



## School Updates and Impacts April 2018

### UC DAVIS' VETERINARY SCIENCE RANKED TOP IN WORLD FOR 4TH CONSECUTIVE YEAR



The school maintained its premier spot in veterinary sciences in the latest QS World University Rankings. As the inaugural No. 1 university in Veterinary Science, UC Davis is renowned for applying a “One Health” approach to addressing critical health concerns on a local and global scale.

The school, also ranked #1 by U.S. News and World Report, is home to a robust research program with more than \$85 million in annual research funding (21 percent from NIH) and provides clinical services to more than 50,000 animal patients annually in 34 specialties. As strong leaders in veterinary medical education, prominent faculty members teach nearly 600 DVM students with a curriculum built on sound educational theory. Advanced training is also provided to 170 graduate students and 115 clinical residents.

### NEW FACULTY



**Dr. Chai-Fei Li** recently joined the faculty as an Assistant Professor of Clinical Neurology/Neurosurgery. Dr. Li received her DVM (2013) from Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA. She completed a one year rotating small animal internship at North Carolina State University (2013-14) before pursuing her residency program in Neurology/Neurosurgery at UC Davis (2014-17). Li served as an Associate Staff Veterinarian in the VMTH. Her clinical research interest is in the area of glioma pathophysiology and ambulatory EEG. She will be involved in teaching the DVM professional curriculum, graduate clinical training in the VMTH, and will hold a clinical assignment in the Neurology/Neurosurgery Service.

### FACULTY RECRUITMENTS

- Assistant Professor of Clinical Anesthesiology
- Assistant Professor of Epidemiology in Climate Adaptation Health
- Professor of Marine Aquaculture Science
- Assistant Professor of Clinical Equine Internal Medicine
- Assistant Professor of Clinical Livestock Medicine
- Assistant Professor of Small Animal Internal Medicine
- Health Sciences Clinical Assistant Professor of Small Animal Internal Medicine

- Assistant/Associate/Full Professor of Dermatology
- Professor of Clinical Anatomic Pathology-Tulare (CAHFS)
- Assistant/Associate/Full Professor of Clinical Avian Diagnostics (CAHFS)
- Specialist in Cooperative Extension-Beef Cattle Herd Health and Production
- Specialist in Cooperative Extension in Antimicrobial Stewardship
- Assistant/Associate/Full Professor of Equine Theriogenology
- Assistant/Associate/Full Professor of Anatomic Pathology
- Health Sciences Clinical Assistant/Associate Professor—Anatomic Pathology
- Director, Center for Comparative Medicine

## NEW LEADERS



**Dr. Robert Rebhun** (DVM, Ph.D., DACVIM) was recently appointed as the Inaugural Maxine Adler Endowed Chair in Oncology for a five-year term. Maxine Adler established two endowed chairs, one in genetics and one in oncology. She was particularly interested in the role that genetics play in predisposing animals to cancer.

Rebhun has a strong research foundation in basic and applied cancer biology with a focus on mechanisms of metastatic disease, and comparative and translational aspects of tumor biology and therapeutic strategies. He is an astute diagnostician and compassionate clinician, highly regarded for the quality of his patient care and client communication, innovation in clinical practice, devotion to mentorship of residents and highly effective clinical and classroom instruction of professional students. Rebhun is the service chief for the Medical Oncology Service of the William R. Pritchard Veterinary Medical Teaching Hospital (VMTH) and Associate Director of the Center for Companion Animal Health.

## 2018 ALUMNI ACHIEVEMENT AWARD RECIPIENTS

Each year the school honors members of its alumni with an Alumni Achievement Award. This award is the highest honor bestowed by the school. Honorees may be graduates of the school's DVM, MPVM, and graduate academic (MS, PhD) programs, or individuals who have completed internship or residency programs. Recipients are recognized at several events leading up to the formal award presentations during the school's Commencement ceremony. This year's 2018 Alumni Achievement Award Recipients are:



- **Stanley Creighton**, DVM, DACVIM, President-Creighton Consulting and Founder Emeritus, NVA. Dr. Creighton receives this award in recognition of his vision, effort, and leadership as the founder of National Veterinary Associates.
- **Howard Hill**, DVM, MS, PhD. Retired. Dr. Hill receives this award in recognition of his contributions to the health and welfare of swine and to the nation's pork industry.
- **Philip Kass**, DVM, MPVM, MS, PhD, DACVPM, Vice Provost of Academic Affairs, UC Davis. Dr. Kass receives this award in recognition of outstanding achievements in epidemiological research, extraordinary collegiate support, and distinguished leadership to enhance veterinary medical faculty diversity and equity.
- **Jon Klingborg**, DVM, Owner-Valley Animal Hospital in Merced, CA. Dr. Klingborg receives this award in recognition of his extreme dedication, leadership and tireless commitment to the health and welfare of the veterinary profession and animal patients.

- **Pamela Ruegg**, DVM, MPVM, DACVPM, DABVP, Professor and Extension Milk Quality Specialist, Department of Dairy Science, University of Wisconsin-Madison. Dr. Ruegg receives this award in recognition of her extraordinary service to dairy farmers, dairy cattle, and consumers of dairy products around the world.

## TRAINING THE NEXT GENERATION OF LIVESTOCK VETERINARIANS



As the world population grows, so too does the need for more veterinary students trained in livestock medicine. Veterinarians like Hannah MacDonald (pictured), a 2017 graduate of UC Davis, who care for dairy cows, beef cattle, swine, poultry, sheep and goats, are on the front line of protecting the nation’s food supply by ensuring the health of animals in these industries.

MacDonald grew up in northern California, in a small Native American community where she rode as a cattle hand for a nearby beef operation. She also participated in several international service trips in Mexico and India where she saw a strong need for herd health.

After learning more about the industry in veterinary school, MacDonald decided to specialize in livestock medicine. During her clinical rotation in Dairy Production Medicine at the Veterinary Medicine Teaching and Research Center (VMTRC) in Tulare, she worked on large sized dairies typical of California’s Central Valley learning how important herd health is—preventing one sick animal from affecting others.

Keeping livestock and poultry healthy is critical in preventing the rise of antibiotic-resistant infections that kill more than 23,000 people each year in this country. Veterinary students receive diagnostic training to identify sick animals promptly, to prevent disease outbreaks, and to decrease dependence on antibiotics.

In addition to the VMTRC rotation, livestock students rotate through two clinical services—the Livestock Medicine and Surgery Service and the Livestock Herd Health and Reproduction Service—based at the veterinary hospital in Davis. While rotating on the three livestock services, students work alongside faculty members and residents gaining practical hands-on experience in medicine and surgery of client-owned cows, sheep, goats and pigs.



## VET-FOR-A-DAY

Recently, 24 Davis High School students interested in veterinary medicine participated in Vet-for-a-Day, an outreach effort hosted by the school. This was the second in a two-part program put on this year by faculty and staff to engage younger students on the potential career options available in veterinary medicine.



“Early exposure to the profession, along with direct mentorship, have proven to be the most powerful drivers for a career choice in veterinary medicine,” said Karl Jandrey, associate dean for Admissions and Student Programs. “We hope to inspire these up and coming students to consider a career in this great profession while exposing them to the daily skills and knowledge we apply to solve patient problems.”

The students participated in a parasitology presentation and hands-on learning lab in the school's Multi-Purpose Teaching laboratory, and a clinical skills lab where they practiced on dog mannequins how to give injections, draw blood, and suture wounds.

"Drawing blood was easy, stitching up the 'skin' was the hardest, and observing the surgeries was incredible," commented one student. Overall, the group felt the day was a great experience.

### **RAT POISON FROM MARIJUANA FARMS IS HARMING FEDERALLY THREATENED NORTHERN SPOTTED OWLS**



The northern spotted owl has had many adversaries. Three decades ago it was loggers, whose forays into the remote forests of the Pacific Northwest threatened the shy creatures, then it was the more aggressive and adaptable barred owls. Now, its unpermitted marijuana farms suspected of spreading rat poison up the owl's food chain, according to a study led by researchers at UC Davis in cooperation with the California Academy of Sciences.

"We have discovered a new potentially lethal threat to this struggling species that many conservationists have spent decades trying to save from extinction," said Mourad Gabriel, lead author of the study and a researcher with the school's Karen C. Drayer Wildlife Health Center.

Seven of 10 spotted owls and 34 of 84 barred owls collected between 2009 and 2013 tested positive for anticoagulant rodenticides. The study area encompassed Humboldt, Mendocino and Del Norte counties, a region where increasing numbers of marijuana cultivation sites overlap with the owls' hunting grounds.

Separate studies conducted by Gabriel in 2012, 2013 and 2015 were the first to link rat poison and illegal marijuana farms to the deaths of fishers, a weasel-like mammal living in the Pacific Northwest. Scientists fear the beginning of recreational sales of marijuana in California could spur the creation of more illegal cultivation sites that could further contaminate rodents eaten by predators, including birds of prey.

All spotted owls collected in the study were found dead in wilderness and timberlands and submitted to U.S. Fish and Wildlife Service (FWS) field offices and the Humboldt State University Wildlife Museum in Arcata, Calif. All of the owls collected were from remote forested lands with no nearby urban or agricultural settings, suggesting the sources were marijuana farms. The study, funded by the U.S. FWS, was part of an effort to build a scientific case for increased forest monitoring and species protection before it's too late.

### **UC PRESIDENT NAPOLITANO VISITS VET MED**

On Thursday, April 5th veterinary medicine welcomed University of California President Janet Napolitano for a visit and tour. The school's leadership team provide an update for President Napolitano on program priorities and activities in support of animal, human and environmental health. Following a brief overview in Gladys Valley Hall, the heart of the school's didactic teaching space, Dean Michael Lairmore and Dr. Jane Sykes, chief veterinary medical officer of the VMTH, toured Napolitano through the hospital.



The visit was an opportunity to showcase the veterinary hospital's sophisticated level of animal patient care, discuss translational research initiatives and observe advanced veterinary educational training for students and hospital residents.

At the Center for Companion Animal Health, Napolitano talked with staff and students working on clinical treatments and translational research related to cancer. Napolitano's tour included stops in the small animal clinic and a visit to the Claire Giannini Hoffman Equine Athletic Performance Laboratory where she viewed a live demonstration of a horse on a treadmill, used for clinical care evaluations and exercise physiology and pulmonary research studies.

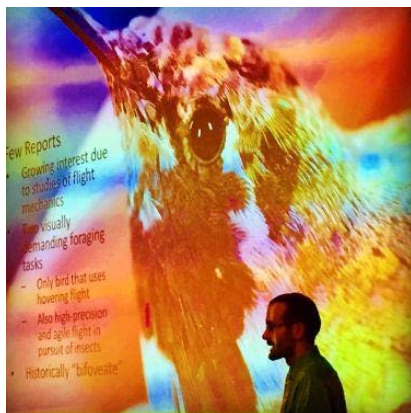
Part of the day's discussion included the vision for a comprehensive Veterinary Medical Center which will set the standard in veterinary medicine. "The new center will amplify our ability to collaborate and create new solutions for our patients that translate to human care," Lairmore said. "We'll combine compassionate health care for animals with innovation, discovery, and education."



The tour concluded with a brief discussion on the One Health approach – focused at the interface of animals, people and the environment to solve complex problems that impact health and conservation. Both Dr. Brian Bird and student Marlene Haggblade shared their experiences of working in Africa on zoonotic health issues where disease is transmitted between animals and humans.

## HOUSE OFFICERS SHOWCASE RESEARCH PROJECTS

UC Davis veterinary hospital house officers (interns, fellows, residents) presented their research studies at the 40th Annual Gerald V. Ling House Officer Seminar Day. The day-long event featured short presentations to fellow house officers, faculty, staff, students and guests.



Having the ability to do research is a major advantage of participating in an advanced training program at UC Davis. With the largest and most diverse house officer program in the country, the school is able to offer unique research and publishing opportunities not available elsewhere to veterinarians pursuing advanced training at teaching hospitals. With centers like the Center for Companion Animal Health and the Center for Equine Health financially supporting these projects, UC Davis house officers have the ability to pursue a vast array of research subjects.

Dr. Bret Moore (pictured) presented his research on the prevalence of ocular disease in hummingbirds.

This year, 27 speakers presented 30 studies covering a huge breadth of topics including:

- Risk factors for Candida urinary tract infections in dogs and cats
- Amdoparvovirus infection in red pandas
- Pullout properties of monocortical and bicortical pins and screws in canine lumbar vertebral bodies
- Multi-drug residues and antimicrobial resistance patterns in waste milk from dairy farms in central CA
- Effect of amino acid infusion on body temperature in anesthetized cats
- Effect of NSAIDs and antihistamines on antibody production in horses when concurrently administered

with bacterin-toxoid vaccine

- Diagnostic yield of dental radiography and cone-beam computed tomography for the identification of anatomic structures in cats
- Intravenous contrast enhanced computed tomography anatomy in normal adult koi
- Medical management of deep ulcerative keratitis in cats
- Torsional mechanical properties of the rabbit femur

Because of the hospital's high patient caseload (more than 50,000 per year), UC Davis is able to offer one of the most advanced clinical training experiences for house officer veterinarians anywhere in the world. The school currently trains 115 house officers.

### **DR. GREGORY FERRARO ENDOWED DIRECTORSHIP ANNOUNCED**



Dr. Gregory Ferraro (pictured) was honored for his lasting impact on equine health and research with the announcement of a new endowed directorship in his name. Nearly 100 people—a veritable who's who in equine medicine at UC Davis—gathered as Dean Michael Lairmore appointed Dr. Carrie Finno as the inaugural holder of the Dr. Gregory L. Ferraro Endowed Directorship. A number of partnerships and generous donors to the Center for Equine Health (CEH) made this endowed

directorship possible, including the Bill and Inez Mabie Foundation that helped spearhead the initiative.

Dr. Claudia Sonder, former director of the CEH, was also honored for her leadership and skill as a liaison between the school and equine industry. A number of people reminisced about the lasting impression Dr. Ferraro made over the years, including delivering a foal while still dressed in one of his trademark suits. Dr. Finno spoke of the value of mentors and Ferraro's instrumental support of her Ph.D. training in equine genetics and her recruitment to UC Davis as faculty member. "I have some very big Italian loafers to fill," she said.

### **STUDY SHOWS HORSES WITH SAND COLIC HAVE 'EXCELLENT' PROGNOSIS**



Horses accumulate sand in the large colon relatively frequently in regions with naturally sandy soils, including California, Texas, and Florida. Affected horses, who consume sand inadvertently while grazing or eating off the ground, can develop gastrointestinal tract obstructions, intestinal tract lining irritation, altered gut motility, weight loss, diarrhea, and overt colic.

Dr. Isabelle Kilcoyne, (MVB, DACVS) presented her study findings at the 2017 American Association of Equine Practitioners Convention in San Antonio, Texas.

"Both medical and surgical management resulted in over 94% of treated horses surviving to discharge from our hospital, based on a review of the medical records of 153 horses with sand colic," Kilcoyne said. "One factor to consider, however, is that half of all horses treated medically suffered recurrent colic, whereas only 17% of surgically treated horses suffered sand colic again."

If a practitioner suspects sand colic, Kilcoyne recommended that, in addition to a standard colic workup, he or she take radiographs to help confirm sand in the gut and quantify how much has accumulated. This is because listening to the abdomen's oceanlike sounds using a stethoscope and measuring fecal sedimentation are only effective in approximately 20% of cases. With a positive diagnosis, the veterinarian can discuss

treatment options—either medical or surgical—with the owner. Kilcoyne said one of the key factors veterinarians should consider when selecting their approach is how much gas has built up in the abdomen, based on radiographs and transrectal palpation.

“Evidence of intestinal distention (swelling) due to that gas accumulation, based on radiographs or rectal palpation, suggests that surgery should be performed,” she said. Otherwise, medical therapy would include intravenous fluids and passing a nasogastric tube to administer enteral fluids, psyllium, and either magnesium sulfate or mineral oil.

### **CYSTOSCOPY USED TO REMOVE BLADDER STONES**

Veterinarians at the school are using cystoscopy to evaluate the lower urinary and genital tracts in animals. Cystoscopy can be used to help identify many issues of an animal’s urinary health. Ectopic ureters in dogs, a common reason many young dogs present with urinary incontinence, can be diagnosed via cystoscopy. It can also be used to less invasively obtain biopsies of the lower urinary tract if mass lesions such as polyps or tumors are suspected. Clinicians use this technique to evaluate dogs and cats that present with recurrent urinary tract infections (UTI); if no underlying cause is found, biopsy forceps can be inserted through the scope and small samples of the bladder wall can be obtained and submitted for histopathology and culture analysis. Finally, the cystoscope can be used as a treatment option for stone removal.

One recent patient to benefit from the use of cystoscopy was Callie, an 8-year-old female poodle/spaniel mix, who presented to the emergency room on Christmas Eve after her pet sitter noticed bloody discharge from her vulva. Following abdominal x-rays and an ultrasound, a large bladder with bright sediment (likely crystals or mineralized material) was revealed. No stones were visualized at that time. Veterinarians then placed a urinary catheter in order to help Callie empty her bladder in addition to collecting a urine sample for analysis and culture.



The case was then transferred to the Internal Medicine Service, which performed a complete abdominal ultrasound and x-rays the following day with the Diagnostic Imaging Service. The ultrasound found multiple stones in her bladder, which was confirmed with the x-rays. The stones had previously been hidden by the bones of her pelvis when they were causing an obstruction to the outflow of urine. Callie was also found to have a UTI.

To evaluate Callie’s urinary tract for abnormalities predisposing her to UTIs and bladder stones, and to remove the stones, Callie underwent cystoscopy. Using this method, veterinarians identified and removed the bladder stones, allowing Callie to avoid having surgery. With the help of antibiotics to treat her UTI, Callie recovered well at home.

Cystoscopy is minimally invasive, which is one of its advantages over surgery, however, it cannot be used in all cases – some of the factors that determine whether cystoscopy can be used include size of the animal, size of the stones, and the number of stones.

### **MENTAL HEALTH AND WELLNESS INITIATIVES**

The school continues to be proactive to provide mental health and wellness resources and support for veterinary students. Program initiatives include:

*Counseling Services* – provided free to all registered veterinary students, 1.5 counselors are employed with a drop in hour available every day as well as a weekly support group

*Wellness Events* – on-going wellness initiatives include: Wake up for Wellness, Massage Day, Active Aggies (circuit training exercise program), and events sponsored by the VetMed Health & Wellness Club.

- Activities: yoga, meditation, Tai Chi and crafts
- Speakers and webinars on mental health
- Suicide Prevention Week
- Sponsor a Wellness Summit
- Social activities: hikes, rock climbing, farmer's market, corn maze, wine tasting, ice cream days, field game days, cooking classes, and potlucks.

*Wellness Representatives* - each class has 3-5 representatives to offer support and provide information on resources to DVM students. The representatives work with school administration on wellness initiatives while also sharing student concerns and helping to disperse information.

*Each Aggie Matters* – this campaign unites the thousands of students, faculty, and staff at UC Davis in an open and affirming dialogue about mental health. The campaign seeks to collectively raise awareness, destigmatize mental illness and cultivate mental health as a state of flourishing. Together, the university is creating a campus where Each Aggie Matters and at the school we are taking a public stand to advocate for our community.

*The Healer's Art Program* - this program is an innovative discovery model course in values clarification and professionalism that offers a safe learning environment for a personal in-depth exploration of the time-honored values of service, healing relationship, reverence for life and compassionate care.

*Doctoring Course* - taught throughout the curriculum, and touching on a multitude of topics, the Doctoring Course also includes information sessions, lectures/discussions/panels, and workshops on mental health and wellbeing (including self-care, compassion fatigue and suicide awareness and prevention).

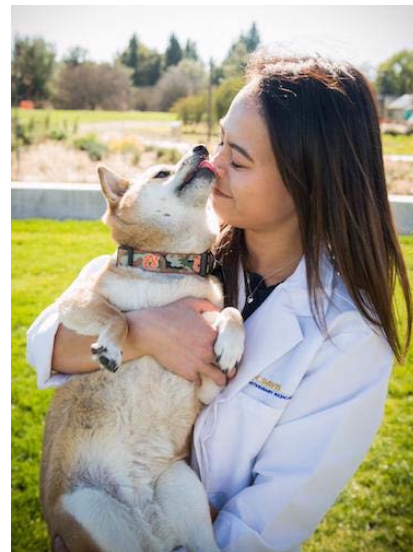
*Suicide Prevention Training* – training sessions are held for faculty and staff through the QPR (Question, Persuade, Refer) model. Faculty and staff are also invited to attend Inquiring Minds training.

*New Wellness Room* – this room is a safe and comfortable space for DVM students to get some rest and relaxation, practice mindfulness or meditate. It is designed to support mental health and wellness for students throughout their DVM program.

For more information: [www.vetmed.ucdavis.edu/students/clw/wellness/index.cfm](http://www.vetmed.ucdavis.edu/students/clw/wellness/index.cfm)

## **CALIFORNIA WATERFOWL TRACKER**

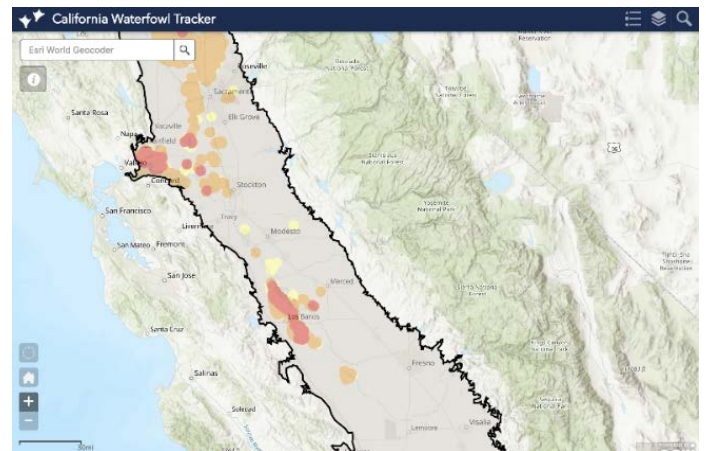
A new interactive California Waterfowl Tracker website developed by Cooperative Extension Specialist Maurice Pitesky at the school, and colleagues from the University of Delaware, U.S. Geological Survey, and UC Agriculture & Natural Resources shows the location of waterfowl.





"While the current version of the website is designed for California, the long-term goal is to develop and expand this system for the continental U.S. to promote health and safety of poultry flocks nationally," Pitesky said.

Although not all waterfowl carry avian influenza, the migratory birds are the primary reservoir of the virus that kills chickens, turkeys and other birds and can take an economic toll on the poultry industry (2014-15 U.S. outbreak killed nearly 50 million birds).



From September through March, geese, ducks and other waterfowl migrate by the millions via the Pacific Flyway and winter in California wetlands, rice and corn fields. At the height of migration, the Central Valley is home to 3 million waterfowl and the majority of the state's commercial egg-laying hens, broiler chickens and turkey flocks.

Using the web app to understand when and where waterfowl are feeding and roosting, poultry farm managers and other stakeholders will be able to consider waterfowl in their decision making and make biosecurity decisions.

To use the California Waterfowl Tracker, visit: <http://ucanr.edu/sites/poultry>.

A web app video demonstration can be viewed at: [https://youtu.be/EOO0Q\\_ggZ9I](https://youtu.be/EOO0Q_ggZ9I).

## **DOUBLING SHELTER CAT SPACE RADICALLY REDUCES UPPER RESPIRATORY DISEASE**

Feline upper respiratory infection in shelter cats can be dramatically decreased by doubling cage sizes and providing cats with two compartments. The findings are important because upper respiratory infection (URI) decreases the likelihood of a cat being successfully adopted, and is a leading cause of illness and euthanasia in shelter cat populations.

To better understand and combat the problem, a UC Davis team worked with nine animal shelters around North America. Shelter staff recorded data daily about their feline populations, such as how many of their cats had a URI and how long those cats had been at the shelter. Staff also filled out surveys which included questions about cage size, hide boxes, disinfection practices and vaccinations.



The team discovered that to minimize stress and cases of URI, cats needed about 8 square feet of floor space in their cages, rather than the common average of 4 square feet. Cats also were less likely to get sick at shelters with a double-compartment cages that allowed each cat to remain comfortably on one side of the cage while the other side was cleaned. This configuration also allowed separation of the litterbox from food, water and bed, which may have further lowered stress. Study findings were published in [PLoS One](https://doi.org/10.1371/journal.pone.0158888). This study was funded by the Morris Animal Foundation.

## **VETERINARY CENTER FOR CLINICAL TRIALS**

The Veterinary Center for Clinical Trials (VCCT) works with faculty and collaborators across the campus to facilitate more than 70 active clinical trials aimed at advancing medical care for veterinary patients in a variety of disciplines.

