

## One Health Connects Us All

From Saudi Arabia to California's Salinas Valley, UC Davis School of Veterinary Medicine is committed to applying a One Health approach to improving the well-being of animals, people and the environment. Veterinary medicine practitioners are increasingly expected to work with colleagues across disciplines to help solve emerging health problems and those collaborative partnerships create the synergy needed for critical thinking and problem solving relevant to sustainable health for all.

Experience with the One Health approach can expand career pathways for students in a wide variety of disciplines including wildlife and ecosystem health, public practice, food safety, herd health, disaster preparedness, rural health, zoonotic disease threats and more. The following examples of One Health in practice at UC Davis are in no way comprehensive, but highlight some of the research, teaching and community outreach critical to the school's mission of advancing the health of animals, people and the environment.



**Preventing Pandemics**--Instead of spending billions of dollars reacting to outbreaks, we're working to contribute to a system to identify disease potential and prevent pandemics before they start. That's the driving goal behind [PREDICT](#), a \$75 Million project funded by USAID's Emerging Pandemic Threats Program led by the school's One Health Institute. The project brings together international experts in veterinary medicine, epidemiology, wildlife ecology, virology, genetics and other specialties.

Since 2009, PREDICT has been building global surveillance capacity in 20 countries to predict, prepare for, and detect spillover of pathogens of pandemic potential that can move between animals and people (zoonotic diseases). The groundbreaking efforts of PREDICT have been cited by the World Bank and in the medical journal *The Lancet* as a model for a new, globally coordinated pandemic prevention strategy.

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**Serving Local Communities**--Less than 20 miles from UC Davis, a migrant worker population lives in the Knights Landing area, a rural agricultural community with many domesticated animals, including dogs, cats and chickens. Participants in the school's Students for One Health Club join with medical school students to offer a free clinic to people and their pets. The veterinary clinic, serves 75-85 patients each month, while their human counterparts receive preventive health care assistance from medical school students. In addition to physical exams, screening and vaccines, veterinary and medical students provide classes

to the community on topics like nutrition, behavior/mental health, environmental health and shared diseases (leptospirosis, valley Fever, rabies, Lyme, etc.) [Read more...](#)

At the end of each clinic, the veterinary and medical teams of students, volunteer veterinarians and physicians come together to conduct joint rounds, fostering open communication to develop a One Health approach to the community's needs. The veterinary students also visit [Sabana Grande, Nicaragua](#) each year to bring sustainable healthcare and economic development to the people and animals there.

**Protecting our Food Supply**--One in six people in the U.S. each year will become sick from a food-borne illness at an estimated annual economic cost of \$77 billion. Sources of that illness could come from E. coli contamination in spinach fields from wildlife and rodents or poor sanitation during harvesting. Or a Salmonella outbreak could originate from contaminated compost used on a small vegetable garden. Researchers at the Western Institute for Food Safety and Security conduct training for backyard gardeners, dairy inspectors, investigators of food-borne illness outbreaks, and first responders to all-hazards events. These activities help manage the safety of our food systems from the farm to the table. [Read more...](#)



**Other projects that take a One Health approach include:**

**Fighting Cancer**--A multidisciplinary team of experts at the UC Davis School of Veterinary Medicine and the Comprehensive Cancer Center collaborated on a clinical trial to treat melanoma in dogs. Their success may soon lead to trials in human patients with metastatic melanoma. [Read more...](#)

**Genetic Discovery**--Researchers detected a genetic mutation responsible for a form of cleft palate in Nova Scotia Duck Tolling Retrievers. This discovery provides the first dog model for the craniofacial defect, and hopefully will lead to a better understanding of cleft palate in humans. [Read more...](#)

**Bone Regrowth**--The school's veterinary clinicians, in collaboration with biomedical engineering colleagues, adapted biomedical technology to regrow jaw bones in dogs that have lost bone to injuries or removal of tumors-a novel reconstructive procedure that promises to provide valuable information for treatment in human medicine. [Read more...](#)

**Stem Cell Treatments**--Regenerative medicine using adult stem cells is proving to be an effective treatment for tendon and ligament injuries in horses and dogs. This multidisciplinary work holds promise for new cures in both veterinary and human medicine. [Read more...](#)

**Water Quality**--Researchers with the school's Aquatic Health Program discovered that plastic waste in the ocean may be contaminating the seafood that people eat. [Read more...](#)