



Keeping Hearts Healthy

Our team of veterinary cardiologists is located on both the UC Davis campus and at UC San Diego. Together they offer specialized expertise dedicated to the heart and the prevention, diagnosis and treatment of cardiovascular diseases. Our cardiologists provide compassionate, state-of-the-art services to a wide range of species with heart disease.

Widely recognized as one of the premier “founding” institution of veterinary cardiology, UC Davis pioneered, improved or perfected a number of interventional techniques used widely today. Treatments for congenital and acquired heart disease such as patent ductus arteriosus (PDA) and pulmonic stenosis are routinely provided by the experts at our centers.



Training future generations – UC Davis has a distinguished history of training residents who have gone on to be the leading cardiologists at their institutions. UC-trained veterinary cardiologists populate veterinary schools throughout the world. Currently, this very productive cardiology program adds one resident per year to its three-year training program.

Mastering canine heart health – UC Davis’ veterinary cardiologists were trailblazers in the diagnosis, understanding of progression, and treatment of congestive heart failure in dogs. The cardiology team continues to push the envelope in clinical research and development of novel diagnostic and treatment strategies.

Advancing the field – Researchers are making exciting advances in the field of pharmacogenomics, exploring the ways in which animals’ DNA and identified gene mutations impact their response to cardiac medications.

Heart disease in cats - Veterinary cardiologists identified the gene mutation responsible for hypertrophic cardiomyopathy, the most common cause of heart disease in cats. This inherited disease is also important in humans and is frequently responsible for sudden cardiac death. The discovery marks the first report of an identified spontaneous genetic mutation causing heart disease in a cat or dog. The findings paved the way for development of a screening test that identifies cats carrying this genetic mutation so that they can be identified before they are bred, thus reducing or eliminating the incidence of the disease. As they continue to study this disease and mutation in cats, researchers are also hopeful that the discovery will provide a valuable model for investigators in human medicine who are studying the disease.

Tissue breakthrough - Cardiology scientists recently pioneered a new approach to tissue preparation that makes transplants and replacements less likely to be rejected by the body’s immune system — potentially giving patients longer, healthier lives. Tissues developed by the team provide a source of material for engineering mechanically functional tissue grafts, such as heart valves, tendons, ligaments, and cartilage. This research and development has led to the creation of a start-up company that aims to commercialize these

tissue products for both human and animal use.

Unlocking the mysteries of SAS - Researchers have successfully identified a mutation responsible for the development of subvalvular aortic stenosis (SAS) in Newfoundland dogs. The most common congenital heart disease in dogs, SAS can also affect (human) children. This exciting discovery, which led to a genetic test for the disease, allows breeders to make informed decisions about avoiding breeding dogs that harbor this mutation, thus gradually eliminating the disease from the Newfoundland breed. Additionally, this information may pave the way for the development of novel therapies to help treat this devastating condition.

Studying the hazards of equine athletics - Cardiologists conducting equine genetics research are studying sudden death in racehorses, examining them cardiovascularly to identify possible causes for this mystifying occurrence and seeking to determine if the condition has a genetic and/or cardiac basis.

Many species served – While a majority of cardiology patients are dogs and cats, our clinicians also regularly treat horses, less traditional pets such as birds, reptiles and small mammals, and a number of zoo animals.

Cutting-edge technology - Scientists pioneered the use of a three-dimensional (3D) echocardiogram to diagnose canine Aortopulmonary window, a rare congenital heart anomaly. Previously, two-dimensional imaging was used to diagnose this defect. Veterinary cardiologists successfully demonstrated that the 3D echocardiogram offers greater diagnostic potential than 2-D, affording clinicians the ability to more completely define the anatomical features of canine Aortopulmonary window - providing information critical to determining the feasibility of surgical defect correction.

Furthering our understanding of reptiles – Researchers are exploring the cardiovascular system and heart disease in snakes and bearded dragons, advancing our knowledge in a little-understood area of these species' physiology.

Keeping patients comfortable and safe - The majority of animal patients can be completely evaluated using only non-invasive diagnostic and examination methods such as echocardiography, radiography, and electrocardiography. Clinicians also offer minimally invasive (catheter-based) interventions to repair or improve congenital heart defects.

Vibrant collaborations –

- Researchers work with vet industry partners in the exploration of novel drugs to treat disease.
- The cardiology team supports and participates in many multi-center clinical studies and trials, such as the Golden Retriever Lifetime Study, which tracks thousands of volunteer dogs' health for life in order to gain insights into preventing and treating cancer and other canine diseases.
- Veterinary cardiologists frequently offer their expertise to colleagues in the field, such as examining congenital heart disease in fur seals at the Marine Mammal Center in Marin.

