

GETTING THE DEGREE

Organic Higher Education in California

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Where would you go to college if you wanted to become an organic farmer?

There's a lot to be said for the "school of hard knocks" and experience from which most of the world's farmers graduate in order to become successful. The rare individual who grows up on a family farm is raised to appreciate the work ethic and practical savvy it takes to run a farm business. At the same time, the intimate knowledge of the hard labor and long hours that it takes to farm successfully often turns farm kids toward other careers. Rural America can also hold less attraction for many young people who prefer to live in thriving urban areas and enjoy an array of cultural opportunities.

Still, students are signing up to study agriculture in greater numbers at U.S. colleges and universities. Enrollment in college ag programs has seen an overall increase of 14 percent at non-land-grant colleges and 8.5 percent at the land-grants over the past nine years. Clearly, more young people want formal training in farming. But organic agriculture has not typically been in the curriculum—until recently.

Ten years ago, there weren't many choices for a student who wanted to go to college and study organic farming. Now, it is possible to major in organic agriculture. A broad array of other educational options exists for those seeking an agricultural career outside the conventional mainstream.

Six land-grant colleges across the country were identified by a national survey in 2011 to offer an organic major or certificate program combined with hands-on experience in organic production and marketing, typically on a student farm. Noteworthy programs include Washington State University's major in organic agricultural systems (the first to be offered in the country), the Organic Farmer Training Program offered at Michigan State University, University of Minnesota's Organic Horticulture & Local Food program of study, and an organic production concentration in the plant sciences major at the University of Tennessee.

A more recent study conducted by this author looked at all 446 colleges and universities in the state of California including community colleges, the state university system, and private schools. A pilot project that will now broaden to include all colleges in the country, this survey found that organic, sustainable, urban farming, and food systems programs in higher education are being offered at a wide range of institutions. Students have a choice of 16 colleges in California that offer a related major, minor, or certificate program (see table on page 30). A total of 65 California colleges offer hands-on training in organic production through a student garden or farm. Most of these campus gardens are not linked to a formal academic program but do offer students a place to learn to grow their own food and gain an appreciation for where food comes from.



Organic training programs have influenced the current generation of farmers, academics and educators, ag entrepreneurs, government agency personnel, and activists.

Damian Parr, Research and Education Coordinator at the Center for Agroecology & Sustainable Food Systems at the University of California, Santa Cruz (UCSC), was key in organizing UC Davis's new Bachelor of Science in Sustainable Agriculture and Food Systems while a graduate student and postdoctoral fellow at Davis. An instructor and researcher who has been published widely on the sustainable and organic farming movements in higher education, Parr has observed changes over the years and notes, "What we would consider historical agricultural education institutions, such as land-grant colleges of agriculture, are increasingly starting student farms and getting into organic and agroecological research."

In California, there exists a stable core of long-time organic training programs, more or less formalized in the academic curriculum, that has influenced the current generation of farmers, academics and educators, ag entrepreneurs, government agency personnel, and activists. These include programs at UCSC, Cal Poly San Luis Obispo, and UC Davis.

Stimulated by the growth of the organic industry and the movement that fuels it and turbocharged by increasing public interest in food-related issues, new programs are becoming increasingly common offerings in higher education. Courses include San Diego City College's three-year old Sustainable Urban Ag program and the intensive Veteran's Sustainable Agriculture Training now offered through Cal Poly Pomona and taught at a CCOF-certified farm.

One emerging trend is the integration of organic consciousness and production at culinary schools. Napa Valley College Cooking School boasts that it has developed "our own biodynamic system" that emphasizes reducing waste through composting and recycling, growing their own produce in an organic garden, and maintaining a flock of heritage breed hens. Similarly, San Diego Mesa College's culinary arts program produces its own fresh herbs in three organic gardens, and Laney College in Oakland grows an edible garden that produces food for its culinary arts program. Campuses nationwide are increasingly sourcing local and organic food to serve in student dining halls. The Real Food Challenge, a national movement working to shift university food budgets away from industrialized products to community-based and sustainable sources, is contributing to this change.

College-level ag training programs in California fall on a spectrum that reflects the ag economy. On one end are long-established conventional ag colleges that offer students training in everything from rodeo and equestrian studies to conventional production agriculture and heavy equipment maintenance. But newer programs have sprung up that offer training in alternative agriculture systems, using varying terminology including sustainable agriculture, ecological horticulture, and "Alternative Food Production Methods" (a skills certificate offered at Cabrillo College).



While each of the vibrant ag training programs in California deserves acknowledgment, the following profiles provide a taste of the types of programs available to college students today.

San Diego City College: *Sustainable Urban Agriculture Program*

Run on a shoestring budget and staffed by a small yet committed core of faculty and students, a sustainable urban agriculture program with its own urban farm has emerged on the campus of San Diego City College (SDCC). Now, students have the opportunity to earn an Associate of Arts (A.A.) degree in Sustainable Urban Agriculture and any of three certificates, including an Urban Farming Professional certificate and a Certificate of Performance in Organic Gardening for the Culinary Arts. According to the SDCC website, “The Associate’s degree in Sustainable Urban Agriculture prepares students to transfer to a four-year college in agriculture and related fields.” Already, students who have completed the 26-unit program have gone on to start their own urban agricultural enterprises or find work on local organic farms.

Lora Logan is a sustainable urban agriculture professor at SDCC and was, until recently, one of a few part-time farm managers at SDCC’s Seeds@City Urban Farm. She describes how a little-used lawn was transformed into a one-acre organically managed campus farm that supports a year-round CSA and an on-campus farm stand open during the school year. The farm was started as a hands-on lab for organic production and sustainable agriculture classes, and offers internships for students who provide crucial labor for maintaining the farm.

Recently, a “fully fledged greenhouse” has been installed at the Orchard, where students learn intensive vegetable as well as orchard production. A third location, the Flower Site, provides space for growing ornamentals.

Logan explains that the school district has been providing more funding for the sustainable urban agriculture courses over time, but the campus urban farm is largely self-sustaining through fruit and vegetable sales, grants, and even a Kickstarter program used to fund construction of the new greenhouse.

“We definitely get a lot of students who have glorious ideas about being a farmer,” said Logan. “Even students who think that they would like to be a farmer and decide it’s not for them, it educates them in the value of local food and other ways to engage. It’s really important that we teach people to grow food for themselves or for others. With or without a certificate or A.A. degree, most leave with an understanding of how to grow food for themselves.”

University of California, Santa Cruz: *Certificate in Ecological Horticulture (Apprenticeship Program)*

Many elements of the contemporary organic movement originated in Santa Cruz, California, where the campus garden founded at UCSC by Alan Chadwick in 1967 blossomed into a hands-on apprenticeship program that has shaped a new generation of organic farmers, activists, and academics. One of oldest and most influential of university-based alternative agricultural training programs, it is also unique in that it is located at a center within the Division of Social Sciences on a



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non-land-grant campus. The apprenticeship program at UCSC has inspired other educators to pattern their internships on it.

Over 1,400 students from around the world have immersed themselves in the six-month residential apprenticeship program, gaining a thorough grounding in organic farming and gardening through a combination of hands-on farm experience, lectures, practical skills courses, and field trips. A CSA program and farm stand provide students with training in postharvest handling and marketing. The three-acre Chadwick Garden and 30-acre farm are certified organic and were some of the first farm sites certified by CCOF. The organic farm also provides space for field research and currently hosts plots where anaerobic soil disinfestation is being studied as a method of controlling soil pathogens in organic strawberry and vegetable production.

Numerous graduates of the apprenticeship program have started their own successful farms and educational programs around the country and around the world. One recent example: a graduate from UCSC's apprenticeship program was hired earlier this year to head the city of San Francisco's new Urban Agriculture Program.

Other well-known graduates from the apprenticeship program include Thom Broz, who founded Live Earth Farm

in Watsonville, California; Emily Freed, regional production manager for Jacob's Farm/Del Cabo, Inc.; Kevin and Charuth Loth, who manage the 34-acre Shadow Brook Farm near Lincoln, Nebraska; Jered Lawson and Nancy Vail, who started Pie Ranch, an educational farm located near Pescadero, California; and Cathrine Sneed, who developed a gardening program at the San Francisco County Jail and went on to launch The Garden Project to serve former offenders.

California State University, Chico: *Organic Dairy & Vegetable Programs*

Chico State is home to the first certified organic dairy program on the West Coast. Certified organic in 2006, the dairy sold its first bulk tank of organic milk in 2007 and now has 100 certified acres dedicated to its pasture-based dairy program.

Cindy Daley, director of the Organic Dairy Program and professor in the College of Agriculture, emphasizes the learning-by-doing model. Working together with her staff, she hires a team of students to manage the 80-cow herd of crossbred Jerseys. Students are actively engaged in every aspect of organic dairy production, from milking to calving, breeding, pasture management, grazing practices, and integrated pest management. Students also learn the



business of organic dairy by working with budgets, nutrient management plans, and organic certification requirements. A new upper division course entitled "Organic Dairy Production & Management" has been added to the catalog to support the dairy.

Currently, Daley has 10 students on payroll, 10 in directed work experience, and 30 enrolled in the new course this spring.

"We teach value-added production practices to help the family farm survive," said Daley. She reports that several of her students have returned to their family farm after completing the program, many are working on organic dairies, and others have gone into teaching or other professions with a new perspective on organic practices.

Chico State's Organic Vegetable Project (OVP) harvested its first crops in 2008 and has since expanded from one to three certified organic acres. A primary objective of the project is to trial new vegetable varieties under organic conditions and provide the results to local organic growers. In addition to many types of flowers and herbs, a wide range of cool-season and summer crops are grown on the plot.

Director and professor in the College of Agriculture, Lee Altier noted that the project has become an outdoor classroom for several classes including Sustainable Vegetable Crop Production and Integrated Pest Management. A crew of five student employees manage the fields, and 12 students participate in directed work experience. Produce is sold at a weekly campus farm stand and to campus food services. The OVP hosts field days and workshops for students and community members on diverse aspects of organic management.

Chico State does not yet offer a specific certificate or degree in organic production, but does provide students with unique hands-on experience managing organic dairy and vegetable production.

California Polytechnic State University, San Luis Obispo: Sustainable Agriculture Minor & Cal Poly Organic Farm

An oasis of organic and sustainable agriculture in the heart of one of the oldest and largest agricultural colleges in the United States, Cal Poly's sustainable agriculture program has gone through ups and downs since director Hunter Francis started it as a "small grassroots" effort when completing his master's degree there. One of the constants associated with the program is the Cal Poly Organic Farm, which has grown from one acre certified organic by CCOF in 1995 to its present size of 10 certified acres. In the past, the student organic farm has grown food for a CSA and hosted a broad array of community programs and farm visits. Now, the farm continues to be a site for hands-on experiential learning and its produce is still sold at an on-campus farm stand and to local restaurants and stores, but the CSA is no longer active.

Cal Poly is well positioned to train the organic farmers of the future. Notes Francis, "The incredible array of resources at Cal Poly offers everything that a young farmer needs to support them. Though there are only a few courses dedicated specifically to organic production and processing, the instruction and training provided at Cal Poly would help any student become a successful farmer."

Organic & Sustainable Ag Higher Education in California

California Community Colleges

Cabrillo College Aptos, CA	<ul style="list-style-type: none"> • Alternative Food Production Methods (Skills Certificate)
College of Marin Kentfield, CA Novato, CA	<ul style="list-style-type: none"> • Environmental Landscaping: Landscaping, Organic Farming and Gardening (A.S. Degree) • Environmental Landscaping: Landscaping, Organic Farming and Gardening (Certificate of Achievement) • Environmental Landscaping: Landscape, Organic Farm, and Garden Production (Certificate of Achievement)
Mt. San Antonio College Walnut, CA	<ul style="list-style-type: none"> • Integrated Pest Management (A.S. Degree)
Shasta College Redding, CA	<ul style="list-style-type: none"> • Sustainable Agriculture Science (A.S. Degree)
Sierra College Rocklin, CA	<ul style="list-style-type: none"> • Sustainable Agriculture (A.S. Degree) • Sustainable Agriculture (Certificate of Achievement)
Merritt College Oakland, CA	<ul style="list-style-type: none"> • Permaculture Design (Certificate of Proficiency)
San Diego City College San Diego, CA	<ul style="list-style-type: none"> • Sustainable Urban Agriculture (A.A. Degree) • Organic Gardening For the Culinary Arts (Certificate of Performance) • Urban Gardening (Certificate of Achievement) • Urban Farming Professional (Certificate of Achievement - beginning Fall 2014)
Santa Rosa Junior College Santa Rosa, CA	<ul style="list-style-type: none"> • Sustainable Agriculture (A.S. Degree) • Sustainable Agriculture (Certificate of Achievement)

California State Universities

California State Polytechnic University, Pomona Pomona, CA	<ul style="list-style-type: none"> • Veteran's Sustainable Agriculture Training (six-week certificate program in partnership with Archi's Acres certified organic farm)
California Polytechnic State University, San Luis Obispo San Luis Obispo, CA	<ul style="list-style-type: none"> • Sustainable Agriculture (Minor)
California State University, Stanislaus Turlock, CA	<ul style="list-style-type: none"> • Agricultural Studies (B.A. Degree) with concentration in Sustainable Agriculture

Private Four- Year Schools

Stanford University Palo Alto, CA	<ul style="list-style-type: none"> • Earth Science (B.S. Degree) with Sustainable Food and Agriculture track
Santa Clara University Santa Clara, CA	<ul style="list-style-type: none"> • Environmental Science (B.S. Degree) with concentration in Applied Ecology specifies it can prepare students for an agroecology career path
Occidental College Los Angeles, CA	<ul style="list-style-type: none"> • Urban and Environmental Policy (B.A. Degree) specifically covers food and resource issues

University of California

University of California, Davis Davis, CA	<ul style="list-style-type: none"> • Sustainable Agriculture and Food Systems (B.S. Degree) • Agricultural Systems and Environment (Minor) with Sustainable Agriculture track • Horticulture and Agronomy (M.S. Degree) with specialization in Agroecology
University of California, Santa Cruz Santa Cruz, CA	<ul style="list-style-type: none"> • Environmental Studies (B.A. Degree) with focus in Agroecology & Sustainable Agriculture • Ecological Horticulture (Certificate)

The hands-on Organic Enterprise course is how most students connect with the organic farm. The course is a semester-long internship where students learn organic production and marketing by working at the farm for six hours per week. Additionally, the popular Organic Agriculture class, which utilizes the farm as a lab, has exposed hundreds of students to the topic.

Currently in a state of transition, Cal Poly's sustainable agriculture program has gradually become more integrated into the university's structure under Francis's direction. A decade ago, program staff and faculty developed a sustainable agriculture minor that is available to all Cal Poly students. While a steady stream of students have chosen this minor, the program is currently being updated to include new curricula and make it easier for students to fill the minor's requirements.

Cal Poly's sustainability effort was formalized in 2010 into the Center for Sustainability, which hosts a wide array of educational programs including an annual Sustainable Agriculture Pest Management Conference developed in collaboration with CCOF. The Center also sponsors the Cal Poly Compost Project, one of the nation's largest university-based composting programs, that utilizes waste from campus livestock facilities and landscaping to generate approximately 4,000 tons of compost per year. Cal Poly offers a four-day intensive training on large-scale composting to the public and a one-day compost symposium for growers and others interested in recycling organic materials and promoting soil health. It is also looking into setting up a large-scale model vermicomposting operation.

Lundberg Family Farms has funded a faculty fellowship in organics that is allowing Cal Poly to establish a new, full-time position: Professor of Sustainable and Organic Agricultural Plant Sciences. The new faculty member, among a number of other duties, will oversee management of the Cal Poly Organic Farm. Francis is excited about the possibilities. "That person will be instrumental in providing direction for the future," he said. 

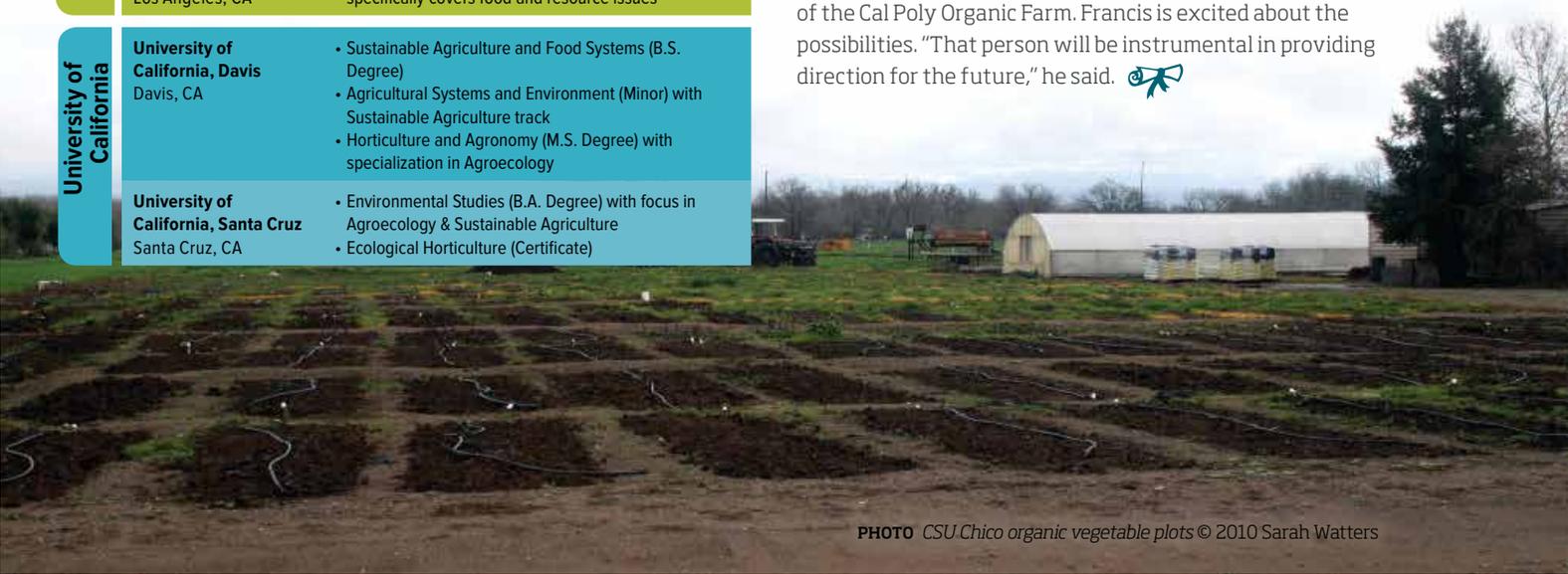


PHOTO CSU Chico organic vegetable plots © 2010 Sarah Watters