

ENERGY EFFICIENCY PARTNERSHIP PROGRAM BEST PRACTICE AWARDS APPLICATION FORM

Submission Deadline: March 7, 2013, 6:00 p.m., no exceptions

Thirteenth Annual CA Higher Education Sustainability Conference - hosted by San Diego State University

This form is only for nominations in the **Sustainability Innovations** category

This award category was created to recognize sustainability projects that do not fit into any of the other award categories. Projects applying in this category should be replicable best practices that do not meet the criteria of the other awards categories. Examples include renewable energy generation and environmentally preferable purchasing.

I. Contact Information

1. Campus **Cal Poly State University, San Luis Obispo**
2. Contact name/title **Dennis Elliot, Assistant Director, Energy, Utilities, and Sustainability**
3. Telephone **(805) 756-2090**
4. Email **delliot@calpoly.edu**

II. Project Information (a student group may submit a single nomination for up to three discrete projects)

1. Project name **Sustainable Infrastructure and Energy Initiative**
2. Project location **Cal Poly SLO**
3. Implementation period **Jan 2014 through Aug 2014**
4. Brief narrative description of project goals and strategies (200 – 300 words) **This initiative is a unique collaboration between Facility Services and the College of Engineering to undertake academic strategic planning and Utility Master Planning around the area of Sustainable Infrastructure and Energy. What was originally envisioned solely as an academic planning exercise, to be led by a single faculty person within the College, became a cross-divisional collaboration between faculty in the College of Engineering and staff within Facility Services. With funding provided by the College of Engineering Dean's Office and matching funds provided by the Vice President of Administration and Finance, two coordinator positions were created to lead the effort rather than one. The task assigned to this interdisciplinary team is to perform strategic planning for the College around the identified Focusing Initiative of "Sustainable Infrastructure and Energy". By facilitating a dialog across all the departments within the College through stakeholder engagement and the design charrette process, the co-coordinators will create a vision and action plan for the College to:**
 - Enhance academic program and curriculum development;
 - Strengthen connections between disparate faculty performing teaching and research in areas related to energy and sustainability;
 - Advance the concept of using the campus buildings and infrastructure as a living laboratory;

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- Identify opportunities to align Capital/Energy/Utility Master Planning with the academic mission of the University;
 - Create and articulate a vision for Sustainable Infrastructure and Energy to be used for the College's Advancement Campaign.
5. Project budget \$34,600
6. Describe your project's funding model. \$17,300 was provided from the College of Engineering Dean's office and \$17,300 in matching funds was provided by the Vice President of Administration and Finance.
7. What are the estimated or measured sustainability impacts (e.g., metric tons of greenhouse gas reduced, acres of open space preserved, quantities of renewable energy generated, etc.)? *Please describe your calculation methods and assumptions.* It is yet to be seen what measurable impacts the initiative will have after its recommendations are implemented, but the outcome will hopefully result in:
- Further infusion of Sustainability principles across the College of Engineering curriculum;
 - Enhancement of the depth and richness of student learning in the areas of energy and sustainability;
 - Increased opportunities for hands-on Learn by Doing student sustainability projects;
 - Enhanced collaboration between faculty in different departments and disciplines;
 - Leveraging of capital projects and/or renewable energy power purchase agreements to incorporate a significant academic component for teaching, research and student;
 - Creation of a new, or repurposing of an existing Center or Institute around the area of Sustainable Infrastructure and Energy;
 - Attraction of increased giving from donors and award of additional grant funds.
8. What are the estimated annual cost savings? *Please state assumptions used for these calculations.*
Unknown
9. Relevancy to the Best Practice Program – Please provide a detailed narrative of the project, highlighting those project features that qualify it as a best practice readily replicable on other campuses. Please include information on project planning, implementation and evaluation (500 word limit). This initiative was originally conceived by the College of Engineering Dean's office as part of the College's regular strategic planning cycle, which created a Strategic Framework composed of a short list of Focusing Initiatives. For the 13/14 academic year, one of the Focusing Initiatives was identified as "Sustainable Infrastructure and Energy". Dean Debra Larsen chose to create a faculty position to act as coordinator of the planning initiative, with a 1/3 FTE work load over two academic quarters. A position description was created and the job posting circulated in November 2013 (see attached job posting, "Sustainable Infrastructure and Energy Coordinator").

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A number of interested faculty from across the College applied for the position, as did the Assistant Director of Energy, Utilities, and Sustainability in Facility Services. Upon interviewing the candidates, Dean Larsen saw an opportunity to expand the role, scope and focus of the coordinator position. After receiving a commitment of support and cofunding from Stan Nosek - Vice President of Administration and Finance, Dean Larsen created a second coordinator position, hiring both Dale Dolan - Professor of Electrical Engineering, and Dennis Elliot - Assistant Director of Energy, Utilities, and Sustainability within Facility Services. The Dean saw a benefit to combining the skill set of a Professor (familiarity with existing academic programs, curriculum, research, personnel, and planning process) with a Facility Manager (familiarity with program development, project management, and collaborative stakeholder engagement).

To accommodate the Winter Quarter teaching schedule of Professor Dolan, the initiative schedule was extended to take place over three quarters, and work began immediately. Co-coordinators Elliot and Dolan developed a work plan involving outreach to Department Chairs, faculty performing teaching and research in related areas, Directors of Centers and Institutes, College and University Advancement staff, and select corporate partners and industry advisory board members. Meetings and interviews have been taking place since early January and will continue through mid-summer. A focus of the work plan includes two weekend planning retreats modeled after the design charrette process in order to facilitate broad participation, input, and ownership of the outcomes and recommendations. (See attached file "Sustainable Infrastructure and Energy Pre Plan").

After meeting with a broad cross section of stakeholders, a number of common themes have been identified that align well with existing academic and Facilities programs and provide opportunities for enhanced collaboration across multiple departments and Colleges:

- **Energy Efficiency in the built environment** - Accounts for approximately 40% of all energy use in the US, significant opportunities for collaboration between mechanical engineering, electrical engineering, architecture, and construction management. Aligns with Facility Services goals for design and construction of green buildings, LEED certification, retrofit of lighting/HVAC/plumbing systems, monitoring based commissioning, and implementation of an Enterprise Energy Information System.
- **Sustainable power generation and renewable energy** – significant opportunities to expand or modernize existing programs in mechanical and electrical engineering related to power and energy, renewable energy, and energy storage; develop creative solicitations for renewable energy Power Purchase Agreements from sources including solar PV, solar thermal, wind and biomass in a manner that incorporates an academic curriculum/research component. Aligns with Facility Services goals

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to reduce greenhouse gas emissions, increase on-site/distributed generation, move to renewable energy sources, and adopt smart grid technologies.

- **Water efficiency, waste water and the energy/water nexus** – accounts for 20% of energy use in California, and targets the two largest water using sectors in the US economy – Agriculture and Power Generation. Aligns with advanced research underway on biodigestion, algae production as a biofuel source, and agricultural irrigation. Aligns with Facilities goals to reduce water use in buildings and landscape irrigation by 20%, and ensure adequate water supplies for ultimate campus buildout as per the Master Plan.
- **Sustainable materials and waste management** – combines work underway within virtually all engineering departments (especially materials engineering) regarding design, manufacturing, packaging, reuse, recycling, and disposal of raw materials, assemblies, products, equipment, and systems. Aligns with Facilities goals to reduce waste, increase recycling and diversion rates, move toward zero waste, implement sustainable procurement strategies, and design, construct, and renovate buildings using recycled and rapidly renewable materials.
- **Sustainable transportation** – enhances work underway to investigate and develop more efficient means of mass/rapid transit, alternative fuel vehicles and related infrastructure, advanced/hybrid/electric vehicle design, advanced aircraft design, and transportation planning for communities. Aligns with Facilities goals to reduce greenhouse gas emissions from fleet/commuting/business travel, reduce fleet operating costs, promote alternative forms of transportation, and continue development of a bike/pedestrian friendly campus core.

The primary functions of the stakeholder workshops/design charrettes will be to narrow the focus of the areas mentioned above and articulate a clear vision that has meaning, significance, and relevance for the College and the various departments involved, and one that resonates with potential donors.

10. Collaborative design and implementation – Describe the way in which this project incorporated stakeholders from multiple departments across campus and the local and regional off-campus community. Describe how collaboration produced sustainable solutions and improved the project's performance (300 word limit). This initiative is all about collaboration. From initial inception through the workshop/charrette process, to production and presentation of the final deliverables, this initiative is a model of interdisciplinary collaboration and cross-organizational planning. Stakeholders will include faculty, staff, students, administrators, utility representatives, corporate partners, College and University advancement, and regional leaders working in areas related to energy and sustainability. By involving a broad cross section of stakeholders from numerous groups and organizations, the process

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insures that diverse perspectives will be brought together and the outcomes will be comprehensive and broadly supported.

11. If applicable, describe how this project has been communicated to and received by campus stakeholders. Describe what has been met with satisfaction or dissatisfaction, and why (300 word limit). This initiative has been met with wide support and excitement, sparking engaging dialog and debate. Attendance and participation in the workshops is expected to be strong and active. The Provost and Vice President have expressed a desire to see the initiative grow beyond the confines of the College of Engineering to involve other Colleges, likely incorporating the College of Architecture next.
12. Describe why you believe this is an innovative sustainability project (200 word limit). Facility Services has never been involved in comprehensive academic planning before, nor has an academic department or college been involved in Facilities planning. I believe this is the first effort of its kind, and will result in projects, programs, and initiatives that would not have happened had both organizations continued their planning efforts separately.

III. Additional information

Please provide up to three additional files (total) to assist the selection committee in understanding and evaluating the project. Visuals such as pictures or videos are strongly encouraged.

IV. Speaker bio

Speakers will present at the Sustainability Conference if their project is selected for a best Practice Award. Speaker bios will appear in the conference program. Please submit the following for each speaker (limit of two speakers per project).

1. Name and Title (should include name, acronyms (PhD, LEED AP, etc), job title, department, and institution)
2. Email
3. Phone Number
4. Bio (100 word limit)

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Bio: Dennis Elliot is the Assistant Director of Energy, Utilities, and Sustainability for Facility Services at Cal Poly SLO, and a part-time lecturer in the Mechanical Engineering Department. He is a registered Professional Engineer and a Certified Energy Manager. Dennis manages the University's utility procurement, energy and water conservation programs, and acts as the University Engineer for operations and new construction. Dennis also mentors the PowerSave Campus intern program, and serves on three campus sustainability committees. Dennis has served in a variety of energy related positions at the University over the course of his 30 plus year career.

At least one of the speakers listed here must be a student, staff, or faculty member. Co-presenters from non-campus entities (e.g. architecture firms, consultants, etc.) are permitted. Please note that if the campus speaker cancels, a co-presenter not affiliated with a campus may no longer be allowed to present.

V. Nomination submittal

Send completed Nominations to Rashmi Sahai, Sustainability Specialist at the University of California Office of the President (rashmi.sahai@ucop.edu). **All submittals must be received by 6:00 p.m. on March 7th, 2014, no exceptions.**

Answers to frequently asked questions can be found at: <http://chesc.org/awards/faq.php>. Please direct any other questions to Rashmi Sahai, (510) 587-6225.