# AC UC DAVIS SCHOOL OF VETERINARY MEDICINE TO AVIS SCHOOL OF VETERINARY MEDICINE OF ALL OF ALL

The Faithful Partner Fund helps pay for medical costs of K-9 officers injured in the line of duty.

## **School Aids Injured K9 Officers**

Not many patients are transported to the veterinary hospital by ambulance. As a matter of fact, none ever had before. So it was odd to see a German shepherd arrive in one last spring. With several police officers in tow, it was clear something was unique about this dog. Hit by a car while attempting to apprehend a suspect during his job with the City of Woodland Police Department (WPD), K9 Officer Peydro was in critical condition when he was rushed into the emergency room. About a dozen members of the WPD anxiously sat in the waiting room.

Luckily for Peydro, he was in the hands of some of the best emergency veterinarians and neurosurgeons available. Equally fortunate for him, the school had recently established the Faithful Partner Fund (FPF) to assist with the medical costs of treating K9 officers, as well as search and rescue dogs, injured in the line of duty. In critical instances like Peydro's, medical costs are often borne by the tens of thousands. The majority of those medical costs are often borne by the K9 officer's handler and/or from contributions by the officer's unit. The school is trying to ease that burden on police departments with the fund.

Thanks to many donors, including a lead gift from the Edward E. Hills Fund, the FPF has grown in the year and a half since its inception. With promotional and awareness programs such as the Labor Day Races and Faithful Partner "I'm thrilled that UC Davis was able to save my partner. It means so much to me and my family that he is still with us."

> – Officer Juan Barrera City of Woodland Police Department



Continued on page 6

Leading veterinary medicine, addressing societal needs

# Welcome Class of 2020

The school welcomed 144 new DVM students to the Class of 2020 in August with plenty of jokes from the stage party about their perfect vision for the future. Among the new students, one has biked from Vancouver to San Diego; many have worked with wildlife such as primates, turtles, bats and raptors; one is a professional photographer; several compete in athletic events; and one is a twin whose younger siblings are triplets (no doubt of interest to the school's geneticists). Guest speaker King Moon, a fourth year student and Army Captain, recalled being as happy as a golden retriever with a stick when he learned he was accepted to UC Davis. "Remember the joy of getting here through the tough times ahead," he told them. "It will all be worth it!"



New DVM students celebrate their induction to the school.



n May 2015, an oil pipeline just north of Santa Barbara ruptured and spilled 100,000 gallons of thick oil along a 10-mile stretch of coast. Some of the affected marine mammals and birds died, but many others were recovered and rehabilitated thanks to the efforts of the Oiled Wildlife Care Network (OWCN) administered by the UC Davis Karen C. Drayer Wildlife Health Center in the School of Veterinary Medicine.

But little is known about how animals fare after the oil is washed away and they are returned to the wild. How many of them die? How many return to breeding colonies? And does the spill have lasting effects?

In an attempt to answer some of these questions, the OWCN and its collaborators attached GPS tracking devices to 12 brown pelicans that were oiled, rehabilitated and returned to the wild. These solar powered backpackstyle units log 12 locations per day during the daylight hours, weigh 65 grams (2.3 ounces), and have an angled front that allows pelicans to dive for fish with little resistance.

The pelicans will be tracked for about two years. In addition to the 12 oiled and rehabilitated pelicans, eight additional pelicans not affected by the oil spill are also being tracked so that researchers have a control group for comparison.

Results from this study will paint a more scientifically accurate picture of how these animals go on to survive and reproduce after rehabilitation, and also serve as a learning

opportunity to help the OWCN refine capture and care protocols.

Thanks to GPS units on these brown pelicans, researchers may gain a better idea of how well they fare after rescue and rehabilitation from an oil spill.

Photo by Justin Cox

# Dogs Teach Researchers

## **About Cancer in Humans**

Dogs may be our best friends in more ways than one. In addition to companionship, they provide researchers with clues on how cancer forms in humans and insight into possible treatment. Two recent discoveries from the school have advanced that knowledge.

One research group, led by Dr. Peter Dickinson, investigated spontaneous gliomas in dogs, which occur in humans at a similar frequency. They investigated chromosomal abnormalities in canine gliomas to better understand glial tumor formation and how they may respond to therapies. Results appeared in the *Journal of Neuropathology & Experimental Neurology*.

"Cancer is cancer," says Dickinson, a neurooncologist with the school's Center for Companion Animal Health (CCAH). "The big pathways altered in humans are likely to be altered in dogs as well. The details may vary but it's the same big picture overall so it's smart to use dogs as a model to identify potential genes for gliomas in humans."

Other study contributors include Drs. Dan York, Robert Higgins, Richard LeCouteur, Danika Bannasch and researcher Nikhil Joshi. The study was supported by donors to the CCAH, UC Davis, The Paul and Borghild T. Petersen Foundation and the Maxine Adler Endowed Chair in Genetics, held by Dr. Bannasch.

In another study, veterinary radiation oncologist Dr. Michael Kent partnered with Dr. Arta Monjazeb, a radiation oncologist with the UC Davis Comprehensive Cancer Center, to examine the use of a novel triple therapy in treating advanced



Drs. Arta Monjazeb and Michael Kent (from left) collaborated to examine a novel triple therapy to treat metastatic cancer in dogs.

metastatic disease in dogs. By combining radiotherapy and immunotherapy with an immune checkpoint inhibitor for the first time in a canine clinical trial, they were able to improve local and systemic efficacy of treatment and extend the lives of some dogs while maintaining their quality of life. Results appeared in the journal *Clinical Cancer Research*.

Thirteen other researchers from UC Davis participated in the project which received partial funding from donors to the CCAH.

"This was a really nice example of how physicians and veterinarians can work together to tackle a disease that affects both species," says Kent who also serves as CCAH director. "Now our job is to follow up, refine, and improve the technique so it can be used for both dogs and humans."

#### vevad Count

## Weather Radar Tracks Bird Flu

The same weather radar technology used to predict rain is now giving veterinary researchers the ability to track wild birds that could carry the avian influenza virus. The virus, which causes bird flu, kills chickens, turkeys and other birds, resulting in significant economic loss to the poultry industry. In 2015, the United States experienced its worst bird flu outbreak in history, resulting in the depopulation of over 48 million birds in 15 states, including California.

"By tracking mass bird movements remotely in realtime, we hope to gain novel strategic insights with respect to surveillance and prevention of Avian Influenza transmission to domestic poultry," said Dr. Todd Kelman, a veterinarian and engineer who co-leads the project with cooperative extension specialist Dr. Maurice Pitesky.

In California, waterfowl migrate by the millions from September through March via the Pacific Flyway where they winter in wetlands, rice and corn fields. The Central Valley alone is home to three million birds at the height of migration.

The project—funded by UC Agriculture and Natural Resources—is a collaboration with Dr. Jeff Buler at the University of Delaware, the U.S. Geological Survey, the California Department of Food and Agriculture, the California Poultry Federation and the Pacific Egg and Poultry Association.

## For the Love of Cats

A nimals are considered by many to be important members of the family. For Lin Zucconi, her cats— Doc, Itsybelle and Pinky—are truly special, and she makes sure they receive the best possible care. That is why she routinely drives more than 100 miles to bring them to the UC Davis veterinary hospital.

Zucconi first brought her cats to the veterinary hospital in 2013, to be seen by specialists in dentistry and ophthalmology—soon followed by appointments with other specialists in dermatology, internal medicine, orthopedics and surgery.

"We've certainly made the rounds seeing many specialty services at the hospital. The care that my cats receive at UC Davis is always outstanding and exceptionally thorough," she said. "I love it that the different specialists work so well together, providing a full range of services under one roof. I've been very impressed by the caring staff and students, all of whom clearly love animals, and that includes the Client Services team at the front desk. I feel welcomed at UC Davis. Whenever I bring my cats to the hospital I feel like I am going home to a safe and comfortable place for them and for me."



Lin Zucconi and (from left to right) Pinky, Doc and Itsybelle

Improving the quality of life for all cats is important to Zucconi. She values the school's research programs that develop new knowledge to share with veterinarians and animal owners. To support novel discoveries, she has directed a portion of her estate to advance research on chronic feline diseases, such as renal failure and feline herpes virus.

"You could say that this is for selfish reasons as my cats suffer from these conditions," Zucconi added.

This unselfish gesture, however, ensures that other cats do not suffer with a chronic disease.

By making a bequest to the School of Veterinary Medicine, Zucconi is a member of the school's Heritage Society for Animals. For information about becoming a member, please contact the Office of Development at 530-752-7024 or svmdevelopment@ucdavis.edu.

# Bella's Fund for Assistance Dogs of Wounded Veterans

Bella, beloved canine companion of veteran J.C. Levendowski, Ph.D., was destined to a life of helping others. She brought smiles to all she visited. Levendowski honored her by establishing Bella's Fund for Assistance Dogs of Wounded Veterans, providing financial support for medical treatment at the UC Davis veterinary hospital for assistance dogs of veterans who have sustained disabilities during their U.S. military service.

She began her journey as a Canine Companions for Independence (CCI) specially trained puppy. This organization provides canine companions to assist

individuals with disabilities. Inspired by the devotion of an assistance dog he happened to come across, Levendowski decided to volunteer for the CCI. He was the puppy raiser for Bella's mother and then for Bella, nurturing her with an initial, 14-month phase of training. Bella then underwent advanced training at the CCI and was later returned to Levendowski to assume a new important role as a mascot for a World War II U.S. Navy veteran unit organization.

Her gentle poise and good-natured temperament eased her transition to becoming the mascot for SACO, the Sino-American Cooperative Organization. This unit was instrumental in conducting a wide-range of military intelligence operations in China during World War II. At events, she proudly wore a red cape and dog tag that read "Bella, U.S. Navy SACO Scouts/ Raiders, and Mascot." Her mission was to visit veterans and their organizations and serve as a goodwill ambassador for our nation's military forces.

Bella passed away at the age of 13 in June, but she will be fondly remembered for her life of service. Levendowski, who served in the Minnesota Army National Guard, Minnesota National Guard and U.S. Marine Corps Reserve, hopes that his gift to establish Bella's Fund will continue to make a difference—helping canine companions assisting wounded veterans.

"I want to give to those who gave to us," Levendowski said. For information about contributing to Bella's Fund for Assistance Dogs of Wounded Veterans, please contact the Office of Development at 530-752-7024 or symdevelopment@ ucdavis.edu.

Bella, WWII U.S. Navy SACO Unit Veteran Organization Mascot

# Improving Rabbit Health

Rabbits are among the most common animals brought to the Companion Exotic Animal Medicine and Surgery Service at the UC Davis veterinary hospital. Their intelligence and social demeanor make them desirable companions. As prey animals in the wild, rabbits mask signs of disease much longer than other pets. When caring for an ill rabbit, it's important for veterinarians to consult with exotic specialists with experience treating rabbits.

Many common medications, especially antibiotics, can be toxic to rabbits. This means veterinarians need to know which antibiotics work most effectively, and ensure the drugs are administered in a way that causes as little stress as possible. Due to the rabbit's unique and sensitive gastrointestinal system, many oral antibiotics commonly given to other species cannot be used safely in rabbits.

Dr. Sara Gardhouse, an exotics resident at the hospital, leads a research project on the effects of long-acting crystalline-free acid antibiotics in New Zealand white rabbits. She and her colleagues collect blood samples from rabbits that have been administered this antibiotic. They then measure the antibiotic present in the blood to determine whether the doses are safe, the concentrations are correct, and how long this drug is effective.

"This research aims to improve the health of sick rabbits, decrease stress and pain from repeated handling and injections, and support the overall well-being of these animals," Gardhouse said. Clinicians are investigating the safety and efficacy of antibiotics for rabbits.

This research is funded by donors to the Center for Companion Animal Health's (CCAH) Resident Grants Program. The ability to conduct research is a major asset to pursuing a residency at the veterinary hospital. As the hospital with the largest and most diverse residency program in the country, it is able to offer research opportunities not available elsewhere. Thanks to CCAH donors, 90 research projects are being funded by CCAH grants on an annual basis.

With an ever-increasing caseload, the Companion Exotic Animal Medicine and Surgery Service is expanding its facilities at the hospital. Exotics are becoming so popular as household pets that the service is adding three examination rooms. Completion of the expansion project is scheduled for November 2016. The additional space will enhance the service's capabilities for treating exotic species, ranging from birds, turtles and rabbits to snakes, lizards and fish.

# Protecting the Integrity of California Horse Racing

California's horse racing industry relies on a unique partnership with the school to ensure the integrity of the sport and keep it safe for horses and jockeys. This relationship is recognized worldwide as a model for public and private sector cooperation in horse racing and has demonstrated California's capacity for visionary leadership.

Since the late 1970s, research has been conducted at the Center for Equine Health and other campus facilities to protect the health of racehorses. In 1999, the school added the Kenneth L. Maddy Equine Analytical Chemistry Laboratory. Created through legislative mandate, this laboratory provides routine drug testing and quality control. Additionally, its scientists conduct research into the effects of drugs on racing performance and the longterm health of horses. They develop new technologies to study the pharmacology of therapeutic medications, work with the veterinary pharmaceutical industry to investigate new animal drugs, and provide information, continuing education and recommendations on pharmacology-related issues.

The Maddy Laboratory now serves as the primary equine drug testing facility for California's five permanent race courses and

seven seasonal fair venues. The laboratory is equipped to detect more than 1,800 drugs in its routine testing. It was one of the first horse racing laboratories accredited by the American Association for Laboratory Accreditation and Racing Medication and Testing Consortium, based on the World Anti-Doping Association model. Its staff tests approximately 70,000 samples a year, looking for evidence of performanceenhancing and other prohibited drugs.

### Injured K9 Officers Continued from page 1

Ceremony, the community is recognizing the vital role that K9 law enforcement officers and search and rescue dogs play in society.

The hospital has sponsored the Golden Valley Harriers' annual run in Davis' Central Park the past two years. With proceeds going to the fund, the Labor Day Races have incorporated a Doggy Dash 5K into its lineup to help raise awareness. Several local K9 units join the festivities in the park and entertain the crowd with demonstrations of the dogs' skills.

The Faithful Partner Ceremony, routinely held on the campus, attracts dozens of K9 units from throughout the state. The memorial ceremony honors fallen K9 officers and spotlights the increasing demand for these animals to receive the highest level of veterinary care, especially in emergency situations.

Peydro continues to recover from his injuries that included damage to his teeth and jaws, as well as extensive damage to his vertebrae which required a 4-hour surgery to place pins in his lower back to stabilize his spine. Thanks to the dedicated neurology team, he was able to walk out of the hospital after only nine days.

"I'm thrilled that UC Davis was able to save my partner," said WPD Officer Juan Barrera. "It means so much to me and my family that he is still with us, and that his recovery is going so well."

# Strategic Planning: Team Approach Amplifies Research

The school's 36 centers, programs and units bring together faculty, researchers and students across multiple disciplines to address complex health problems. By sharing expertise, facilities, and equipment, these collaborative teams make discoveries that enhance our educational, clinical and public service efforts.

Faculty at the veterinary hospital further advance animal health by applying the knowledge obtained through the centers to treatment options for more than 50,000 clinical patients and state-of-the-art training for students and residents. The hospital serves the centers through the collection of clinical material for use in

## **School's Strategic Goals**

- Educate world leaders in academic veterinary medicine
- Perform high-impact transdisciplinary research
- Develop cutting-edge clinical programs
- Promote animal and human well-being
- Maintain school infrastructure and sustainable resources
- Retain excellent faculty and staff
- Promote academic, government, industry collaboration

research, and provides a database of reliable information on naturally occurring disease.

Major discoveries by **Center for Companion Animal Health** teams include:

- Identifying the gene mutation for hypertrophic cardiomyopathy in cats
- Advancing cancer treatments using the linear accelerator and stereotactic radiosurgery
- Formulating a reconstructive procedure to regrow jawbone in dogs following bone injury or tumor removal
- Designing stem cell therapy clinical trials for feline chronic gingivostomatitis
- Developing a surgical technique for cornea disease in dogs
- Developing a vaccine for feline immunodeficiency virus

Major discoveries by **Center for Equine Health** teams include:

- Detecting stress fractures early to prevent catastrophic injuries in racehorses
- Advancing neonatal care for prematurity, colic, maladjusted foal syndrome, angular limb deformities and sepsis
- Identifying the genetic cause of equine malignant hyperthermia and prevention strategies
- Developing stem cell therapy for equine orthopedic injuries



Congratulations to our research teams for their outstanding efforts to advance animal, human and environmental health through high-impact transdisciplinary research. The school once again leads the nation's veterinary schools in total extramural contracts and grants funding at \$56.6 million, \$21 million ahead of the second highest funded school.

6

# Welcome

## **New Faculty and New Leadership**



### Dr. Chen Gilor

Assistant Professor of Small Animal Internal Medicine

Special Interests: diabetes mellitus; obesity; and the interaction between gastrointestinal hormones and systemic metabolism



**Dr. Amir Kol** Assistant Professor of Veterinary Clinical Pathology

<u>Special Interests</u>: stem cell biology; regenerative medicine



### **Dr. Mary Lassaline** Associate Professor of Clinical Equine Ophthalmology

<u>Special Interests</u>: equine infectious keratitis; equine corneal wound healing; equine immune mediated keratitis





#### Assistant Professor of Clinical Equine Analytical Chemistry

**Dr. Benjamin Moeller** 

<u>Special Interests</u>: antidoping; equine health and performance; analytical chemistry

### **Dr. Arathy Nair** Assistant Professor of Clinical Equine Analytical Chemistry

<u>Special Interests</u>: diagnostic bacteriology; food pathogen diagnosis; milk quality and dairy chemistry

#### Dr. Pamela Hullinger was appointed

director of the California Animal Health and Food Safety Laboratory System (CAHFS). As director, she is responsible for all aspects of CAHFS operations and administrative matters, including strategic planning, personnel, material management, business procedures, budgeting and fiscal management. Hullinger is a boardcertified specialist in veterinary preventive medicine, and since April 2015, served as Large Animal Clinic director at the veterinary hospital.



**Dr. Lisa Tell,** board-certified in companion avian practice and zoological medicine, has been appointed as vice-chair of the Department of Medicine and Epidemiology. Tell will assist with academic personnel actions and mentor junior faculty. Her research focuses on expanding therapeutic options for treating foodproducing animal species through pharmacokinetic studies. Tell also directs the Hummingbird Health and Conservation Program.

**Dr. Bruno Pypendop,** a veterinary anesthesiologist, was appointed chair of the Department of Surgical and Radiological Sciences. His responsibilities include: academic personnel actions, oversight and management of departmental budget and staff, and allocation of space. Pypendop is recognized nationally and internationally for his scholarship on the pharmacodynamics and pharmacokinetics of anesthetics and analgesic drugs in small animals.

**Dr. Rachel Pollard,** a veterinary radiologist, now serves as vice chair of the Department of Surgical and Radiological Sciences. She will manage academic personnel actions, the mentoring program for junior faculty, and oversight of departmental curricular matters. Pollard has particular interest in swallowing disorders of dogs and using imaging techniques to evaluate organ function.













#### www.vetmed.ucdavis.edu

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## Veterinary Continuing Education

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The school is committed to lifelong learning through its Veterinary Continuing Education by providing nearly 20 annual offerings.

For a complete listing of events, visit: www.vetmed.ucdavis.edu/CE/

### 2017

January 7-8 Winter Conference, UC Davis

January 27-29 \*MATS: Clinical Cardiology, San Diego

January 28 Heumphreus Memorial Lecture, UC Davis

**February 11-12** Low Stress Animal Handling Workshop, UC Davis

March 4-5 Wildlife & Exotic Animal Symposium, UC Davis

April 22 Regenerative Medicine Symposium, UC Davis

\*This program is not open to the public

## **The Veterinary Center for Clinical Trials**

The Veterinary Center for Clinical Trials is dedicated to accelerating the identification and development of diagnostics and therapeutics for the benefit of veterinary and human patients. There are more than 50 ongoing veterinary clinical trials in different specialties and species, including:

- Oral melanoma in dogs
- Pemphigus foliaceus in dogs
- Bladder stones in dogs
- Urethral obstructions in cats
- Chronic gingivostomatitis in cats
- Chronic progressive lymphedema in horses
- Recurrent uveitis in horses

For more information on these and other ongoing clinical trials, visit us at www.vetmed.ucdavis.edu/clinicaltrials.





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