



Distinctions

The School of Veterinary Medicine team has shaped the field of veterinary medicine, developing dynamic veterinary treatments and making key discoveries related to animal, human and environmental health. Veterinary experts in dozens of scientific disciplines train tomorrow's veterinarians and mentor leaders in veterinary practice, higher education, public health/food safety, research, environmental protection and biotechnology. Michael D. Lairmore has led the school since 2011.

- The School of Veterinary Medicine, opened in 1948, is the only school in the University of California system authorized to confer the Doctor of Veterinary Medicine (DVM) degree.
- Faculty have educated more than 5,500 DVM graduates, 1,400 residents, and 1,000 Master of Preventive Veterinary Medicine degree candidates.
- *US News & World Report* ranks the school second in the nation.
- Educating the best and brightest veterinary students is the school's core mission. Among the most recent contributions to preparing the next leaders of the profession are:
 - An integrated curriculum for delivery of instruction, measurable outcomes and unparalleled practical training
 - An investment in the future of the profession through the giving of \$4 million in donor-sponsored scholarships and other financial aid
 - Opportunities to broaden career horizons through unique programs such as the summer student research program, specialized externships, dual-degree programs and international experiences
- Veterinary specialists at the William R. Pritchard Veterinary Medical Teaching Hospital treat more than 40,000 patients each year while teaching essential clinical skills to veterinary students and training future specialists in the nation's largest veterinary residency program.
- School researchers developed health measurement tools that helped set the nation's first air quality standards in the 1970s and continue to provide data for the Environmental Protection Agency's ongoing refinement of those standards.
- Much of the school's \$63 million research budget concerns human health investigations. Interdisciplinary teams lend key insights into lung disease, influenza, HIV/AIDS, malaria, West Nile virus, Lyme disease, autism and other disorders.
- The Veterinary Genetics Laboratory, established in the 1950s, pioneered DNA identification techniques to provide pedigree validation, forensic services, diagnostic tests and genetic disease research in animals.
- School researchers first described simian and feline immunodeficiency viruses in monkeys and cats, which became the earliest models for AIDS research.
- Food animal veterinarians developed the J-5 vaccine, which prevents mastitis infections in dairy cattle, saving producers more than \$11 million every year. Rapid, accurate diagnostic tests designed at the school help producers keep herds and flocks healthy.
- Using a novel anti-inflammatory compound, an equine specialist successfully treated a young Thoroughbred mare near death from laminitis, beginning a promising study of the drug's safety and effectiveness.

- The world's first Master of Preventive Veterinary Medicine degree program has prepared veterinarians since 1967 to apply population health, public health and food safety concepts in veterinary practice; graduates serve in leadership positions in animal health services and public health programs in more than 75 countries.
- Wildlife veterinarians, in cooperation with the California Department of Fish and Game, administer the Oiled Wildlife Care Network, an international model for rescue and rehabilitation of oiled sea birds and other small marine species; research emphasizes the best achievable care for injured animals.
- The International Laboratory of Molecular Biology for Tropical Disease invented a genetically engineered vaccine for rinderpest and an inexpensive diagnostic kit designed to be stable under field conditions. In Africa and other regions dependent on cattle for meat, milk products and work, rinderpest has caused famine and economic damage-an estimated \$500 million in one outbreak of the 1980s.
- School centers provide indispensable health services, research and education in California, the nation and the world:
 - California Animal Health and Food Safety Laboratory System, Davis, Turlock, Tulare, San Bernardino
 - Center for Companion Animal Health
 - Center for Equine Health
 - Dairy Food Safety Laboratory, Davis and Tulare
 - One Health Institute
 - Veterinary Medicine Extension, Davis and Tulare
 - Veterinary Medicine Teaching and Research Center, Tulare
 - Western Institute for Food Safety and Security
 - William R. Pritchard Veterinary Medical Teaching Hospital
- School pathologists were the first to characterize the bluetongue virus, which causes serious illness in sheep and impacts the international cattle trade. School scientists developed the first bluetongue testing and vaccine strategies for livestock. Related discoveries have influenced global trade policies, important today as the ecology of the disease changes and global warming challenges the agricultural industry.
- School faculty pioneered the practice of zoological medicine and were the first to teach veterinarians how to treat wildlife and exotic zoo animals.
- Veterinary nutritionists first documented the link between a lack of dietary taurine, an amino acid, and feline dilated cardiomyopathy, a fatal heart ailment. Pet food companies now add this essential ingredient to commercial pet food, saving countless lives.
- Veterinary cardiologists identified the gene mutation responsible for a devastating heart disease in cats that is a leading cause of sudden death in young athletes. The discovery is the first report of a spontaneous genetic mutation causing any type of heart disease in a cat or dog.
- An investigation by toxicology experts found that melamine and cyanuric acid, detected in samples of pet food recalled in 2007, can be lethal to cats when combined. The study is helping veterinarians better diagnose the causes of kidney failure in cats.
- A partnership of the California Animal Health and Food Safety Laboratory System, the California Horse Racing Board and the JD Wheat Veterinary Orthopedic Research Laboratory established the equine necropsy program to uncover the reasons behind catastrophic injuries on the track.
 - Nearly 6,000 horses have been necropsied in the program; data from these analyses has led to astonishing insights into the nature of catastrophic injuries in racehorses
 - Equine researchers were the first to document the presence of previously existing stress fractures in racehorses

that suffered catastrophic injuries, giving owners and trainers the science-based knowledge to help them manage race horse health

- Describing the harmful effects of "toe grab" racing shoes led to a ban of such shoes in California
- Hospital faculty and staff invented the revolutionary Anderson sling, which provides safe support for horses that cannot bear their full weight during recovering from injury or surgery. The sling has been adapted for use in several dramatic airlift rescues of equines and cattle.
- Large animal clinicians helped initiate the first disaster preparedness plans to incorporate animals into rescue protocols. Faculty and staff volunteered during California floods in 1997, Hurricane Floyd, Hurricane Katrina, San Diego County wildfires, and the Yolo County wildfire of 2006 that affected hundreds of sheep.
- UC Davis veterinarians were the first to identify *Neospora caninum*, develop diagnostic tests and conduct research for the first vaccine. The parasite, the most common cause of abortions in cattle, costs livestock producers up to \$35 million per year in lost animals and reduced milk production.
- Food animal researchers collaborated with Stanford University to develop a modified live, genetically altered *Salmonella dublin* vaccine for calves, one of the only such vaccines available.
- School of Veterinary Medicine parasitologists revealed how cat feces transmit *Toxoplasma gondii*, which causes a fatal brain disease in California's endangered sea otters and can cause illness in pregnant women.
- The Center for Comparative Medicine identified molecules in the salmonella bacteria that trigger an immune response, paving the way toward development of a vaccine against these increasingly antibiotic-resistant foodborne bacteria, which kills hundreds of thousands of people worldwide each year.
- Veterinary oral surgeons and biomedical engineers proved that an experimental reconstructive procedure can regrow jawbones in dogs that have lost bone to injuries or removal of cancerous tumors. This valuable data is already being translated into biomedical treatments in human and veterinary medicine.
- The Center for Children's Environmental Health is one of the first scientific organizations to explore deep questions about why exposure to toxic chemicals may influence the onset of autism. Members of this group have produced remarkable findings such as:
 - A link may exist between flame-retardants and the social, behavioral and learning deficits associated with autism.
 - Triclosan, an antibacterial chemical widely used in hand soaps, poses serious concerns in human and environmental health.
 - A new explanation about how a defective gene causes brain changes leading to the atypical social behavior characteristic of autism may provide a potential target for drugs to treat the disorder
 - Early exposure to polychlorinated biphenyls (PCBs) causes a chain of events that disrupts normal patterns of neuronal connections in the brain; the impairment is a common feature of a number of conditions, including autism spectrum disorders.
- Wildlife geneticists in 2013 found the first evidence that rat poison used on illegal marijuana farms is killing endangered wildlife such as the fisher, a rare carnivore living in some of California's most remote forests, including Redwood and Yosemite national parks.
- Endowed chairs funded through private donations support excellence in research into genetic diseases, equine reproduction, emergency medicine and cancer.
- Koret Foundation support of the world's first shelter medicine program radically changed how shelters tackle infectious disease, housing, behavior and other aspects of shelter animal health and welfare.

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