UCDAVIS WIFSS
Western Institute for Food Safety & Security

UCDAVIS
UNIVERSITY OF CALIFORNIA



WIFSS STRATEGIC PLAN 2020-2025:

BUILDING A FUTURE FOR THE NEXT GENERATION

UCDAVIS WIFSS
Western Institute for Food Safety & Security

TABLE OF CONTENTS

03 EXECUTIVE SUMMARY

05 FOOD SYSTEM CHALLENGES IN THE 21ST CENTURY

06 ARMS OF WIFSS

07 STRATEGIC GOALS

08 ▸ GOAL 1

09 ▸ GOAL 2

10 ▸ GOAL 3

11 ▸ GOAL 4

12 ▸ GOAL 5

13 WESTERN CENTER FOR FOOD SAFETY (WCFS)

13 ▸ GOALS

13 ▸ OUTCOMES AND ACCOMPLISHMENTS

14 ▸ EXAMPLES OF RESEARCH PROJECT AREAS SUPPORTED THROUGH WCFS AND LEVERAGED FUNDING

16 THE CALIFORNIA DAIRY QUALITY ASSURANCE PROGRAM (CDQAP)

16 ▸ WIFSS & THE CALIFORNIA DAIRY QUALITY ASSURANCE PROGRAM

17 ▸ ENVIRONMENTAL HEALTH

17 ▸ ANIMAL HEALTH & WELFARE

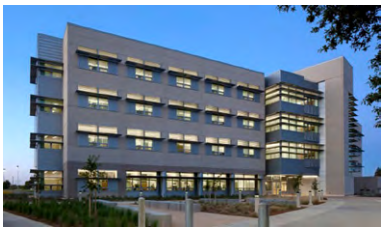
17 ▸ MORTALITY MANAGEMENT

18 ▸ FARM SECURITY

EXECUTIVE SUMMARY

A VISION FOR THE FUTURE OF THE WESTERN INSTITUTE FOR FOOD SAFETY AND SECURITY

Humanity faces the daunting task to feed, house, and provide a healthy life for the growing global human population. At the same time, safeguarding and preserving the environment and natural resources for the benefit of future generations is paramount. Sustainable food production and environmental stewardship are needed to meet this enormous challenge and will require a One Health approach. One Health is the concept that the health of humans, animals, plants and the environment are inextricably linked. This approach can be applied to food safety, sustainable food production, and environmental stewardship by bringing together interdisciplinary teams to create a One Health network to address these challenges. WIFSS is committed to "One Health for Food Systems" by working in areas that intersect human, animal, plant, and environmental health to address needs and challenges within the food system. Ensuring availability of nutritious, safe, and secure food in California and around the globe, advancing public health, and safeguarding natural resources for future generations is at the heart of our work at WIFSS.



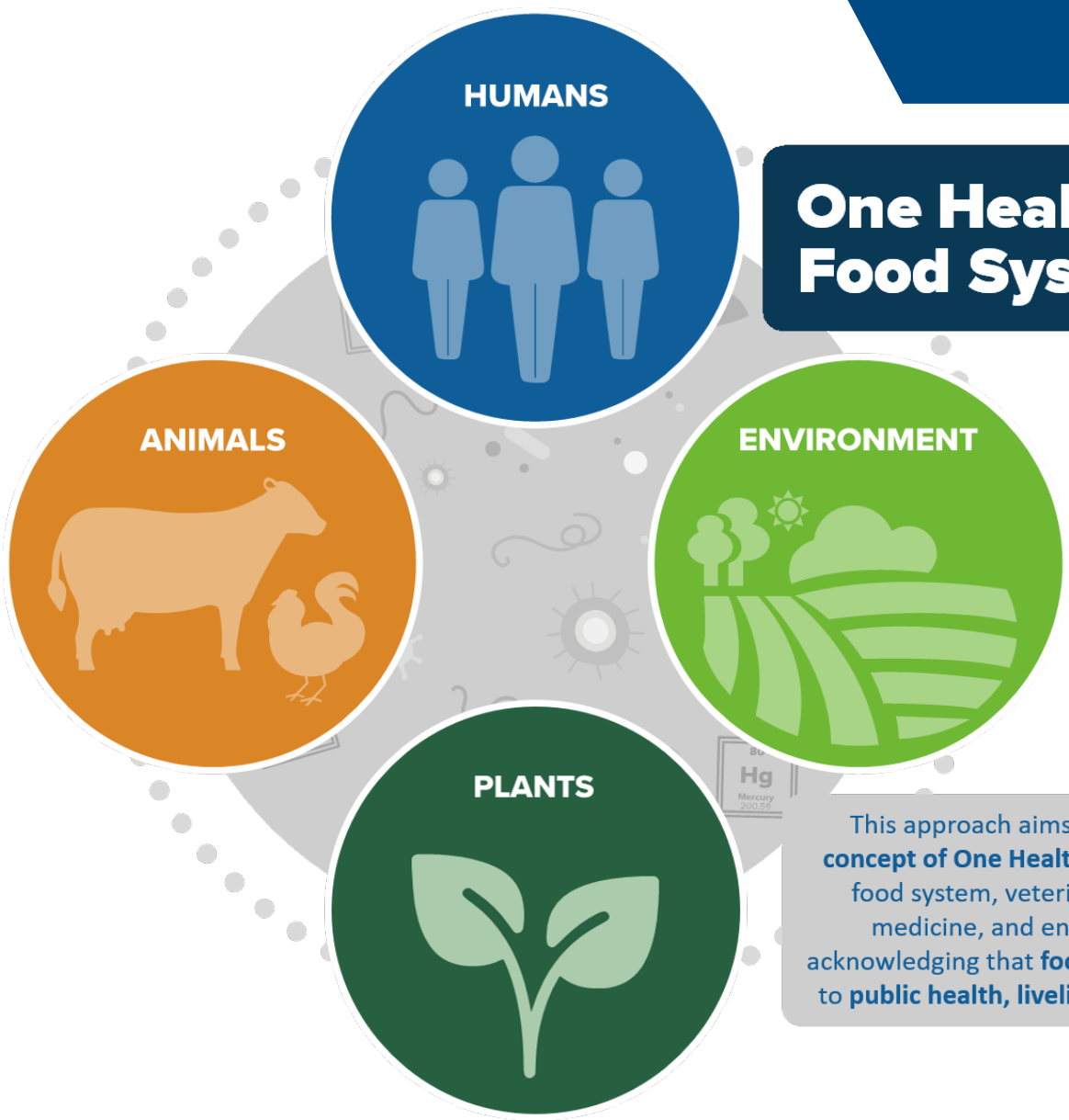
The origins of One Health at UC Davis SVM reside with Dr. Calvin Schwabe, a UC Davis School of Veterinary Medicine Professor. Dr. Schwabe coined the term "One Medicine," in his book Veterinary Medicine and Human Health and he is considered the "father of modern epidemiology" and the visionary behind the One Health concept. In his book, he details the roots of One Medicine noting that traditional healers did not differentiate between practices used to heal animals or humans, the course of disease and treatment are essentially the same and fundamentally "there is only one medicine." His work acknowledges the critical role of veterinary medicine in maintaining the health and wellbeing of food animals to ensure safe, affordable, and nutritious animal sourced foods for a growing human population as well as the role of veterinary medicine in bridging the gap between animal and human health.

Veterinarians maintain animal health, perform meat inspections, bring new perspectives to veterinary and human public health, influence veterinary medicine curriculum, and play a critical role in policy and governance. Veterinarians are needed to address food safety and security challenges both globally and nationally. WIFFS aims to bring together disciplines in veterinary medicine, agriscience, human health, public health, and environmental health to improve health globally, ensure a safe, secure and nutritious food supply, and improve livelihoods through advancing knowledge and education in food safety and food security.

MISSION STATEMENT:

THE WIFSS MISSION IS TO SERVE THE GLOBAL COMMUNITY BY CONDUCTING RESEARCH, DEVELOPING EDUCATION, AND PROVIDING TRAINING IN AREAS OF FOOD SAFETY AND SECURITY TO ENHANCE THE HEALTH, SECURITY, AND WELFARE OF PEOPLE, ANIMALS, PLANTS, AND THE ENVIRONMENT.

EXECUTIVE SUMMARY



One Health for Food Systems

This approach aims to establish a **broader concept of One Health** which incorporates the food system, veterinary medicine, human medicine, and environmental health – acknowledging that **food and agriculture** are tied to **public health, livelihoods, and social equity.**

FOOD SYSTEM CHALLENGES IN THE 21ST CENTURY

GLOBAL CHALLENGES

The global human population is expected to reach 9.7 billion people by the year 2050. [1]

13 zoonoses are responsible for a staggering 2.2 billion human illnesses and 2.3 million deaths per year, mostly in low-income and middle-income countries where the correlation between rates of protein malnutrition and incidence of endemic zoonotic diseases is 99%. [2]

By the year 2050, food production will need to increase by more than 50% of 2012 production levels to meet demand. [1]

As incomes in developing countries continue to rise and living conditions improve, demand for meat, dairy and specialty crops such as fruits, nuts and vegetables has increased. [1]

U.S. CHALLENGES

The USDA estimates there will be a shortage of ~25,500 college graduates with experience in food, agriculture and renewable natural resources to fill the projected 57,900 career opportunities in this area by the year 2020. [3]

Sixty three percent of established farmers are over 55 years old and less than 2% of the population is directly employed directly in agriculture in the United States. [4]

There is a critical veterinary workforce shortage for rural communities and food-animal producers in the United States, only 5 to 8 percent of graduating veterinarians join private practices with an emphasis on food animals.[5]

1. FAO. "The Future of Food and Agriculture – Trends and Challenges." Rome: Food and Agriculture Organization of the United Nations, 2017. http://www.fao.org/3/a-i6583e.pdf.
2. Kelly, Alan, Bennie Osburn, and Mo Salman. "Veterinary Medicine's Increasing Role in Global Health." The Lancet Global Health 2, no. 7 (July 2014): e379–80. https://doi.org/10.1016/S2214-109X(14)70255-4.
3. Allan D. Goecker, P.U.E.S., U.S. Food and Drug Administration; J. Marcos Fernandez, Purdue University; and U.S.D.o.A. Ray Ali, NIFA; Rebecca Theller, Purdue University. Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment, United States, 2015–2020. 2015; Available from: https://www.purdue.edu/usda/employment/.)
4. Ahearn and Newton, 2009; Bureau of Labor Statistics, United States Department of Labor, 2017
5. "Veterinary Medicine Loan Repayment Program: 5-Year Review 2010-2015." USDA NIFA, October 2015.

ARMS OF WIFSS

RESEARCH:

WIFSS recognizes the need for innovative research in emerging topics. WIFSS researchers have advanced knowledge in microbial food safety in animal health, crop systems, water quality, and environmental monitoring, which has resulted in millions of federally and state funded research programs. This work was the basis for FDA's establishment of the Western Center for Food Safety (WCFS), an academic Center of Excellence in partnership with WIFSS and the College of Agricultural and Environmental Sciences (CAES).

EDUCATION:

WIFSS recognizes the need to build an educated agriscience workforce capable of addressing food safety and food security challenges from farm to fork. The WIFSS mission in education aims to build competencies needed to meet current and future workforce standards for K-12, vocational, undergraduate, graduate, and professional levels through innovative pedogeological approaches.

TRAINING:

WIFSS recognizes continued education and training is vital for the current workforce to ensure food safety compliance, animal health and welfare, plant health, water quality, disaster and emergency response for the agriculture sector, and imparting innovative sustainable agricultural practices to farms and food processors.

PLEASE SEE OUR CURRENT PROGRAMS REPORT FOR MORE DETAILED INFORMATION ON CURRENTLY FUNDED PROJECTS.

STRATEGIC GOALS

GOAL 1	Provide research and education to equip and support stakeholders in agriculture and the food supply chain to address the needs and challenges in food safety and security for a diverse and growing global human population.
GOAL 2	Serve as stewards of scientific and regulatory information for stakeholders in agriculture to advance understanding, compliance, and promote best practices from farm to fork and throughout the global food system.
GOAL 3	Foster a creative environment of learning and intellectual freedom that supports and values development of innovative and entrepreneurial approaches to research and education.
GOAL 4	Bring together multidisciplinary stakeholders in exchange of dialog, knowledge, and principles to advance emerging and overlooked areas of scientific knowledge and foster impactful innovative partnerships for the advancement of science and education, globally.
GOAL 5	Foster educational programs emphasizing the application of One Health to food systems in developing countries of the world through innovative introductory and curricular programs for undergraduate and graduate students to prepare them for food system careers addressing the health of people, animals, plants and the environment.

GOAL 1

PROVIDE RESEARCH AND EDUCATION TO EQUIP AND SUPPORT STAKEHOLDERS IN AGRICULTURE AND THE FOOD SUPPLY CHAIN TO ADDRESS THE NEEDS AND CHALLENGES IN FOOD SAFETY AND SECURITY FOR A DIVERSE AND GROWING GLOBAL HUMAN POPULATION.

CORE VALUES

- Conduct multidisciplinary applied research on pre-and post harvest food safety issues that will generate real-world solutions and enhance food protection.
- Support the longstanding California Dairy Assurance Quality Program (CDAQP) in close collaboration with the dairy industry and research community.
- Build relationships with domestic and international partners to successfully leverage resources and maximize the ability to achieve research and translate to education and outreach objectives.
- Support advancements in reducing global and US burdens of endemic foodborne disease through a One Health approach that acknowledges the roles of soil, plants, animals, and humans, in complex ecosystem interactions.
- Promote public awareness of translational research taking place at UC Davis School of Veterinary Medicine and College of Agricultural and Environmental Sciences and UC Agriculture and Natural Resources.
- Advance and disseminate scientific knowledge to better serve and equip California's diverse population of farmers and farm workers to ensure safe and nutritious food for all Californians.

GOAL 2

SERVE AS STEWARDS OF SCIENTIFIC AND REGULATORY INFORMATION FOR STAKEHOLDERS IN AGRICULTURE TO ADVANCE UNDERSTANDING, COMPLIANCE, AND PROMOTE BEST PRACTICES FROM FARM TO FORK AND THROUGHOUT THE FOOD SYSTEM.

CORE VALUES

- Provide agricultural producers with relevant education and training that can be deployed on-farm to improve communication and build teamwork between management and workers, and improve processes to safeguard animal health, human health, and environmental health for the economic benefit of agricultural producers.
- Bridge the gap among agriculture, science, medical sciences, government, industry and public advocacy to promote dialog, cooperation, and mutual understanding of complex topics in the food system.
- Provide translation of rigorous scientific topics in science and agriculture so that individuals with a non-science background can understand complex concepts.
- Provide technical assistance to the farming community in adopting and complying with components local, state, and federal regulatory programs through outreach materials, food safety workshops, and educational programs for food producers, harvesters, processors and key stakeholders across the continuum of food systems.

GOAL 3

FOSTER A CREATIVE ENVIRONMENT OF LEARNING AND INTELLECTUAL FREEDOM THAT SUPPORTS AND VALUES DEVELOPMENT OF INNOVATIVE AND ENTREPRENEURIAL APPROACHES TO RESEARCH AND EDUCATION.

CORE VALUES

- Apply innovative approaches to pedagogy to achieve learning outcomes that foster critical thinking, problem solving, and cooperation for students, trainees, and faculty.
- Use problem-based learning strategies to achieve desired learning outcomes.
- Provide and support a culture that extends the benefits of our research and education activities beyond the boundaries of the university.
- Foster a creative environment of intellectual freedom that supports the development of an innovative and entrepreneurial culture that advances emerging and overlooked areas of scientific knowledge.

GOAL 4

BRING TOGETHER MULTIDISCIPLINARY STAKEHOLDERS IN EXCHANGE OF DIALOG, KNOWLEDGE, AND PRINCIPLES TO ADVANCE EMERGING AND OVERLOOKED AREAS OF SCIENTIFIC KNOWLEDGE AND FOSTER IMPACTFUL INNOVATIVE PARTNERSHIPS FOR THE ADVANCEMENT OF SCIENCE AND EDUCATION.

CORE VALUES

- Advance the One Health Approach for food systems with stakeholders to impart the concept and need for a safe, secure, nutritious, and sustainable food supply globally.
- Build relationships with domestic and international partners to successfully leverage resources and maximize the ability to achieve research, education and outreach objectives.
- Bridge the gap among agriculture, medical sciences, social science, government, industry, and public advocacy stakeholders to promote dialog, cooperation, and mutual understanding of complex topics in the food system,
- Foster exchange of knowledge and principles to foster impactful and innovative partnerships for the advancement of science and education.
- Develop global educational programs for introducing the concept of One Health for Food Systems impacting the rapidly changing health needs of the global society.

GOAL 5

FOSTER EDUCATIONAL PROGRAMS EMPHASIZING THE APPLICATION OF ONE HEALTH TO FOOD SYSTEMS IN DEVELOPING COUNTRIES OF THE WORLD THROUGH INNOVATIVE INTRODUCTORY AND CURRICULAR PROGRAMS FOR UNDERGRADUATE AND GRADUATE STUDENTS TO PREPARE THEM FOR FOOD SYSTEM CAREERS ADDRESSING THE HEALTH OF PEOPLE, ANIMALS, PLANTS AND THE ENVIRONMENT.

CORE VALUES

- Provide education and training for K-12, vocational, undergraduate, graduate, and professional levels that build competencies to meet workforce standards and best practices to ensure a proficient and adequate workforce of the future.
- Support agricultural production and rural sustainability with access training on emerging topics such as disaster management, catastrophic animal disease, and approaches to sustainable agricultural practices.
- Provide student based multidisciplinary learning programs using awareness examples designed for addressing local food system problems of food insecurity, food safety, food security, and sustainable food production.
- Foster examples of problems that utilize interdisciplinary teams which can be used to train the trainer for addressing local food system issues.
- Prepare the students to design and prepare call to action reports for informing others of issues which need solving.

WESTERN CENTER FOR FOOD SAFETY (WCFS)

The Food and Drug Administration (FDA) established a cooperative agreement in 2008 that established the Western Center for Food Safety (WCFS) in partnership with the Western Institute for Food Safety and Security (WIFSS), University of California, Davis. WCFS research programs inform and enhance critical outreach and education efforts to implement FDA's prevention oriented activities outlined in the Food Safety Modernization Act (FSMA).

The mission of the WCFS is to research the interface between production agriculture and food protection, identify real-world solutions to food safety challenges in these systems, and communicate new knowledge through outreach and education.

GOALS

1. Conduct multidisciplinary applied research on pre-and post harvest food safety issues that will generate real-world solutions and enhance food protection for FDA-regulated products.
2. Provide technical assistance to the farming community in adopting and complying with components of FSMA through outreach materials, food safety workshops, and educational programs for food producers, harvesters, processors and key stakeholders across the continuum of FDA-regulated foods.
3. Build relationships with domestic and international partners to successfully leverage resources and maximize the ability to achieve research, education and outreach objectives.

OUTCOMES AND ACCOMPLISHMENTS

- WCFS scientists work collaboratively with other scientists in universities, industry and governmental agencies across different regions of the United States and internationally to use innovative approaches to conduct multidisciplinary applied research using both laboratory, field, and novel statistical methods.
- WCFS quickly addresses real-world food safety challenges and provides solutions through the ability to immediately extend new science-based information from applied research programs to the industry, regulatory agencies, others in academia, and consumers.
- WCFS research programs in partnership with FDA play a pivotal role to inform policy related to the development of the proposed and final Food Safety Modernization Act (FSMA) Produce Safety Rule and the proposed and final Preventative Controls Rule under FSMA.
- WCFS research programs advance FDA's ability to address the increasing incidence and complexity of foodborne disease outbreaks and intervention strategies.
- WCFS scientists, through widespread access to a range of producers and processors, rapidly responds to research, education, and outreach needs as they arise for FDA-regulated foods.
- WCFS also provides FDA the opportunity to partner with UC Cooperative Extension (UCCE) throughout the state, which then links to an expansive boots-on-the-ground network of extension specialists and advisors in food and production agriculture throughout the country.

- WCFS Research programs, in combination with WIFSS Outreach and partnership with UCCE, create an unparalleled ability to conduct on-farm real-world studies, technology transfer, and food safety training across the entire food production and processing continuum for the hundreds of foods addressed in FSMA.
- WCFS successfully leverages additional resources to magnify the breadth and impact of FDA-funded research, education, and outreach programs for enhancing the safety of both domestic and imported food supplies. These leveraging efforts provide FDA with an array of scientists and resources that support innovative, prevention-oriented, science- and risk-based new regulatory programs.

EXAMPLES OF RESEARCH PROJECT AREAS SUPPORTED THROUGH WCFS AND LEVERAGED FUNDING:

AGRICULTURAL WATER

Agricultural water contaminated with microbial pathogens can elevate the risk of foodborne illness when used as source of irrigation water or for other purposes (e.g., crop protection sprays, agrochemical mixtures) that result in contact with the edible portion of the produce.

- Facilitating implementation of FSMA's agricultural water quality regulations: Case study for cooperative monitoring.
- Assessment of the benefits of cooperative monitoring in the Gulf South.
- Project feasibility to assess microbial survival on equipment surfaces during long distance transport between southwestern US growing regions and central coastal California.
- Assisting rural communities to comply with FDA's water quality regulations: Hold-time evaluation.
- Evaluation of the risk of using tail water sources for the production of leafy green lettuces and herbs (also funded through the Center for Produce Safety).
- Movement of Salmonella through farm ponds, irrigation distribution systems and transfer to fresh produce at medium-size mixed produce farms in Georgia (also funded through Center for Produce Safety).

BIOLOGICAL SOIL AMENDMENTS

The microbial food safety risks from using raw animal manure and other untreated biological soil amendments of animal origin (BSAAOs) are well documented. Nevertheless, some growers still rely on untreated BSAAOs for economic and practical reasons, and recent research has shown that their use varies widely by geographic region, farm size, and type of crop/manure. The Produce Safety Rule specifies that BSAAOs must be applied in a manner that does not contact covered produce during application, but has reserved the specific harvest interval(s) after application until further research and a risk assessment are conducted. In contrast, application of FSMA-compliant composted or treated BSAAOs to soils for production of fresh produce is expected to result in reduced risk of pathogen contamination with minimal public health risk. But, unexpected risk may occur from cross-contamination or regrowth of pathogens.

- Evaluation of application intervals for the use of untreated animal manure as a soil amendment in conventional and organic fresh vegetable production (also funded through USDA Specialty Crop Research Initiative and USDA Organic Research and Extension Initiative)
- Prevalence and levels of Salmonella and STEC in raw manure in different geographic locations of the western and eastern U.S.

- Persistence and transfer of generic coli and STEC on organic farms that integrate rotational sheep grazing and fresh produce production (also funded through Center for Food Animal Health)
- Understanding and enhancing the safe use of biological soil amendments: Evaluating potential microbial risks from commercial heat treated poultry pellets

DOMESTICATED ANIMALS & WILDLIFE

Many of the major enteric foodborne pathogens (Campylobacter, STEC, Salmonella, Cryptosporidium spp., etc.) are zoonotic, meaning that they have animal reservoirs that may shed the pathogen in their feces. Produce-related outbreaks have been caused by fecal contamination of plants or surrounding watersheds by domesticated animals (especially livestock) or by wild or feral animals. Even a low level of contamination from fecal-borne zoonotic enteric pathogens can be a significant public health concern due to the low infectious dose of these pathogens, the potential for attachment and possibly ingress into edible parts of plants, and the lack of a post-harvest "kill step" to destroy pathogens on fresh and minimally processed produce.

- Strengthening good agricultural practices for reducing bacterial contamination of leafy greens grown in central coastal California
- Salinas field trials to enhance quantitative microbial risk assessment following simulated wildlife fecal contamination in romaine lettuce fields
- Sources and modes of transmission of foodborne pathogens in orchards and adjacent concentrated animal feeding operations (CAFO) in central valley California (also funded through Center for Produce Safety)
- Identification of pre-harvest risk factors for foodborne pathogen transfer to leafy greens grown in the southwestern desert (also funded through Center for Produce Safety)

POST-HARVEST

Postharvest handling of fruits, vegetables, and nuts is the stage of crop production immediately following harvest, including cooling, cleaning, hulling, sorting and packing. Foodborne pathogens can be introduced into the postharvest environment from product contaminated during pre-harvest production or harvest. Contamination may also occur due to unsanitary conditions including pests, dirty equipment, poor microbial water quality, and lack of hygienic practices by workers. Some pathogens (e.g., Listeria monocytogenes, Salmonella spp.) may persist for long periods of time in postharvest facilities, especially if the environment promotes formation of biofilms.

- Evaluating microbiological food safety risks associated with tree nut harvest equipment
- Postharvest studies to support the scientific basis for sanitation controls in treefruit packinghouses
- Postharvest handling of onions
- Postharvest studies to support the scientific basis for implementation of Produce Safety Rule and Preventative Controls at produce packinghouses and nut hullers and dehydrators

INDOOR AGRICULTURAL SYSTEMS

Indoor agriculture (including aquaponic systems that integrate plant and fish production), are emerging as a sustainable approach to fresh produce production. The unique ability to regionalize these indoor systems (partially independent of acreage and climate), and the potential to serve different populations (urban, peri-urban, rural), make indoor/vertical agriculture increasingly attractive internationally. Best food safety practices outlined in FSMA also apply to these systems, but there is also a need to conduct research and outreach to fill knowledge gaps related to unique aspects of pre- and post-harvest production under these systems.

- Evaluation of zoonotic food safety risks in aquaponic production of vegetables and tilapia
- Evaluating microbiological food safety risks associated with condensate that forms in protective or greenhouse structures

THE CALIFORNIA DAIRY QUALITY ASSURANCE PROGRAM

WIFSS & THE CALIFORNIA DAIRY QUALITY ASSURANCE PROGRAM

ORIGINS & MISSION

The California Dairy Quality Assurance Program (CDQAP) is an industry, regulatory and academic collaborative mission is to promote the health of the consumer, the health of the environment, and the health and welfare of dairy livestock. The program was created through a partnership agreement in 1998 signed by fifteen agencies and industry organizations which included UC-ANR, USDA and three state cabinet-level secretaries. The original partnership grew to encompass every major dairy trade organization and dairy processor in the state. CDQAP recently celebrated its 20th anniversary.

AWARDS & RECOGNITIONS

The program and its leaders continue to receive numerous awards most notably including Governor Schwarzenegger's Environmental Partnership Award in 2007, the California Milk Advisory Board's Golden Seal Award in 2018 and most recently the Rominger Agricultural Sustainability Leadership Award and the North Coast Regional Water Quality Stewardship Award both in 2020.

FUNDING, PROGRAM INITIATIVES & WIFSS

Over more than two decades base-funding for the program has been supplied by the California Dairy Research Foundation (CDRF), typically about $200,000 per year. The program aggressively pursues additional grants and collaborations. An economic analysis reported in 2014 estimated a 5-to-1 return for every industry dollar invested in the program.

WIFSS serves as the School of Veterinary Medicine's home for the CDQAP, the most comprehensive source of continuing education for the state's dairy producers. Some of WIFSS/CDQAP's recent and current projects are described below.

ENVIRONMENTAL HEALTH

Training & Outreach – Every year CDQAP provides class-room training to assist producers in meeting air and water quality laws and regulations. Over two decades this has resulted cumulatively in 12,665 in-person contacts and 39,410 hours of training. The program provides a comprehensive website containing all relevant course binder content, employee training tools, animal care topic papers and the monthly newsletter. The program offers a comprehensive on-line study course for dairy water quality that is a prerequisite for the program's environmental certification. The program conferences every two months with industry leadership on environmental issues.

Environmental Certification – CDQAP provides a third-party environmental evaluation certifying compliance with all federal, state and local laws and regulations. Certified producers receive a 50% reduction in state water fees, collectively saving our 700 producers more than $2 million annually.

ANIMAL HEALTH & WELFARE

Animal Handling – In 2019 CDQAP partnered with the California Beef Council, the National Cattleman's and Beef Association and Dairy Management Inc. to deliver a two-day dairy stockmanship workshop from the three most recognized "cow whisperers" in the country.
Secure Food Supply – WIFSS has been building on previous on-line and demonstration projects addressing prevention and response to foreign animal disease. This year WIFSS was awarded a $560,000 grant from USDA-APHIS to pilot a program to assist dairy and poultry produces for creating enhanced, emergency biosecurity plans for three Western states.

FOOD SAFETY

Produce Safety – In 2019 CDQAP and WCFS-WIFSS acquired a $45,000 grant from CDFA to bring together the dairy, feedlot and producer industries in two "Good Ag Neighbors" workshops that examined the scientific and regulatory aspects of contamination of fresh produce grown adjacent to CAFOs.

Antibiotic Resistance – CDQAP and WIFSS have consistently focused on new state mitigation requirements for livestock. This has included a suite of videos designed specifically for dairy producers. WIFSS/CDQAP is participating in CDFA's Antimicrobial Use & Stewardship (AUS) advisory group.

MORTALITY MANAGEMENT

Training & Outreach – Previously CDQAP and WIFSS had managed the statewide Emergency Animal Disposal Workgroup which completed a white paper detailing dead-stock disposal challenges in California and completed $300,000 worth of composting research. CDQAP is a local coordinator for a USDA composting demonstration to be held in March 2021.

Emergency Disposal Events – With disturbing regularity CDQAP managed the development of plans for emergency disposal of excessive carcasses resulting from either heat events (2006) or mechanical failures at rendering facilities (2017 and 2020). CDQAP has lead the industry in gaining a promise from CDFA to create a livestock mortality management workgroup.

FARM SECURITY

Terrorism – In 2019 CDQAP partnered with producer and processor leadership, the FBI, Homeland Security, FDA and state ag and public health agencies for a two-day, table-top exercise modeling a deliberate contamination of the milk supply.

Ag Crime & Activists – CDQAP partnered with local sheriffs' offices and the FBI to deliver workshops throughout the state and seven additional dinner presentations focusing on prevention of rural crime and theft and dealing with activist and drone trespass. The program conferences every month with industry leadership on farm security issues.

Natural Disasters & Other Emergencies – An important attribute of CDQAP is the program's ability to provide critical timely outreach during times of crisis. In addition to the mortality disposal crisis listed above in 2019-2020 the program nimbly responded with information for producer dealing with the COVID epidemic, and it's associated emergency on-farm dumping of milk, seasonal flooding, wind events and power loss and a number of catastrophic hay fires.

Farmer Mental Health – In the wake of both the 2008 and current recession CDQAP partnered with Colorado State University to deliver a webinar and resource webpage on *Addressing Stress, Depression and Suicide in Dairy Families.*

UCDAVIS

WIFSS

Western Institute for
Food Safety & Security