobilize student, faculty, and administrative effort toward energy conservation. Amelia Gulling and Sarah Schneider review lessons learned and share tips to help students help their campuses moving in the right directions.

Website

This month, the university launched a new Sustainability website to highlight the campus' efforts to reduce its ecological footprint. The site details initiatives and policies the University has launched to reduce its ecological footprint and gives users information on sustainability-focused clubs and organizations. In November, the HSU Green Campus Program was highlighted for its efforts to implement network based power management and building re-commissioning projects.

Phantom Hunter Submission to Competitions

Following Interns' submission of an edited version of *The Phantom Hunter* to the Lucid Design Group Building Dashboard Competition in October (see October 2008 monthly report for details), Interns this month received word from Creative Director Gavin Platt that they were declared as one of the two outstanding runners-up. The prize for this honor is access to and a special discount for Lucid's Dashboard Starter package, about which Interns expect to receive details in December. They then plan to share this information with stakeholders to determine if the University might be interested in purchasing the product.

Also this month, Interns submitted the 3-minute edited version of *The Phantom Hunter* to the National Wildlife Federation's "Campus Chillout" competition on GreenTube (<http://www.gogreentube.com/watch.php?v=NDg0NT11>). After watching the submitted videos, viewers can vote on their favorite. This month, Interns conducted extensive outreach to request votes for *The Phantom Hunter*; voting ends February 1st 2009. Two videos will be selected as winners through a combination of online voting and NWF and Go Green Tube's judging criteria. Each winner will receive the following prizes for his/her campus group or department:

- \$500 for a climate project
- The video featured in *Chill Out*, a multi-media broadcast (April 2009)
- 5 t-shirts
- Project promoted to the media

San Diego State

International Peace Village

This month the team geared up for December 4th tabling efforts as part of the 52nd Annual International Peace Village, organized by International Student Center. They plan to exchange CFLs and distribute information about upcoming Green Campus Club Meetings. Organizers expect over **800 people** to attend, including local youth.

Green Campus Club Registered as Student Organization

In November, the Green Campus Club at SDSU became officially recognized as a student organization at SDSU. Two officers, club President Simarjeet Sahota and Vice President Sunil Gupta attended the new organization orientation conducted by SDSU Student Life and Campus

Living office. This orientation informed the club officers about the rights and obligations of the student organizations as well as funds available for organizing and sponsoring events on the campus. The team's first club meeting is December 1st.

UCSD

Chill Out Competition Video

On November 13 and 14, various students, staff, and a film crew were brought together to create a film for the National Wildlife Fund's Chill Out competition. Any university could participate by making a video or writing an essay that showcases the work that their campus is doing. The winners of the competition are awarded grant money and featured in the NWF's Chill Out broadcast, an event in April that brings universities together and features practical solutions to global warming being implemented by higher education campuses around the country.

UCSD's video features Green Campus interns Erika Kociolek, June Reyes, and Michelle Kizner, as well as various other students who are leaders in the sustainability movement. In the video, the students present to the audience, the many things that UCSD has done and is doing to promote sustainability. To see the video, visit <http://gogreentube.com/watch.php?v=NDc4OTQ1>. On December 1, individuals across the nation will have the chance to vote on the videos posted to GoGreenTube.com.

Greenbuild Conference

Since 2002, thousands of people have attended the Greenbuild International Conference and Expo to connect with green building professionals and industry experts. This year, Green Campus intern Erika Kociolek and recent graduate Sarah Termond (2008) joined nearly **30,000 conference attendees** in Boston, MA at the seventh annual Greenbuild conference. Students attended sessions ranging from green roofs to energy software and heard from the esteemed voices of Archbishop Desmond Tutu, E.O. Wilson, and Janine Benyus. They also met with US Green Building Council Associates in the Higher Education Sector to prepare for their own presentation - an invited panel discussion at a student advocacy training session.

This discussion highlighted the work of the UC San Diego Green Campus Program on the university's first LEED-EB project, which will be submitted to the USGBC for review in the coming weeks. The training was intended for Emerging Green Builders and students interested in enacting change on their campuses. UC San Diego students spoke about their involvement with the LEED certification project, sharing obstacles and lessons learned and also participated in a role-playing exercise highlighting the importance of professionalism and communication skills when talking to staff and administrators on campus. UC San Diego students made connections with students from Ohio, Massachusetts, and Florida, and look forward to applying lessons learned from the conference sessions to two new LEED certification projects at UC San Diego.

Cal Poly SLO

This Way to Sustainability Conference

This month, Interns Chad Worth and Doug White attended the This Way To Sustainability IV conference at CSU Chico November 6 – 9. Interns met with Alliance Staff at the conference to discuss team activities and project status. Besides attending numerous sessions on energy efficiency and climate protection, Intern Chad Worth facilitated the following presentation on his

experiences on an energy-themed tour of Europe; the session was attended by **25 people**:

Lessons from Europe- 2008 European Smart Energy Study Tour

In the spring of 2008 twenty students, energy experts, county officials, and community leaders traveled to Europe on a two-week European Smart Energy Study tour. The tour included stops in England, Belgium, Netherlands, Denmark, and Sweden to participate in meetings and workshops and to see some of Europe's most cutting-edge policies and technologies. Come learn about best practices from across the pond.

Article

This month the Cal Poly SLO student newspaper *The Mustang Daily* published an article on student and university sustainability efforts. The article highlights the Green Campus Program as a student organization contributing to the campus' overall sustainability objectives. **See SLO Mustang Daily Article, attached.**

CSU Chico

Tabling

On November 17th, Interns hosted an informational table during the Tofurkey Feast, an event sponsored by the Environmental Action Resource Center and the Environmental Affairs Council. Besides a vegetarian meal, the event highlighted various student environmental groups on campus. Interns spoke with **20 students** at the event and distributed brochures on the Program.

This Way to Sustainability Conference

This month, Interns attended the *This Way To Sustainability IV* conference at CSU Chico November 6 – 9. Besides attending numerous sessions on energy efficiency and climate protection, Interns facilitated the following presentations:

Campus Energy Tour

See and experience Green Campus energy efficiency projects and tour other Chico State sustainability accomplishments. Coordinators from the Alliance to Save Energy's Green Campus Program will lead a tour of the Sustainability House, the real-time energy meters in Lassen and Shasta Hall, and campus LEED buildings and solar arrays.

SCOOP: Sustainable Consultations of Office Practices

SCOOP is designed to assess current office practices and formulate sustainable recommendations for improvements toward currently achievable sustainable office standards.

How to Conduct an Energy Audit

Whether for a home, office or classroom, an energy audit can be the first step toward changing behavior and saving significant energy. In this session, Amelia Gulling and other coordinators from the Chico State Green Campus Program offer hands-on training in energy auditing and data collection, and also share energy saving tips.

Student Led Initiatives to Save Energy, The Green Campus Internship Course: How to integrate energy efficiency education into the classroom

Program coordinators offer an overview of successful Green Campus projects and discuss how to mobilize student, faculty, and administrative effort toward energy conservation. Amelia Gulling and Sarah Schneider review lessons learned and share tips to help students help their campuses moving in the right directions.

Website

This month, Interns updated the Chico Green Campus website with content and layout to be more user-friendly and current. Got to www.csuchico.edu/greencampus to see the updated website.

UC Merced

This Way to Sustainability Conference

On November 6th, Intern Rachael Bennett attended the first day of *This Way to Sustainability IV* conference at Chico State University. Ms. Bennett attended various sessions on energy efficiency and climate protection throughout the day, returning to Merced that evening.

Tabling

This month, Interns hosted a Green Campus table during America Recycles Day on the UC Merced campus. Interns spoke with a total of **22 students** and distributed information on recycling CFLs and on Green Campus projects.

UC Santa Cruz

In November, Intern Rachel Shiozaki conducted research into establishing a UCSC Green Campus website to bolster name recognition and their campus presence; have an informational site to direct interested campus and community members; post monthly newsletters; and generally to educate people about UCSC's energy use and conservation best practices. Currently, the Campus Sustainability website (<http://sustainability.ucsc.edu/>) has a page called "Energy and Climate" (<http://sustainability.ucsc.edu/energy-and-climate>), and at the bottom of the page is a "Green Campus Program" link (<http://sustainability.ucsc.edu/energy-and-climate/10>). This month, Ms. Shiozaki contacted Sustainability Coordinator Aurora Winsdale to learn how the Program could expand its online presence.

Ms. Winsdale created the Green Campus page with her student intern last year when the sustainability site was launched, and agreed to work with Interns to expand the web page. In the short term, her office has agreed to publish information sent by Interns onto the web page. In the long term, Ms. Winsdale agreed to assist Interns in learning the basics of the program (JOOMLA). In December, Interns plan to meet with Ms. Winsdale's intern (primary manager of the web page) to discuss development and submission of content to be published onto the Green Campus web page.

3. Program performance/program status (describe)

- Program is on target
- X Program is exceeding expectations
- Program is falling short of expectations

Note: The Alliance considers that the Green Campus Program is exceeding performance expectations in that it is meeting, and in many cases, surpassing the program deliverables; in addition, it is consistently producing new, creative and successful program activities.

4. Program achievements (for non-resource programs only)

Task 2: Facilitate a planning meeting with student organizers and key administrators, facility staff, and faculty at each campus.

Chico

Interns held a stakeholder advisory meeting on November 13th, which was attended by **seven stakeholders** from Facilities, Dining Services, the Institute for Sustainable Development, and academics. Interns gave a presentation on current projects and led a brainstorming session on new project ideas, including improving collaboration between the Program and other departments on campus. Stakeholders were provided with post-it notes, upon which they listed project or collaboration ideas and stuck to the limbs of an image of a tree (each limb depicting a key sustainability issue). **See Chico Stakeholder Project Ideas, attached.**

Following the meeting, Interns organized notes and sent them out to the stakeholders, thanking them for their participation. **See Chico Stakeholder Meeting Notes, attached.** Interns will look to follow up with stakeholders at the beginning of the spring semester to discuss project ideas.

UC San Diego

On November 24th, UCSD Interns held a stakeholder meeting attending by **20 stakeholders**. The discussed upcoming projects, including the following:

- Fume hood Competition in Natural Sciences Building (January 5 – February 6)
- Green Business Certification for Café Ventanas (and Ocean View Terrace next year)
- Energy Competition between Muir and Revelle Colleges
- The Green Campus Club
- The Sustainability Resource Center
- LEED Projects, including the Campus Services Complex and a lab building in Scripps

Stakeholders shared their ideas for new projects and pledge of support for this running list. The group intends to converge again next quarter.

San Diego State

On November 24th, SDSU Interns held a stakeholder meeting attended by **10 stakeholders**. The event took place at the Physical Plant Conference room, compliments of Director of Physical Plant Joe Patterson. Other attendees included Physical Plant Administrative Assistant Katie Moreno, members of AS Green Love and officials of E3, another likeminded student organization. GCP interns and GC Club Officer Ms Heather Hinman were present along with Oakland based Green Campus Project Manager Ms Renee Lafrenz.

GCP intern Simarjeet Sahota showcased the projects undertaken by Green Campus Program and Club in the year 2008 and the partnerships we established with International Student Center, American Language Institute, Women's Studies department and other campus organizations. Intern Robert Ellsworth explained scope of Greeks Going Green project to begin in 2009. Sarah Campbell informed the attendees about the Dorm Energy Competition slated for spring 2009.

Mr. Patterson expressed interest in more campus-wide energy assessments and virtualization of computer labs. AS Green Love officers invited GCP to do energy assessment of their administrative offices and E3 officers requested for teaching their members how to do energy assessments. The team plans to explore the possibilities of these projects in near future.

Task 3: Recruit and support Green Campus Interns at each campus in implementing program activities.

Cal Poly SLO

This month, Interns conducted outreach to recruit for an intern position to be vacated by Chad Worth at the end of the quarter. Interns developed an advertisement (***see SLO Internship Ad, attached***), which they deployed to their mailing list, the Career Center, and to student environmental group memberships. Interns also made announcements about the opening in their classes. At the time of this writing, Interns had received a total of **10 applications**; the last day to submit an application will be December 1st.

Interns and Alliance Staff will hold interviews on December 5th.

Humboldt

In November, Interns conducted outreach to recruit for an intern position to be vacated by Chris Escarcega at the end of the semester. Interns shared the job description with current for-credit Interns, three of which indicated interest in applying for the open position. In December, Interns and Alliance staff will interview candidates and expect to hire a new intern to start spring semester.

Chico

This month, Interns conducted outreach amongst the for-credit volunteers to recruit for two paid intern positions to be vacated by Tami Kautz and Fumiko Motohashi at the end of the quarter. Interns and Alliance staff identified two volunteers that have worked very well with the Interns over the past semester and have expressed interest in joining the team as paid Interns. In November, Alliance staff Morgan King reviewed resumes and met with the two volunteers to conduct an informal interview and to gauge their interest and commitment to the Program. In December, Alliance staff will hold a more formal interview with the two volunteers before offering the internship positions.

UC Santa Cruz

During November, one of the three UCSC Green Campus interns, Lara White, decided to complete her Green Campus Internship. Following this notice Alliance Staff discussed team roles and responsibilities with the interns for the remaining weeks of the fall quarter:

- Intern Lara White will continue with the Program until the end of the quarter. In the remaining weeks of her internship, she will focus her efforts on editing the December newsletter (reporting on November activities), organizing and packaging her work on the Family Student Housing project so that it can easily be transitioned to another intern, and creating a 'training' binder for incoming interns that describes how to conduct UCSC-specific activities relevant to project coordination (e.g., how to get onto the Cruztime calendar, how and where to get approval for tabling events, etc.)
- Interns will initiate recruitment efforts to hire a new Intern to replace Lara White starting

in the winter quarter. This month, in consultation with Alliance Staff, Interns developed a brochure (to be placed in the Environmental Studies Internship Office) and a flyer (to be sent out to the Career Center, stakeholders, student environmental groups, and posted around campus) to aid recruitment efforts (*see UCSC Hiring Flyer and UCSC Brochure, attached*) for one paid intern and one or more for-credit interns. Interns also began making announcements about the positions in their classes. Interviews will be held in the first week of the winter quarter.

- Former Intern David Chang, who has been on a study abroad this quarter (and therefore inactive with the Green Campus Program), contacted Interns and Alliance Staff this month to affirm his return as a paid intern in the winter quarter.

Task 7: Integrate energy efficiency and conservation into course curricula.

Campus/Course	Number of students
HSU Project-based Course	6
UC Merced Course	5
UC Merced Speaker Series	19
UC Berkeley Energy DeCal	30
UC Berkeley ER199	14
Chico Observe and Conserve	90
Chico For-credit Internships	5
TOTAL	169

This month, **5 Green Campus teams integrated energy efficiency into course curricula:** UC Berkeley (two courses), UC Merced (one course and one speaker series, Humboldt, SDSU, and Chico. These academic opportunities contribute to the workforce education and training efforts of the Green Campus Program to prepare the broader student body as the next generation of energy efficiency professionals. The first three campuses structured an entire course (or two in the case of UC Berkeley), Chico and SDSU integrated projects into course assignments, finally Chico also organized for credit volunteer internships. Note that the descriptions below are separated into the following three categories: Structured Entire Course; Integrated Course Assignments; and For-Credit Internships.

- *Structured Entire Course:*

UC Berkeley

Energy DeCal

Green Campus Interns facilitated the 8th consecutive semester of the 2-unit Energy DeCal course this fall semester. The course educates Cal students about the relationship between energy and the environment and how to make small changes in their lifestyle to reduce their energy consumption and carbon footprint. This semester, the class continued to feature popular guest speakers to inform students of cutting edge technologies and energy issues such as hydrogen fuel, consumer footprint, and sustainable living in an urban environment, take students on tours of campus solar panels and the green demonstration areas, perform a personal energy audit, and hold debates and discussions on up and coming energy related topics. Currently **30 students** are enrolled in the course, with backgrounds ranging from political science to environmental science.

This month, the Green Campus team featured **four guest speakers** to talk about various sustainability topics: Professor of Architecture and the Associate Director for the Center of the Built Environment Gail Brager discussed Leadership in Energy and Environmental Design certification; Green Campus Team Lead Kameron Kitajima provided a general overview of the topic environmental justice using the example of the Chevron refinery in Richmond, CA; Campus Sustainability Director Lisa McNeilly presented past sustainability programs implemented on campus, the role of the Cal Climate Action Partnership (CalCAP), and discussed the proposed changes to building infrastructure and the upcoming Strategic Energy Plan; and from the University of California Office of the President Andrew Coghlan and Sustaining Ourselves Locally (SOL) Shereen D'Souza who shared their experience living in the SOL cooperative in Oakland, CA.

ER199: Applications of Energy Efficiency and Conservation

The Building Sustainability at Cal (BS@C) program facilitated the 2nd semester of the *ER199: Applications of Energy Efficiency and Conservation* course this fall semester, which provided Cal students with hands-on experience in assessing the energy usage and costs of campus buildings. The course is co-facilitated with Environmental Science 98/198 which concentrates on other sustainable aspects of building including water and waste; both classes focused on six buildings on campus. This semester, Green Campus took on a more supportive role in facilitating the course, and provided class organizers and students with energy audit training.

This month, ER 199 students worked and finalized their building projects and began prepping for the final project presentations in December. Students were required to complete one large structural project ranging from foot candle assessments to lighting audits to an appliance audit in their building. This is in addition to an educational project such as tabling or bathroom newsletters. Final projects will feature recommended changes based on the student sustainability assessments and will be presented to campus administrators next month.

UC Merced

For-Credit Course

This month, students in the ES 199 course supported Interns in developing the Sustainability Brochure and in conducting energy audits of the 19 portables on campus. See Sustainability Brochure and Energy Audits activities in Direct Implementation Activities above for more information on student progress.

In December, the students will complete a paper on their efforts. This month, Team Manager Jessica Zenger unveiled the requirements for this assignment which are as follows:

- **2 pages double spaced**
- *Attach the SOW completed as part of the course*
- **Paper must cover the *planning, execution, and results of your project***
- ***If your project will not be completed by the end of the semester, replace results with discussion of how future semesters should continue your work***

Also this month, Interns went through the administrative effort to establish the ES 199 independent research course for the spring 2009 semester. Interns received confirmation from the current faculty sponsor that she will continue in her role for the course in 2009. In consultation with the faculty advisor, stakeholders John Elliot and Mark Maxwell and Alliance Staff, Interns completed an initial draft of a syllabus for the course (**see UCM ES 199 Syllabus, attached**).

In December, Interns will discuss the syllabus further and refine as needed. Furthermore, Interns will also engage in planning and recruitment efforts to register students. All current ES 199 students expressed interest in continuing in the course next semester.

Humboldt

In November, Interns worked with the Office of Extended Education, Green Campus advisor Richard Engel, and Dana Boudreau, of the Redwood Coast Energy Authority, to establish a two-day energy audit seminar to take place in the spring semester (February 5th and 7th, 2009). The Office of Extended Education published a summary of the seminar in its 2009 catalog and Interns notified their mailing list and stakeholders of the upcoming seminar.

Evaluations from the one-day energy audit seminar this semester (see September 2008 monthly report) indicated participants wanted a longer, more comprehensive and hands-on course with time to conduct practice audits. This month, Interns and audit seminar instructors (Engel and Boudreau) planned out the two day course:

- Day 1 will cover energy fundamentals and an overview of the audit process;
- On Day 2 participants will perform audits of offices and other spaces on campus.

The seminar will be open to students as well as community members, and students can elect to receive academic credit.

UC Santa Cruz

Education for Sustainable Living Program (ESLP) is a student-led, interdisciplinary academic program open to students in the spring quarter. Students can receive academic credit for peer-taught and project-based courses in energy conservation, renewable energy, climate change, green building, and other topics relevant to sustainability on and off-campus. This month, Interns conducted initial planning for the development of a course on energy efficiency as part of this ESLP program.

In November, Team Manager Rachel Shiozaki conducted outreach efforts to other ESLP organizers to develop the Spring Speaker Series, a succession of local and out-of-the-area speakers that present on sustainability issues to students in ESLP courses. Ms. Shiozaki also participated in connecting and collaborating with different students and student organizations, staff, faculty & departments in order to widen the program's scope to include a wide array of disciplines and perspectives on key sustainability issues (i.e., economics, anthropology, and psychology). Ms. Shiozaki will continue to support efforts to organize the ESLP in December.

Also this month, Intern Sean Higbee conducted initial planning and development to lead and be primary teacher of a course on energy efficiency as part of the ESLP in the spring quarter. Mr. Higbee completed and submitted an application to ESLP organizers to facilitate the 5-unit, project based course. As the facilitator, Mr. Higbee will take a 5-unit ESLP design course winter quarter, in which he and other ESLP student facilitators will plan out their courses, create the curriculum and be 'taught how to teach' by senior ESLP organizers. In November, Mr. Higbee received commitment from Environmental Studies professor Erika Zavaleta to be the academic sponsor (a requirement) for an energy efficiency course. In December, Mr. Higbee will continue to prepare for facilitating the ESLP course.

➤ *Integrated Course Assignments*

Chico

See October 2008 Monthly report for background on the 'Observe and Conserve' campaign. This month, Interns contacted an instructor in UNIV 101 to get an update on class activity. The instructor noted that her class was still engaged in the 'Observe and Conserve' project with essays to be completed before the end of the semester (i.e., December). Interns expect to review essays over winter break and at the beginning of the spring semester.

➤ *For Credit Internships:*

Humboldt State

This month, Interns continued to oversee the efforts of **six students** receiving academic credit (2 – 3 units) for their work on Green Campus projects through ENV5 482 in the areas of office energy auditing, hosting informational tables, and in designing and marketing the Green Campus art exhibition. Furthermore, Interns worked with faculty advisor Dr. Richard Hansis to establish the ENV5 482 internship course for the spring 2009 semester in time to have it listed in the course catalog. In December, Interns will conduct outreach in order to recruit students into the course.

5. **Changes in program emphasis, if any, from previous quarter** (e.g., new program elements, less or more emphasis on a particular delivery strategy, program elements discontinued, measure discontinued, budget changes, etc.).

In light of increased attention and feedback from the CPUC, the Alliance team worked with SCE to highlight and emphasize the Green Campus Program's workforce education and training aspects. These guiding pillars include academic integration, professional development, statewide and alumni networking, job shadowing/mentoring, and technical training.

6. **Changes to staffing and staff responsibilities, if any**

None to report this month.

7. **Changes to contracts, if any**

None to report this month.

8. **Changes to contractors and contractor responsibilities, if any**

None to report this month.

9. **Number of customer complaints received**

There are no complaints to report.

10. **Revisions to program theory and logic model, if any**

No revision to program theory and logic model to report at this time.

Supporting Documentation:

1. This Way to Sustainability Presentation
2. AASHE Presentation
3. BECC Presentation
4. November 2008 Intern Implementation Budget Summary
5. November 2008 CFL Exchange Summary
6. HSU Cumulative Energy Audit Savings Chart
7. UCM LED Experiment Protocol
8. UCM LED Results
9. UCM Brochure SOW I
10. UCM Brochure SOW II
11. UCM Occupant Survey
12. UCSC Lab Freezer Inventory
13. UCSC Performing Arts map
14. UCSC Bi-Level Photos
15. UCSC Bi-Level Savings Estimate
16. Chico Vending Inventory
17. Chico Competition Flyer
18. Chico Display photo
19. Chico Competition Evaluation
20. Chico SCOOP Nov. Reports
21. SLO Greeks SOW
22. SLO Greeks Assessment
23. SLO Vending Inventory
24. SLO Vending Map
25. SLO Vending Savings
26. SLO Competition Spreadsheet
27. Green Campus Newsletters
28. SLO Mustang Daily Article
29. Chico Stakeholder Project Ideas
30. Chico Stakeholder Meeting Notes
31. SLO Internship Ad
32. UCSC Hiring Flyer
33. UCSC Brochure
34. UCM ES 199 Syllabus