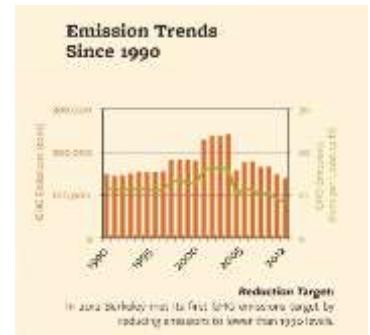


## UC Berkeley FY 2013-14 Sustainability Updates

### UC Berkeley hits 2014 greenhouse gas emissions target two years early

Six years ago the campus set out to reduce its carbon footprint by one-third – to bring Berkeley’s greenhouse gas emissions from campus operations back to the levels they were in 1990. Our most recent emissions inventory reveals that Berkeley has met this target, two years ahead of schedule. Ambitious at the outset, this voluntary target to reduce greenhouse gas emissions (GHG) to 1990 levels by 2014 puts Berkeley ahead of UC Policy and State of California guidelines which call for this level of reduction by the year 2020.

Berkeley was recognized for this achievement with a Sustainability Innovations award at CHESC.



### Campus drought response

Since the start of the drought, the campus has further reduced main campus water use by over 10%, although continued reductions at this level cannot be guaranteed. Total campus water use is down a total of 17% since 1990. (Data not yet updated with 2013 data.)

The campus has slightly modified the process for reporting and responding to leaks, and has prominently included information on how to report leaks in an education campaign. In addition, the campus has increased work to use meter data to identify leaks and is currently investigating data anomalies in Life Science Addition. Installation of toilet retrofits, which reduce the flow per flush, is underway in several buildings.



In recent years, the campus has converted nearly 68,000 square feet of turf grass area to native or drought tolerant species or to permeable surfaces, reducing the need for irrigation. The campus is planning to expand this lawn conversion program substantially.

In response to the drought, in May this year, the Daily Californian produced a video response, giving an “immersive look at how UC Berkeley and Bay Area researchers are using an environmental crisis to spur innovations in water resource management.”

### New Berkeley Food Institute

The Berkeley Food Institute (BFI) launched in 2013 is dedicated to research, education, policy initiatives and practices to support sustainable food and agriculture systems. The institute has more than 80 staff members catalyzing change in the food systems to promote resilience, justice, diversity and health, from local to global scales.



The Institute aims to use its affiliation with multiple departments to help provide a holistic answer to many of the key issues faced in sustainable food and agriculture systems, using links with the College of Natural Resources, the Goldman School of Public Policy, the Graduate School of Journalism, the School of Public Health, and Berkeley Law.

## Campus as a living lab

UC Berkeley Researchers Aim For Comfort And Energy Efficiency: UC Berkeley's Center for the Built Environment (CBE) are refining, testing and promoting a new set of tools to enable more efficient temperature control in buildings by using input from building occupants, a network of web-based applications, and a user-responsive Personal Comfort System (PCS). The PCS system targets the most thermally sensitive parts of the body such as the face and head, the torso and feet, to provide warmth or cooling as needed and as desired, rather than trying to maintain one temperature for an entire building or floor. CBE estimates that the new tools can cut natural gas use by 39 percent and electricity use by 30 percent for heating, ventilation and air conditioning in typical California commercial office spaces.



## Working to further reduce waste

*Bears Retain National RecycleMania Title:* UC Berkeley has successfully defended its title in the national collegiate waste-diversion competition, RecycleMania. For the second year in a row, the Bears took first place in the national "Game Day" competition, with a waste-diversion rate of 93 percent at its March 8 men's basketball home game against University of Colorado Boulder (which Cal won 66-65).



Staff employees at 2000 Carleton St., the off-campus home of Facilities Services, recently jettisoned a 24.45-ton mother lode of metal, paper and other materials in a six-week clean-up. 22.2 tons of those materials were recycled or reused – a 91% diversion rate.

Trash to Treasure: DIY Book for Reducing Home Waste: The Berkeley Student Food Collective won a 2012 TGIF Mini-Grant to create a DIY Book containing creative projects for turning trash into treasure and reducing home waste. Books can be purchased for \$5 at the store, or viewed online. Recipes include 'Orange Peel 2 Candy' and 'Bag 2 Apron.'

## Working with community partners

Toxic Chemicals Removed By Holistic Effort Of Researchers and the Community: A \$40,000 campus grant is helping UC Berkeley and local organizations (such as Berkeley Partners for Parks) are planting swathes of the fern *Pteris vittata* (the Chinese brake) to help extract arsenic from the soil. The hope is that this will lead to the production of more fertile verdant greenways, with trees and bike paths, creating a greener Berkeley.

Berkeley Is Partner In A New Electric-Bicycle-Sharing Pilot Scheme: UC Berkeley is a partner in new scheme to offer Electric Bicycle Sharing in the Bay Area. Having been granted \$1.5 million by the San Francisco Municipal Transportation Agency, the project will aim to lead to lower emissions in the region, as well as reducing congestion and increase mobility in the region. The UC Berkeley Transportation Sustainability Research Centre will be looking the effects on commuter's methods of transport and the environmental impacts of the service. The pilot period will end in 2018. The project may be the first of its kind tested in the US, according to the co-director of the research center, Susan Shaheen.

## UC Davis FY 2013-14 Sustainability Updates

### UC Davis Renewable Energy Digester Project Begins Transforming Organic Waste into Green Electricity

On December 31, 2013, the UC Davis Renewable Energy Anaerobic Digester (READ) began producing electricity for the campus. The READ biodigester encompasses several of the university's goals: (1) reducing campus waste in a way that makes both economic and environmental sense, (2) generating renewable energy, and (3) transferring sustainable technology developed at UC Davis to the commercial marketplace. A video about the UC Davis READ Project can be found at <http://bit.ly/1pjBSpR>. The facility takes unique advantage of its location at the now-closed UC Davis landfill by blending landfill gases with biogas from the biodigester to create a total of 5.6 million kWh per year of clean electricity, and is expected to reduce greenhouse gas emissions by 13,500 tons per year. Nearly half of the organic waste, or feedstock, needed to operate the biodigester to full benefit comes from UC Davis dining halls, animal facilities, and grounds.



### Double Platinum in 2013! Bicycle-Friendly University and Bicycle-Friendly Business

UC Davis holds the singular achievement of Platinum Level recognition, the highest awarded, by the League of



American Bicyclists (LAB) as both a Bicycle Friendly University (BFU) and a Bicycle Friendly Business (BFB). There are only two Platinum level BFUs recognized in the US, and of the nine Platinum BFBs, UC Davis is the only university to earn that status. While these awards are based in part on UC Davis' well-documented history of supporting bicycle transportation going back over fifty years, Platinum status is not achieved without continuing to



innovate, expand and evolve to meet new demands and increase our bicycle commute mode share. According to the results of the Annual Campus Travel Survey administered in October 2013, 47% of the total campus population commute primarily by bicycle; by far the largest mode share followed by single occupancy vehicles at 24%. In short, UC Davis' "Double Platinum" recognition reflects the extraordinary measures taken by the campus over the past six decades to promote this most sustainable of all wheeled transportation choices among its students, employees and visitors.

### Drought Summit, UC Davis Drought Response Action Plan, and Water Dashboard Launched

In January 2014, California Governor Brown declared a drought state of emergency and called upon Californians to reduce water use; in response UC Davis convened a Drought Summit to educate legislators, policymakers and agencies about drought in California; wrote a Drought Response Action Plan with nearly 50 measures to reduce campus water use by 20% from the previous year on the main Davis campus; and students worked with staff to develop a real-time water dashboard to display progress toward the 20% reduction goal. More about the summit, the plan and the water dashboard can be found at



<http://drought.ucdavis.edu/uc-drought-summit.html>; <http://sustainability.ucdavis.edu/progress/water/index.html>; and <http://wateroncampus.ucdavis.edu/>.

## Other Notable UC Davis Highlights and Achievements for 2013-14:

### *Student Housing:*

- UC Davis had a very successful residence halls move-out donation drive with an all-time record high diversion of almost 17,000 pounds – double last year's numbers.
- Emerson and Webster residence halls became UC Davis' first certified LEED-EBOM buildings.

### *Dining Services:*

- Total sustainable food purchasing reached 23% this year, up from 21% in 2012-2013. Approximately 70% of produce purchased in Resident Dining was local and/or organic.
- Over 32,000 pounds of tomatoes have been harvested from the UC Davis Russell Ranch research farm and made into tomato sauce since 2010. The Russell Ranch farm hosts the Agricultural Sustainability Institute's Long-Term Research in Agricultural Sustainability project (learn more at: <http://asi.ucdavis.edu/rr>).
- The 2013-2014 Go Green Grant, funded by a portion of UC Davis Dining Services Voluntary Meal Plan sales, supported four projects this year, including *A Fresh Focus*, a student-led initiative to bring recovered, fresh produce from the UC Davis Student Farm to the campus food pantry. The Student Farm is a key facility used by students in the Sustainable Agriculture and Food Systems major <http://www.caes.ucdavis.edu/students/future/academics/majors/safs>.

### *West Village:*

- The University of California, Davis, [West Village](#), the nation's largest planned zero net energy community, underwent its first year of energy performance review. The first formal analysis of West Village showed that even in its initial phases, the community is well on the way to the ultimate goal of operating as a ZNE community. The report is available at: <http://sustainability.ucdavis.edu/news/2013/november/uc-davis-west-village-setting-the-standard.html>.
- The Honda Smart Home opened at West Village in spring 2014; working with the Western Cooling Efficiency Center, the Energy Efficiency Center, and the California Lighting Technology Center, Honda partnered with UC Davis research to showcase energy efficient technology in this home of the near future. Learn more at: <http://www.its.ucdavis.edu/slide-show/honda-smart-home-opening-tuesday-march-25/>

### *Other Research, Curricular and Co-curricular Activities:*

- UC Davis was named one of 10 sites in the nationwide Climate Hub program; with responsibilities to address climate change's effects on specialty crops, ranching and forestry. To learn more: <http://www.caes.ucdavis.edu/news/articles/2014/02/uc-davis-in-nationwide-hub-on-climate-change>.
- The Putah Creek Riparian Reserve encompasses nearly 700 acres of stream, riparian and grassland ecosystems and naturalized lands that are managed for teaching, research, and wildlife and habitat protection on the UC Davis campus. The Reserve has partnered with Wild Campus, a student-run program dedicated to the conservation of local wildlife, allowing the student program to adopt a 12-acre portion of the Putah Creek Riparian Reserve as the Wild Reserve. Students lead invasive species eradication and habitat restoration projects within the Wild Reserve, as well as undertake annual bio-monitoring of insect, bird, and fish populations, to build a body of knowledge about the land they are stewarding and determine long-term success of their restoration projects. This innovative program is the only such partnership UC Davis is aware of where students are the lead environmental stewards of an on-campus nature preserve along a natural waterway, while providing hands-on learning for course credit, helping train future environmental leaders and land stewards. For more information on Wild Campus, please visit: <http://wildcampus.ucdavis.edu/>.



# UC Irvine FY 2013-14 Sustainability Updates

## Introduction

- In 2013, UCI was recognized with the state of California's highest environmental honor, the Governor's Environmental and Economic Leadership Award, for the campus's leadership in climate protection programs including the UCI Smart Labs Initiative which safely reduces laboratory energy use by an average of 60 percent. The campus was previously honored with this award in 2008 for programs that minimize the effects of transportation on climate change.



- In 2014 Irvine was ranked the #1 'Coolest School' by Sierra Magazine, ranked in the Top Ten for five consecutive years. The campus was also named to The Princeton Review's Green Honor Roll for the second year in a row.
- President Barack Obama was the featured speaker at the 2014 commencement commenting, *"And when I challenge colleges to reduce their energy use by 20 percent by 2020, UC Irvine went ahead and did it last year. Done. So UC Irvine is ahead of the curve."*

## GHG Emissions & Energy

- UCI was recognized by the Department of Energy for attaining the Better Buildings Challenge goal of reducing campus energy use by 20 percent seven years before the 2020 deadline. President Barack Obama acknowledged this achievement in his address to UCI's 2014 graduating class by telling the crowd that UCI is "ahead of the curve."
- Campus held the first annual Sustainable Living Workshop, part of the campus' newly founded local offset program. Campus energy management staff and representatives from Southern California Edison, Southern California Gas Company, and Irvine Ranch Water District taught methods for homeowners in University Hills faculty/staff housing community to conserve energy and water.
- UC Irvine earned the U.S. Environmental Protection Agency's Climate Leadership Award for Organizational Leadership

## Green Building

- The campus was awarded three LEED NC Platinum certifications bringing its total to 12 Platinum and 8 Gold ratings for new construction
  - Social & Behavioral Sciences Gateway
  - Biological Sciences III
  - Contemporary Arts Center

## Water

- UCI's Water Resource Working Group developed drought response actions, some highlighted below:
  - Immediate reduction of irrigation water use by 10% (23 million gallons per year) and 2020 reduction goal of total water use of 30%
  - Development of potable to reclaimed conversion plans for three areas of campus
  - Students developed Drought Reach, a peer-to-peer outreach program updating the campus community on the drought while also providing water savings tips



Students replace underutilized turf by planting California Native Plants in Middle Earth Housing

## Urban Forestry

- The UC Irvine Shadetree Nursery received the Arbor Day Foundation Award for Volunteer Management recognizing UCI's partnership with the Irvine Ranch Water District resulting in the planting of 30,000 native and drought tolerant shade trees on campus and in the southern California community over the past 19 years through volunteer efforts.
- Designated Tree Campus USA by the Arbor Day Foundation for 4<sup>th</sup> consecutive year.

## UCLA FY 2013-14 Sustainability Updates

### University-wide Initiative

#### *UCLA Grand Challenge in Environment and Sustainability: Thriving in a Hotter Los Angeles*

UCLA announced a groundbreaking university wide research initiative- the Grand Challenge in Environment and Sustainability. This initiative brings together over 160 faculty across 70 different, to work with partnerships across sectors and communities, to develop a comprehensive plan to achieve 100% renewable energy and 100% local water while enhancing biodiversity in the Los Angeles region by 2050.



### Transportation Initiatives

#### *Sustainable Transportation Plan*

Building on UCLA's Climate Action Plan, the UCLA Sustainable Transportation Plan, features three goal areas of Commutes & Trips, Operations, and Civic Engagement that aim to balance the sustainability values of economic benefit, social equity, and environmental health. Transportation will also achieve the Climate Action Goal of 50% sustainable fleet vehicles with additional electric vehicle purchases and donations.



### Green Sports Initiatives

#### *LEED Certified Venues and Greener Operations*

UCLA Recreation and Athletics continued to work with the Green Sports Alliance and NIRSA to further green sports initiatives at UCLA. A team of undergraduate students in the Action Research Team program worked on a second year of Zero Waste initiatives at Pauley Pavilion. Pauley Pavilion and the Kinross Recreation Facility (KREC) both achieved LEED Gold.





## Food System Initiatives

### *Meet the Farmers Vendor Fair at the Award Winning Bruin Plate Residential Restaurant*

Bruin Plate, the new Residential Restaurant at UCLA that focuses on sustainability and nutrition for a healthy campus, was awarded the Sustainable Foodservice Best Practice Award at this year's statewide CA Higher Education Sustainability Conference. At the Meet the Farmers Vendor Fair guests met farmers and growers that supply Bruin Plate and other residential restaurants with fresh, fair, and humanely raised products, promoting the concept of farm-to-fork dining.



## Additional Awards

### *APPA Award for Sustainability in Facilities Management*

UCLA received an award for Sustainability in Facilities from APPA, a professional organization for facilities managers at educational institutions, at their 100 year anniversary conference. The award recognizes Facilities Management's efforts to embed sustainable practices throughout the campus. The comprehensive award recognized initiatives in climate action, energy efficiency, green cleaning and others areas.



### *Environmentalists of the Year*

The UCLA Sustainability Committee, along with a number of UCLA faculty and donors were honored as Environmentalists of the Year for their outstanding dedication to environmental education, research, advocacy, operations and philanthropy by Los Angeles nonprofit Faith2Green, and were presented the awards at Los Angeles City Hall and the LA County Board of Supervisors by City Councilmember Paul Koretz and County Supervisor Zev Yaroslavsky.





## UC Los Angeles Health System FY 2013-14 Sustainability Updates

### Sustainable Food

#### *Antibiotic-free Beef and Poultry*

The Ronald Reagan UCLA Medical Center and UCLA Medical Center Santa Monica are now offering antibiotic-free beef and poultry. This is available on the patient menu and cafeteria.



#### *Los Angeles Green Business Certification*

The Ronald Reagan UCLA Medical Center Dining Commons is a City of Los Angeles certified green business. The certification covers many areas including the indoor dining area, cafeteria, kitchen, public restrooms, the food service administration office and outdoor dining area. A checklist was completed and an inspection by the City of Los Angeles was conducted. We are working with the City of Santa Monica Sustainable Works to certify the cafeteria at UCLA Medical Center-Santa Monica.

#### *Sustainable Food Purchases*

Ronald Reagan UCLA Medical Center has reached 30% sustainable food purchases. This is an increase of 5% from the last fiscal year.

### Waste and Recycling

#### *Single-Use Washable Isolation Gowns*

The switch from disposable to reusable isolation gowns is still underway. From July 2013 through June 2014, 1,497,390 reusable gowns were used. That calculates to 135 tons of disposable gowns diverted from the landfill. We are still in the process of switching gowns at our Santa Monica hospital. Some treatments will continue to require the use of disposable gowns.

#### *Blue Wrap Recycling*

A new collection process for blue wrap has been implemented to ensure proper recycling of this material. Blue wrap had been collected along with other clean plastics from the Operating Rooms (OR). However, the current recycling company will not accept this material. We have partnered with Shred-It (formerly Cintas) to recycle this material. The blue wrap is segregated from all other recyclable material, placed in a special clearly marked bin and picked up by Shred-It. Shred-It also collects, shreds, and recycles confidential paper.



## Employee Engagement and Communication

### *Sustainability Liaison Program*

The Sustainability Liaison Program was created in October 2013 to engage staff from all over the health system to promote sustainable practices within and outside of their departments, offer ideas for improvements, and be the liaisons between the steering committee and their staff. Twenty-nine staff members have signed up. Members are comprised of nurses, clinic managers, human resources staff, IT and administration staff among others. They receive special notices of events via email and are the first to hear about upcoming initiatives. This fiscal year we will be focusing on expanding their knowledge of sustainability with monthly lunch and learns, which will also be open to all staff. Recommendations for topics were solicited from this group last month.

### *UCLA Health Sustainability Website and Video*

There is a stand-alone website dedicated to the UCLA Health Sustainability Program. Prior to this, there was a single page on the UCLA Health website highlighting a few initiatives. This website now displays our commitment statement, goals and progress, news, events and available resources. A feedback form is also available for staff and visitors to recommend their ideas with a system in place to take those ideas and develop a plan to implement them using our Lean project templates and methodology. We also created a short video showcasing some long standing and new sustainability initiatives. Access to online social media is available through the site to encourage visitors to share to those platforms.

## Accolades

### *Practice Greenhealth Awards*

Both medical centers were the recipients of the Greenhealth Partner for Change award along with the Making Medicine Mercury-Free award. This is the fourth year both hospitals have been honored with the former award and first to receive the one-time mercury-free award. Our Media Relations department wrote an article about the antibiotic-free meat and awards news which spread online and appeared in the local newspaper.

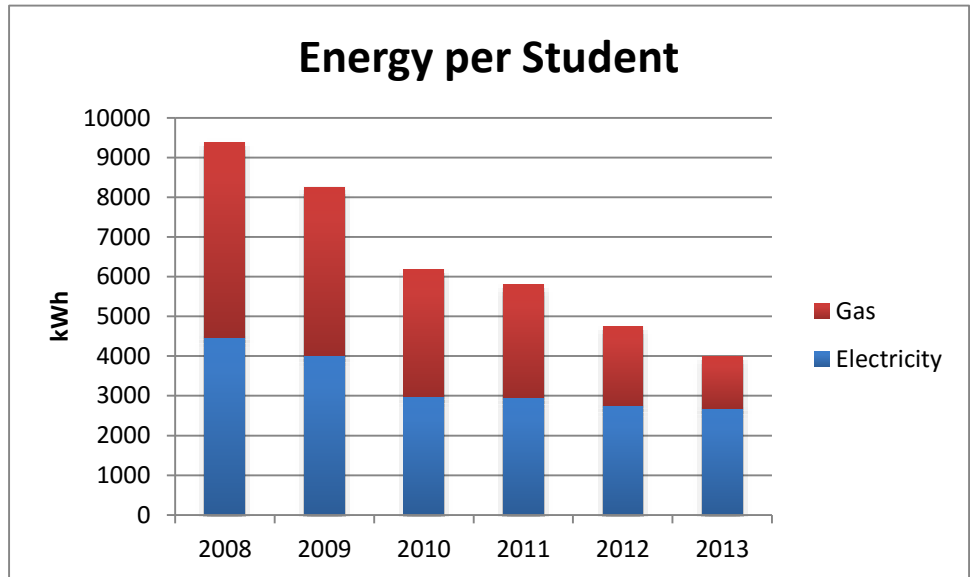
## UC Merced FY 2013-14 Sustainability Updates

### Sustainability:

- Since 2005, UC Merced has demonstrated success in everything from green building to energy efficiency to procurement. These successes, combined with what we have learned, have enabled UC Merced to establish its Triple Zero Commitment: a goal for the campus to ultimately produce its power from renewable sources, to generate zero landfill waste and to achieve climate neutrality.
- The Chancellor Advisory Committee on Sustainability (CACS) has commissioned the first sustainability report.

### Building Efficiency:

Sustainability has been the guiding principles of the construction and operation activities on UC Merced from day one. The Majority of the campus buildings exceeded the energy benchmarks established by California Institute for Energy & Environment (CIEE). The following table is an example of UC Merced building performance compared to the benchmarks.



Buildings	Benchmarking KBTU (1999)	Current KBTU	Percent of Benchmark
Science and Engineering 1	40.7	28.24	69%
Kolligian Library	15.1	9.9	66%
Classroom and Office Building	15.1	9.21	61%

### LEED Certification:

- UC Merced is the only campus with all LEED certified buildings, all but one either at the Gold or Platinum level.
- UC Merced completed its LEED-EBOM master site with 13 points. Six buildings registered for LEED-EBOM.
- UC Merced completed its first submittal of a LEED-EBOM building (Kolligian Library).

### Renewables:

- UC Merced's ground mounted photovoltaic solar PV system provided over 14% of the current annual electricity use and resulted in GHG avoidance of 740 tons of CO<sub>2</sub>/year.



- UC Merced executed a roof top solar RFP on 10 buildings that will produce an additional 13% of the campus energy use. This will bring the total on campus renewable electricity production to over 27% of the campus annual electricity use.

#### Water and Ground services:

- UC Merced completed its water action plan.
- UC Merced's conservation policies resulted in 12% reduction in irrigation water in response to the UC president's call for water conservation.

#### Waste Management:

- UC Merced funded the procurement and installation of a state of the art waste sorting line in an effort to increase waste diversion to the landfill. This sort line, along with smaller office waste bins, will allow UC Merced to reach up to 85% waste diversion from the landfill.
- UC Merced deployed a Solar Big Belly waste management system. It is also being incorporated in the construction standards.



#### Transportation:

- UC Merced has initiated a transportation and parking study that addresses current and future transportation needs/options up to the campus' full build-out. The study will include sustainable transportation and commuting options.
- UC Merced adopted and put in place policies that incentivize carpooling and vanpools.

#### Food & Dining Services:

- Total sustainable food purchases for dining services was 13% in FY 2013-14.
- Last year approximately 325,000 OZZI containers were used and returned. The "OZZI Kiosk" was developed, where students can see how much trash they specifically have helped divert from the landfill.

#### Land Use:

On January 2, 2014, the UC Board of Regents approved land adjoining the northeast corner of campus to officially become part of the UC Natural Reserve System. The reserve hosts many teaching activities such as plant identification and landscape floristics; animal behavior studies; bird watching; soil science; and mapping and orienteering.

## UC Riverside FY 2013-14 Sustainability Updates

### Renewable Energy

#### *SIGI – Sustainable Integrated Grid Initiative*

Four megawatts of solar photovoltaics panels, two megawatt-hours of battery energy storage, 27 electric vehicle charging stations, an electric-powered trolley, energy monitoring and smart dispatch and open architecture brought together in a synthesis of collaboration between UCR, local, state and national governmental agencies, and for-profit companies to evaluate smart grid protocols and energy storage for electric vehicle charging demonstrating the efficiency and performance of various forms of electric and hybrid electric transportation and renewable energy generation.



#### *Solar Café Tables*

13 solar charging café tables, ADA compliant, seating for four, USB and 110 charging outlets, 1 kw battery storage, all funded by UCR students.



### Student Initiatives

MOU with City of Riverside to provide sustainability focused internships for 2-4 undergraduate and graduate students signed during UCR/ City of Riverside Sustainability Summit co-sponsored by Riverside Public Utilities and UCR Office of Sustainability featuring presentations by the Chancellor of UCR, Mayor of Riverside and former mayor of Riverside and current Director of UCR's Center for Sustainable Suburban Development.

#### *GCAP Referendum*

Students voted an indefinite extension to the Green Climate Action Plan on Earth Day. The only referendum to pass this academic year, it provides funding for sustainability interns, support for small educational projects and larger operational focused sustainability project proposed by undergraduates.

## *R'Courses*



UCR has established a section in its catalog for student designed and led courses base off of the overwhelming success of a student established sustainability course, The Urban Garden Seminar, which uses the Sustainable Campus Community Garden, R'Garden., as a Living learning Laboratory.

Student teams supported City of Riverside's efforts to win Coolest City in California competition. Efforts earned UCR a share in \$50,000 prize money for its efforts.

## Academics

New hire of eco-feminist in preparation for BS in Sustainability in Gender and Sexuality Studies with new courses: Sustainability, Gender and Development in the Global South and Feminist Politics of Food.

First methodology course in Sustainability offered through School of Public Policy

First Green Class certification achieved in Spring 2014. Class policy included zero printing, e-text book available for free, all recommended resources available for free online or through the library, refillable whiteboard markers made with 91% recycle content, all assignments delivered, received and corrected digitally, and recycling bins available in the classroom.



## UC San Diego FY 2013-14 Sustainability Updates

### Energy Efficiency and Renewable Energy

- Completed 16 energy efficiency projects resulting in:
  - 2,135,958 kwh and 229,163 therms saved annually
  - 1,992 tonnes of CO2 reduced annually
  - \$465k annual avoided cost
  - \$742k incentive received from San Diego Gas & Electric (SDGE)
  - This is year 4 of an energy efficiency program
- Installed 7 rooftop Solar Photovoltaic systems on the main campus:
  - Total capacity of 773 kW-ac
  - 370 tonnes of CO2 reduced annually
  - \$840k incentive received from California Center for Sustainable Energy (CCSE)
  - UCSD now has a total on-site renewable energy system capacity of 5,975 kW
- Completed design of Energy Storage System
  - 2.5MW – 5MWhr Battery Storage System
  - Reserved \$3.2M SGIP incentive from the CCSE
  - Battery system to be charged by renewable energy generated by on site fuel cell at night and displace high carbon content peak energy during the day.
  - Project to be completed mid 2015
- Completed design of Thermal Energy Storage System
  - 1.2M Gallon, 11,445 ton-hr (7 hour discharge capacity)
  - Reserved \$1M incentive from SDGE
  - Will eliminate all on peak electric chilling on the East Campus neighborhood
  - Project to be completed mid 2015
- Installation of Absorption Chiller to Fuel Cell
  - Capture heat from renewable fuel cell that was previously vented to atmosphere.
  - Will raise overall system efficiency to 68%, making it one of the most efficiency combined heat and power plants in operation.
- Continued progress was made implementing a \$1.8 million grant to develop stand-alone energy sources for the microgrid, as well as increase the availability of electric vehicle charging units to more than 50 stations by 2014.

### Water Conservation

- Completed design to extend reclaim water system to serve Central Plant Cooling towers
  - Will reduced potable water use by over 100M gallons annually
  - Represents approximately 25% reduction in campus potable water usage while also saving the campus approximately \$500k annually in water/sewer costs.
  - Project to be completed by Q1 2015
- Begin design to extend reclaim water system to the majority of campus irrigation areas
  - Will reduce potable water use for irrigation by approximately 40M gallons annually
- All new construction includes installation of low flow water fixtures and native or drought tolerant vegetation.
- Retrofitting existing irrigation system with low flow devices. Approximately 6,650 irrigation heads have been replaced. These changes have resulted in an annual savings of 7.2 million gallons annually in irrigation water used. In addition, a significant number of high water-use spray heads were removed and turf was replaced in Mesa Housing, saving about 900,000 gallons annually.
- Installation of a computer controlled irrigation system for 40% of our campus that uses weather data to adjust watering based on temperature and humidity. The system also detects abnormal water usage -- identifying possible water leaks. The 136 central irrigation controllers have the potential to save 100 million gallons annually.

### Facilities Design & Construction: New and Pending LEED Certifications/ Project Awards

- The Marine Ecosystem Sensing, Observation and Modeling (MESOM) building at Scripps Institution of Oceanography (SIO) not only was certified Leadership in Energy and Environmental Design (LEED) Platinum by the Green Building Certification Institute (GBCI), but also won an *Award of Merit* in Sustainable Technology from the ASCE.
- The newly constructed Health Sciences Biomedical Research Facility 2 building is on track to be certified LEED Platinum by the GBCI and employed innovative electrical design that optimized natural daylighting utilizing operable exterior shading devices which track the sun and dimmable controls that resulted in lighting efficiency that is 20% better than 2010 Title 24 energy code.
- Galbraith Hall Renovation was certified LEED Gold by GBCI for its innovative renovation and repurposing of 30,000 square feet of existing space and won an *Orchid for Interior Design* from the San Diego Architectural Foundation. The new renovation includes a mixed-use program including a 417 seat lecture hall, study spaces, conference rooms, office space and dance studios.
- East Campus Office Building was certified LEED Silver by GBCI and won *Fan Favorite* and *Excellence in Achievement* by the Concrete Tilt Up Association and *Distinction Award* by the Design Build Institute of America.
- East Campus Parking Structure was certified LEED Silver by GBCI.
- The SIO Research Support Facility project included three new ocean research support buildings totaling 24,000 GSF, and renovated three existing buildings totaling 17,000 GSF. The project is on track to be certified LEED Silver by the GBCI.
- The UC San Diego rehabilitated the historic 1945 Geisel University House to achieve seismic safety and accommodate modern uses while cataloging and preserving the most important historical features of the building. It received several awards including: the *Rehabilitation Award* from the California Preservation Foundation, *Award of Merit in Historical Category* from the American Society of Civil Engineers (ASCE), and the *Green/Sustainable Project of the Year* from American Public Works Association.

#### Contracts & Purchasing

- UCSD has created a set of sustainability questions to be included in all RFx questions to suppliers. The scope ranges from suppliers' sustainable in-house practices to the products and practices they will provide for and employ to the campus.
- In order to better understand environmental and social impacts associated with our purchases, UC San Diego has begun a case study with ProductBio, a data platform that maps purchasing data to data gathered from 99 eco-labels, CSR reports, and MSDSs. The end result is to discover high-impact products and find lower-impact alternatives, then promote those alternatives.

#### Housing and Dining

- Over 1000 reusable bags given to residents & decorated at educational events
- 25 Res Life Presentations reaching over 300 residents
- 15 waste sorts to identify recyclables in housing trash & develop education around that information
- 12 Presentations at HDH New Employee Orientations
- 100+ mini bin trash bins deployed to HDH offices
- Composted 242.99 tons of food scrap
- 24 tons donated to DAV during 2014 move outs
- 17% Sustainable Food purchases in HDH locations
- \$276,378 in Fair Trade- and increase of 78% from 12/13
- 76,680KWH saved thru lighting upgrades
- Reduced 16,778 sq ft. of turf= 494,879 gallons of water saved

## **UC San Diego Health System FY 2013-14 Sustainability Updates**

### Water Conservation Improvements

Hillcrest Medical Center - Dishwasher replacement reduced water usage by 310,369 gallons

Hillcrest Medical Center- Installed Laminar Flow Restrictors housewide; Project to continue in La Jolla

### Energy Improvements

Hillcrest Medical Center - Dishwasher replacement reduced energy consumptions 15%

### Environmentally Preferred Purchasing

Director Environmental Services completed final year commitment on Novation Environmental Advisory Group. This group significantly impacted reduction in product packaging (reducing amount of waste), reducing and eliminating chemicals of concern, identifying and publishing chemicals of concern in agreement scopes and on Novation contract product web site, identifying sustainable food options and posting attributes clearly on Novation contract product web site.

Printing: Through a competitive award, UC San Diego Health System partnered with Auxilio, Inc. in March of 2014 to manage their document output processes (copy, print, fax and scan) across UC San Diego Health Sciences. Auxilio's expertise will streamline and align processes and infrastructure to create a manageable, dependable print management program that will reduce our cost, increase our Health System sustainability efforts by reducing printed materials, and increase employee productivity as we continue to meet and exceed our patient care standards.

Materials: UC San Diego Health System was awarded from their primary medical supply reprocessing vendor their "Gold Award for outstanding performance in reducing environmental harm and improving overall hospital quality through medical device remanufacturing and reprocessing". Total waste avoidance for 2013 was 13,789 pounds.

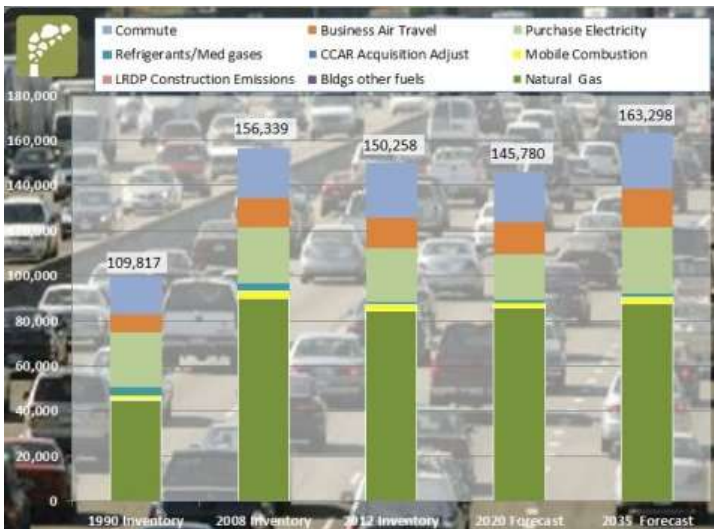
### Waste Reduction Improvements

Collaborated with various departments to better segregate recyclables at source and transport appropriately.

Negotiated new service contract that will double numbers of recycling containers.



## UC San Francisco FY 2013-14 Sustainability Updates



### Long Range Development Plan's Greenhouse Gas Emissions Strategy Completion

The [Draft UCSF Long Range Development Plan](#), which was completed and published for public comment, included the Greenhouse Gas Emissions Strategy in the [appendices](#) which outlined strategies put forth to reduce carbon emissions consistent with CEQA and UC policy on Sustainable Practices to achieve stated goals while incorporating plans for new campus building construction and renovation projects.

### Sustainability Action Plan and Water Action Plan Completion

The Sustainability Action Plan is a living document developed by the ten Sustainability Steering Committee work groups to identify strategies and tactics to implement to meet our 2020 work group goals. These work group goals are in alignment with the UC Policy on Sustainable Practices and include Toxics Reduction strategies that are specific to UCSF's healthcare focus. Included in this effort, was the development of the draft Water Action Plan which was completed and submitted to UCOP outlining multiple strategies to reduce campus-wide water usage by 20% by 2020.

### UCSF Medical Center Awards Received

UCSF Medical Center was recognized at [Practice GreenHealth's](#)

Clean Med conference with the Emerald Award and two Circles of Excellence Awards in categories of Climate (for our GHG emissions tracking and reporting) and Green Building (for the construction of our LEED-gold seeking Mission Bay Women's, Children's and Cancer Hospitals). These awards recognized the leadership of clinical and operations staff to reduce waste, energy, and water, increase adoption of sustainable food and construction of LEED certified medical center buildings. The Medical Center was also recognized by the [University Healthcare Consortium](#) (of 450 academic medical centers and affiliate hospitals worldwide) as winner of their second annual Sustainability Awards.



### Health and Sustainability Summit Held

The Chancellor's Advisory Committee on Sustainability and the Academic Senate Committee on Sustainability hosted a [Health and Sustainability Summit](#) which gather leadership from across the campus and medical center to discuss top strategies to position UCSF as national leaders in Health and Sustainability by 2025. This Summit, with welcome address by medical center CEO, Mark Laret,



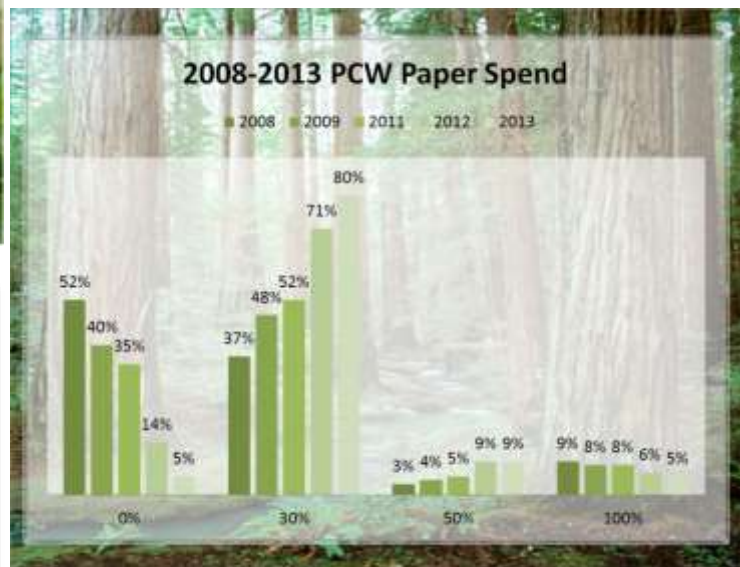
evaluated recommendations put forth from leading experts around Health and Climate Change, Toxics Reduction and Healthcare Operations. Continued development of specific strategies will occur in the next fiscal year to meet the 2025 goals.

### Campus Engagement

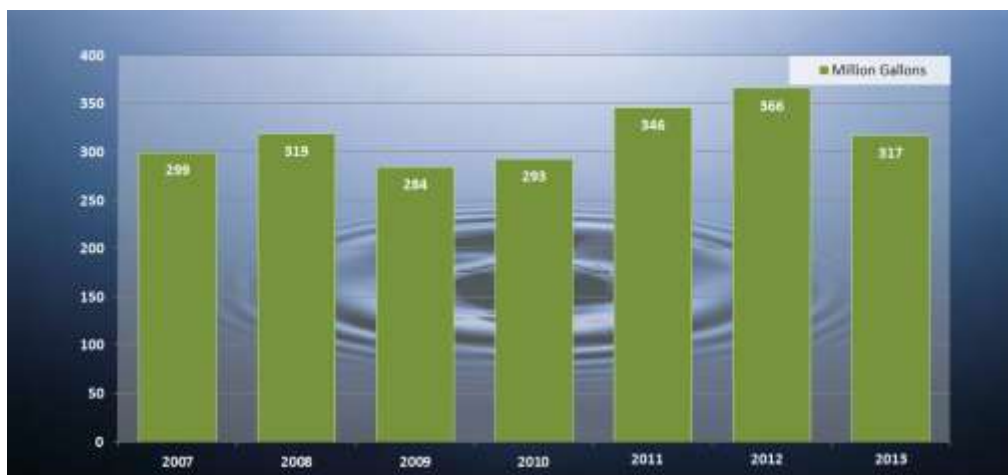
75,121 unique visitors to the **LivingGreen.ucsf.edu website** in the past two years appear to have prompted international interest and several visits from Europe and Asia.



**Sustainable Food Spend** - UCSFMC exceeded UCOP Goal by 6.7% and 6 years early



**Increase in Spend on PCW paper** in the past year was due to default replacement program of 30% PCW instead of virgin paper



**Water Savings** were realized with a reduction of 9% from the 2012.

Employee Discount Solar Photovoltaic Program - Last year UCSF implemented a partnership with the Business Council for Climate Change and SF's five largest employers to negotiate a 20% discount on residential Solar PV for employees living in the 9 bay area counties. This program resulted in 12 contracts from UCSF, with a total 69 kW of solar PV capacity. The entire 9 Bay Area counties program resulted in 467.8 kW producing 12.6M kWh of electricity over a 20-yr life time and will eliminate 9000 metric tons of CO<sub>2</sub>e.

Employee Discount Electric Vehicle Program - UCSF also partnered with Nissan to promote the purchase of the all-electric Nissan Leaf at \$1000 below dealer invoice for all interested UCSF employees. We were only able to confirm 12 participants based upon their email addresses but suspect that twice as many employees took advantage of the program.

## **UC Santa Barbara Campus FY 2013-2014 Sustainability Updates**

### Water:

- Prioritized campus-wide water conservation and efficiency efforts this year with a focus on education and outreach. Irrigation on areas irrigated with potable water was reduced 50% and completely shut down on selected lawns. This was coupled with signage about our irrigation practices; over 40 signs were created and deployed throughout campus to educate the community about the drought and our irrigation practices, as well as to promote smart irrigation practices within the community. Water conservation DigiKnows and Green Boards posters were also displayed throughout campus to educate the campus community.
- Collaborated with the Goleta Water District and hosted a Community Lecture Series, “Water We Going to Do?”
  - a. Session 1: Introduction (Goleta Water District/ UCSB/ Bren School)
  - b. Farmer’s Market: Tabling event with EAB and Goleta Water District
  - c. Session 2: Our Local Water Resources – Saving During the Summer
- Received National Recognition for Leading the Way in Water Conservation by the Earth Day Network.
- Reduced the use of annuals for color on campus, selecting water-efficient perennials instead and reducing the number of maintenance-intensive hedges. The campus also improved the management of 60% of irrigation on turf areas by employing Rainmaster weather stations that continuously collect rainfall, humidity, wind, and temperature data to modify irrigation levels.
- Saved a total of 201,808 gallons of potable water, thanks to a month-long residence hall water savings competition which saw residents reduce their water use on average 4.7% compared to their baselines.
- In all, UCSB’s water conservation and efficiency efforts this FY led to a savings of 56,377 HCF when compared to the previous FY, a 21% reduction in potable water use. Potable water consumption rates at UCSB have not been this low in over 10 years!

### Food:

- Formed a coalition of 23 departments and over 40 people to develop a set of initiatives that UCSB could implement in response to President Napolitano’s global food initiative.
- Launched the Gaucho Certified Farmers’ Market
- AS Food Bank in conjunction with the Swipes for the Houseless organization launched the student-run Swipes for Us Program, which enables students to donate unused swipes to other students who cannot afford a meal. 1,500 swipes have given back to students.
- The 2013-2014 sustainable food procurement assessment for the UCSB Dining Commons calculated 35% sustainable food purchases. This year, 46% of our total produce purchases were grown and distributed within 250 miles of campus, and 40% within 150 miles of campus. Additionally, we were able to purchase 23% organic produce.
- Hosted Chef Net: Experiencing Local & Sustainable Flavors. Residential Dining hosted Chef Net through the NACUFS organization. Our program was designed to entice our participant’s palate and to explore innovative, local, and sustainable food.

### Waste:

- UCSB decreased its waste diversion percentage, including construction and demolition (C&D) material, from 81% last year to 70% this year. This could be attributed to a lack of reporting from C&D projects. However, the waste diversion percentage for municipal solid waste (MSW) (w/o C&D) increased to 72%, up from 70%.
- Secured funding for 5,000 desk-side recycling bins from the Campus Green Initiative Fund.
- Established a composting program to recycle clippings and shredded trees for campus landscaping use.
- Decreased water bottle sales by 54%

### Energy:

- Electricity accounts for three quarters of UCSB’s annual utility expenditure. As compared to the prior year, total electrical energy usage on campus decreased by 4 percent. Over the past decade, UCSB has reduced electricity usage per square foot by 36 percent.

- Natural gas represented between 16 percent of UCSB's annual utility spend in 2013-2014. As compared to the prior year, total natural gas usage on campus decreased by 15 percent. Over the past decade, UCSB has reduced natural gas usage per square foot by 57 percent.
- The primary element driving these energy savings at UCSB has been the Statewide Energy Partnership.
- The overall UCSB Campus Energy Utilization Index has been reduced from 77 kBTU/sf/yr to 53 kBTU/sf/yr since the implementation of the current SEP Program in 2009.
- The 423kW Renewable Energy Initiative student funded Solar Array was awarded early this year and will more than double UCSB's onsite renewable energy generation.
- The Recreation Center and Student Affairs is continuing its collaboration with Southern California Edison and others to bring the Recreation Center's buildings to Zero Net Energy.
- Developed 2014 climate action plan including updated emissions data, projections, and mitigation strategies. It is the first Climate Action plan in the UC system to include a cost analysis of President Janet Napolitano's Carbon Neutrality Initiative.

#### Built Environment:

- Implemented practices to include LabRATS representation on all building committees for laboratory buildings or buildings that include laboratory space.
- Continued the first LEED for Homes project in the UC System: North Campus Faculty Housing Phase II.
- Completed a LEED-NC Gold certification for the Ocean Science Education Building and a LEED-CI Gold certification for the Anacapa Residence Hall.
- Completed a LEED-EBOM Gold certification for the Recreation Center (its 2nd LEED-EB certification), for a total of 12 LEED-EB buildings on campus, more than any college or university in the nation (UCSB now has 83 LEED certifications in place).

#### Transportation:

- UCSB was named a Gold Bicycle Friendly University by the League of American Bicyclists.
- Completed the installation of 12 EVSE (electric Vehicle Supply Equipment) level 2 chargers on campus.

#### Curriculum:

- Won approval of the Interdepartmental PhD Emphasis on Environment and Society, a joint effort of 15 departments from social science, natural science, and humanities divisions (with a planned launch in Fall 2014)
- Drafted and piloted a Sustainability Literacy Assessment Tool
- Developed a partnership with YStrive, a local career training program for youth. Through this partnership, we connected them with a writing program class that drafted grants for their organization.

#### Community Partnerships and Events:

- The 3<sup>rd</sup> Annual Central Coast Sustainability Summit took place at UCSB in fall 2013. The Summit is a conference whose goals include sharing best practices and building collaborations to address complex environmental and economic issues in our region. The 4<sup>th</sup> annual event will take place in October 2014.
- Dr. John Foran hosted a Climate Justice conference with support from the Faculty Sustainability Champion Program in Spring 2014.
- UCSB supported the statewide California Higher Education Sustainability Conference in hosting its thirteenth annual conference at San Diego State University.
- Through the Educating Leaders for the Future program, UCSB developed and facilitated over 30 environmental lesson plans for elementary and middle school youth in the Santa Barbara Housing Authority and 36 environmental lesson plans for La Cuesta Continuation High School students.
- Through the Partners in Environment Initiative, UCSB developed partnerships with eight local environmental non-profit organizations who have pledged to collaborate to increase volunteer recruitment broadly in the community.



# UC Santa Cruz FY 2013-14 Sustainability Updates

## Structure and Planning

In 2014 the Sustainability Office began reporting directly to Vice Chancellor of Business and Administrative Services. This elevates the position of sustainability within the organization, and we are excited about opportunities this change will provide.

*Sustainability Working Group Micro-grants* – The Sustainability Office funded \$50,000 (an increase of \$20,000) to 13 different projects representing seven of the sustainability working groups. A sample of the projects funded include:

- Rainwater Harvesting at the Office of Physical Education, Recreation and Sports
- Grassland Gird Monitoring
- Walk to Class Challenge Day

## Education & Outreach and Waste Reduction

*Academic and Operation Connection for Sustainability/ Living Lab* – Developed the first Sustainability [Living Lab Map](#), which highlights places on campus where problem-based teaching, research and applied work combine to develop actionable solutions that improve sustainability of our campus and community.

*Chancellor's Sustainability Challenge* – The first-ever Chancellor's Sustainability Challenge was focused on waste reduction. The Challenge resulted in over 700 personal pledges and led to the advancement of many infrastructure related projects including a pilot zero waste collection model beginning in the fall. A comparison of 2011 and 2014 waste assessment results indicate a 12.3% reduction in food scraps and compostable paper and a 4.5% reduction in recyclable paper.

*Recycle Yard and Compost Feasibility Study* – The campus funded a feasibility study to identify a location for Grounds Services to consolidate its recycling operations and potentially expand operations to include composting services on-site. This study is a key step toward reaching Zero Waste by 2020.

## Buildings & Facilities and Energy

*Integrated Climate and Energy Strategy* – The campus awarded \$870,000 in funding for a highly collaborative strategic planning initiative to develop a roadmap for how UCSC can best address Cap & Trade regulation and achieve President Napolitano's directive on carbon neutrality by 2025. This process will include updating the 2008 Strategic Energy Plan, conducting a renewable energy feasibility study, conducting a campus-wide building and systems energy use audit, and developing a techno-economic scenario analysis tool to help the campus make short and long-term decisions.

## Water and Drought Response

*Water Action and Drought Response Team* – The Sustainability Office created a five-student team to assist with the campus' response to the drought and meeting the City of Santa Cruz's mandatory water use reduction target of 24%. The team is conducting a campus-wide audit of all restroom, kitchen and lab fixtures; posting educational signage regarding water use restrictions on lawns and in restrooms; assisting with the identification of campus sub-metering needs; and connecting with campus users as needed to facilitate improved water usage practices.

*Water Conservation Project Funding* – In response to the immediate need to reduce water during the drought season, the campus funded \$374,000 in water-saving projects including replacing all remaining high-flow

toilets on campus, piloting a water re-use system for laboratory autoclaves, adding sub-meters in unmetered irrigation areas, and installing a system to use seawater for marine mammal pool wash downs.

### Land, Habitat & Watershed, Food, and Procurement

*Campus Reserves* – 3,018 students within 52 UCSC undergraduate courses utilized campus reserve lands. 24 paid student positions and 88 volunteers worked on stewardship activities, bird monitoring, curriculum development and forest ecology.

*Increased Real Food Purchases* –Dining Services contracted with Sea to Table to source directly from Wild American Fisheries, which includes purchasing “under-loved” species to help balance the eco-system from extinction of well-known species. Dining also started sourcing a portion of its produce from a local aquaponic growing company, Viridis.

*Financial Affairs Unit Green Team* – The Financial Affairs unit took on the Chancellor's Sustainability Challenge to Reduce Waste through leading and promoting tangible actions that reduce waste within their department. Specific activities included reducing paper towel use and increased adoption of direct deposit and electronic W-2.

### Transportation

*Sustainable Transportation* – The Spring 2014 Mode Split Study determined that 63.3% of all trips made to and from UCSC rely on a sustainable transportation mode of travel (i.e. transit, MOV, bike, pedestrian).

*EV Charging Stations* – The first public electric vehicle charging stations on campus were installed. The chargers are available for all students, staff, faculty and visitors to use. This project was partially supported through a grant from the Monterey Bay Unified Air Pollution Control District.

*Walk to Class Challenge* – The first year of this peer-to-peer education program had a participation rate of over 400 students. This is a student-to-student peer education program on the sustainability and health benefits of walking on campus and was created and produced by a student intern through the Provost’s Sustainability Internship program.

### Awards

UCSC received three Best Practices Awards at the 2014 California Sustainability in Higher Education Conference:

- Physical Science Building Laboratory Automated Lighting Conversion Project (Lighting Design/Retrofit Award)
- Cold Water Wash Campaign (Student Energy Efficiency)
- Real-Time Waste Metrics for Weight-Based Recharge and Diversion (Innovative Waste Reduction)