

AGRICULTURAL SUSTAINABILITY INSTITUTE

Science for stewardship and human well-being

Program Overview

As part of the UC Davis College of Agricultural and Environmental Sciences (CAES), the Agricultural Sustainability Institute (ASI) provides leadership for research, teaching and outreach and extension efforts in agricultural and food systems sustainability at the Davis Campus and throughout the UC system.

ASI provides a hub that links initiatives and education in sustainable agriculture and food systems across all divisions of CAES and the University of California, and with other partners across the State. ASI units include:

- UC ANR Sustainable Agriculture Research & Education Program (SAREP)
- UC Davis Russell Ranch Sustainable Agriculture Facility (RRSAF)
- UC Davis Student Farm

ASI Mission & Vision

The mission of ASI is to ensure access to good food and to promote the vitality of agriculture today and for future generations. We do this through integrative research, education, communication and early action on big, emerging issues.

ASI is engaged with a broad range of partners to shape a vision for a food and agricultural system that:

- is innovative, adaptive and profitable
- provides healthy food for everyone
- promotes prosperity and equity for people working in agriculture and the food system and their communities
- improves the environment and human health
- builds awareness and understanding of the food system
- engages public participation in policy decisions affecting food and agriculture



Photo: Kent Britton

Agriculture, Resources & the Environment

Integrating agricultural systems at the farm/ranch and landscape level

ASI is committed to helping farmers, ranchers, land managers and communities reach their goals of managing resources and production systems in ways that are profitable and enhance environmental quality. Development of science-based information for these audiences and for policy makers is a key role for ASI. Current initiatives include:

Responding to Climate Change

An interdisciplinary research team is evaluating potential mitigation and adaptation to climate change in the Central Valley. Yolo County, with its cross section of agricultural landscapes, will be used as a case study for looking at vulnerability to climate change and options for mitigation and adaptation during the next 50 years. The project will consider the responses of specific commodities to environmental change, economic outcomes, repercussions of climate change for land use, and effects on biodiversity. High and low emissions scenarios will be evaluated. Results will be instrumental in building awareness of the impacts of climate change



Photo: Dave Chaney

Russell Ranch Sustainable Ag Facility

The RRSAF provides ASI affiliates and cooperators the unique opportunity to conduct basic and applied research as well as develop innovative agricultural production technologies on a full farm landscape. Home of the Long Term Research on Agricultural Systems (LTRAS) and Sustainable Agriculture Farming Systems (SAFS) programs, RRSAF is a "living laboratory" where researchers can study the interface of intensively managed agriculture with native California riparian habitat. Current studies focus on air and water quality issues, and reducing energy consumption in food production systems. Educational opportunities involve teachers and students from primary and secondary levels, and the site provides on-farm experience for such programs as FFA and 4-H. Farmers and agricultural professionals also learn about and participate in activities at the facility through workshops and field days.



Photo: Dennis Bryant

Food & Society

Linking production, distribution and consumption

ASI is working to enhance our understanding of the system of growing, distributing, processing and marketing food. Projects are addressing key needs in the areas of nutrition, accessibility, improved profitability for all persons and groups working in food systems enterprises, and energy use. Current initiatives include:

Linking Regional Agriculture with Schools and Institutions



Photo: Jeri Ohmart

A growing demand for local, sustainable and/or organic food products among consumers and food service directors has opened up new institutional

markets for small and mid-scale farmers. Schools, colleges, universities, hospitals, prisons and corporate cafeterias can increase sales for regional farmers while simultaneously providing fresh, healthful food for students, patients, or other consumers. We work in interdisciplinary research teams to evaluate the behavioral, economic and health outcomes of farm-to-school and farm-to-institution programs. We are also partnering with community organizations to investigate innovative regional distribution infrastructures that shorten supply lines for institutional food service buyers and maintain economic value for area farmers.

Carbon Footprint of the Food System

One of the primary goals of this initiative is to study energy intensity and greenhouse gas emissions throughout the food system, from "farm to fork," in order to identify the technologies, methods, and consumer food choices that can reduce energy and carbon emissions in our food system. Quantifying various trade-offs by analyzing strategically chosen commodities is one of the first steps in the research plan. Later, we plan to study the energy and greenhouse gas emissions associated with whole diets (e.g., a typical American diet, a low meat diet and a vegetarian diet). Representatives from the food service and organic/natural food industry will help shape the outreach components of this work.



Photo: Sharyn Morrow

Education & Leadership

Integrated programs for sustainability education - kindergarten through post-graduate

ASI is working on several fronts to improve sustainable agriculture education for diverse audiences including: graduate and undergraduate students, K-12 students and teachers, agricultural and food system professionals, and the general public. Current initiatives include:

Garden-based Learning Program

This program at the Student Farm addresses our children's understanding of agriculture and the food system, recognizing the impact this can have on nutrition, health,



Photo: Jeri Ohmart

and promoting stewardship of our natural resources. Through direct, hands-on education programs, development of resource materials, training for K-12 educators and strategic partnership building, this program enhances the agricultural literacy of children and the adults who teach them. A variety of activities are underway to develop vibrant school gardens and other educational opportunities that promote awareness of the sustainability of California agriculture and encourage healthful eating. The demonstration garden and farm sites at the UC Davis Student Farm have shaped this work over decades and are central to the learning and teaching cycles that we strive to generate.

New UC Davis Undergraduate Major

There is a growing interest in, and need for, graduates who will become a new generation of leaders in sustainable agriculture and food systems. UC Davis faculty, students and staff are developing a new major designed to provide students with the knowledge, skills and experiences needed to help create and manage sustainable food and agriculture systems and solve complex agricultural and societal problems. The major will emphasize systems thinking, interdisciplinary analysis, experiential learning, and opportunities for collaboration. Through diverse courses, internships and other learning experiences, students will learn to link theory, practice and formal learning with real-world challenges and



Photo: Damian Parr

ASI Team

ASI Director: Tom Tomich
ASI Deputy Director: Kate Scow

24 full and part-time staff members from various programs and projects

8 new ASI-affiliated professorships in agroecology, sustainability science, sustainability and society, economics of sustainability, plant disease management/soil microbiology, soil science, pollination, biology and sustainable animal systems

- 150 other UC Davis faculty self-identified as strongly interested in sustainable agriculture
- 150 members of UC Davis Students for Sustainable Agriculture
- UC Cooperative Extension
- Expanding network of other partners

ASI & Affiliated Units Contact Information

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Photo: Kathy Bryant