

The Sustainable Living Center Program Report 2010-11

A Living Laboratory to Investigate Sustainable Food Systems from Seed to Table

The Sustainable Living Center (SLC) is a program of the Environmental Studies Department at the University of California, Santa Cruz (UCSC) and is located at the entrance to the Village in the Lower Quarry on campus. It is home to the Program in Community and Agroecology (PICA) and the Community Agroecology Network (CAN). The SLC was created as part of a vision for making UCSC a leader in sustainability education and in developing environmental educators.

The mission for the Sustainable Living Center is to develop a model Action Education Center at UC Santa Cruz where a diversity of students engage meaningfully with food systems sustainability and justice through experiential learning. At the SLC, students from multiple disciplines apply classroom knowledge in real settings, gain hands-on experience in sustainable technologies and community food systems, and prepare for becoming environmental educators and leaders. Student learning projects are focused around environmental education, organic food production, green building, alternative trade systems, and much more. Through community-based learning, students are trained to become leaders, environmental educators, and engaged agents of change.

Initial funding from the Clarence E. Heller Foundation and the Helen and Will Webster Foundation has provided key financial support for the SLC to develop programs which offer UCSC students learning experiences that give them a deeper and more meaningful understanding of their environment and engage them in learning and teaching.

Action Education and Community-Based Learning

At the SLC, young people learn the necessary skills and tools to become leaders in educating and engaging communities in sustainable and equitable food systems. The educational model we follow is for students to engage in project-based learning at the SLC, gain experience through community internships, and use the knowledge they gain to educate others in the student community. As students participate in this learning cycle of *Engage, Experience, Educate* (the 3E's), they become active members of their community and are given the opportunity to apply academic knowledge in real settings.

In our fourth year of developing the SLC, we have continued to witness confirmation of the vital role that the SLC plays in providing opportunities for students, faculty, and staff to engage in sustainability education at UCSC. The use of the SLC by the UCSC community as a site for hands-on, experiential education continues to grow. Faculty and staff from numerous departments and colleges, including Education, Engineering, Environmental Studies, College Eight, and the Education for Sustainable Living Program (ESLP), recognize the SLC as an invaluable resource for their curricula, and regularly access the SLC to provide students with opportunities to observe and engage in sustainable practices and environmental education.

Academic Classes

The SLC offers a wide range of interdisciplinary classes and internships in such fields as agroecology, alternative energy, natural history, food systems sustainability, and environmental education. 12 classes from different departments and student organizations

on campus used the SLC for hands-on learning during the 2010-11 school year. The following classes and/or labs were held at the SLC in 2010-11:

<i>Academic Classes at the SLC</i>	
Environmental Studies	College Eight
ENVS 91/191F - Seminar in Community and Agroecology ENVS 107 ABC - Natural History Field Qtr ENVS 130 & 130L – Agroecology & Lab ENVS 138 & 138L - Ethnobotany & Lab ENVS 177 - Teaching Environmental Education and Sustainability ENVS 196 - Senior Exit Seminar in Environmental Education	CLEI 81A, CLEI 80 A&B - Core Course Sustainability Project CLEI 90 - College 8 Garden Internship CLEI 161, CLEI 61- the Education for Sustainable Living Program’s 2 and 5-unit student directed classes CLEI 199F - PICA residential Seminar
	Electrical Engineering
	EE80S – Sustainable Engineering & Ecological Design

Student-Directed Activities and Projects

The SLC also supports leadership opportunities for students to put learning into action. Student-directed projects and events provide students with the opportunity to gain experience and apply their academic learning in tangible ways. Some student-led activities at the SLC this past year included: weekly PICA Garden Workdays, an ESLP Action Research Team on Aquaponics, UCSC Food Systems Week, College 8 Garden Class exchanges, a series of workshops on cob building organized by the Student Environmental Center’s Green Building Campaign, FoCAN weekly meetings, and the Student Gardens Market Cart. The comprehensive experience that students gain from their involvement with the SLC prepares them for full engagement in their work with communities around issues of environment, sustainability, and social justice. Through participation in SLC classes, internships, and leadership development roles in 2010-11, 745 students learned the necessary skills and tools to become community leaders and environmental educators.

PICA residential community

The PICA residential program in the Village offers students an alternative to standard dorm living. Under the mentorship of the SLC staff and faculty, PICA residents grow organic food together at the Foundational Roots Garden, design and implement ecological landscaping projects around their housing units, and direct a Village-wide composting program. The living/learning experience that the PICA residential program provides allows students a way to link healthy communities with healthy food systems.

In 2010-2011, there were 36 PICA residents with a student leadership team of 6 students. The Leadership Team positions were: Garden Coordinator, Community Meals Coordinator, Propagation Coordinator, Compost Coordinator, Chancellors’ Undergraduate Internship Program (CUIP) Intern, and the PICA Residential Assistant. The PICA leadership team was responsible for facilitating regular community activities such as organic gardening workdays, Village-wide composting, plant propagation, and weekly community meals. At the garden workdays, students from across campus were able to build and maintain relationships within PICA and thus the larger sustainability

movement. Each workday was concluded with a community meal prepared from food grown in the garden. Last year, PICA hosted 30 garden workdays at the SLC.

The PICA residential composting system continues to be a model for sustainable waste reduction within the University Housing program. The system consists of a series of 6 hot composting bins that turn nitrogen rich food waste into compost for plants. Food scraps are collected from Village residents twice each week by PICA's compost rangers. This student-run compost system allows residents to see the connection between the food they eat, the cycle in which food waste is diverted from the landfill and returned to the soil, and how organic food is grown right in their own neighborhood. Our goal is to achieve complete food waste diversion in the Village.

The Leadership Team also held weekly meetings and participated in collaborative campus-wide events. These events included: the Sustainability Fair, OPERS Fall Festival, Harvest Festival, Practical Activism Conference, Strengthening the Roots Conference, the Winter Sustainability Retreat, Day by the Bay, Earth Week, Fair Trade Market Place, and the Strawberry and Justice Festival. PICA also provided garden-based educational opportunities to other student groups on campus such as the College 8 Core Course, the College 8 Garden Class, and ELSP.

Friends of CAN (FoCAN)

The student group FoCAN met weekly each quarter to work on projects focused on community education about sustainable food systems and equitable global trade. CAN's student leadership team involves students in leadership roles in which they design and coordinate programs to educate others regarding the global food system and related environmental and social justice issues. The FoCAN student leadership team in 2010-11 consisted of 6 students. Over the course of the year, they were mentored by SLC staff in the development of professional skills such as event planning, public speaking, campus and community outreach, and inter-organizational collaboration with other groups on campus who share a commitment to international solidarity and food systems. Projects accomplished included the weekly downtown Santa Cruz farmer's market table, student outreach events organized as part of *El Intercambio*, and increased participation of FoCAN students in international internships and field courses.

In 2010-11, a total of 13 FoCAN students participated in field internship programs in agricultural communities and school gardens. CAN's Field Internship Program is an experiential learning program that provides college students with the opportunity to live and learn in CAN's partner communities in rural Mexico and Central America. CAN field interns gained professional skills by participating in a local, community project. Interns worked alongside farmers and community organizations and were exposed to the realities of global trade systems.

The CAN Field Internship Program is currently active in four different CAN partner communities in Mexico and Nicaragua. This year, CAN forged a new partnership with the prestigious Global Fellows Program at Santa Clara University. In the past year, new communities in San Cristobal de las Casas and Veracruz, both in Mexico, were added to the CAN network with the intention of developing new internship programs.

Highlights of our accomplishments in Action Education include the following:

- The Education for Sustainable Living Program (ESLP), an annual student-run course, whose focus is on sustainability issues and is sponsored by the Student Environmental Center, used the SLC for several of its Action Research Team

- projects. These projects included classes on aquaponics, cob building, and garden education.
- The College Eight Core Course sent 80 freshmen to Saturday PICA garden workdays as part of its sustainability service-learning requirement.
 - The Sustainable Engineering and Ecological Design (SEED) course (EE80S) used the SLC for hands-on course lab sections. 160 students participated in these sections and explored topics such as solar energy, solar water heating, and methane digestion.
 - FoCAN students hosted the 3rd annual *El Intercambio*. 8 internship coordinators from Latin America participated in workshops dedicated to internship program development and engaged with important campus allies such as the Latin American and Latino/a Studies department, the Environmental Studies department, and the Chicano/a Latino/a Resource Center (El Centro).
 - The ENVS 91/191F seminar in Community and Agroecology was offered each quarter, with a total of 114 students enrolled. Students gained hands-on experience in organic gardening, studied food system issues, and shared a weekly community meal.
 - The student organization Friends of CAN (FoCAN) held its weekly seminar on issues of justice in the food system and fairness in trade throughout the school year. Additionally, 13 students participated in international internships connected to food system sustainability and school garden education.
 - 19 students participated in the second annual Alternative Spring Break in Yucatán, Mexico. The educational trip focused on learning about Mayan farming through a local school garden and intercultural exchange.
 - FoCAN students coordinated Food Systems Week on campus when youth leaders from Mexico and Nicaragua visited the campus and spoke in classes and participated in the 4th annual Fair Trade Marketplace held at Quarry Plaza.

The Green Kitchen

The Green Kitchen will be a central component of the Sustainable Living Center's hands-on education programs and a demonstration site for small-scale sustainable living. It will be integrated into SLC educational programs and be widely available for use by multiple campus units, including ENVS, CASFS, Electrical Engineering, the Ethnic Studies Resource Center, the Student Environmental Center, and others. Incorporating the latest in sustainable building technologies, the Green Kitchen will be the first place on the UCSC campus where students can gain real-world experience with solar technology, energy conservation, sustainable cooking, renewable energy, and rainwater catchment. The Green Kitchen complements the SLC's vision to create opportunities for students to engage with sustainability at every step of the food system. Through academic classes and workshops, students explore connections between sustainable food systems, green technologies, and healthy communities.

All necessary funds for the Green Kitchen have been procured, and the final steps in the planning process are in progress. Key fundraising includes the donation of the building valued at \$120,000, a \$75,000 matching grant from the Heller Foundation, collaborations with the School of Engineering on several grant proposals, meetings with

local food-related business owners, and development of the SLC's alumni network. The anticipated completion of the Green Kitchen is June 2012 in order to coordinate its opening with graduation celebrations.

The Environmental Education Model at the SLC

In Spring 2009, the Environmental Studies Department (ENVS) approved the development of an emphasis in Environmental Education and Sustainability (EE&S) as one of its four areas of focus that majors can select. Two of the three EE&S classes, plus internships and workshops, are offered through the Sustainable Living Center. The EE&S area of focus instills students with a deep understanding of the environment, effective educational pedagogy, and practical application of environmental principles. This cohesive course of study within ENVS prepares students to teach environmental education to K-12 students through a series of academic coursework, internships, and site placements in K-12 classrooms.

The core component of the EE&S emphasis is a one-quarter internship practicum where students are involved in teaching EE&S in schools. The practicum can be a placement at a school with a Life Lab school garden, teaching environmental studies to middle school and high school classes, or teaching about the environment and conservation in an international setting. These internships are established through community-based partnerships, and students receive academic credit toward the ENVS major.

In its third year, the Calabasas School Garden Internship continues to successfully train UCSC interns on garden classroom mgmt, age-appropriate curriculum, and teaching hands-on garden based science lessons for elementary school students of various grade levels. The internship is based on a 4 week curriculum model where weekly themed lessons are taught that align with a main standard. The first half of the quarter *lead interns* model lessons and prepare *new interns* for teaching the second half of the quarter. This model provides returning students the opportunity to share their experiences and knowledge gained from the previous quarter. Ideally new interns would continue on into the following quarter as lead interns and take on responsibility as mentors for the incoming group. Interns also meet weekly with the SLC Director of Education and reflect on their week, build new skills, and get feedback and support on their curriculum.

Upon completion of their internship practicum, students can participate in a senior seminar where they analyze their internship and share their experience with others. This senior seminar, offered at the SLC, satisfies the senior exit requirement for ENVS majors. As they prepare for, engage in, and analyze their experiences in K-12 education, these students will be modeling the 3E's learning cycle of the SLC: to engage, to experience, and to educate.

In the 2010-11 academic year, all core components of EE&S were offered, with 2 classes being offered through the SLC. This included ENVS 177: Teaching Environmental Education and Sustainability, and ENVS 196: Senior Exit Seminar in Environmental Education. Over 20 students were enrolled in each class, with a total of 24 students participating in weekly classroom placements in K-12 schools throughout Santa Cruz County. In addition, SLC staff sponsored 22 internships at Life Lab and in school gardens that gave students direct experience working with K-12 students. Out of these, 7 students completed senior internships and theses related to teaching environmental education.

Highlights of our accomplishments in Environmental Education include the following:

- A total of 46 students participated in SLC placements and internships in K-12 classrooms and school gardens, impacting 4,862 K-12 students.
- 5 partnerships and 55 teacher networks were developed for education-based internships and K-12 classroom placements. These include Pajaro Valley Unified School District, Calabasas Elementary School, the CA Environmental Education Initiative, Santa Cruz Resource Conservation District, and Santa Cruz City Schools.
- Senior seminar students designed two field trip days for 4th and 5th graders from local schools to visit the SLC and engage in hands-on learning about sustainability. UCSC students experienced lesson design, hands-on teaching, and outdoor classroom management.
- 13 UCSC students participated in the Calabasas School Garden Internship, impacting 320 elementary students from a low-income and underserved community in Watsonville. Interns developed and taught lessons in science and nutrition.

The SLC has created a landmark program for educating future leaders in environmental education and sustainability. Our vision for the development of an environmental education program in the ENVS Department at the end of three years has been realized. Course curricula have been developed for the Department emphasis, the Sustainable Living Center has been established as a core facility, and interdisciplinary connections with the Education Department, Electrical Engineering, Latin American/Latino Studies, Politics, and Psychology have been established. The SLC’s Environmental Education Model integrates diverse programs and courses at UCSC into a comprehensive pathway for students to become the environmental educators of the next generation.

Events and Outreach

The impact of SLC environmental education & outreach programs in the 2010-11 academic year has been tremendous and continues to grow with each year. In addition to the K-12 internships and classroom placements mentioned above, several key SLC outreach programs were implemented. These programs offered opportunities for SLC student leaders and other student groups on campus to collaborate, educate, and engage the larger UCSC community on sustainability issues around food systems. A total of 3,450 University students were impacted by SLC outreach in classes, dining halls, and at special events.

**Impact of SLC Environmental Education & Outreach Programs
Academic Year 2010-11**

Elementary School students impacted by SLC student teaching	3,405
High School Students impacted by SLC student teaching	1,457

University students impacted by SLC presentations and events	3,450
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Student Market Cart

The Student Garden Market Cart brought together the student gardens on campus and increased awareness of these gardens by reaching out to a new audience of students. Each of the different gardens contributed collectively to the produce, herbs, and flowers offered at the cart and provided information so that interested students could get involved with upcoming garden events. Collaborations were fostered at the Gardener’s Alliance gatherings and included students from the Kresge Garden, the Stevenson Garden, and the College 8 Garden. PICA hosted 7 Market Carts during the 2010-2011 school year.

PICA Sustainability Events

PICA student leaders organized and facilitated 3 sustainability workshops at the SLC each quarter. These student-led workshops served as a successful outreach tool, with approximately 162 students participating over the course of the year. Topics included cooking classes, fruit tree pruning, permaculture design, recycled papermaking, composting, and native plant gardening. These workshops provided hands-on sustainable living skills and educational opportunities for students from the greater campus community.

Sustainability Winter Retreat

PICA and FoCAN (representing the SLC) helped plan and facilitate the Winter Retreat hosted by the Sustainability Office. It was the second retreat of its kind, in which a diversity of student groups came together to discuss common goals and visions for a sustainable campus, and ways to collaborate to accomplish those goals. Participating groups included PICA, FoCAN, FSWG, CSC, ESLP, SEC, Green Campus, SSITE, and FoSO (Friends of the Sustainability Office).

FoCAN Dining Hall Education

FoCAN volunteers tabled outside the Dining Halls to share information on alternative coffee trade to UCSC students. Students learned about consumer choices and how alternative trade models can create change. They were also informed about how CAN coffee served in the Dining Halls connects with research and internships, and how it is beneficial to both small farmers and the environment. Over 400 students were impacted by these outreach and education efforts.

Food Systems Week

FoCAN presented the kickoff to their first annual Food Systems Week this spring with the Fair Trade Marketplace. This event was a collaboration with local vendors and served as a means of engaging and educating students on campus about what they can do, both in their community and internationally, to support sustainability and fair trade. The Fair Trade Marketplace was funded by the Campus Sustainability Council (CSC) and was a successful collaboration with numerous campus organizations including El Centro, The Kresge Co-Op, The Food Systems Working Group (FSWG), UCSC Dining Services, the Latin American and Latino Studies Department (LALS), and The Center for Agroecology and Sustainable Food Systems (CASFS).

The goal of Food Systems Week was to celebrate UCSC's campus food movement and exchange perspectives about local and global food systems with youth from rural communities in Mexico and Nicaragua. Food Systems Week was coordinated by FoCAN around the theme "Connecting You to Food Matters". Events included a bilingual exchange at a UCSC Dining Hall where students were able to speak with youth representatives from CAN's partner communities, The Fair Trade Marketplace, and a forum of Youth Representatives speaking about sustainability issues in their home countries to an ESLP class of over 400 students.

Agroecology Shortcourses and Institutes

This year, the SLC was involved with several important agroecology shortcourses and institutes which reached an international audience totaling over 100 youth, working professionals, students, farmers, and educators. These courses focused on practical applications of agroecological principles, community-based work, sustainability curriculum development, and hands-on environmental education.

- **Youth Intercultural Agroecology Course, May 11-22, 2011:** This was a 10-day course on intercultural agroecology for eight youth leaders from CAN partner communities in Veracruz and Yucatán, México and San Ramón, Nicaragua. During this course, youth participated in workshops on agroecology, year-round sustainable food production, training in strategies including school/community garden management, seed banking, seedling nursery management, food storage and preparation, and skills such as project planning and monitoring. Upon completion of this course, youth could then return to their home communities and apply their new skills and knowledge-base as part of long-term food sovereignty projects. The course also had a strong intercultural exchange component, in that UCSC students involved with both PICA and FoCAN participated in and facilitated some of the workshops.
- **Sustainable Engineering and Ecological Design (SEED) Institute, June 29, 2011:** SLC staff and students hosted a site tour and dinner for participants of the NSF funded SEED Institute, a national institute for universities focused on sustainability education which integrates engineering and the social sciences. 35 participants from 9 universities participated.
- **12th Annual International Agroecology Shortcourse, July 10-23, 2011:** This two-week course hosted by EVRN, PICA, CAN and UCSC at the SLC, was focused on agroecology and the transformation of food systems, and California's experiences with food system transformation. The over forty participants engaged in activities that balanced conceptual work and applied activities at the SLC and farms in the Santa Cruz area. Activities included presentations on specific topics given by invited specialists, group discussions on assigned readings, hands-on field activities throughout the food system, individual and group presentations, and field trips to local farms and farm training programs.
- **Keisen University, Japan Course in Sustainable Food Systems, August 28-September 2, 2011:**
This 6-day course for students from Keisen University focused on agroecology and school garden education skills. 13 students participated in hands-on workshops,

presentations, cooking, demonstrations, group discussion, and field trips to local farms and a farmers market.

SLC Advisory Board

Last year, the SLC advisory board was formed, consisting of an interdisciplinary collaboration of faculty from 6 different academic departments. Members of the advisory committee include: Barbara Rogoff (PSYC), Ronnie Lipschutz (POLI), Ali Shakouri (ENGR), George Brown (PHYS), Jeff Bury (ENVS), Flora Lu (LALS), and Steve Gliessman and Roberta Jaffe (SLC Co-Directors). The group met once each quarter and collaborated on developing a 5-year academic plan for the SLC which focuses on future leadership, forging strong links across campus, and fundraising. Jeff Bury, Curriculum Chair for ENVS, is working to incorporate the SLC in all ENVS curriculum planning.

Collaborations and the Future of the SLC

In 2010-11, the SLC increased its collaborations with other sustainability stakeholders on campus and in the broader local and international communities, including increased interactivity with the Education for Sustainable Living Program (ESLP), the Campus Sustainability Office, the ENVS internship office, The Food Systems Working Group, CASFS, and others. Our accomplishments have been many, as we continue to grow SLC programs and deepen our commitment to being champions for environmental education and sustainability.

Throughout this past year, measurable progress has been made in regard to the institutionalization of the SLC within UCSC, in addition to the accomplishments made in incorporating the SLC within the ENVS Department. This includes: engaging the active support of the Dean of Social Sciences for the SLC; Steve Gliessman meeting regularly with five faculty from multiple departments regarding sustainability curriculum at UCSC; Robbie Jaffe seeking official approval from the Education Department for EE&S courses to be used to satisfy requirements of the Education Minor; and SLC staff and students serving on various sustainability committees on campus. In the coming year, we will build on this groundwork as we aim to diversify funding sources, complete the site development via the successful completion of the Green Kitchen project, and engage multiple departments and student organizations through the use of the SLC.

We are planning to diversify support through the integration of the SLC with departments on campus, strengthening relationships with CASFS, collaboration with other UCSC faculty in seeking alternate funding sources, and the development of income revenue through various programs. The SLC is strongly connected with student sustainability organizations on campus, and is host to two of these groups, both of which receive funds from the Campus Sustainability Council to support activities at the SLC. In addition the SLC has developed a strong collaboration with school districts throughout Santa Cruz County and is currently collaborating with the Education and ENVS Department and these Districts in pursuing funding to support teachers in teaching environmental and science education. In the coming year, we hope to further develop cross-campus connections that will support the SLC in becoming the preeminent UCSC center for hands-on education about the environment, sustainability, and social justice.