



# Using Campus Efficiency Projects to Engage Students:



## A Green Campus Program Perspective



ALLIANCE TO  
**SAVE ENERGY**  
*Creating an Energy-Efficient World*



SOUTHERN CALIFORNIA  
**EDISON**  
An EDISON INTERNATIONAL® Company



*Pacific Gas and  
Electric Company*



A Sempra Energy utility\*



# What is the Alliance to Save Energy?

## *Mission:*

- n To promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security.

## *Organization:*

- n Staffed by 80+ professionals
- n 33 years of experience
- n \$12 million annual budget
- n Recognized as the premier energy efficiency organization in the world



# Green Campus Program Overview

- n 16 CA campuses (6 in SE)
- n Student driven workforce education and training program
- n Paid student internships
- n Funded by CA IOU's
- n LACCD (2009-2010)
  - n West Los Angeles
  - n East Los Angeles
  - n Los Angeles Southwest




# Energy Efficiency?

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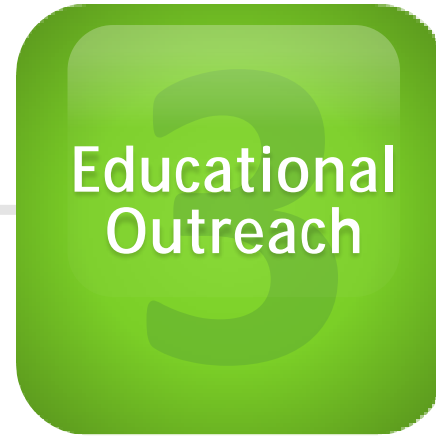
## *What is it?:*

- n Defined as “using less energy to provide the same service”. Also tied to energy conservation which is “reducing or going without a service to save energy.” (LBNL)

## *Why energy efficiency?:*

- n Less energy=less energy generation= less environmental impact (GHG)
  - n Low hanging fruit
  - n Quickest, fastest, cheapest
  - n Saves \$\$\$!!
  
  - n Also good way to engage students in something that leads to cost savings on campus!
- 

# Green Campus Program Pillars





# Green Careers



# Green Career Panels

**Wednesday  
Mid-Day  
Lecture/Training  
Seminar**

The LASC Green Campus interns invites you to one of its lecture/training seminar with three of the major local sustainable companies. This Wednesday's Mid-day Lecture/Training Seminar will explore a wide-range, as well as apply a few interdisciplinary ideas about sustainability, energy efficiency, urban design and planning, as well allowing you to get a hands-on experience using the equipment that these professional use on a daily bases.

**2010 May 19 12:00 pm SSC 223A**

## **Solar City**

Is the nation's leading full-service solar provider for homeowners, businesses and government organizations—the first company to provide solar power system design, financing, installation and monitoring services from a single source.

They understand that the environmental impact of energy production is one of the greatest challenges that our planet will face in the near future, and they are committed to doing their part to alleviate this impact.



## **Prevailing Wind Power**

Their years of experience in renewable energy design, permitting, and regulatory process, along with financing options, if needed, remove the barriers and risk for the customer so they can enjoy the cost savings associated with wind and solar power.



## **General Electric**

GE is a diversified infrastructure, finance and media company taking on the world's toughest challenges. From aircraft engines and power generation to financial services, medical imaging, and television programming, GE operates in more than 100 countries and employs about 300,000 people worldwide.

GE has a strong set of global businesses in infrastructure, finance and media aligned to meet today's needs, including the demand for global infrastructure, growing and changing demographics that need access to healthcare, finance, and information and entertainment; and environmental technologies.



\*\*Get up-to-speed on cutting-edge technologies and learn some ways to become more energy efficient by attending this free brown bag lecture/training seminar over the lunch hour!

### **Things to know**

- This seminar is FREE for all and you do not need to register for them.
- This seminar is hands-on and there will be lots of time for questions and interaction with the speaker.
- Bring your lunch and eat while you learn!



# Green Job Fairs

By the way:  
92% of Green  
Campus students  
say this internship  
influenced their  
career decisions



## Guest Speakers & Field Trips



Tour of  
utility  
resource  
centers

How-To Kitchen  
Audits: Water,  
Electricity, Gas,  
Behavioral





# Academic Integration

# Student-Led Courses



Peer-to-peer teaching & learning.  
Green Campus interns teach a  
2-unit class about Energy.



# Trainings & For-Credit Internships

Anywhere from two hrs  
to 3-4 sessions per wk

Work on projects similar to paid  
Green Campus interns



## Benefits:

- More bandwidth for projects
- Collaborate with faculty
- For-credit and/or hand-on opportunities for students



# Educational Outreach



# Tabling Events- LACCD

Energy awareness activities and flyers to educate and engage students, faculty, and staff.



Take the Stairs Day  
Earth Day Pledges  
Trivia Games/Prizes  
Educational Flyers

Student-Student Interactions!

# Educational Materials- LACCD

First ever Best Practice Award for Student Energy Efficiency in the CC category (West Los Angeles College-2010)



Students, Faculty and Staff  
Acct. #: 22-345-1870066

Billing Period: 01/01/09-12/31/09

Utility	Total Use	\$/kWh or Therm	Total Cost
Electricity Usage	4,197,969 kWh	0.184	\$688,647.00
Natural Gas	53,952 Therms	1.131	\$61,025.00
		<b>TOTAL</b>	<b>\$749,672.00</b>

**This is a Mock Bill (i.e. Fake)! (Based on data from Seimens)**  
Brought to you by Green Campus

The Alliance to Save Energy is a national organization that promotes energy efficiency. For more information, visit [www.ase.org](http://www.ase.org).

Note: Southern California Gas (SoCal Gas) provides natural gas service to the facilities. There are three meters serving the campus. For the purpose of this study the average natural gas consumption (therms) for the periods between January 2007 through December 2008 was used.

### Tips to Lower Energy and Water Usage

- ✓ Purchase **ENERGY STAR®** products (use less energy than other products)
- ✓ Turn off all lights when you leave a room
- ✓ Plug electronics into a **power strip** and turn off when sleeping or when you leave your room
- ✓ Use your **computer's** stand-by & hibernate modes
- ✓ Use the **stairs** instead of elevators
- Take **shorter showers** and install a low-flow showerhead
- Turn off the water when you brush your teeth or shave
- Always do **full loads** of laundry and try air drying clothes on a rack
- ☑ Use **sweatshirts or blankets** rather than turning on heaters
- ☑ If you have a **thermostat**, turn it down to **68 degrees** in the winter
- ☑ Optimize your use of **natural lighting** and heat (from the sun)
- ☑ Use **cold water** rather than heated when you can

**Spread the word** - tell others about saving energy and water!  
Remember, many energy and water sources are finite (i.e. limited quantities)!

Questions / Comments / Concerns: Email [GreenCampusProject@gmail.com](mailto:GreenCampusProject@gmail.com)

Part of 7 year winning streak for Green Campus Program!



# Measurable Energy Savings

# Energy and/or Lighting Assessments

1. Survey lighting or office occupants



2. Identify low or no cost upgrades



3. Submit report and follow up



WLAC  
Thermal  
Imaging:

29,000  
kWh/year;  
\$3,770,  
20,000 lbs  
CO<sub>2</sub>

ELAC  
Parking  
Garage  
Lighting:

31,500  
kWh/year;  
\$4,100,  
21,000 lbs  
CO<sub>2</sub>

## Estimated Annual Potential Savings

150 aerator installations  
(\$2-4 each)

- 0.5gpm fixture retrofit
- ELAC



66 Flow Control Valves  
(\$5-10 each)

- Controls sink faucet flow
- LASC



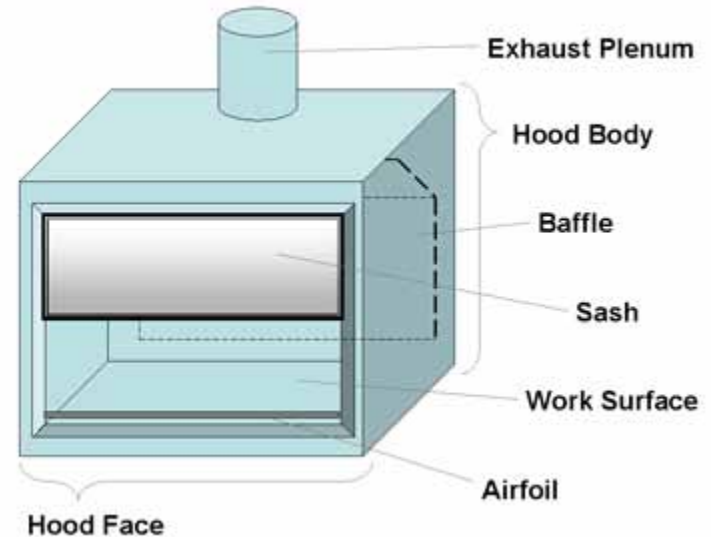


## I WANT YOU... TO SHUT YOUR SASH!

IF LEFT OPEN, A FUME HOOD COULD USE AS MUCH  
ENERGY AS 3.5 HOUSES! SHUT YOUR SASH AND  
REDUCE CONSUMPTION UP TO 60%.

TAKE OUR SURVEY AT [WWW.SASHSURVEY.GREENCAMPUSBRUIINS.ORE](http://WWW.SASHSURVEY.GREENCAMPUSBRUIINS.ORE)

FOR A CHANCE TO WIN A \$25  
AMAZON.COM GIFT CERTIFICATE



San Diego State  
University saved  
115,000 kWh, or  
\$10,350 during a  
month-long campaign

# Thank you!



Ellie Kim, Senior Program Associate  
Alliance to Save Energy  
[ekim@ase.org](mailto:ekim@ase.org)





UCLA



# A Green Campus Program Perspective



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# Our History!

## *About us:*

- n UCLA's Green Campus Team was established June 2010



- n We've created **35,000 kWh (\$4,500)** in actual energy savings! (YTD)
- n We have identified potential savings of **4.3 million kWh (\$816,000)**! (YTD)

# Snapshot of Savings (Jan-Sept 2011)

	Actual Energy Savings	Potential Energy Savings
<i>Total kWh savings</i>	34,658.10	1,101,193.39
<i>Total therms savings</i>		58,649.32
<i>Total H2O savings (gal)</i>		11,492,130.00
<i>Total CO2 (lbs) savings</i>	42,976.04	7,957,168.07
<i>Total cost (\$) savings</i>	<u>\$4,505.04</u>	<u>\$816,187.07</u>
<i>Energy savings from H2O (kWh)</i>		1,459,500.51
<i>kWh equivalent for therms</i>		1,718,848.72
<b>TOTAL ENERGY SAVINGS (KWH)</b>	<u>34,658</u>	<u>4,279,542</u>

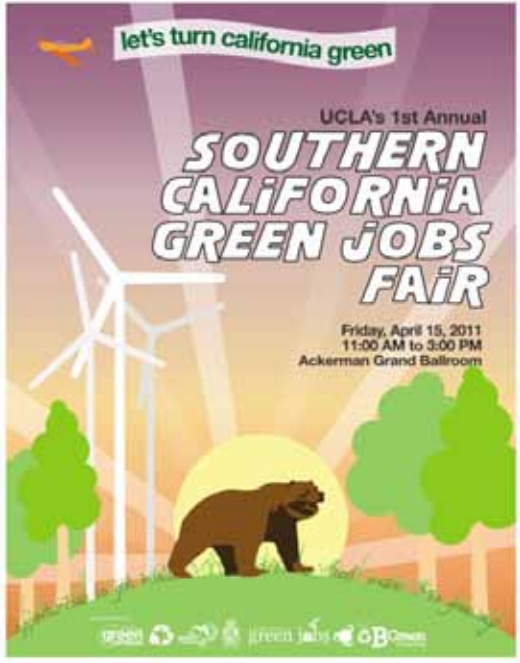
Workforce		Academic Integration		Outreach		Total Students Reached
Involvement		Involvement		Involvement		
Commitment		Commitment		Commitment	437	437
Interaction	45	Interaction	21	Interaction	608	674
Remote interaction		Remote interaction		Remote interaction	4,704	4,704
# of work events	3	# of Faculty	4	# of events	7	
# of audits	24	# of Academic projects	1			

**5,815  
Students!**



# Green Careers- The Southern California Green Jobs Fair

Over  
**300**  
students  
attended the  
fair!



Involvement with  
Education 170  
Seminar

Environment 180  
project working with  
Southern California Gas  
Company

Hosting  
documentary  
screenings for  
students for extra  
credit in courses

Collaborating with an  
already-established  
ART (Action Research  
Team)

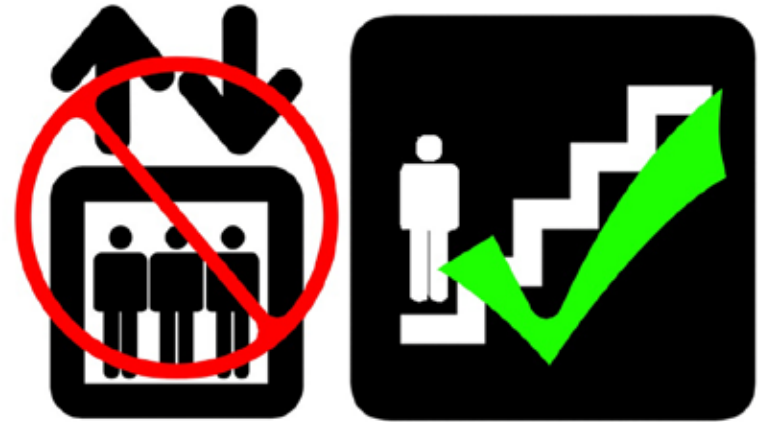
# Outreach- The Take the Stairs Challenge



UCLA Office of Residential Life



# TAKE THE STAIRS CHALLENGE



**Take the stairs and save energy!**

**Follow the posters up the stairwell to find out how much energy you can save.**



# Outreach-Energy Hero

# Energy Hero



**8-10pm, February 8th**  
**Sproul Lecture Room**

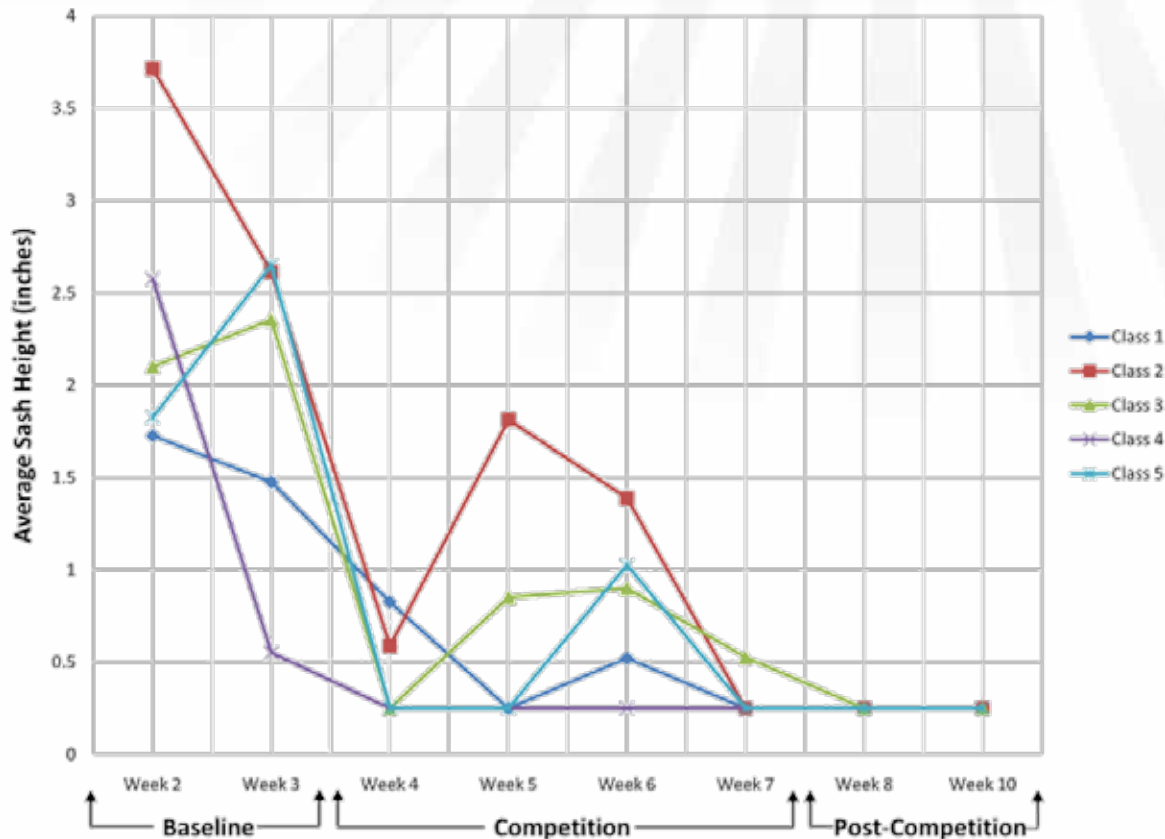
- learn how to win the housing energy competition
- play **Guitar Hero!**
- get free stuff!



# Energy Savings- Fume Hood Campaign

## Chemistry Labs!

Fall Quarter Fume Hood Competition Sash Heights



Gives the benefit of actual energy savings while helping inspire behavior change and awareness

**35,400 kWh/\$4,600 in actual energy savings!**

# Thank you (again)!



Sydney Pike, UCLA  
Green Campus Program  
[sydney.pike@gmail.com](mailto:sydney.pike@gmail.com)

