

AGRICULTURE PARTNERSHIPS

Agriculture, one of the largest and most widespread industries in California, is a critical part of the state's economy. The California State University is the state's leader in agricultural education, producing more than 52 percent of the state's graduates in agriculture-related majors (nearly 1,200 students). In specialized majors like food and nutrition studies, agricultural engineering, plant sciences, and horticultural services, the CSU produces more than 90 percent of the state's graduates.



The CSU is also a leader in applied research and industry partnerships that help further the agricultural knowledge base:

- The California Agricultural Research Initiative (CSU/ARI) is an applied agricultural and environmental research program that leverages public funding with university and industry capital and intellectual collateral through collaborative university/industry partnerships. CSU/ARI project themes include agricultural business, biodiversity, biotechnology, food science, natural resources, production, public policy, water, and irrigation technology.
- The California Agricultural Technology Institute (CATI), based at Fresno State, is a nonprofit educational institution dedicated to improving California's agriculture. CATI administers the CSU/ARI collaborative research partnership working with the other three CSU colleges of agriculture—Cal Poly Pomona, Cal Poly San Luis Obispo, and CSU Chico. CATI is made up of:
 - ◆ The Center for Agricultural Business
 - ◆ The Center for Irrigation Technology
 - ◆ The Center for Food Science and Nutrition Research
 - ◆ The Viticulture and Enology Research Center

The CSU has six campuses that specialize in agriculture-related programs: Chico, Fresno, Humboldt, Pomona, San Luis Obispo and Stanislaus.

The variety and depth of programs is as diverse as these five campuses, offering students practical knowledge and first-hand experience through the teaching and guidance of an expert faculty and staff. The following highlights demonstrate that, through its partnership with the agriculture industry, the CSU is working for California.

CSU Chico

CSU Chico is improving the sustainability of California agriculture with a focus on Northern California. The university works closely with industry advisory groups and agricultural organizations to identify critical problems and problem-solving strategies. Highlights of CSU Chico activities include:

- Contributing to the sustainability of the agriculture industry through collaborations with the University of California on crop variety trials (including walnut, cotton, and bean variety), agricultural waste management and by-product development trials (rice straw composting, food processing waste management, and olive oil processing waste by-product development), use of DNA markers to improve meat quality, and evaluation of potential new crops for Northern California including meadow foam, stevia, and pecans.
- Helping agriculture adapt to rapidly changing public policy issues by developing a new irrigation training facility located at the CSU Chico Agricultural Teaching and Research Center. The facility was developed in collaboration with Cal Poly San Luis Obispo, Fresno State, the California Public Utility Commission, and the U.S. Bureau of Reclamation. The facility serves agriculture water users of Northern California by demonstrating new technologies that can be used to improve irrigation efficiencies.
- Assisting in the development of value-added and niche-market products. The university's work with Sierra Nevada Brewery, the emerging North State olive oil industry, and grass-fed beef producers exemplifies how students and faculty have helped in the creation of new markets for producers.
- Working closely with colleagues around Northern California through activities such as sponsoring grower-producer field days at the Agricultural Teaching and Research Center and collaborating with the UC Cooperative Extension in program development. Each year, hundreds of agriculturists are attracted to the Agricultural Teaching and Research Center to take part in seminars, trainings, and field days.
- Contributing to youth agricultural leadership development by actively supporting Future Farmers of America (FFA) and 4-H programs and hosting workshops and field days, including a regional FFA field day that typically attracts nearly 1,000 high school students.

Fresno State

Fresno State's College of Agricultural Sciences and Technology faculty and staff provide students with "hands-on" education through applied research, service activities, industry internships and farm production projects. The hands-on approach is made possible through the newly remodeled 1,083-acre University Farm Laboratory, the California Agricultural Technology Institute (CATI) and the college's location in the nation's most productive agricultural valley. Highlights of Fresno State activities include:

- Operating CATI, a nonprofit, educational institution dedicated to improving California agriculture. Projects address regional and statewide priority issues such as air quality, food safety, agricultural drainage, farm worker safety, production and marketing, and conversion of agricultural lands.
- Administering, through CATI, the CSU's Agricultural Research Institute, a multicampus collaborative research partnership between CSU Chico, Fresno State, Cal Poly Pomona, Cal Poly San Luis Obispo, and the state's agriculture and natural resources industries and allied business communities. CATI's research areas include agricultural business, biodiversity, biotechnology, food science, natural resources, production and cultural practices, public policy, and water and irrigation technology.
- Hosting the Solutions Center, at which student teams, faculty advisors, and client liaisons work together to problem-solve on projects identified by San Joaquin Valley industries and businesses. Client sponsors include Hughes Aircraft, Wawona Frozen Foods, Bulldog Brewing Company, Grundfos Pumps, Duncan Enterprises, Raytheon Systems, and Panoche/Silver Creek.
- Collaborating with regional community colleges, CSU campuses, and UC Davis on the Central Valley Ag Literacy Initiative to educate K-12 and community college students about agriculture and career opportunities.
- Operating the first licensed, bonded, commercial winery on a university campus in the United States. Fresno State students have had the opportunity to study the art and science of grape-growing and winemaking for more than 40 years with some of the most well-respected professors in viticulture and enology. Since the winery became bonded in 1997, Fresno State has won 87 awards.

Humboldt State

Humboldt State has produced graduates in fields directly related to California agricultural production and private natural resources-based industries for more than 50 years. In addition to producing well-prepared students, Humboldt State faculty members and graduate students embark on research projects directly related to agricultural production. Highlights of Humboldt State activities include:

- Undertaking projects relating to wildlife impacts on alfalfa production, tissue culture techniques for orchid growers, embryo transfer to dairy cows, management of stump sprouting in Coast Redwoods, silvicultural treatments for wildfire hazards, sprout competition and soil compactions effects on redwood seedlings, GIS surveys of invasive plants such as yellow starthistle, production economics for small wood, nonindustrial private forests, watershed monitoring protocols, genetics and management of Chinook salmon at Trinity River Hatchery, and monitoring pollinating bee populations.
- Generating more than \$10 million in grant support for these and other projects in the last three years from agencies and industrial partners, dramatically increasing the work that could be done with either of those partners in isolation.
- Collaborating on partnerships with companies including the largest timber producers in California, a healthy regional dairy and beef industry, and a strong regional fishing and mariculture industry. Industrial partners include all the major California timber producers (e.g., Green Diamond Resource Company, Pacific Lumber Company, Soper-Wheeler Company, Sierra Pacific Industries), the largest California producer of oysters (Coast Seafoods Inc.), lily and orchid growers (e.g., Sequoia Orchids), and numerous small ranches and dairies.

Cal Poly San Luis Obispo

The College of Agriculture at Cal Poly San Luis Obispo is the fourth largest undergraduate agriculture program in the nation, with more than 3,500 students. The college awards an average of 650 baccalaureate degrees each year, nearly half of all baccalaureate agriculture degrees granted in the state. The college emphasizes a “learn by doing” teaching methodology, offering small classes and close faculty/student interaction, along with both theoretical and hands-on instruction. Highlights of Cal Poly San Luis Obispo include:

- Operating more than 6,000 acres for agriculture instruction on campus, including rangeland for grazing, and more intensively cultivated parcels for orchards, vineyards, fruit and nut crops, vegetable production, field crops, agroforestry, and turf management. Greenhouses, modern laboratories, the Leaning Pine Arboretum and shops and facilities for livestock, meat, fruit and vegetable processing are available for production and instructional use. A modern dairy processing plant and a poultry complex were completed in 1995. Additionally, the 3,200-acre Swanton Pacific Ranch in Santa Cruz County gives students an opportunity to live and work on a commercial ranch with forestry, cattle and crop production activities.
- Hosting several centers of excellence, including the Ag Safety Institute, the Brock Center for Agricultural Communication, the Coastal Resources Institute, the Dairy Products Technology Center, the Global Agricultural Trade and Marketing Research Project, the Irrigation Training and Research Center, the Multicultural Agriculture Program, and the Urban Forest Ecosystems Institute.
- Helping irrigation districts shift more than 65 megawatts of electricity to off-peak hours through the Irrigation Training & Research Center’s (ITRC) work with the California Energy Commission. In the past five years, the ITRC has provided technical assistance to more than 60 irrigation districts in the western U.S. to meet goals related to power conservation, improving in-stream river flows, and water conservation.
- Enhancing the ability of California milk powder manufacturers to export product to Mexico and Asia through research conducted by Dairy Products Technology Center (DPTC) scientists on milk powder. DPTC research and development partnerships have resulted in novel dairy product introductions by Kraft, ConAgra, and General Mills.

Cal Poly Pomona

Over the past few years, the College of Agriculture at Cal Poly Pomona has undergone a transformation from a small production-based college into a more modern, urban, inclusive college of agriculture. The college operates its 700-acre farm surrounded by three freeways and 13 million people. The inclusion of the food industry as part of its corporate base has enabled the college to embrace everything, literally, from the farm to the plate. Highlights of Cal Poly Pomona activities include:

- Partnering with the California Department of Corrections (CDC) to provide a long-term lease agreement for agricultural land at the California Institution for Men in Chino. The CDC provides 1,076 acres of prime, irrigated farmland to the university in exchange for weed abatement on this parcel. If the agricultural crops grown (currently alfalfa, corn, wheat, oats and Sudan grass) are profitable, the profit is shared with the institution.
- Starting a unique vineyard education, research and preservation project with the initial assistance of a \$50,000 California State Lottery grant. This grant was parlayed into a working partnership with Geyser Peak Vineyards in St. Helena and Galleano Winery in Mira Loma. Cal Poly Pomona has propagated and grafted 400 cuttings of a prized, award-winning, 100-year-old Zinfandel clone, saved from a property that is now an industrial park. Geyser Peak will be instrumental in preserving this grape and eventually bottling the wine to promote the campus.
- Collaborating with Seminis Seeds to screen genetic material in an effort to selectively improve the nutritional content of lettuce. The laboratory is also working with Ready Pac Produce to develop a lettuce cultivar that, once harvested, processed and placed in a bag, would have a longer shelf life.
- Using food science, nutrition science, and community nutrition to discover better ways to deliver healthy food. Projects include working with ConAgra Foods Inc. and Van Drunen Farms to use unique grain ingredients to improve the healthy characteristics of the most commonly consumed foods; working with the ARI, the National Institutes of Health and the U.S. Department of Agriculture to examine the role

of genes and ethnicity in dietary responses; and working with the Pomona Food Bank and Farmers Market to develop better ways to increase the availability of fruits and vegetables to those in need.

- Partnering with a startup company, Calmecco Meats, to provide significant alternative meat salvage markets for Southern California dairy and beef livestock producers. The partnership significantly assisted the Southern California dairy industry in developing an alternative market for animals that had been injured as a result of natural causes and helped enhance programs in veterinary medicine and veterinary technology.

CSU Stanislaus

The CSU Stanislaus Agricultural Studies major is a unique 2+2 multidisciplinary program that allows students to complete their baccalaureate education via the CSU Stanislaus College of Arts, Letters and Sciences after securing an agricultural degree (or the equivalent) from one of the university's community college partners. Initially an educational option for career-bound agriculture students who lived and pursued careers in the San Joaquin Valley, the program has developed into a popular choice for students throughout California who prefer a smaller, student-centered environment. Individualized attention allows students to personalize their educational paths to meet specific career goals. Highlights of CSU Stanislaus activities include:

- Continuing development of the CSU Stanislaus Bio-Ag area as a demonstration site for sustainable practices and applied research, in keeping with the university's sustainability theme.
- Developing further Agricultural Business options, in cooperation with the College of Business, in order to offer more career opportunities for students.
- Promoting student success by requiring internships, which assist students in developing real-world skills.
- Promoting agricultural leadership by participating in the Agricultural Ambassador program on the CSU Stanislaus campus and at state and national conferences. Community service, university outreach and leadership development activities are all part of this student opportunity.

- Partnering with area high schools and community colleges in a variety of scholarship, outreach, education and promotional activities that support the National FFA Organization and various agricultural education programs.
- Committing to community and student education by hosting the Agricultural Studies Speaker Series, which includes free public lectures presented by agriculture experts on relevant and timely agricultural topics.
- Advising students continuously throughout the community college and university experience to provide guidance and shorten time to degree.