

2006-08 Energy Efficiency Portfolio Monthly Report Narrative

Program Implementer Name: Alliance to Save Energy
Program Name: Green Campus Program
Program Month: September 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 four campuses in the SCE service territory under the 2006-08 grant: UC Santa Barbara, CSU San Bernardino, Cal Poly Pomona and UC Irvine.

2. 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 Cal Poly Pomona and CSU San Bernardino in order to discuss ongoing projects, track action items and plan for the fall 2008 term. UC Irvine continued the planning process that they initiated in August by completing Scopes of Work for ongoing and upcoming projects including the Croul Hall waste audit, fume hood stickering, and Welcome Week outreach (**see attached SOWs**). UC Santa Barbara also completed a team SOW this month for their fall activities (**see attached**).

This month, the CSU Office of the Chancellor offered to sponsor Green Campus attendance at the 2008 CSU Facilities Management Conference (October 22-24 in Los Angeles, CA), including full funding for Green Campus interns and staff to attend. Program staff will support and prepare all Green Campus interns for the student competition as part of this event, which will require intern teams to host a tabletop display at the opening reception, design an informational poster, and compete for awards. The award winners will present on one of their key projects in front of all conference attendees. As of the writing of this report, **26 Interns are registered to attend, along with 5 staff members.**

On September 4th, Jo Tiffany, Renee Lafrenz, and Merrilee Harrigan held a conference call with Fred Harris, Assistant Vice Chancellor of College Finance & Facilities Planning - California Community Colleges System Office, in order to discuss opportunities for expanding Green Campus to community colleges (**see attached notes**). Outcomes of this call included a list of possible ideas for launch and development, which included state-wide greenhouse gas inventories as a key project to aid in their compliance with AB32. The Alliance subsequently provided Mr. Harris with a one-pager for his use to garner support from his colleagues (**see attached**).

On September 5th, Alliance Project Manager Renee Lafrenz and Senior Program Associate Jennifer Alvarez held a conference call with Paul Mathew and David Heinzerling from Lawrence Berkeley National Laboratory (LBNL). Their main topic of conversation was a collaboration on the Labs 21 Wiki site, which is an information sharing database promoting energy efficient lab equipment (site can be viewed at X). The group developed Green Campus involvement in their efforts, which included the following elements:

- Interns to garner Lab Manager support for access to labs on campus;
- Audit lab equipment as part of program-wide efforts to contribute data to the wiki site. In other words, selected equipment per team will be based on site information gaps, equipment in use in accessible labs, and what other teams are able to audit (to be coordinated centrally by the Green Campus office);
- Interns to work with LBNL to analyze energy consumption data and posting to the site.

On September 26th, the Alliance and LBNL co-hosted a program-wide conference call, attended by over 20 Interns from 10 Green Campuses. Outcomes of this call included a pledge of support from a number of campuses, as well as the initial development of a one-pager description document. This informational tool will be used to initiate lab contact as the Interns launch this project in the coming months.

On September 9th, Jo Tiffany, Renee Lafrenz, and Merrilee Harrigan held a follow-up conference call with nationally recognized higher education sustainability expert Debra Rowe regarding Green Campus expansion to community colleges (**see attached notes**). Outcomes of this call included Ms. Rowe's pledge of support to distribute a Green Campus one-pager informational document as appropriate. This document was subsequently developed by Alliance staff and provided to Ms. Rowe (**see attached**).

On September 10th, Project Manager Renee Lafrenz gave an update on the UC/CSU/IOU Energy Efficiency Partnership call. She highlighted the Student Energy Efficiency Best Practices recognitions during July's Sustainability Conference, as well as upcoming Green Campus plans for the 2009-11 round.

On September 11th, Alliance Green Campus staff members conducted a Green Campus Program brainstorm session with fellow Alliance colleagues Chuck Wilson and Susan Shuckra from Development and Communications, respectively. Outcomes of this meeting included their pledge of support to aid in marketing and outreach to increase the program's scope.

On September 26th, Alliance staff participated in a conference call with SCE Program Manager Carlos Hernandez regarding the Green Campus energy savings chart to be included in intern newsletters. As a result of this discussion, the decision was made to assume 1 year annual kWh savings for all retrofit projects; the chart was revised as a consequence (**see attached**).

SCE Career Fair Events

During this reporting period, SCE Program Manager Carlos Hernandez informed Alliance staff of several upcoming SCE career events scheduled at various college campuses including Thursday, October 16 at Cal Poly Pomona and Friday, October 24 at UC Irvine. These events offer interns an opportunity to showcase the work they have done with support from SCE, and to recruit interested students for volunteer, for-credit, and potential paid internship opportunities. In addition, it gives SCE career representatives an opportunity to contextualize energy efficiency career opportunities for prospective students, and to highlight their work with Green Campus.

SCE also provided an informational internship flyer, which the interns will distribute at the events (see attached).

Direct implementation activities (describe)

Intern Implementation Budget

See *attached September 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 **12,772 CFLs**. During July, Green Campus interns in the SCE, PGE, and SDGE territories exchanged a total of **397 CFLs provided by SCE**. July CFL exchanges break down as follows:

CFLs Provided by SCE

SCE – 36
PGE – 0
SDGE – 0

CFLs Provided by Others

SCE – 0
PGE – 0
SDGE – 0

See *below and/or attached September 2008 CFL Exchange Summary* for details, including bulb wattage and origin.

Cal Poly Pomona

Parking Garage Audit Presentation

This month, Interns finalized and submitted results of the parking garage lighting audit that they conducted to Parking and Transportation. Interns Brandon Ro and Razilee Tadeo, presented their recommendations to the Director of Parking and Transportation Glenn Shanker on September 11th (see attached). Energy Manager George Lwin and Campus Lead Jennifer Alvarez were present to field miscellaneous questions and support the team.

In spring 2008, Interns surveyed 11 different locations throughout the six level structure, taking light level readings during various times of the day. Using Illumination Engineers Standards of North America (IESNA), experimental tests determined that all areas of the structure, except the ramps on the ground, 2nd, and 3rd floors, met IESNA recommendations of minimum lighting with the lights turned off. In conclusion, the team determined **two possible two options that would save approximately 15-20% daytime energy savings, equivalent to 50,000 to 70,000 kWh, or \$7,000 to 10,000 annually, or 30-40% overall energy savings, equivalent to 210,000 to 270,000 kWh, or \$30,000 to 40,000 annually.**

Option 1 proposed to keep all perimeter luminaries off during day time hours during a normal sunny day, shutting power down 2 hours after dawn and 2 hours before dusk, while on cloudy or

rainy days, luminaries will be turned on throughout the day. Option 2, on the other hand, proposed a de-lamping strategy, the removal of half the lights on all fixtures except those closest to entry ramps. Additional recommendations included shutting down all or part of the structure during weekends, holidays, and long breaks.

Due to the labor intensity involved in option 1, option 2 and the additional recommendations received greater interest from Mr. Shanker. In follow-up, Mr. Shanker will propose these recommendations to the Vice President of Business Services, and will provide an update of his results. Interns also met with Dr. Kyle Brown, Dean of the College of Environmental Design, to propose a possible collaboration with the Energy and Environmental Controls Class, as a means of engaging students to help with validating some of the test results.

BroncoFusion

On September 25, Green Campus interns participated in BroncoFusion, the day-long welcome event at which clubs and organizations recruit and inform incoming students of program activities. Interns quizzed participants on sustainable trivia, distributed **340 Green Campus buttons, brochures provided by Southern California Edison and Southern California Gas, and raffled off 15 t-shirts**. Interns also designed informational posters for tabling events throughout the year highlighting energy saving solutions and promoting greater awareness of Green Campus Program projects (*see attached*). Students were also directed to the Green Campus website, and asked if they would be interested in participating in a class about energy efficiency and sustainability to garner support for a Green Campus facilitated lecture course. Finally, Interns exchanged **147 CFLs** provided by SCE, with students signing a pledge to replace an incandescent in their home.

Housing Check-In

This month, Interns tabled during residence hall check-ins on September 21st and 24th, distributing **277 CFLs** provided by SCE, over the course of the two days. Interns were very well received, and parents and students were very interested in finding ways to save money and were pleased to receive free CFLs. Informational posters were also displayed (see BroncoFusion description above).

CSU San Bernardino

Welcome Week

CSUSB Interns hosted the Green Campus Welcome Week event on September 24th. Adapted from Georgia Tech's 2007 Earth Day Maze, the celebration focused on a Sustainable Commitment Maze and attracted over **155 students** to participate. Those in attendance were encouraged to adopt 5 sustainable practices throughout the year in the areas of energy, housing, water, waste, and consumerism. Each student was instructed to stop at a panel dedicated to each of these areas and to make assessments of their own lifestyle. Participants received a button with deepening shades of green reflecting their level of commitment, a slice of pizza and drink upon completing the course, and were entered in a raffle to win an iPod shuffle. Interns also distributed **82 23W CFLs provided by SCE, which will save approximately 5,933.52 kWh a year, or \$830.70 annually**.

Information was also provided about the benefits of using Energy Star appliances, organic food, and campus recycling. In addition, participants were asked trivia questions as they stood in line and given eco-friendly prizes if they answered correctly. Questions ranged from simple inquiries such as "What does CFL stand for?" to more in depth questions such as, "What offers more fuel economy, driving with the windows down or the air conditioner on?" Tote bags and a CSUSB t-

shirt, all donated from CSUSB's Coyote Bookstore, were among the prizes given for answering questions correctly. Quiznos also provided coupons that were passed out to participants in the event.

UC Irvine

Fume Hood Stickers

This month, Interns continued their fume hood stickering efforts initiated over the summer, in collaboration with the office of Vice Chancellor of Administrative and Business Services Wendell Brase and the Department of Environmental Health and Safety (see July and August 2008 reports for more information). On September 3, Interns Max Broad, Alyssa Penacho, and Courtney Gill conducted a large stickering drive to place updated "Shut the Sash" stickers on every fume hood on campus. The team posted all **275 stickers** – every sticker in their possession – and are waiting to receive more from Vice Chancellor Brase's office before they can complete the project.

Croul Hall LEED Waste Audit

During September, UC Irvine interns conducted a waste audit of Croul Hall, within the Department of Earth Systems Science (NOTE: UCI Interns are supported in part by their university and were requested to conduct this project by Campus Recycling Coordinator Suzanne Hibbs). As reported in August, interns were requested by the UCI Facilities Management Department to conduct the waste audit as part of Facilities Management's efforts to obtain LEED certification for Croul Hall. Interns conducted the audit from September 8-12; each day the team went through all the waste collected at Croul Hall, and sorted into 11 categories, including papers, glass, plastics, metals, e-waste, yard waste, foam, and trash. The team weighed each type of waste to determine its relative volume within the total waste stream, and recorded which types of waste are currently diverted from the landfill through recycling programs (**see attached Croul Hall Audit Results**).

The Facilities Management Department plans to use this information to devise new recycling policies to divert more of Croul Hall's waste from the landfill and ramp up recycling education programs based on the types of materials for which recycling is currently available, and the percentage of those materials that are actually being recycled. By improving recycling practices and reducing the amount of waste sent to landfill, Facilities Management also hopes that the waste will secure additional waste reduction credits as part of the buildings LEED certification.

Welcome Week

The UC Irvine intern team set up an information booth for new students during Welcome Week, from September 22 – 25. On September 22, the team participated in UC Irvine's annual Anteater Involvement Fair in Aldrich Park, in which various student organizations provide information on their activities to new students. During the Fair, Green Campus **exchanged 160 23W CFLs provided by SCE**. In addition, dozens of new students signed up to join the Green Campus club. Interns also tabled on Thursday and Friday, during which time they continued to recruit new club members and disseminate information about the Green Campus program.

Marketing activities (describe)

This month CSU San Bernardino, UC Irvine, and UC Santa Barbara completed newsletters covering their September activities. At the time of this report Cal Poly Pomona was compiling a draft September newsletter, which will be included in next month's report (**see attached Newsletter**).

CSU San Bernardino

Green Campus Website

This month, Interns relaunched the Green Campus website located at <http://adminfin.csusb.edu/greencampus>. Students, faculty, and staff can now find useful tips, blog about current events, and learn about energy efficiency and conservation on campus. The website features energy basics such as energy production, renewable and non-renewable energy resources, a new blog feature which allows open discussions about related energy topics, and energy saving tips and links to resources about energy conservation and efficiency.

SOAR to Success

On September 23, Green Campus interns participated in the Student Leadership and Development “SOAR to Success” event in the Santos Manuel Student Union. Joined by various on-campus clubs and organization, over **300 freshmen, faculty and students participated in the event**. Information about how to recycle on campus, organic food, and back to school checklists on efficient products were provided to those who stopped by the table. Students were encouraged to take a quiz to see how “green” they are living. Each participant was presented with a button with a varying shade of green based on their responses, the deeper the color the better. Stickers, rulers, pencils, and letter openers made from recycled materials were among the free goodies at the table. Free bus passes were also available to the visitors. **Approximately 110 CFLs were distributed at this event, equivalent to 10,693 kWh per year, or \$1,114.34 annually.** Students also signed up for the Green Campus listserv to find out about upcoming Green Campus and Green Earth Club activities.

RA Training

On September 10, Green Campus interns held a training session for Resident Advisors which focused on ways to promote energy efficiency in the residence halls. Interns shared Green Campus goals and objectives, and provided programming ideas to RAs to encourage residents to adopt a more sustainable lifestyle. RAs were also invited to participate in two upcoming campaigns in the next few months: the Serrano Village residence hall energy competition and Resident Assistant Energy Awareness competition. All seven freshmen residence halls in Serrano Village will compete this fall to save the largest percentage of energy, while RAs who encourage residents to participate will be rewarded for the most creative and effective programming.

UC Irvine

University Hills Fiesta Verde

On September 14, Green Campus interns Max Broad and Courtney Gill participated in University Hills Fiesta Verde, an annual event at the University Hills faculty housing community. This year’s event was themed “Going Green” and featured information booths and tables for several environmental businesses and organizations. Green Campus was honored to be the only student group invited to participate. During the event, Green Campus distributed energy efficiency literature, shared residential energy savings tips, and discussed Green Campus projects with faculty member residents and their families. In addition to showcasing Green Campus projects and activities, the event enabled interns to network with new professors, who may be a resource in future research and educational projects, including the upcoming Green Campus for-credit internship course (see Task 7 below).

Journal Article

During this reporting period, the National Wildlife Federation's (NWF) Campus Ecology program published an article on the Green Campus fume hood and lab energy efficiency initiatives at UC Irvine. NWF contacted Ms. Gill in August and interviewed her on their work with the ongoing fume hood competition project. The article can be seen here:

<http://www.nwf.org/campusEcology/climateedu/irvine.cfm>

3. **Program performance/program status (describe)**

You can leave this section blank

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.

UC Santa Barbara

This month, Interns finalized preparation for their fall stakeholder advisory meeting, which will take place on October 3rd. Over 20 people have pledged to attend this meeting, which will be located in Bren Hall and include refreshments. The agenda is as follows:

Our Agenda is as follows:

12:00- 12:10 Grab food, get settled

12:10- 12:15 Introductions

12:15- 12:25 Green Campus Overview (Jesse and Jordan)

12:25- 12:40 Attendee Introductions-- what they have planned for the year

12:40- 12:50 Case Study: Residence Hall Energy Competition

12:50- 12:55 Introduce Brainstorming Session

12:55- 1:30 Group Brainstorming

CSU San Bernardino

On September 11, Alliance Campus Lead Jennifer Alvarez and CSUSB Green Campus interns met with Tony Simpson, Associate Director of Facilities; Jon Mohoroski, Assistant Director of Environmental Health and Safety; and John Muir, Network Analyst. Interns reviewed potential fall projects, including a survey of building thermostat settings, an audit of the Santos Manuel Student Union (specifically focusing on dining equipment), and a night classes audit.

UC Irvine

This month UC Irvine interns held two planning meetings with key stakeholders-- on September 24 interns met with Campus Energy Manager, and on September 26 interns met with the EH&S/Physical Sciences Safety Coordinator.

During their meeting with Mr. Wingco, interns reviewed summer projects, including fume hood stickering, the Croul Hall waste audit, LARC office audits, and CFL exchange events. The team also discussed upcoming and potential new projects, including office audits, a Fall Lab competition, a dining hall lighting project, housing laundry efficiency education, and a Rec Center pool cover project. Mr. Wingco suggested that interns conduct a fume hood competition in Croul Hall, a building that they have not previously targeted, and that will be up for LEED certification at the end of the quarter. Mr. Wingco indicated that by conducting the competition

at Croul, interns could potentially assist the building in securing a LEED innovation credit. (**See attached Stakeholder Meeting Notes**).

During their meeting with Mr. Singh, Interns discussed upcoming plans for a fall fume hood competition, and potential buildings and/or department to target. Mr. Singh encouraged interns to wait until later in the quarter to conduct a fume hood competition within Croul Hall, as the building is currently undergoing air circulation system tests, which, in conjunction with the fume hood competition, might appear overly disruptive to researchers and lab occupants. (**See attached Stakeholder Meeting Notes**).

UC Santa Barbara

Green Campus Week-of-Welcome Discovery Days Event

Two Green Campus Interns met with a group of **20 incoming UCSB freshman** in the Santa Rosa dorm on Wednesday, September 24, as part of the campus-wide Week-of-Welcome Discovery Days events. The description for this event was as follows:

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| <p>Title: Sustainable Living in the Res Halls</p> <p>Description: Come eat FREE PIZZA and learn about the Green Campus Program at UCSB. We are a team of interns that promote energy conservation efforts across campus. Come learn what we have planned for the year and how to get involved **Get a free CFL bulb just for showing up!**</p> <p>Location of Event: Santa Rosa Hall Formal Lounge</p> <p>Event Date: Wednesday, September 24</p> <p>Begin Time: 4:00 PM</p> <p>End Time: 4:30 PM</p> |
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The Interns provided an overview of the Green Campus Program and discussed the importance of practicing energy conservation and efficiency while living in the residence halls. Each of the students in attendance received a CFL and pizza provided by the Green Campus Program. The students were very receptive to tips on what they could do to reduce their energy usage and committed to implementing these recommendations as a part of their every day lives. One student was quoted as saying, "I never really thought about saving energy in my dorm because I don't have to pay the bill, but the Green Campus Interns helped me realize that I do end up paying for it one way or another."

Task 6: Convene mid-year meeting of all Green Campuses.

Green Campus Energy Efficiency Summit

During September, Alliance staff members began working with UC Irvine Team Manager Courtney Gill to research conference amenities and services at UC Irvine, where the Alliance is considering holding the 2009 Green Campus Energy Efficiency Summit. Ms. Gill has begun looking into room costs, layouts and availability, as well as catering options and conference logistics.

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

UC Santa Barbara

Working with key campus stakeholder Sustainability Coordinator Katie Maynard, the Green Campus Team plans to host a series of lectures as part of an energy-related course in the Creative Studies Department. On October 8 and November 10, Interns Jesse Fulton and Jordan Sager will train approximately **15 students** to conduct energy audits and then lead them on a walk through audit in a nearby building. This is part of a rotating audit program whereby the team will collaborate with Ms. Maynard as well as fellow organizations including LabRats (working on laboratory energy efficiency) as well as the E-Coalition.

UC Irvine

During this reporting period, the UC Irvine Green Campus team made arrangements to initiate a for-credit internship course in order to educate the broader campus community on energy efficiency and prepare them as the next generation of sustainability professionals. The team began brainstorming for this project idea following the spring 2008 quarter, as a means to reinforce the existing for-credit internship program. While the internship program has provided paid Green Campus interns with a pool of students to assist with projects and has served as a pipeline for hiring new paid interns, it has lacked a centralizing component that provides training, education, and a consistent structure for participating interns.

The team is modeling its course after UC Berkeley and Humboldt State's successful for-credit Green Campus courses, in that it combines classroom lectures and lesson plans with hands-on projects and participation in ongoing Green Campus projects, thereby helping students prepare skills needed for future green careers.

The team has developed a draft syllabus, and has approached various stakeholders and local energy and sustainability professionals to provide guest lectures to students. Several stakeholders, including Campus Energy Manager Paul Wingco and Vice Chancellor of Business Services Wendell Brase, have indicated that they would like to participate.

Custodial Contracts Manager Anne Krieghoff will serve as the primary supervisor for the course, and will provide a classroom space for the course. Interns are working to register the course with Field Study Program Director Ashley Vikander in the School of Social Ecology, which will provide credits to participating students. The team is in the process of recruiting students, and plans to launch the course in October. **(See attached DRAFT Course Syllabus).**

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.).

None.

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

CSUSB

This month, Rebecca Rivera, a Masters of Business Administration student joined the Green Campus team. Rebecca recently graduated from CSUSB with a degree in Marketing, and will continue her education at the university. Rebecca brings to the team her experience in finance

and marketing, and her passion and interest in green building design, the field she hopes to enter upon receiving her Masters degree.

7. Changes to contracts, if any

None.

8. Changes to contractors and contractor responsibilities, if any

None.

9. Number of customer complaints received

None.

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

None.

Attachments:

1. Croul Hall Waste Audit SOW
2. Fume Hood Stickers SOW
3. Welcome Week Outreach SOW
4. Internship Course DRAFT SOW
5. UCSB Team SOW
6. Meeting Notes – ASE and Fred Harris
7. Fred Harris one-pager?
8. Meeting Notes – ASE and Debra Rowe
9. GC information one-pager
10. Final Metrics Tracking Log
11. SCE Internship Flyer
12. September 2008 Implementation Budget
13. September 2008 CFL Summary Sheet
14. CPP Parking Garage Audit Presentation
15. CPP Tabling Posters
16. Croul Hall Waste Audit Results
17. Green Campus draft September newsletters
18. Stakeholder Meeting Notes – Paul Wingco
19. Stakeholder Meeting Notes – Rama Singh
20. For-credit Internship Course Syllabus