



Food Animal Health and Food Safety

The School of Veterinary Medicine has advanced food animal health and food safety since initiating the first veterinary food safety program here in 1964. Today, faculty in nearly a dozen centers are making a difference in this field to benefit animals, agricultural producers and consumers in California and beyond.

Comprehensive services to animal agriculture—Nationally recognized veterinarians perform 1.5 million diagnostic tests each year to safeguard the health of California's food animals and protect the public from animal diseases.

Early warning system—Laboratory personnel run the largest animal disease surveillance program in the country and participate in national laboratory and emergency response networks with the FDA, USDA and CDC.

Sentinels for animal health—In 2012, our faculty helped federal regulators pinpoint a case of bovine spongiform encephalopathy in a California dairy cow and confirm that the animal did not enter the food supply.

Outbreak response—Laboratory experts were the first to identify and respond to exotic Newcastle disease in 2002. Their efforts, including developing a more precise diagnostic test, helped halt the disease two years sooner than expected and saved poultry producers more than \$500 million.

Unique national resource—Faculty members co-direct the national Food Animal Residue Avoidance Databank, FARAD, supplying practical information to veterinarians and producers on how to avoid illegal or harmful drug and pesticide residues in food animals. Faculty also generate specialized data to keep national recommendations current.

Emergency preparedness—The school developed California's first emergency response plans to incorporate livestock evacuation and rescue during fires, floods or other disasters affecting animals.

Protecting water quality—Faculty made key discoveries about the waterborne microbe *Cryptosporidium parvum*, how it moves through environments shared by animals and people, and how to reduce such pathogens in storm runoff from dairies and rangeland. A free publication assists public agencies and landowners to understand the nature of waterborne pathogens in agricultural watersheds and learn best management practices to mitigate risks.

Safer produce—Researchers leading a multi-institutional study identified the prevalence, distribution and diversity of E coli, Salmonella, Campylobacter and other pathogens in a major California produce region. The findings underscored the importance of protecting raw vegetable crops from contamination by domestic and wild animals.

Foreign animal disease—Agricultural producers, veterinarians and consumers across California turn to our veterinary specialists first for authoritative guidance on high-profile issues such as foot and mouth disease, BSE and avian flu.

Vaccine strategies—Dairy medicine researchers developed the J-5 vaccine, which saves producers millions of dollars each year while reducing mastitis outbreaks in dairy cows.

National recognition—Foodborne illnesses each year sicken 48 million people in the US and cause 3,000 deaths. Food safety experts at UC Davis are building the nation's first integrated food-safety training network, which is already helping inspectors, producers, university researchers and others to prevent food-borne illnesses at all points in the food production continuum.

Poultry health—In a collaborative effort, veterinary diagnosticians isolated the first known US instance of the virus that causes very virulent bursal disease in California poultry.

Global influence—School of Veterinary Medicine pathologists first characterized the bluetongue virus, designed early testing procedures, established vaccine strategies for sheep and other livestock and made related discoveries that have influenced global cattle trade policies.

Animal welfare—Faculty brought farm animal welfare to the forefront with the first workshops on practical approaches to livestock well-being, science-based information on cattle care standards, and updated guidelines in Spanish and English for on-farm euthanasia.

International impact—Faculty co-authored *Animal waste, water quality and human health: 2012*, a free, comprehensive review from the World Health Organization about how to avoid common waterborne zoonoses transmitted by livestock.

Improved diagnostics—Our faculty develop up to 10 new animal diagnostic tests and publish more than 50 scientific articles on veterinary diagnostics each year; these professionals have invented faster, more accurate and less costly tests to speed diagnosis of diseases such as:

- *Mycoplasma mastitis*, a common disease of dairy cattle
- Bovine trichomoniasis
- Bovine respiratory disease
- Foot and mouth “look-alike” diseases
- Toxins and infectious agents of biosecurity concern
- Bovine viral diarrhea virus
- Exotic Newcastle disease in poultry

New knowledge—Hospital-based livestock veterinarians published one of the first guides for dealing with animals affected by wildfires and smoke inhalation, an area in which very little scientific data exists.

Science-based practices—When school researchers concluded that tail docking of cattle does not improve sanitation, worker safety or dairy cattle health and welfare, California became the first state to ban the tail docking of dairy cows.

Research influence—Three faculty members are among the top 25 authors for international veterinary medicine and animal health citation impact, 1994–2004.

Livestock genetics—Pioneering blood-typing services have evolved into DNA-based technology so producers can identify individual animals, verify parentage for livestock breeding, detect inherited diseases—and even track down cattle rustlers.

Contact: Trina Wood, (530) 752-5257
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