

# **UC Santa Cruz**

## **The Cultivar Newsletter**

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The CENTER for  
AGROECOLOGY  
& SUSTAINABLE  
FOOD SYSTEMS

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# the Cultivar

The CENTER for AGROECOLOGY & SUSTAINABLE FOOD SYSTEMS

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

SPRING/SUMMER 2006

VOL. 24, NO. 1

## UC Santa Cruz Makes the Farm-to-College Connection

Perched in the hills above Monterey Bay, the UC Santa Cruz campus looks out on the rich farmland of the Pajaro and Salinas Valleys, home to some of the most successful and productive organic farming operations in the country. UCSC's own 25-acre farm, managed by the Center for Agroecology and Sustainable Food Systems, has been training organic farmers for nearly four decades. Yet until a year ago, students eating in the campus dining halls seldom had a choice of organically grown food.

Today, all five UCSC dining halls and the University Center's Terra Fresca restaurant serve certified organic produce every day of the week. Growers from the seven local farms that make up the Monterey Bay Organic Farmers Consortium (MBOFC)—including UCSC's farm—pool their produce through the Agriculture and Land-Based Training Association (ALBA) in Salinas to sell to UCSC Dining Services. ALBA's contract to provide locally grown organic produce is a first among the UC system's 10 campuses.

This transition didn't come easily. It's the result of several years of collaboration and hard work by students, staff, and local growers, as well as some fortuitous timing. Thanks to these efforts, UCSC is now positioned to be a national model for a growing movement called "farm-to-college," which, like the K-12 farm-to-school movement, is bringing fresh, local produce to student dining halls through direct relationships between farmers and educational institutions. Farm-to-school or farm-to-college arrangements help farmers get more of the food dollar, benefit local economies, and give students access to locally produced, fresh food.

Several features distinguish UCSC's Farm-to-College project: a consortium of organic growers was formed to supply produce to the campus dining halls; sustainable food purchasing guidelines were developed; and education (both academic and experiential) is incorporated from the campus farm fields to the dining halls.

In this article we'll discuss the history of the farm-to-college work at UCSC, describe some of the strategies and obstacles involved in changing the University's purchasing practices, and report reactions from participating farmers and campus chefs.



Students are enjoying organic produce from the UCSC Farm and other local organic growers thanks to a new university purchasing program.

We'll also talk about the key role that students across the UC system are now playing in a campaign to create sustainable food systems at all of UC's campuses, and offer advice on how other campuses can implement such efforts.

### THE ROOTS OF THE CAMPAIGN AT UCSC

In the winter of 2003, UCSC's Students for Organic Solutions (SOS) brought together diverse stakeholders of the campus food system at the annual Campus Earth Summit to discuss how to create sustainable change in the system, including the advantages of purchasing organic produce from local farmers. This grassroots effort was largely unsuccessful in garnering support from Sodexo—the largest food and facilities management services company in North America—which was then under contract to provide all the food to UCSC campus dining halls.

Sodexo was at the same time dealing with its own challenges. UCSC's Students for Labor Solidarity—unhappy with the company's labor practices—had organized to “dump Sodexo” in conjunction with campus labor unions. After a six-month student campaign the UCSC administration ended its 30-year contract with the company in June 2004, enabling Dining Services to contract directly with suppliers for the first time. This transition to an “in-house” service structure opened a crucial avenue to work with the university administration in designing a more sustainable food system.

Early in this process, conversations between members of the Center for Agroecology and Sustainable Food Systems (the Center) and Dining Services director Alma Sifuentes brought staff of Dining Services to the UCSC Farm, an important step in introducing the concept of sustainability to the campus food system. Sifuentes also helped catalyze the effort to bring organic, Fair Trade coffee to campus through the Community Agroecology Network (CAN).

During the 2004 UCSC Earth Summit, Students for Organic Solutions facilitated a group of students, faculty, staff, and representatives from student and community organizations in brainstorming ways to bring local organic food to campus dining halls. The two top strategies that emerged from the group were:

- To develop guidelines for purchasing local, organic, “socially just” food by campus Dining Services, and
- To educate and organize students to demand socially just, organic food in the dining halls.

Among those participating in the Earth Summit meeting was Scott Berlin, the new Director of UCSC Dining Services, who would soon be contracting with vendors. His support of the purchasing guidelines idea was key to its eventual success.

### CRAFTING THE PURCHASING GUIDELINES

Several months of meetings followed the 2004 Earth Summit as members of campus and community organizations came together as the Food Systems Working Group (FSWG) to craft the details of a purchasing guidelines proposal. Included were representatives from the Center for Agroecology

and Sustainable Food Systems, Community Alliance with Family Farmers, Comercio Justo, (a student group working to bring Fair Trade-certified products to UCSC), the Community Agroecology Network (CAN), Students for Organic Solutions, and the Education for Sustainable Living Program (ESLP)—all of whom brought expertise in various aspects of sustainable agriculture and food systems.

Spearheaded by graduate student Linda Wallace, the FSWG developed the following guidelines to assist Dining Services in selecting both a primary food vendor that would provide a broad range of food items, and a local organic produce vendor:

**Purchasing Requirements:** All vendors supplying food product to UCSC Dining Services will source from producers who pay minimum wage or higher to farmworkers, as required by state and federal law, and who provide safe workplaces, including protection from chemical exposure, and provision of adequate sanitary facilities and drinking water for workers, as required by law.

#### **Purchasing Preferences:**

1. **Buy local:** Local food is grown within a 250-mile radius of Santa Cruz, with priority given to growers closest to Santa Cruz.
2. **Buy certified organic:** The United States Department of Agriculture (USDA) has established a uniform set of standards to which all organic produce must conform.
3. **Buy humanely produced animal products:** Humanely produced animal products are cage free, range fed, and antibiotic free.
4. **Buy direct:** Cultivating closer relationships between producer and consumer helps to eliminate middle folk, deliver more income at the farm level, and empower producers. Direct purchasing also helps to create an educational network amongst students, researchers, administrators, and producers that facilitates dialogue and fosters awareness of the production chain.
5. **Buy certified Fair Trade:** Certified Fair Trade products are produced according to an established set of social criteria. Farmers generally use environmentally friendly cultivation methods and are paid per-pound commodity prices above open market rates to ensure adequate family income. Certified Fair Trade products are purchased through democratically operated producer cooperatives.
6. **Buy worker supportive food products:** Worker supportive products are purchased from socially just companies and organizations that incorporate one or more of the following into their employment practices:
  - a) Pay a living wage to their workers, defined as union or prevailing wage.
  - b) Provide benefits to their workers, such as medical insurance, on-site housing, year-round employment, and childcare.
  - c) Actively seek to build the capacity of their workers through provision of education, training and opportunities for advancement.

## Building on a Tradition of Organic Farming, Gardening and Education

While efforts to formalize a local, organic, farm-to-college connection at UCSC are relatively new, the campus community has long enjoyed organic vegetables, fruit and flowers grown at the 25-acre UCSC Farm and 3-acre Alan Chadwick Garden. Now managed by the UCSC Center for Agroecology and Sustainable Food Systems (the Center), both sites have for nearly 40 years served as training grounds for organic farmers and gardeners, as well as outdoor classrooms for UCSC students, research sites for faculty and cooperators, and resources for visitors from around the world.

Participants in the Center's 6-month Apprenticeship in Ecological Horticulture training program market the produce they grow at the Farm and Chadwick Garden through a 100-member Community Supported Agriculture (CSA) project focused on the campus community, and at the roadside Market Cart set up at the base of campus twice a week. In 2004 the UCSC Farm began selling its produce and flowers to Terra Fresca, the University Center's restaurant, which features fresh, organic, and sustainable foods from Santa Cruz and the Central Coast region. In 2005 the UCSC Farm became one of the grower members of the Monterey Bay Organic Farming Consortium, marketing produce to the campus dining halls. This year the Farm will also sell produce to the Kresge Coop, students from the Program in Community and Agroecology (PICA), and College 9/10's dining hall.

Since 2004, Center staff members have been involved in the Campus Food System Working Group, collaborating with UCSC students, staff, and faculty to create a more sustainable food system on the campus. In 2005, the True North Foundation funded the Center's Apprenticeship program for one year to support farm-to-college work, along with its continued support of our Community Supported Agriculture training and demonstration program. Nancy Vail works half time on both farm-to-college projects, such as College Eight's "Harvest for Health," and the CSA program.

Under these guidelines, preference is given to price-competitive bids from the primary food vendor that meets the greatest number of criteria. For the local organic contract, all produce must be grown within 250 miles of Santa Cruz and be certified organic. In selecting a local organic produce vendor, preference is given to price competitive bids that are "worker supportive" as defined in the guidelines.

In May 2004, the Food Systems Working Group formally presented these guidelines to UCSC's Dining Services. Students for Organic Solutions also continued to build support for bringing local organic food to the dining halls by putting on educational classroom presentations and organic "taste

Access to a year-round supply of locally grown organic produce is one of the factors that makes UC Santa Cruz's farm-to-college effort successful. Here apprentice Peter Anderson packs produce grown at UCSC's organic farm, one of seven local farms in the Monterey Bay consortium.



Jon Kersey

tests" for students. Timed to coincide with the presentation of the guidelines, a campaign spearheaded by Comercio Justo and CAN generated over 2,000 postcards from students to Dining Services in support of the guidelines' adoption.

Honoring the guidelines, Dining Services selected the local distributing company Ledyard as the prime food vendor in 2004. The sole source organic produce contract with the Monterey Bay Organic Farming Consortium (MBOFC) began in late summer 2005 after a year-long struggle to find a way to include "worker supportive" as a criterion in selecting a vendor. During the process, FSWG found that "worker supportive" could not be used as a criterion under UC purchasing regulations because, unlike organic and local, employment practices are not regarded as a characteristic of food.

In order to qualify for a sole source contract, local organic farmers formed a consortium and agreed to make their farms available for organic farming and food system research conducted under the auspices of the Center. The consortium operates under the umbrella of ALBA, a worker-supportive operation. This arrangement meets UC insurance, ordering, delivery, and invoicing requirements.

## ORGANIC PRODUCE CONTRACT: NUTS AND BOLTS

At the start of the contract year, each of the farms participating in the Monterey Bay Organic Farmers Consortium (MBOFC) provides UCSC's Purchasing Department with a list of the produce it grows and what it will have available each season. All of the participating farms, which currently include ALBA, Coke Farm, Phil Foster Ranches, Happy Boy Farms, New Natives/Greensward Nurseries, Swanton Berry

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# from the director



As I think about the material in this issue of *The Cultivar*, “making connections” emerges as an overriding theme.

Our cover story describes a new effort at UC Santa Cruz to connect local organic farmers to campus diners through the farm-to-college program. This movement is taking off nationwide, as campus communities and growers realize the mutual advantages of sourcing organic produce and other food from local farms.

The UCSC farm-to-college project is unique in that it was driven by a set of food purchasing guidelines developed by students, staff, and faculty and supported by UCSC’s Dining Services; it involves a consortium of local organic growers; and it includes both academic and experiential education, much of it coordinated by Center staff. This is an exciting program that is poised to expand both at UCSC and throughout the UC system.

Also blossoming are efforts to develop a nationwide network of educators and students involved in sustainable agriculture education. A recent conference organized by staff of the Center and UC Davis brought together over 140 students, educators, administrators, and members of the sustainable agriculture community to discuss ways to improve education at the post-secondary level (see page 7). This initial meeting has catalyzed ongoing work to establish a new organization that will promote and improve college and university sustainable agriculture education.

At the international level, growers and consumers are coming together to promote connections between farmers and their communities. The community supported agriculture (CSA) concept is taking off in many countries, and Center CSA coordinator Nancy Vail is helping build this growing movement. See her report from the second international CSA conference (page 14).

Also in this issue is an update on Center efforts to develop and improve pest control programs on local organic strawberry farms. Center researchers have introduced a parasitoid that, in combination with trap crops, is showing promise in controlling populations of the strawberry pest *Lygus hesperus* (page 5). Researchers Sean L. Swezey, Janet Bryer, and Diego Nieto have also expanded their connections in the strawberry community thanks to a grant from PG&E. The 2-year grant will fund efforts to implement and monitor trap cropping systems on conventional as well as organic farms, to see whether methods developed on organic strawberry operations will help decrease the amount of sprays used on conventional farms (see page 11).

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## the *Cultivar*

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The Center for Agroecology & Sustainable Food Systems is located at the University of California, Santa Cruz. Through our research and educational efforts we seek to increase understanding of the social, economic, political, and ethical foundations of agricultural sustainability; to establish the ecological and agronomic basis for sustainable production systems; and to demonstrate and facilitate the use of information critical to the adoption of these systems.

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Happy summer to you, and enjoy this issue of the newsletter.

– DR. CAROL SHENNAN

# Center Researchers Find Pest Control Help for Central Coast Organic Strawberries

When it comes to dealing with a pest infestation—especially of a native pest that can cause significant economic damage—entomologist Sean L. Swezey had some basic advice for his audience at the 2006 Ecological Farming Conference: “Don’t try to spray it into submission. Identify and enhance key natural enemies and get them chomping on it.”

Swezey speaks from experience, but in the case of lygus bugs (*Lygus hesperus*, also called the western tarnished plant bug), finding specific natural enemies turned out to be a more complex undertaking than he had imagined. Although a number of lygus predators, such as big-eyed bugs and damsel bugs, occur naturally in the state, Swezey was interested in encouraging a particular type of natural enemy—a selective endoparasitoid that could help control lygus infestations in organic strawberry plantings.

Insect endoparasitoids lay their eggs inside their insect host, usually when the pest is in the immature stage. When the parasitoid egg hatches, the developing parasitoid larva kills its host. Because they usually parasitize a narrow range of hosts, endoparasitoids are ideal tools for biocontrol programs.

Swezey, an extension specialist with the Center for Agroecology and Sustainable Food Systems (the Center), has spent years working on alternative cultural control techniques to limit lygus bug damage in organically managed strawberry crops. Finding an effective endoparasitoid to help control lygus populations would be an important biological addition to growers’ management options.

Yet when Swezey and visiting Italian researcher Gianumberto Accinelli from the University of Bologna began searching for a native endoparasitoid of lygus on California’s central coast, they came up empty. “Accinelli reared out literally thousands of lygus and didn’t find a single endoparasite,” recalls Swezey. “An insect like lygus that’s so widespread but has no endoparasitoids affecting the nymphal stage? It was perplexing to say the least.”

## EUROPEAN WASP OFFERS CONTROL OPTION

It was a chance encounter with a colleague that led Swezey to some unexpected help in his search. “I ran into Charlie Pickett, a biocontrol specialist with the California Department of Food and Agriculture’s Biological Control Program. We started talking about some old scientific literature that described the genus *Peristenus* [a parasitic wasp] working as a biocontrol agent against the European tarnished plant bug,” recalls Swezey.



Lygus bugs (*Lygus hesperus*) damage a variety of crops grown in California, including strawberries, cotton, and sugar beets. (Photo by Jack Kelly Clark.)

Pickett had been rearing a parasitoid species of the *Peristenus* genus that he hoped would help control lygus bug infestations in California’s cotton crop. His research had led him to studies done in southern Europe, where a species very similar to *Lygus hesperus* infests alfalfa. This pest, the European tarnished plant bug, hosts two naturally occurring endoparasitoids—the hymenoptera wasps *Peristenus stygicus* and *P. digoneutis*. The latter had been successfully imported to the eastern United States where it controlled the tarnished plant bug, a pest of alfalfa.

*Peristenus* wasps attack their prey by parasitizing the nymphal stage of the lygus bug. “The female wasp grasps the lygus nymph, then oviposits [deposits the egg] into a membranous area between two segments of the nymph’s body,” explains Swezey. The developing wasp consumes the nymphal host from the inside out, killing it before emerging as an adult wasp. “A female *Peristenus* can lay up to 60 or 70 eggs—usually one in each host—in its lifetime,” says Swezey.

Working with Dominique Coutinot from the US Department of Agriculture’s European Biological Control Laboratory in Montferrier, France, and Ulli Kuhlman of CABI Bioscience in Switzerland, Pickett imported *Peristenus stygicus* and *P. digoneutis* for release in California’s Central Valley. He was also looking for a cooler region to try and establish the endoparasitoid. “Central Coast strawberry plantings were an ideal study site,” says Swezey.

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With the help of UC Cooperative Extension farm advisor Mark Bolda, Pickett released the parasitic wasps in 2002 into native vegetation bordering a conventional strawberry operation in Monterey County.

“The results were very exciting,” says Pickett, who was surprised to find that the wasps had parasitized 50% of the lygus nymphs collected near the release site—particularly since these were conventional strawberry fields subject to pesticide sprays. “At this point the wasps have most likely become established, and we’ll continue to monitor their spread in the region.” Ronnie Colfer of San Juan Bautista’s Mission Organics identified a second site at Harkins Slough for additional releases.

### IMPACTS ON LYGUS IN ORGANIC STRAWBERRIES

In 2004, Swezey and Center research assistants Janet Bryer and Diego Nieto released both *Peristenus stygicus* and *P. digoneutis* into alfalfa plantings established at the Eagle Tree organic strawberry ranch of Pacific Gold in Prunedale (Monterey County). The research group had already conducted several years of field trials at the site, working with Pacific Gold’s Larry Eddings and Joe Valdez to incorporate the alfalfa as “trap crops” in the strawberry fields. These crops attract and “trap” pests such as *Lygus hesperus* in a concentrated area; ranch personnel then run tractor-mounted vacuums, or “bug vacs” over the strips of alfalfa to remove the lygus bugs.

During the 2004 season, the researchers found that approximately 20% of the lygus nymphs they collected from the trap crop had been parasitized by *P. stygicus*. “We thought that was a big success,” says Swezey. “It told us that you can take the wasp, originally from southern Spain, put them out in this environment, and they successfully parasitize the pest.”

The researchers were also surprised to find that 50% of the lygus they collected from a “control” strip of alfalfa 300 meters from the wasp release site had also been parasitized by the wasps. “We probably moved the parasitoid to that strip accidentally, or it may have been moved by the ranch workers or the vacuum machine,” says Swezey. Nevertheless, the fact that the wasps became established in alfalfa so readily was good news for the research group.

After the 2004 season the parasitoids successfully overwintered in the alfalfa plots and were present in the spring of 2005. “That told us that *P. stygicus* was established in the environment,” says Swezey. Data collected during the 2005 season show a clear “delayed density dependence” of the wasps and lygus population: when the number of lygus in the trap crop and strawberries went up, the parasitism rate by *P. stygicus* rose soon afterward (see figure 1), and the lygus numbers then dropped. By the end of 2005, parasitism of lygus nymphs in trap crops exceeded 60%.

During the 2006 season, the research group will not do any additional wasp releases, but will collect lygus nymphs for analysis to see whether the wasp species continue to spread at the site.

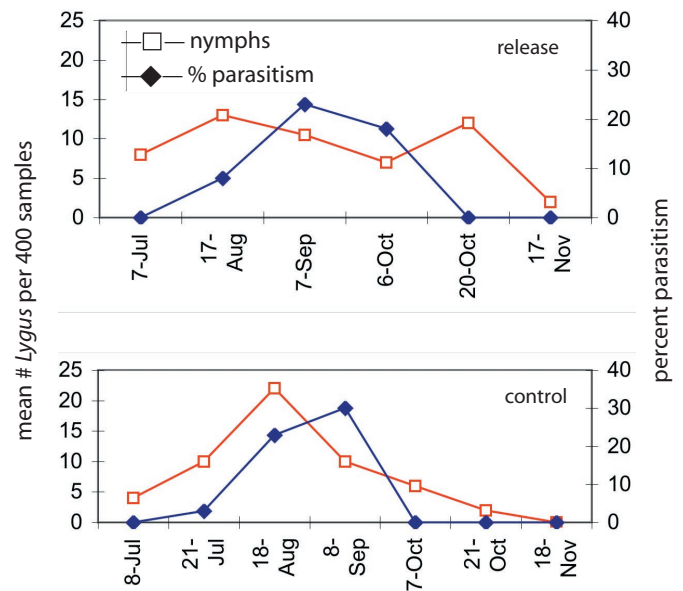


Figure 1. *Lygus* nymph abundance and percent *Peristenus* parasitism in strawberries (2005).

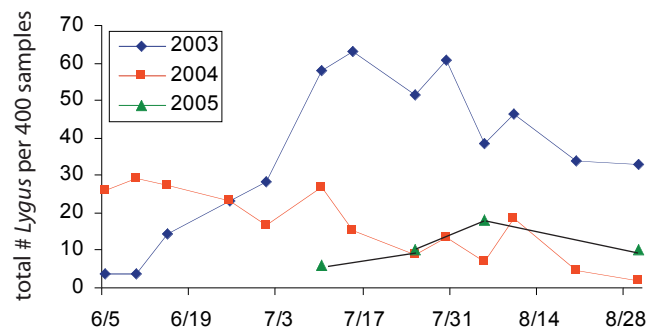


Figure 2. Yearly *Lygus* nymph abundance in strawberries.

The combination of trap crop vacuuming and parasitoid releases has led to a year-to-year decline in average lygus nymph abundance at the Eagle Tree research site since 2003 (see figure 2). Swezey acknowledges that at this point he can’t tease out the effect of the parasites from that of the vacuuming effort in driving down lygus numbers. “In 2006 we’ll map the mean number of parasites against this trend of declining lygus numbers and try to see how much of the effect can be explained by parasitism.”

Ultimately, Swezey hopes to convince strawberry growers to limit the use of bug vacs on their crops to critical mid season periods, and to increase the implementation of alternative controls such as trap crops combined with bio-control efforts. “I think vacuuming the whole field of crops to control lygus is counterproductive,” says Swezey. “It’s a lot of effort and I think it’s quite destructive of the beneficial insect community that could greatly help limit lygus damage in organic strawberries if it were conserved.”

– MARTHA BROWN

# Educators, Students, and Researchers Gather for First National Conference on Sustainable Agriculture Education

Interest in sustainable agriculture isn't limited to the farm fields or grocery aisles—it's also taking root in the classroom. Prompted in many cases by student demand, colleges and universities around the country are developing programs in organic farming, sustainable agriculture, and agroecology.

Recognizing this growing interest, members of the Center for Agroecology and Sustainable Food Systems (the Center) and the UC Davis College of Agricultural and Environmental Sciences and Student Farm teamed this past winter to develop the first national conference on post-secondary sustainable agriculture education.

The conference drew over 140 students, faculty, staff and administrators from more than 50 national and international colleges and universities to the Asilomar Conference Center in Pacific Grove, California. Also attending were representatives from 15 state and national sustainable agriculture organizations.

Conference attendees set their own agenda based on shared interests, brainstorming in more than 20 workshops on topics that ranged from how best to work across disciplines in developing curricula, how to develop and maintain institutional support for sustainable agriculture education and research programs, and how to incorporate student farms into education programs, to how to develop careers paths for students with interests in sustainable agriculture.

The response to the conference was overwhelmingly positive. According to Albie Miles, the Center's curriculum developer and one of the conference organizers, "Many participants commented that the conference was very timely and that they had long recognized the need for a national meeting that would encourage inter-institutional exchange and collaboration between sustainable agriculture educators, researchers, administrators and students."

Part of the conference's outcome is an effort to assess the need for a national-level organization that will continue to address and promote sustainable agriculture as a field of study in higher education. In this article we discuss the background of this effort, describe some highlights from the January conference, and offer ways to get involved in the ongoing work to develop and improve sustainable agriculture programs for post-secondary students. More information on the conference, including summaries of all the workshops, is available on the Center's home page: [www.ucsc.edu/casfs](http://www.ucsc.edu/casfs); click on the *Education* link and go to the *Facilitating Sustainable Agriculture Conference* link.

## CALIFORNIA EFFORTS SPARK NATIONAL GATHERING

Dating to the founding of the Student Garden Project in 1967 and the Agroecology Program in 1981, UC Santa Cruz has a long history of both experiential, apprentice-style training in organic farming and gardening techniques, and more traditional academic courses in agroecology and sustainable agriculture. Building on this experience, members of UCSC's Center for Agroecology and Sustainable Food Systems have worked with other educators from throughout California since 2002 as part of the College Farms Sustainable Agriculture Educators Working Group, with support from the Kellogg-funded California Food and Fiber Futures project.

"The focus of that work was on colleges and universities that have college farms," says Miles. "As post-secondary educators, we wanted to discuss the needs that our programs shared and to develop experiential education curricula that would incorporate hands-on work and learning on college farms into academic programs." The California group worked on a number of projects together, convened several meetings each year, and held workshops for the last three years at the annual Ecological Farming Conference.

Realizing the need for an effort that served the broader sustainable agriculture education community, the California educators proposed the idea of convening a national, multi-day sustainable agriculture education conference. "In 2005 we conducted a survey of selected individuals and US institutions involved in sustainable agriculture education to assess

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Jon Kersey

An Environmental Studies course based at the UCSC Farm is part of a trend toward experiential sustainable agriculture classes. Here students Lydiah Gatere (left) and Eric Hoff examine soil compaction readings as part of an agroecology lab session.



interest in a national conference as well as to solicit input on the conference's content," says Miles. "The great majority of respondents from our initial survey strongly supported the idea of a national conference." Miles, along with Mark Van Horn, director of the UC Davis Student Farm, and Damian Parr, graduate student in agricultural education at UC Davis, formed the conference steering committee.

Both educators and students provided feedback on what issues were of greatest interest and concern (see sidebar). Colleagues at the Center provided the impetus for the use of Open Space Technology for structuring the event such that the content of the conference was determined by the needs and interests of the participants.

Both graduate and undergraduate students played a significant role in the conference. As one of the primary conference organizers, Parr stressed the importance of developing the conference as a progressive "educational event" with a participatory, inclusive curriculum. Central to this principle was assuring students' authorship in developing the conference program and outcomes.

Parr, a member of the Center's 1991 Apprentice class and a UCSC Environmental Studies/Agroecology graduate in 2000, notes that, "We facilitated a social learning process wherein administrative, faculty, and student cultures increased awareness of their respective needs and interests. Ultimately, the goal was to democratize knowledge and practice responsibility for what and how we learn about sustainable agriculture."

#### **PARTICIPANTS ADDRESS SHARED INTERESTS, ISSUES**

By bringing together a national group of educators and students, conference organizers hoped to encourage the continued development of sustainable agriculture and agroecology educational programs in the U.S.

"We wanted to create a stimulating working environment in which faculty, students, staff and administrators were free to share ideas and questions, discuss what they have done and want to do in their education programs, what worked, what didn't work, and what educational resources and teaching methods they've been using," says Miles.

Combining both World Café and Open Space Technology meeting formats (see *Resources*, below, for a description of these approaches), the conference participants worked with facilitators to set their own agenda and broke into various working groups to address topics of shared interest.

One of the most popular of the 23 workshops addressed curriculum development. Participants discussed the myriad challenges and opportunities facing students, faculty, and staff interested in creating a sustainable agriculture curriculum, particularly at institutions with a long history of both conventional agriculture and an exclusively disciplinary approach to agriculture education.

Some of the topics and ideas that emerged from the curriculum workshops included the following:

- Students' leadership, inspiration, and passion about sustainable agriculture capture the attention of university administrators.

#### **Needs and Interests of US Agriculture Educators**

*Topics are listed in the order of interest as ranked by the respondents*

- Experiential learning
- Teaching methods, strategies, and facilities
- Interdisciplinary education
- Developing interpersonal and inter-institutional collaborations
- Engaging and responding to internal and public stakeholders
- Strategizing to meet program development needs
- Assessment of specific program development needs
- Systems approaches, relating to hard systems and soft systems (social learning)
- Theoretical frameworks of sustainable agriculture and their implications for specific approaches to education
- Theoretical educational frameworks that best serve the field of sustainable agriculture
- Critical examination of educational theories of learning, pedagogy, and curriculum

#### **Needs and Interests of Undergraduate and Graduate Students**

- Experiential learning, hands-on practical learning, student farms, internships, and the integration of classroom and applied field-work
- Developing interpersonal and inter-institutional collaborations between sustainable agriculture programs/projects
- Existing sustainable agriculture programs' instructional resources, teaching methods, strategies, and facilities
- Interdisciplinarity, integration of natural and social sciences in courses and curriculum
- Developing and maintaining institutional and faculty support and participation in student sustainable agriculture programs/projects
- Systems and holistic approaches to agroecology and food systems
- Critical educational theories of learning, pedagogy, and curriculum. Participatory Action Research, Critical Pedagogy and Popular Education as social learning and action methodologies.
- Assessment of specific student initiated programs'/projects' (e.g., student farm/co-ops), development needs
- Strategizing to meet student programs'/projects' development needs (e.g., student farms)
- Outreach and student recruitment

“We wanted educators, administrators, and students to meet each other, learn from each other and, if and as it suits them, develop collaborations and working relationships across geographical, disciplinary, and other boundaries. In doing so it is our hope that collectively we can encourage the development of educational programs that focus on learning, student self-empowerment, and the development of knowledge and skills needed to achieve more sustainable food and agricultural systems.”

*Mark Van Horn, Damian Parr, and Albie Miles, conference steering committee*

- Farms, growers associations, and industry are seeking qualified sustainable agriculture workers with plenty of hands-on experience and applied knowledge.

- Many departments require internships of their students, which create opportunities for partnerships with other sustainable agriculture organizations or area farms to provide hands-on learning.

- There is a need to develop 2-year, 4-year, graduate, certificate programs and grower workshops in sustainable agriculture to serve a variety of audiences.

- Defining the role of experiential and interdisciplinary learning in undergraduate programs in sustainable agriculture education is an ongoing challenge.

Another workshop discussed partnerships between universities and non-profits/community groups/grower associations. The objectives of such partnerships include helping to ensure that sustainable agriculture education materials and programs are meeting the needs of people inside and outside of the university—students, graduates, instructors, farmers, employers, community members, and the community at large—and lowering overhead expenses for both university and the partnering organization by sharing resources and expertise. Examples discussed in the workshop include:

- The Program in Ecological Agriculture and Society (PEAS) farm at the University of Montana, where a local non-profit covers the operating expenses of the farm and distributes the produce through its food bank programs, while the university covers the cost of the instructor/farm manager to teach/manage the student farmers.

- Idaho, where a group of growers has gotten together with the University of Idaho to provide sustainable agriculture education, information and training to new and continuing farmers.

- Central Carolina Community College, where area farmers teach courses to students using university infrastructure and resources.

- Michigan State University, where a Farmer Advisory panel is helping guide organic farmer training and transition.

Other workshops addressed such issues as:

- Politics and sustainable agriculture
- Institutionalizing campus and student farms
- How to develop and maintain institutional support for sustainable agriculture education programs
- Student faculty mentoring



Damian Parr

Students, staff, faculty, and administrators share ideas at a World Café session, reflecting on the challenges they face in developing sustainable agriculture programs at their home institutions.

- Establishing new sustainable agriculture education programs: How can established programs assist new programs?
- Employment opportunities for graduates of sustainable agriculture programs
- Sustainable food in college and university dining services
- Developing a national academic association for the advancement of sustainable agriculture in higher education

#### CONFERENCE CATALYZES ONGOING EFFORTS

“By the end of the conference, it was clear that participants wanted to continue the dialogues and brainstorming they’d begun in order to move forward in developing and improving sustainable agriculture education,” says Miles.

Fifteen working groups and sub-committees were proposed to address such topics as: developing and maintaining institutional support for sustainable agriculture education programs; sustainable agriculture curriculum development; student recruitment and retention; connecting sustainable agriculture programs and their students to surrounding communities; student and college farms; interdisciplinary and experiential education; developing inter-institutional collaborations; and a student-centered working group to focus on issues and interests specific to undergraduate and graduate students. Anyone interested is welcome to join the online discussions of these working groups; see [www.ucsc.edu](http://www.ucsc.edu).

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edu/casfs\_and go to the Education link for more information. For specific questions or comments, please contact Albie Miles at [afmiles@ucsc.edu](mailto:afmiles@ucsc.edu).

In addition, the development of a national association for the advancement of sustainable agriculture in higher education was proposed and is currently the focus of work of nine active subcommittees. The draft mission statement of the proposed Sustainable Agriculture Education Association (working title) states:

The SAEA mission is to advance the practice of sustainable agriculture through 1) promoting the development, application, study, and dissemination of best teaching and learning practices in sustainable agriculture education, 2) serving sustainable agriculture teachers and learners through communication, training, development, publication, and collaborative activities, and 3) enhancing the depth and breadth of sustainable agriculture education programs and curricula.

A second inter/national sustainable agriculture education conference is currently being planned for 2006/07. Cornell University and the Pennsylvania State University are negotiating support with their respective institutions and are tentatively planning to accept the co-coordination of the event.\*

– ALBIE MILES,  
MARTHA BROWN

*\*Please note: PSU and Cornell are actively seeking funding to support this effort. Please contact Albie Miles ([afmiles@ucsc.edu](mailto:afmiles@ucsc.edu)) to discuss options for conference sponsorship.*

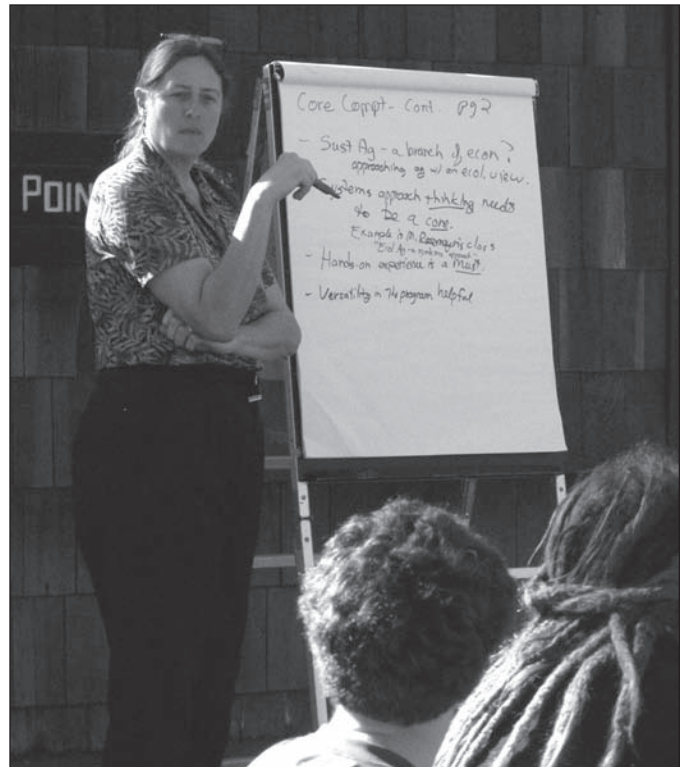
## Steering Committee and Facilitator Team

### Steering Committee

- Albie Miles, Center for Agroecology and Sustainable Food Systems, UC Santa Cruz.
- Damian Parr, Graduate Student, Agricultural Education, School of Education, UC Davis.
- Mark Van Horn, Director, Student Farm. Department of Plant Sciences, UC Davis.

### Facilitator Team

- Richard Bawden, Department of Community Agriculture, Recreation and Resource Studies, Michigan State University.
- Catherine Cloud, Graduate Student, International Agriculture Development, UC Davis.
- Nancy Grudens-Schuck, Department of Agricultural Education and Studies. Graduate Program in Sustainable Agriculture, Iowa State University.
- Geir Lieblein, Department of Plant and Environmental Sciences. Norwegian University of Life Sciences.
- Nadarajah Srisandarajah, Associate Professor, Unit of Learning. Food and Resource Economics Institute. The Royal Veterinary and Agricultural University, Denmark.



Rhonda Janke of Kansas State University takes notes at a workshop discussion on “core competencies,” goals that students develop while in sustainable agriculture programs.

Damian Parr

## Sponsors and Supporters

Major sponsors for the event included the UC Davis College of Agricultural and Environmental Sciences and Student Farm; The Farm Foundation; the UC Santa Cruz office of the Chancellor; the Center for Agroecology and Sustainable Food Systems, UC Santa Cruz; the Department of Environmental Studies and the Division of Social Sciences at UC Santa Cruz. Additional support was provided by the UC Sustainable Agriculture Research and Education Program; the USDA Cooperative State Research, Education, and Extension Service (CSREES) Sustainable Agriculture Research and Education Program (SARE); Wageningen Agricultural University of the Netherlands; and the Students for Sustainable Agriculture (SSA) at UC Davis.

## Resources

For more information on *World Café* meeting strategies, please see the following website – [www.theworldcafe.com/worldcafe.html](http://www.theworldcafe.com/worldcafe.html)

For more information on Open Space Technology for meetings, please see the following website – [www.openspaceworld.org/wiki/wiki/wiki.cgi?EnglishHomepage](http://www.openspaceworld.org/wiki/wiki/wiki.cgi?EnglishHomepage)

# Updates

## Center Surveys UCSC Community on Food System Issues

With the ongoing efforts to develop a more sustainable campus food system at UCSC (*see cover story*), members of the Center’s social issues research group are interested in assessing student, staff, and faculty attitudes, concerns and support for a variety of food system issues.

Center researcher Jan Perez worked with members of the campus’s Food Systems Working Group, including UCSC Dining Services, Community Agroecology Network, and Students for Organic Solutions to develop a web-based survey designed to find out what the UCSC community thinks about food system issues. Survey results will help the groups find potential support for their work, tailor education efforts, and determine campus attitudes toward the future of sustainably produced food at UCSC. The UCSC Office of Budget and Planning implemented the survey.

Asked to identify food issues and other current issues that were important to them, survey respondents ranked protecting the environment, food access for low-income people, improving food safety, improving job conditions of workers in the food system, and reducing the use of pesticides in the food system highest. The food issues that were the least important to people were limiting genetic engineering, and developing local food systems. In fact, 8% of the respondents were “unsure” about the importance of local food systems—the most people to pick that category.

Respondents were also asked to rate their level of interest on a number of topics. Food safety and nutrition were the primary interests people have in their food, followed by topics that encompass the impact of food production on others (wages, working conditions, and treatment of animals) and the environment. The topics garnering the least interest were the distance food travels, and the influence of large corporations.

Other questions addressed interest in various “eco-labels” that represent qualities such as organic, humane treatment of animals, water quality, locally produced, and Fair Trade; whether respondents were willing to pay more for food produced with social justice criteria (fair wages and working conditions); and how often people purchased Fair Trade, organic, or locally produced food. Detailed results of the survey will be presented in the next issue of *The Cultivar* and in a future Center Research Brief.

The campus food systems survey will help Dining Services and other groups on campus tailor education and dining programs to the campus community’s needs and interests.



Candy Berlin

## PG&E Grant Funds Expanded Work on Lygus Control

A recent grant from PG&E’s Non-point Source Pollution Projects Fund will expand the Center’s efforts to analyze the impact of alfalfa trap crops in controlling strawberry crop damage by the western tarnished plant bug (*Lygus hesperus*). The study also entails water quality monitoring to determine whether the use of trap crops can decrease the amount of pesticide sprays needed to control lygus populations when compared with more conventional management techniques.

Center researchers Sean L. Swezey, Janet Bryer, and Diego Nieto have established the efficacy of using strips of alfalfa planted in strawberry fields to “trap” lygus, which are attracted to the alfalfa as a source of food and breeding sites (see “Trap crops show potential to reduce pest damage, save time and energy in organic strawberry production,” *The Cultivar*, Vol. 22 #1). On organic farms, the strips of alfalfa are then vacuumed with a tractor-mounted “bug vac” to physically remove lygus. The new grant will expand the study of alfalfa trap crops to strawberry operations using conventional sprays to control lygus.

The study’s goal is to see whether the trap crop plantings reduce the abundance of lygus bugs and berry damage in the associated strawberry crop; reduce the number and concentration of insecticide applications made for lygus bug control; and reduce the costs of controlling lygus bugs in conventional and IPM operations.

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In addition, the researchers will provide growers with weekly lygus population level and crop damage estimates from the treatment plots, to use in conjunction with estimates and recommendations made by pest control advisors.

This 2-year study will also include analysis of insecticide levels in runoff from strawberry farms to see whether a combination of trap cropping and potentially fewer sprays based on weekly monitoring of lygus population levels can reduce pesticide pollution originating from strawberry operations.

## Center Researchers' Work Appears in Recent Publications

A study on the impact of natural enemies on cabbage aphids (*Brevicoryne brassicae*), a significant pest of broccoli in Monterey County, appears in the February 2006 issue of *Environmental Entomology* (Vol. 35, No. 1, pp. 94–101). Center researcher Diego Nieto, the paper's primary author, conducted the study on 4 organic farms in Monterey County during the summers of 2002 and 2003. He examined such factors as how the arrival date of the aphids (weeks following transplant) and where on the plant they became established (outer leaves, center leaves, etc.) affected whether the broccoli head was eventually harvested (in many commercial operations the head is not considered harvestable if one or more aphids are present). He also examined the impact of syrphid larvae (Syrphidae), a natural enemy of aphids, on aphid abundance. Co-authors on the paper include Center director Carol Shennan, William Settle, Rachel O'Malley, Shannon Bros, and Jeffrey Honda.

Nieto's work found aphids were most abundant on the outer leaves of most broccoli plants; these colonies did not affect infestation at harvest. This suggests that spray policies in conventionally managed systems should be adjusted to recognize aphid location as an important contributor to broccoli harvest, rather than using a zero-tolerance threshold for the presence of aphids once the broccoli head begins to form. He also found that aphid populations that became established early in the season were more likely to be suppressed by syrphid larvae and other natural enemies; hence, techniques to enhance the early establishment of natural enemy populations, such as insectary plantings, could help control aphid infestations.

Social issues researcher Phil Howard's work on Central Coast consumer preferences and concerns appears in the January–March 2006 issue of *California Agriculture* (Vol. 60, No. 1, pp. 14–19). Howard discusses results of focus group discussions and written surveys on consumer concerns about how their food is produced, processed, transported, and sold, and how they would prefer to get this information. The study indicates that food safety and nutrition generate the most interest, with ethical concerns and social justice issues also of interest. The majority of survey respondents indicated that food labels are their preferred source for information on these topics.

## Blueberry Variety Trial Coming Ripe

Blueberries offer a potentially lucrative niche crop for organic growers that can be adapted to wholesale, retail, direct marketing, and U-pick operations. However, growing blueberries on California's Central Coast presents challenges: most soils aren't naturally acidic enough for blueberries to thrive, and winters don't get cold enough to provide the chill hours that many varieties need to set a good fruit crop.

To find out how blueberries can be managed in an organic Central Coast system, the Center initiated a trial of 15 high-bush blueberry varieties in cooperation with Aziz Baameur, Small Farm Program Advisor for Santa Clara County's UC Cooperative Extension (UCCE) office, and Mark Bolda, UCCE's Central Coast Strawberry and Caneberry Advisor.

Planted out in January 2004, the blueberries were stripped of fruit for two seasons in order to let the plants develop. This spring they're being allowed to bear for the first time, providing the research team with an initial look at which varieties are responding best to Central Coast conditions.

"It's pretty clear that some of the more popular commercial varieties, including Jubilee, Duke, Millenia, and Ozark Blue are so far the most productive," says Center farm manager Jim Leap, who oversees the trial. Southmoon is also producing well, and all of the plants are thriving even with the soil pH at 5.6—slightly more basic than is considered ideal.



Anne Gutmann

The first crop of blueberries from an ongoing variety trial is ripening at the UCSC Farm.

Leap notes that as the fruit ripens, bird predation has become an issue. He plans to install bird netting to protect the plants by early summer. The research team will also initiate a trial of a foliar iron spray this summer to see how the plants respond.

"One reason you need to keep the soil's pH low [ideally at a pH of 5] is so the plants take up iron efficiently," explains Leap. "Testing the foliar spray will give us a good idea of the effectiveness of our current pH management strategy."

## Center Says Bon Voyage and Thanks

After many years of important contributions, three Center staff members are moving on to new jobs. Thomas Wittman, assistant operations manager, retired from the University this winter and is pursuing his own business, “Gophers Limited,” which helps gardeners and farmers control vertebrate pest damage using organic techniques. Thomas will also continue to edit a GMO news service that keeps listserve members up to date on the latest developments in the controversy over genetically modified organisms (email [Twittman@aol.com](mailto:Twittman@aol.com) for more information), as well as continue to serve on the Ecological Farming Association’s Board of Directors.

Marc Los Huertos, who has managed the Center’s water quality monitoring work since 1999, has accepted a tenure track faculty position at California State University Monterey Bay, where he’ll be part of the Division of Science and Environmental Policy. Marc’s teaching will focus on watershed science; he’s particularly interested in the role of nutrients in surface waters. He’ll continue to manage several water quality assessment grants for the Center over the next two years.

Phil Howard, a member of the Center’s social issues research group, has accepted a position as assistant professor in the Department of Community, Agriculture, Recreation and Resource Studies at Michigan State University, where he’ll be teaching in a new graduate concentration in Community Food and Agricultural Systems. His research will involve the community in addressing questions related to the sustainability and democratization of food and agricultural systems; some topics this work will focus on include consumer interests, health impacts, and corporate consolidation.

We wish Thomas, Marc and Phil all the best in their new pursuits.

## Center Cosponsors Research Delegation to Cuba

The Center and Global Exchange invite you to join us on a 10-day research delegation November 25 – December 4, 2006 to Havana to learn about how Cuba has become a leader in organic and urban agriculture.

When the Soviet Union collapsed, the island nation of Cuba found itself cut off from the chemical fertilizers, pesticides and herbicides on which its farms had long de-

pended. To feed its people, the Cuban government undertook an unprecedented conversion to organic and local food production. Today, much of the country’s fertilizer comes from some 175 vermicompost centers that produce more than 90,000 tons of compost annually. Thousands of urban gardens across the country help feed the island’s population, and an estimated one-third of Havana’s arable land is under cultivation. As other countries pursue conversions to more local and organic agricultural systems, many are looking toward Cuba as a model.

During the 10-day delegation you will get the chance to talk with Cubans you would otherwise never meet—agronomists, government officials, community leaders, and ordinary Havana residents who are growing their own food. This is a unique opportunity to see an internationally recognized example of how to grow closer connections to our food.

To learn more about this upcoming trip contact Zach Hurwitz at 800.497-2994 or [zach@globalexchange.org](mailto:zach@globalexchange.org), or visit [www.globalexchange.org](http://www.globalexchange.org), click on the “travel with reality tours” link, and follow the “research delegations to Cuba” links.

## Plans Underway for 40th Anniversary

Plans are underway for the 2007 “Back 40” celebration marking the 40th anniversary of Alan Chadwick’s arrival at UC Santa Cruz and the founding of the Student Garden Project (now the Alan Chadwick Garden).

The event will begin on Friday, July 27th and last throughout the weekend. A planning committee is working on the schedule of activities; many more details will follow in the months to come.

If you’d like to help plan the event, can serve as a contact for your apprenticeship year, or would like to be involved in other ways, please contact us at [farmandgarden@gmail.com](mailto:farmandgarden@gmail.com), or call Joan Tannheimer at 831.459-3240. Be sure and save the dates: July 27–29, 2007.

## Web Site Helps School Gardens Grow

The Center and the Life Lab Science Program, which is based at the Center’s on-campus farm, are partners in the new California School Garden Network (CSGN) web site, [www.csgn.org](http://www.csgn.org). CSGN’s mission is to create and sustain school gardens that enhance academic achievement, a healthy lifestyle, environmental stewardship, and com-

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# Center Takes Part in Building New International CSA Network

*In 2004 the Center's Community Supported Agriculture (CSA) manager Nancy Vail and her husband Jered Lawson of Pie Ranch ([www.pieranch.org](http://www.pieranch.org)) attended the first International CSA Symposium, held in southern France. In December 2005 they traveled to Palmela, Portugal for the second meeting of this emerging international movement. Here they report on the conference and its outcomes.*

There was a mix of pride and apprehension as the Portuguese farmer opened his diverse enlarged home garden to a busload of foreigners. Our group was full of questions as we walked among the chickens, the regionally famous black pigs, and the early winter remains of greens, cabbage, squash, and senescing beans.

Urbanites from the nearby town of Odemira recognized this small valley of Old World farmers as a place to build new relationships, or “Reciproco”—more akin to the original Japanese version of Community Supported Agriculture known as “Teikei,” where a number of farmers pool harvests to fill the weekly crate of produce for consumers. These nascent partnerships, where commitment to one another was still forming, mirrored the budding relationships of the members of the second International Symposium on Community Supported Agriculture.

CSA projects are collaborations between the local community and the farmers. The community members support the farm directly for an entire season and in return receive a share in the weekly harvest. This partnership increases community involvement in food production and in the health of the local economy and environment.

## A NEW CSA TAKES ROOT

Our group included another Portuguese farmer who had learned about CSA for the first time when we met in Southern France almost two years ago. Now he was six months into creating a CSA project. The tour included a stop at a Lisbon storefront where Carlos's crates of vegetables are distributed weekly. It was meaningful to see those crates—we took lots of pictures of them because they were so much like our CSA crates at home. No supermarket shelf. A simple box of mixed vegetables produced and enjoyed by people getting to know each other. The box of food, with its heads of lettuce, leeks, lemons, and rutabagas, was the common thread amongst the diverse cultures of the symposium's attendees.

What surfaced as a unique aspect of the Reciproco system, was the farmers' reluctance to ask for a commitment from members in advance. Rather than pay for a season's

worth of food “up front,” as many CSA projects require, Reciproco members pay weekly when they pick up their crate. The farmers expressed trepidation over not being able to provide for their members, and the members might have been afraid of not getting what they paid for. However, for the attendees at the symposium, supporting the transition to a more conscious relationship between urban and rural was the bottom line. And this indeed was happening in the emerging partnerships we witnessed in the first two days of touring.

## UNDER THE CASTLE IN PALMELA

The enthusiasm and support from the 1<sup>st</sup> International Symposium in France in early 2004 carried into the 2005 Symposium in Portugal and drew 160 participants from throughout Europe, as well as Australia, the Cape Verde Islands, Togo, Japan, India, Cameroon, Canada, and the U.S. American attendees included Scott Chaskey from Quail Hill Farm, Elizabeth Henderson from Peacework CSA, Ruth Katz and Paula Lukats from Just Food, Kristy Apostolides (formerly of Just Food and now in Greece developing similar projects), John Peterson from Angelic Organics CSA, Tom Broz from Live Earth Farm CSA, along with the authors and our one-year-old son, Lucas. Kenoli Oleari and Marc Tognotti, also from the U.S., facilitated the participatory meeting framework.

The symposium took place in an old smoky theatre along one of Palmela's cobblestone streets, opening on the morning of December 5<sup>th</sup> with words from local government officials. There was an overview of the history of the International CSA Network and a review of the new Portuguese Reciproco system. It was exciting to hear that since the idea was taken up in Southern France just four years ago there are now over 200 such AMAP (Association pour le Maintien d'Agriculture Paysanne) farms throughout France, with enthusiasm for the model growing in other countries around the world.

Elizabeth Henderson gave the opening presentation and emphasized the ability of CSA to engage the community in meaningful involvement in the long-term health of the farm, citing the example of her own farm and its shareholders, who have donated money towards the farm's permanent protection. Bruno Jean-Jean from France spoke about extending the philosophy of CSA to other enterprises, such as ecologically/locally produced home and body cleaning soaps. Helene Knoll from France and Angel Hernandez spoke of the role primary education can play in fostering relationships between rural and urban communities.

After a lunch of local food in the fire station everyone donned their headsets for simultaneous translation and spent the rest of the afternoon in two rounds of workshops.

1. How to realize CSA/AMAP/Reciproco?
  - Starting a CSA
  - Diversifying (seeds, meat, fruit)
  - Long term viability
2. How to increase participation?
  - Mobilization and organization of consumers
  - Insuring access to land for farmers
  - Insuring access to quality food for low income people

To elicit a broad range of ideas for the network from as many perspectives as possible, each of the planned small-group workshops included time for reflection on how the particular area of focus addressed by that workshop could have a role in the International Network. For example, in the workshop on Long Term Viability for CSAs, there surfaced the idea of posting example budgets from various CSAs around the world on the Urgenci web site ([www.urgenci.net](http://www.urgenci.net)), which had been serving as the Network's web site from the beginning.

In the land tenure workshop, there was discussion of how land preservation tools from each country could be summarized and posted on the web site, coupled with a new global bank offering loans to locally specific farmland preservation efforts. Already since the meeting, we've joined a French land preservation effort whereby they pooled capital from over a thousand "associates" to purchase and protect a small piece of an important agricultural region outside of Paris to operate their CSA/AMAP project. And in fact, we may now begin employing that same model in an effort to acquire and permanently protect the historic Steele Ranch on the California coast for use as an educational farm (see [www.pieranch.org](http://www.pieranch.org)).

Other workshops examined starting, diversifying, and ensuring the long-term viability of CSA projects; mobilizing and organizing consumers in support of small-scale farmers; and ensuring access to quality food for low-income people (see [www.urgenci.net](http://www.urgenci.net) for more information on these workshops).

The discussions and networking during the workshops and during breaks over coffee, local ham (a.k.a. black pig) and cheese sandwiches, and zesty, fresh orange juice, culminated in the final day of the symposium, with the morning focused on roundtable discussions about citizen engagement and public policy initiatives and the afternoon dedicated to the formalization of the International CSA Network.

Seven representatives from Japan, Africa, the U.K., France, Greece, and the U.S. stepped forward to work with Samuel Thirion from Urgenci to help realize some of the goals expressed by everyone during the meetings. The committee divided tasks, such as planning the next symposium, coordinating resources for the network, and improving the web site. To see the current site and a more thorough, step-by-step report of the symposium, including more photos, and how to get involved, go to [www.urgenci.net](http://www.urgenci.net).

While CSA is ultimately about developing local community-based food systems, we left inspired by the sense of global understanding and utilization of a common framework for such urban and rural partnerships. We are hopeful that such bridge-building internationally will in fact strengthen our efforts at home.

– NANCY VAIL, JERED LAWSON

## Center Notes

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munity and social development. The new CSGN web site is described in a recent press release as "a one-stop shop for teachers seeking information about establishing, funding and maintaining school gardens."

The CSGN web site connects teachers with school garden curricula, experts, literature, resources, research, and available funding. As the CSGN program grows, the web site will evolve to provide not only statewide information but also regional resources available to teachers in their own communities.

The Garden Classroom at the Center's farm serves as a garden-based nutrition resource center for the greater Monterey Bay Area by providing workshops related to garden-based nutrition for teachers and school garden coordinators. The Garden Class is open for visitors every day of the year and maintains a garden-based learning educational resource center for educators to browse. For more information, see [www.lifelab.org/programs/cde.html](http://www.lifelab.org/programs/cde.html).

## Grants Help Fund Farm-to-College Food Project, Other Efforts

A \$35,000 grant from the Wallace Genetic Foundation will support the Farm-to-College Sustainable Food Systems Project, designed to link the UCSC Farm with other local organic farms and with UCSC campus organizations to bring organic produce to the campus dining halls, while bringing students to the Farm for sustainable food systems education (*see cover story*). Center staff will also work with UCSC's Food Systems Working Group to promote and foster more sustainable food systems practices, policies, and education at UCSC and at other UC campuses, both refining our own farm-to-campus model and sharing it with other institutions statewide and nationally.

A \$30,000 grant from the Newman's Own Foundation and a \$5,000 grant from the Gaia Fund to the Center's apprenticeship training program are supporting the training of organic farmers and gardeners in 2006.

Finally, a \$30,000 grant from an anonymous foundation is also supporting apprenticeship training, as well as funding efforts to disseminate the free online curriculum and other instructional resources developed by Center staff.

Many thanks to the above foundations for their support of the Center's work.



Farms, and the UCSC Farm, jointly price the produce (this includes the farmer's price plus ALBA's overhead for pooling and delivering orders). The Purchasing Department negotiates prices with the MBOFC twice a year; it then bases the contract with ALBA on produce availability and pricing.

Each of the campus dining halls places an order with ALBA, which delivers to campus three to four times a week. ALBA invoices Dining Services for produce orders; the University pays ALBA, which in turn pays MBOFC's participating growers. The UCSC Farm delivers its own produce due to its proximity to campus dining facilities.

Campus chefs and growers are now working together to plan for the campus's needs. Says Executive Chef Dwight Collins, "The MBOFC farmers are planning their plantings based on what Dining Services can use."

### THE GROWERS' PERSPECTIVE

Terence Welch, Sales Manager for Phil Foster Ranches and one of the members of the MBOFC, talked about the advantages and challenges involved with providing produce to UCSC.

"ALBA took on the nuts and bolts of the whole thing. In a way, we were relatively not as involved as we would have been because of ALBA's role. This has both been a boon and could also be seen as a disadvantage. Overall it works, but the growers don't have as much of a direct relationship with the campus as perhaps some would like. At the same time the growers don't have the responsibility of maintaining the relationship and ALBA's doing a great job in representing the growers and encouraging the relationship. Fortunately, the growers have been asked to come up to campus to talk to students and faculty, providing a great opportunity for everyone involved."

"In terms of volume, a greater share of organic produce going to the campus would be a nice thing for us," says Welch. Dining Services currently contracts with ALBA for approximately 15% of the dining halls' produce budget. Ledyard, UCSC's prime food vendor, supplies organic produce equal to another 3% of the value of Dining Service's purchases.

For farmers considering a similar marketing effort, Welch notes, "It's really important that growers looking to do this type of marketing with an institution find a base or an ally at that institution and cultivate it. The student organizations at UCSC are a model of the type of ally growers would want to cultivate."

Dina Izzo, the Marketing Coordinator for ALBA Organics who works directly with the farmers in the Monterey Bay Organic Farming Consortium, is upbeat about the consortium's progress. "A like-minded group of family farmers came together to feed the students at UCSC. They are a happy bunch, happy with each other, and happy with the distribution of their produce through ALBA Organics," she says. "We realized the uniqueness of the situation: we were creating a pool of produce from three micro-climates for one common market, a true testament to community spirit."

### What Made the Effort to Get Organic Food in the Dining Halls Successful?

#### *Opportunity*

- The termination of UCSC's 30-year contract with Sodexo.
- The collaborative relationships established between student groups and campus administration created opportunities.

#### *Resources*

- UCSC is an academic leader in sustainable food systems research and application, and the home of the Center for Agroecology and Sustainable Food Systems (CASFS). Many students and faculty associated with the Food Systems Working Group had worked on sustainable food system issues and were anxious to use their knowledge to bring "sustainable food" to the campus.
- The Food Systems Working Group was composed of representatives of campus and community groups with staff and volunteers who were willing to devote considerable time to developing the purchasing guidelines, contacting local organic farmers, and organizing students in support of bringing local organic food to the dining halls.
- The proximity of UC Santa Cruz to organic farms that grow a wide range of produce year-round ensures an abundant supply of local organic produce and the support of local organic farmers.

#### *Processes*

- Collaboration, student organizing and outreach, and ongoing student education facilitated acceptance and support of sustainable food by both Dining Services and students.

### What Made the Effort Difficult?

- Under UC purchasing regulations, "worker supportive" (a key component of sustainable food) cannot be used as a criterion in the selection of a vendor because is not a "characteristic of food."
- The FSWG did not initially include a representative from UCSC's Purchasing Department and consequently did not have a good understanding of the regulations and policies governing vendor selection.
- UC's system is not set up to purchase from individual small farmers for a number of reasons: invoicing numerous farmers is not cost effective; large quantities of produce are required; ordering must be computerized; deliveries are required three times a week at minimum, etc. These requirements were addressed by the formation of the grower consortium and the contract with the Agriculture and Land-Based Training Center (ALBA) to pool and deliver produce from various local, organic farms.

Organic strawberries were featured in a recent “Bistro by the Bay” event, where chefs from UCSC’s Dining Services had the chance to create an array of dishes from local organic farms and sustainable seafood sources.



She also commends the efforts of the people involved in creating the opportunity for local growers. “Those who worked so hard to get locally grown produce into the University have our gratitude. Having an advocate, in this case hundreds of advocates, lies at the heart of the success of the program. The growers who answered the call, got a call to answer! We have forged a viable working relationship that is working for both the farmers and the University.”

#### THE CHEFS’ EXPERIENCE

Dennis Wake, manager of UCSC’s College 8 Dining Hall, enthusiastically supports the new purchasing program. “I believe all of the campus chefs feel fortunate that we are able to access such fine local product. This has been a long time due and I see the program setting the trend across the land,” says Wake.

He’s also pleased with the impact that local, organic produce has had on choices for both chefs and students. “With the variety of seasonal product available our menu can reflect different ‘specials of the day’. This not only keeps the chefs stimulated but the students as well,” says Wake, adding, “The area in which we live is so rich with various fresh produce and seafood, it is a chef’s dream. To have a program developing such as this can only enhance the experience of everybody involved.”

Wake notes that the more students are educated and aware of the program, the better the reaction. Candy Berlin, program coordinator for UCSC Dining, has done an outstanding job providing educational and outreach materials in the dining halls that inform students about the origin of their food, the importance of sustainable food choices, and what it means to eat locally and seasonally.

“Students are reacting to these new changes in their food because they see the vibrant colors of fresh and local produce,” Berlin says, “And it’s a huge change to hear the chefs talk about their menu planning around purple cabbage as opposed to creating a menu and then looking for the ingredients.”

Dwight Collins, Executive Chef of Dining Services, echoes Berlin’s and Wake’s enthusiasm. “The chefs are very excited

#### Farm-to-College Movement Growing Nationwide

Sustainable food system initiatives in higher education are emerging across the nation. For example:

The dining facilities at the University of Massachusetts at Amherst serve 14,000 meals a day. This self-operated university dining program has overcome the obstacles of state bidding requirements and other purchasing challenges to steadily increase their local and sustainably harvested procurement ([www.umass.edu/diningservices/index.php](http://www.umass.edu/diningservices/index.php)).

In December of 2000, the University of Wisconsin at Madison became the first major public university in the U.S. to commit to putting foods grown on local organic farming operations on the regular dining hall menu ([www.cias.wisc.edu](http://www.cias.wisc.edu)). Six Wisconsin campuses are now buying food directly from farmer cooperatives within their counties.

With a dining facility in Vermont that serves 5,200 meals daily, Middlebury College has been developing local and sustainable procurement over the past decade. The program has successfully incorporated undergraduate research and class curricula, farm tours, web site information, and special events to raise awareness around sustainable food consumption ([www.middlebury.edu/campuslife/dining/](http://www.middlebury.edu/campuslife/dining/)).

See [www.farmtocollege.org](http://www.farmtocollege.org) for information on individual farm-to-college programs across the country.

about the involvement of local, organic growers—a lot of the chefs have been into organics and vegetarianism for a long time,” says Collins.

He sees a significant impact on meal planning thanks to the availability of fresh produce. “We’re seeing a lot of different vegetables now since we’re going more with what’s in season rather than using frozen vegetables. This is great for the students to try new things—we’re making sure there’s signage with the food, especially with vegetables they’ve never seen before, like romanesco broccoli which looks like something out of ‘Alien’.”

Citing examples of how the program has changed menu planning, Collins notes, “Since we can get organic onions, and organic sub ingredients, we’re able to make an all organic marinara sauce. And we have access now to more organic dry beans and have been making organic chili. We never thought of trying this before because these ingredients weren’t available.”

Collins adds that the younger audiences who visit UCSC will also experience the option of fresh, organic food. “A lot of the groups that come for summer sessions will benefit from seeing what’s available in the dining halls. Youth groups will become more aware and educated. The cheerleader groups that come love pizza and chicken nuggets and will benefit from learning about the benefits of eating fresh and organic produce.”

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## ENGAGING STUDENTS: THE ROLE OF EDUCATION

Although farmers and chefs are critical to changes in the campus food system, demand from student meal plan holders is the key to its ongoing success. Recognizing this, the FSWG provides educational opportunities and outreach to students to help foster student interest in and demand for local organic food and a sustainable food system at UCSC.

Over the past year, outreach activities included –

- hosting three local organic College Night dinners with over 1,500 students in attendance
- facilitating “growing in season” tastings and dialogues between Dining Services staff and local farmers
- organizing regional farm tours for students
- holding organic taste tests at the colleges
- bringing together student leaders from other UC campuses to a sustainable food system resource exchange and networking convergence (see below)
- hosting a Fall FSWG farm tour at ALBA and stakeholder dinner event at CASFS
- hosting Mangaliso Kubekha from the Landless Peoples Movement of South Africa for a talk to students and faculty about food sovereignty
- collecting over 2,000 postcards for the statewide UC Foods initiative from meal plan holders (see below)

The effort to give students a better understanding of their food system has created unique academic opportunities for UCSC undergraduates. In the fall of 2005, the FSWG helped launch a Sustainability Service program within the College Eight Core Course (a class taken by all first year students at UCSC’s College Eight) that focused on the campus food system. A new course initiated this spring brings first year students together in a “Freshman Interest Group” based at the UCSC Farm that focuses on agroecology and farming (see sidebar at right for details).

The Program in Community and Agroecology (PICA) has for several years provided opportunities for UCSC undergraduates to learn practical skills in agroecology and organic gardening through courses and workshops on horticulture and organic agriculture. The program is based in a campus residential “Village” located in an old limestone quarry, where students grow as much of their own food as possible and create a viable, creative, conscious “eco” community on campus. PICA students also serve as interns and conduct independent research projects in both local and international agricultural communities.

## TAKING THE EFFORT BEYOND UCSC

As dining service departments around the country begin to address sustainability (see sidebar, page 17), UC Santa Cruz has served as a springboard for a student-initiated effort that would affect the University of California’s entire 10-campus system.

In the fall of 2004, students across the state began discussing sustainable food system activities taking place at each other’s campuses. These University of California students converged at UC Santa Barbara in October 2004 to launch

## Connecting Students to the Campus Food System

Amy Chang, a freshman at UCSC’s College Eight, is hungry after a day of classes that included a unique opportunity to harvest produce on the campus’s 25-acre organic farm. She walks into the dining hall with her friends and chooses pasta primavera for dinner, noticing that it’s made with local, organically-grown summer squash, broccoli, and organic spinach fettuccine. She feels a twinge of pride knowing that she and four other students harvested the broccoli in the dish and the carrots offered at the salad bar as part of the Sustainability Core Course at College Eight.

“Harvest for Health,” the project that brought Chang and her classmates to the UCSC Farm, is part of a new Sustainability Service program within the College Eight Core Course that focuses on the campus food system. This groundbreaking initiative was developed by members of the campus’s Food Systems Working Group, student organizations, the Center for Agroecology and Sustainable Food Systems (the Center), College Eight programs, and the academic core course.

The College Eight course involved freshmen in four projects that took them outside the classroom to build connections with staff, students, and other members of the UCSC community. The projects include “Waste Watchers” about recycling, “Hidden Connections within Food Waste” about composting, “Jump to the Dump” where they learn about landfills, and “Harvest for Health”.

Supported in part by a grant from the True North Foundation, Center staff member Nancy Vail led the “Harvest for Health” project, which proved to be an engaging, twice-a-week experience for first-year students to learn about food system initiatives at UCSC, as well as the purpose and history of the UCSC Farm, and to harvest food they eat that evening in their dining hall. The work with College 8 students has increased interest among dining hall managers, chefs, student organizations, faculty, and Center staff to replicate this type of program at all of the campus’s residential colleges.

This spring, the Center also initiated a Freshman Interest Group (FIG), coordinated by Vail. The course brought students to the UCSC Farm each week for an in-depth look at agroecology and farming. And the Education for Sustainable Living Program launched the second year of a five-unit ESLP Action Research Team this spring, coordinated by Tim Galarneau, teaching students about the campus and community food system through interactive presentations, discussions, and action based learning.

the UC Sustainable Foods Campaign of the California Student Sustainability Coalition (CSSC). The campaign seeks the UC Regents' commitment to sustainable campus food systems by implementing guidelines that prioritize local, organic, and socially responsible purchasing, as well as waste reduction and green dining facility standards.

Tim Galarneau, Food Systems Working Group coordinator at UCSC, is the campaign advisor for the statewide movement. His work includes leading student efforts to collect 5,000 postcards from all of the UC campuses that urge the UC Regents to adopt sustainable purchasing guidelines (*see below*), as well as communicating with the UC Office of the President and building Food Systems Working Groups on other UC campuses. The campaign's rapid growth has been based in part on the ability to share UCSC's successful track record and models of requests for proposals, purchasing documents, outreach materials, event design templates, and strategic advice.

Food Systems Working Group members have also been sharing information with national audiences. In the fall of 2004, Linda Wallace made a presentation to an enthusiastic group of staff, faculty, and students about UCSC's sustainable food guidelines at the Sustainability in Higher Education Conference held at the University of Oregon. Tim Galarneau gave a talk at the National Association for College and University Food Services conference at Stanford in 2005, gaining recognition for FSWG's work with UCSC's administration to make the campus's food system more sustainable.

**EXPANDING THE PROGRAM AND CREATING A MODEL**

Each year UCSC's Food Systems Working Group reviews the goals and guidelines for the campus food system in collaboration with Dining Services, making necessary adjustments based on student demand and local supply capacity. The goals for 2005–2006, which included increasing the value of “sustainable” produce purchased by Dining Services from 5% to 10% of the total value of produce purchased, have already been exceeded, with the total now 15%. The goal for 2006-2007 is to increase the value of produce purchased by another 5%, to 20% of the total.

This year's goals also include soliciting an organic dairy vendor and contracting for a minimum of 5% of the value of all dairy purchased by Dining Services. Next year the FSWG would like to see Dining Services contract with a vendor(s) to provide other sustainable animal products (in addition to dairy) to UCSC dining halls.

As UCSC's Farm-to-College program expands, the “ripple effect” grows as well, with impacts not only on local organic food producers, food system workers, and campus chefs, but on thousands of students throughout the UC systems who are more aware of their food: where it comes from, who grows it, and how their choices affect the larger food system. With its emphasis on farmer collaboratives, student involvement, social justice issues, and educational opportunities, UCSC's program offers unique lessons for others working to improve the sustainability of their campus food system.

–LINDA WALLACE, TIM GALARNEAU, AND NANCY VAIL

*UCSC students, staff, and faculty interested in the campus's Food Systems Working Group can contact Tim Galarneau at 831.459-1714, solseeker3@aol.com; or Linda Wallace, lindalwallace@earthlink.net.*

*Students interested in getting involved at the UCSC Farm and learning more about sustainable agriculture can contact Nancy Vail of the Center for Agroecology and Sustainable Food Systems at 831.459-4661, navail@ucsc.edu.*

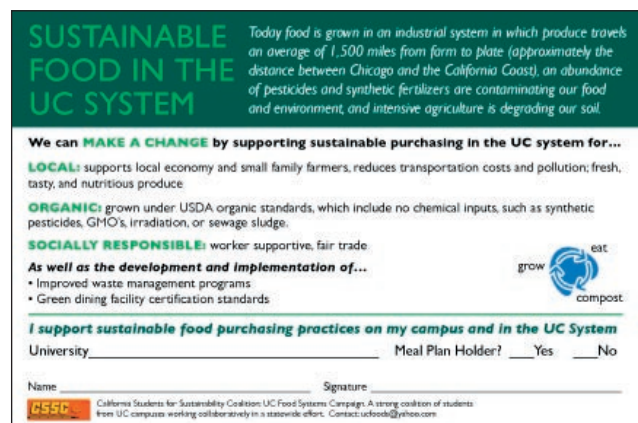
*For more information on groups involved in the Food Systems Working Group and other campus environmental organizations, please see:*

Center for Agroecology and Sustainable Food Systems:  
www.ucsc.edu/casfs

Community Agroecology Network (CAN):  
www.communityagroecology.net

Education for Sustainable Living Program (ESLP):  
www.eslp.net

Program in Community and Agroecology (PICA):  
ucscpica.org



A postcard campaign is underway to encourage the UC Regents to adopt a systemwide set of sustainable purchasing guidelines similar to those now in place at UC Santa Cruz.

# Santa Cruz area events

► **Growing and Using Medicinal Herbs from the Garden**, Saturday, July 15, 10 am–1 pm, Louise Cain Gatehouse, UCSC Farm. Learn about the abundance of herbs growing in local gardens. Darren Huckle, a Western/Chinese herbalist and licensed acupuncturist, will teach you about sources of medicinal plants, how to use garden herbs for health and wellness, and how to prepare planting beds and harvest herbs. \$15 for Friends' members; \$20 for non-members, payable the day of the workshop. No pre-registration necessary.

► **Gopher Control Workshop**, Saturday, July 22, 10 am–1 pm, Louise Cain Gatehouse, UCSC Farm. Back by popular demand, Thomas Wittman shares his expertise in controlling gophers and other vertebrate pests in your garden. Learn the latest techniques for protecting your plants and lawn from damage. \$15 for Friends' members; \$20 for non-members, payable at the workshop. No pre-registration necessary.

► **Perennials in the Landscape**, Saturday, August 26, 10 am–12 noon, Louise Cain Gatehouse, UCSC Farm. Ken Foster, owner of Terra Nova Ecological Landscaping, shares his ideas on incorporating perennials into your yard and garden. Get ready for the fall perennial-planting season as you learn about best-performing varieties, drought-tolerant plants, California natives, and much more. \$15 for Friends' members; \$20 for non-members, payable at the workshop. No pre-registration necessary.

► **Fall Plant Sale**, Friday, September 8, 12 noon–6 pm and Saturday, September 9, 10 am–2 pm, Barn Theater Parking Lot, UC Santa Cruz. Fall is a wonderful time to plant vegetable crops to extend your gardening season and give perennials a good head start for spring. The region's best-suited varieties of organically grown winter vegetables and landscape plants will be available.

For information on the above events, call 831.459-3240, email [jonitann@ucsc.edu](mailto:jonitann@ucsc.edu), or see [www.ucsc.edu/casfs](http://www.ucsc.edu/casfs).

► **The Growing Classroom: An Introduction to Garden-Based Learning**, September 28–29, 9 am–3 pm, Garden Classroom, UCSC Farm. This two-day workshop is ideal for those interested in supplementing their existing science program with garden-based learning.

Using *The Growing Classroom* activity guide for grades 2–6, you'll experience hands-on activities, learn basic science concepts and gardening techniques, and develop management strategies for a school gardening program. Find out how to teach the standards while you guide students through the natural cycles of the garden. You'll receive Life Lab's 480-page book *The Growing Classroom* as well as many other ideas and resources.

For more information and to register, call 831.459-2001 or contact [education@lifelab.org](mailto:education@lifelab.org).

## National

► **Third North American Lavender Conference**, Monday and Tuesday, July 17–19, Sequim, Washington. Speakers and workshops on practical aspects of growing, using, marketing and appreciating lavender, as well as guided tours of lavender farms.

Conference co-sponsored by Washington State University Extension and the Sequim Lavender Growers Association. For more information, contact Dr. Curtis Beus, 800.681-3035, [info@lavenderconference.com](mailto:info@lavenderconference.com), or see [www.lavenderconference.com](http://www.lavenderconference.com).



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