

FOOD SAFETY

DEFINING THE CHALLENGE

Globalization of the food supply has contributed to the emergence of more than 30 new causes of foodborne diseases over the last 25 years. Foodborne illnesses affect 1.5 billion people annually and cause over 3 million deaths worldwide. In the United States, the estimated medical costs and related losses due to absenteeism are approximately \$23 billion per year.

The changing management of livestock, poultry, aquatic species and crops has led to new, speculative concerns about the human health effects of antibiotics, hormones and chemicals used in intensive production systems, and fresh fruits and vegetables are at risk for being associated with foodborne illness.

Without a significant change in the current food safety system, more outbreaks and food product recalls are inevitable. Past experience suggests these outbreaks will continue to be more frequent, more complex and more costly.

Food safety and security are complex and dynamic issues—they require comprehensive, multi-faceted solutions that are field-tested and based on sound science.

Over time, more highly technical solutions will be needed to offset the increasing complexity of the food system and the sophistication of those who would aspire to do intentional harm to the food system and public health.

WIFSS puts in place the collaborative research infrastructure to promote food safety and science-based food safety policies.

Protecting Food Safety and Security: A Shared Commitment

California's need to fortify the science of food safety has never been more urgent.

"Despite the strength of our food production and processing system, California faces numerous challenges," says UC Davis professor and veterinary pathologist Jerry Gillespie. "Our food supply is increasingly subject to contamination from both biological and chemical sources; and now we have the new threat of intentional contamination of food through bioterrorism."

Dr. Gillespie is director of a new institute—a partnership between the California Department of Food and Agriculture, the California Department of Health Services, the University of California, federal agencies and private industry, who have identified food safety and public health as a major initiative.

The Western Institute for Food Safety and Security (WIFSS), announced September 26, brings together a diverse group of university, state and federal scientists and officials, and participants from the state's agricultural and food industries to discover and deliver solutions to the escalating food safety and security challenges of the Western region and of the nation.

The WIFSS, located at UC Davis, is intended to better protect California consumers against food-borne illnesses and to safeguard the state's agricultural industry—California agriculture yields more than \$26 billion in annual sales of more than 350 crop and livestock commodities.

Dr. Gillespie says the WIFSS will draw together leading food-safety scientists to advance understanding and solve critical food safety issues related to plant and animal food sources. The comprehensive WIFSS program will focus on issues such as bioterrorism, biosecurity, microbiological safety of foods, newly emerging disease-causing agents and microbial organisms that are resistant to many commonly used antibiotics, the safety of food moving across California's borders, and consumer food safety education.



In addition to its comprehensive research programs, the WIFSS supports consumer food safety education and food handler education for all individuals, from the farm to the table.

The institute's mission is to develop the capability to identify food-borne hazards more rapidly and accurately, and to develop effective methods to prevent natural and intentional food contamination that might lead to food-borne illnesses and outbreaks.

The institute's research will span the spectrum of food types and sources, including plants and animals, as well as food from both domestic and foreign sources. One area of emphasis will be development of rapid diagnostic tests for disease-causing microbes such as *Salmonella*, deadly strains of *E. coli*, *Cryptosporidium*, *B. anthracis* (anthrax) and foreign food-borne diseases.

WIFSS researchers also will develop methods for tracing the source of food contamination; devise safe alternative methods for disposing animal waste; work with consumers, industry and state agencies to strengthen biosecurity strategies; develop better postharvest pasteurization processes; identify weak food-safety links in the food-supply chain; study animal and human-health impacts of antibiotic use; and evaluate genetically modified products to determine their safety.

Funding for the new \$5 million institute comes from Governor Gray Davis' "Buy California" initiative, a \$76 million program financed by a combination of state and federal funds.