CALIFORNIA ANIMAL HEALTH AND FOOD SAFETY LABORATORY SYSTEM

Leading diagnostics nationally, protecting California locally
The CAHFS laboratory system brings cutting edge diagnostics to animal agriculture, protecting animal health, human health and the economy. A new laboratory facility in Tulare demonstrates our commitment to the heart of California agriculture in the Central Valley. This is an investment in the future of one of the most productive agricultural regions in the world.

Since officially being transferred by legislation in 1987 to the School of Veterinary Medicine at UC Davis, the California Animal Health and Food Safety Laboratory System (CAHFS) has partnered with the California Department of Food and Agriculture (CDFA) to provide farmers, ranchers, veterinarians and consumers in California and beyond, with cutting-edge veterinary diagnostic services. By leveraging our highly-trained and experienced faculty and staff, CAHFS brings the School of Veterinary Medicine’s resources to communities and stakeholders throughout the state by operating laboratories in Davis, Turlock, Tulare and San Bernardino. Through partnering with veterinarians and animal owners, CAHFS assists the CDFA in protecting the health and safety of animals, people and our food supply.

Primary funding support from the CDFA allows the lab system to offer services that benefit the public, while providing comprehensive livestock and poultry disease surveillance for foreign and emerging diseases. For example, the spring 2015 detection of highly pathogenic avian influenza (Bird Flu) in two unrelated poultry flocks in the Central Valley allowed CDFA and the United States Department of Agriculture to quickly respond and halt this deadly and dangerous disease before wreaking devastating consequences, such as the Midwest experienced months later.

Our laboratory responsibilities were expanded in 2000, when the K.L. Maddy Equine Analytical Chemistry Laboratory opened on the Davis campus to provide drug testing and pharmacology services for the equine industries in California. In partnership with the California Horse Racing Board, the chemistry and pharmacology programs in the Maddy Laboratory provide the highest level of drug testing services and cutting-edge research, which helps to safeguard the welfare of California performance horses.

Here at CAHFS, we are committed to serving you. Whether you are a veterinarian, animal owner, or member of the general public, we want you to think of CAHFS as your laboratory for animal diagnostics and invite you to visit any of our four locations. The following information will give you a brief glimpse of the services provided by the dedicated faculty, residents and staff.

Welcome to CAHFS!

Pamela J. Hullinger, DVM, MPVM, DACVPM
Director, California Animal Health and Food Safety Laboratory System (CAHFS)
The California Animal Health and Food Safety Laboratory System (CAHFS) is the backbone of California’s early warning system that helps to protect the health of our state’s livestock and poultry. CAHFS serves the people of California by safeguarding public health with rapid and reliable diagnoses for animal diseases including those affecting humans. It also serves the equine industries by providing high-quality drug testing and pharmacology programs.

CAHFS offers a multi-disciplinary team approach using a comprehensive menu of tests and innovative services to protect animal health and commerce, public health and the food supply.

Diagnostic services offered include Aquaculture, Bacteriology, Electron Microscopy, Food Pathogen, Pathology, Serology/Immunology, Toxicology, Molecular Diagnostics and Virology.

MISSION: CAHFS provides quality services that protect animal health and performance, public health and the food supply.
The new Alex A. Ardans Tulare Branch laboratory provides 29,000 square feet of laboratory and administrative space for veterinary diagnostic testing adjacent to the existing UC Davis School of Veterinary Medicine Teaching and Research Center in Tulare County. This modern facility offers increased space and capabilities, improvements in live animal handling and necropsy facilities, increased biosecurity, and enhances services to our clients in the South Valley for decades to come.

The building of the new facility is a result of the long-term partnership between the University of California and the California Department of Food and Agriculture in protecting human and animal health. The laboratory will accept avian and mammalian submissions for diagnostic procedures to support ongoing food animal production, flock and herd health monitoring, food safety programs and surveillance for foreign and emerging diseases.

With its completion, we are one step closer to a vision of building two full-service, state-of-the-art laboratories in the San Joaquin Valley. A new laboratory is being planned in the Turlock/Modesto area, to replace the outdated avian-only Turlock laboratory, to better meet the service needs of avian and mammalian clients located in a region with large concentrations of poultry, beef and dairy farming.

**Alex A. Ardans, DVM**

Dr. Ardans, CAHFS Inaugural Director 1987-2008, played a major role in restructuring and revitalizing California’s state diagnostic laboratory system. Under his management within UC Davis’ School of Veterinary Medicine, CAHFS has become nationally known for its high quality diagnostic service, livestock and poultry disease detection and equine performance testing. During his tenure, Dr. Ardans championed the concept of high quality standards for veterinary diagnostics and developing an internationally recognized laboratory accreditation system within the American Association of Veterinary Laboratory Diagnostics. He was also instrumental in the launch of the National Animal Health Laboratory Network, a diagnostic laboratory network equipped to respond to emergency animal disease outbreaks anywhere in the U.S.
CAHFS plays a critical role in early surveillance allowing the California Department of Food and Agriculture to rapidly respond to foreign and emerging diseases. In 2002, CAHFS detected exotic Newcastle disease in backyard chickens which led to a multimillion-dollar joint USDA/CDFA disease eradication effort. In 2009, CAHFS was instrumental in the detection of a very virulent form of infectious bursal disease virus in a commercial poultry layer flock not previously documented in the United States.

In 2015, CAHFS accepted 33,559 submissions from 2,336 veterinarians and 9,645 animal owners, providing disease surveillance throughout California.
The avian influenza virus – found routinely in wild waterfowl – can spread to domestic poultry and cause significant mortality and economic loss. In 2015 CAHFS helped limit the spread of avian influenza as the U.S. experienced its worst outbreak in history. Twice in 2015, highly pathogenic avian influenza (HPAI) infected commercial poultry flocks in California. Each time, birds from the affected flock were submitted to CAHFS for routine disease diagnosis where experienced staff rapidly diagnosed HPAI and alerted CDFA. Due in part to this early detection at CAHFS, CDFA and USDA were twice able to quickly contain the disease.

Ongoing surveillance helps to limit the spread of avian influenza and protect California’s poultry flocks and public health. All bird necropsy submissions are screened for avian influenza viruses and this daily surveillance increases the likelihood of diagnosing HPAI early. As part of this effort, CAHFS offers low-cost necropsies for backyard flock owners of less than 1,000 birds and conducts routine influenza surveillance testing from live bird markets. CAHFS also participates in a USDA Wildlife Services surveillance program monitoring wild bird samples from the Pacific flyway.

In 2015, CAHFS tested 37,934 samples for avian influenza, including 2,887 samples for the avian influenza outbreak response; 7,777 samples for wild waterfowl surveillance, and 25,929 samples from domestic birds.

Number of backyard birds necropsied at CAHFS by county, 2014-2015.

Backyard birds are sentinels for diseases like avian influenza that impact California’s commercial poultry industry.
Foot and Mouth Disease

Foot and mouth disease (FMD) is a highly contagious disease that can cause massive damage and disruption to the livestock industry. The 2001 FMD outbreak in Britain, for example, shut down its dairy and meat exports for an entire year, caused an estimated loss of $14 billion dollars and impacted approximately 10 million animals. Although FMD has been absent from the United States for the last 80 years, global movement of people, products and animals make its re-introduction a high possibility. Because testing each individual animal is prohibitively expensive and far too slow to quickly determine the extent of an outbreak, bulk-tank milk testing for FMD could allow testing of entire dairy herds at once. Dr. Beate Crossley, a CAHFS leader in virology and biotechnology, has been working with the USDA to develop a test that can detect a single infected cow out of a herd of 1,000 cows or more. With support from the California Dairy Research Foundation, Crossley and her team have validated this system to increase the number of tests from approximately 100 to nearly 400 bulk tank milk samples in order to rapidly detect an outbreak in California dairies.

As a member of the National Animal Health Laboratory Network (NAHLN) – a nationally coordinated network and partnership of federal, state, and university-associated animal health laboratories – CAHFS is approved to run official foreign animal disease detection tests in California, and through its close partnership with the USDA and the CDFA, mobilize the appropriate response when necessary.

“Protecting California livestock and poultry from catastrophic disease outbreaks, particularly those that are foreign to our animal populations, is one of CDFA’s most important core functions. We depend on the world-class diagnosticians at CAHFS on a daily basis to alert us to disease and help us understand the nature of new or evolving diseases, so that our veterinarians can make critical decisions and take swift and effective action.”

Annette Jones, DVM
State Veterinarian
California Department of Food and Agriculture
The Kenneth L. Maddy Equine Analytical Chemistry Laboratory serves the California Horse Racing Board as the primary equine drug testing laboratory for California’s five permanent racetracks and nine seasonal fair venues, testing more than 36,000 samples per year. The lab also tests show and performance horses and livestock for antibiotic drug residues and other substances. Using strict procedures and precision instruments, laboratory personnel can detect and measure more than 800 drug substances.

Postmortem Examination Program for the California Horse Racing Board (CHRB)

CAHFS performs a postmortem examination on every horse that dies or is euthanized on racetracks or training facilities under the jurisdiction of the CHRB. Since 1990, more than 6,500 horses have been examined at CAHFS laboratories as part of this program, which has become a national and international model for the racing industry. For more than 25 years, CAHFS, in cooperation with CHRB and the J.D. Wheat Veterinary Orthopedic Research Laboratory at UC Davis, has studied the risk factors for catastrophic injuries in race horses resulting in death or euthanasia. A main finding is that the great majority of fractures of race horses occur at the site of pre-existing lesions and may be preventable. Since 2006, the number of horses experiencing catastrophic injuries has declined significantly.

Highlight: Kenneth L. Maddy Equine Analytical Chemistry Laboratory

“The Kenneth L. Maddy Equine Analytical Chemistry Laboratory is considered the best racing lab in the U.S., and the pharmacology group’s research program has been instrumental in establishing threshold and withdrawal times for therapeutic medications in California and nationally.”

– Equine Medical Director, Rick Arthur, DVM
The CAHFS Toxicology Laboratory is one of the busiest veterinary toxicology laboratories in the world. It offers comprehensive, rapid and reliable diagnostic testing for chemical and toxic contaminants that can affect animals and humans. Testing includes analyses of suspected contaminated animal feed, water and foods of animal origin that could prompt regulatory action to protect the food supply.

In 2015, the Food Emergency Response Network (FERN) awarded CAHFS Toxicology its third consecutive 5-year grant for food safety emergency preparedness and response. The $1.89 million award brings the total award to more than $6 million in resources and equipment support in addition to $2.4 million of cutting edge, high tech instrumentation. In the first 10 years of funding, the toxicology lab responded to several high profile events including testing of pet foods for melamine and cyanuric acid in 2007, testing imported protein sources for melamine in 2008, and testing seafood following the Deepwater Horizon oil spill in 2010 for the presence of carcinogenic polyaromatic hydrocarbons. CAHFS is one of only 14 state labs and the only veterinary diagnostic laboratory in the United States receiving funding through the FERN program.
Our Expertise
Leveraging national resources for California

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- Gregg Cutler
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Our Faculty

Faculty members at CAHFS are board certified by the:

- American College of Veterinary Pathologists
- American College of Veterinary Microbiologists
- American College of Clinical Veterinary Pharmacology
- American College of Poultry Veterinarians
- American Board of Veterinary Toxicologists
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