



School Update and Impacts June 2017

STATE OF THE SCHOOL ADDRESS

In his annual State of the School address, Dean Michael Lairmore congratulated the school's community for achieving the top spot among veterinary schools in the world by QS World University Rankings for the third year running. He credits that recognition to the school's ability to attract the best and brightest students, and faculty and staff dedicated to compassionate care, clinical innovation, and high-impact transdisciplinary research. Other highlights of this past academic year include:

- Increased faculty involvement in the Biomedical and Engineering Entrepreneurship Academy with 19 invention disclosures and 16 patents filed (four have been granted so far).
- Five-year grant renewal from the NIH for the UC Davis CounterACT Center of Excellence to identify improved medical countermeasures for chemical threat agents in humans and animals.
- Development of the first PET equine program in the world - used for research on equine bone stress modeling, osteoarthritis, laminitis and tendon disease.
- Launch of the Veterinary Institute of Regenerative Cures.
- Establishment of the Bioanalytical Research Core, specializing in pharmacokinetic-pharmacodynamic studies at preclinical and clinical stages of development.
- Outstanding customer service from the hospital staff for approximately 55,000 veterinary patients this year.
- Increased availability of clinical trials through the Veterinary Center for Clinical Trials (77 currently active).
- High board certification rates among the hospital's residents.
- Broader diversity of the school's community beginning with outreach and intensive training programs for K-12 and community college students.
- Advancing the well-being of animals and people with the Knights Landing One Health Clinic and disaster response training.
- Continued support from philanthropic partners that help keep student debt in check and support cutting-edge research.



He also discussed a few major challenges in particular the future Veterinary Medical Center—a 10-year master plan for clinical facilities that will take place in phases. The complete presentation can be viewed on line at: www.vetmed.ucdavis.edu/about_vetmed/school_updates.cfm

2017 COMMENCEMENT

Congratulations to all of the new graduates of the UC Davis School of Veterinary Medicine. Among those receiving degrees at the 66th Commencement Ceremony held at the Mondavi Center were 134 DVM students, 39 residents and 11 students in the Master of Preventive Veterinary Medicine program. Dr. Grace Bransford, a 1998 graduate of the school and owner of Ross Valley Veterinary Hospital in San Anselmo, was the invited

Commencement Speaker. Rachel Ferris was awarded the school medal, the highest honor for a graduating student in recognition of outstanding academic and clinical performance. Ferris will intern in small animal medicine at the Animal Medical Center in New York.

“Holy toe-tapping chickens, we’ve made it!” said Lori Hammond, student speaker (pictured on the left).

For someone who has aspired to be a veterinarian since kindergarten, the journey to the stage at commencement has been a struggle that not all would have the fortitude to complete. After a backpacking trip following her undergraduate sophomore year at UC Davis, Hammond developed a rare spinal arterial venous malformation that compressed her spinal cord 80-90 percent and left her paralyzed at the T-5 T-7 level. She persevered through intense physical therapy to learn to walk again with the aid of a walker.



Then, after entering veterinary school, Hammond was diagnosed with leukemia. After chemotherapy, Hammond returned to join the Class of 2017. The scariest day of vet school was her second first day, but she recalled being immediately embraced by her new classmates. By the time Hammond finished speaking, there weren’t many dry eyes or people sitting in their seats.

NEW LEADER



Hyemi Sevening was selected as the new Assistant Dean for Advancement. Sevening has a wealth of fundraising and management experience, and was most recently employed as our interim Assistant Dean for Advancement since December 2016. She joined the school in August 2015 as a Senior Director of Development and has successfully raising major gifts to support a number of programs and initiatives. Prior to joining the school she served as a Senior Director for Development at the UC Davis Betty Irene Moore School of Nursing and at Iowa State University, and as Director of Development at the University of Louisville. As the Assistant Dean, Sevening will be responsible for designing, developing, delivering and administering the school’s complex fundraising program; identifying new donor prospects through research; developing materials, marketing plans and organizing related programs/events; cultivating, stewarding and soliciting donors; and managing the school’s fundraising program within the context of overall fundraising efforts at UC Davis

FACULTY RECRUITMENTS

- Professor of Neurology/Neurosurgery
- Professor of Anesthesiology
- Professor of Dermatology
- Professor (50%)/Professor In-Residence of Infectious Disease (50%)
- Professor (50%)/Professor In-Residence (50%) of Respiratory Biology or Toxicology
- Professor of Clinical Neurology/Neurosurgery
- Professor of Clinical Small Animal Emergency and Critical Care
- Professor of Clinical Microbiology-San Bernardino
- Professor of Clinical Avian Diagnostics-Turlock
- Professor of Clinical Pathology-Tulare
- Large Animal Clinic Director

- Specialist in Cooperative Extension-Beef Cattle Herd Health and Production
- Specialist in Cooperative Extension-Dairy Cattle Production Health
- Specialist in Cooperative Extension in Antimicrobial Stewardship
- Health Sciences Assistant Clinical Professor in Community Practice-Theriogenology

VETERINARY MEDICAL CENTER – LEADING THE WAY

The future Veterinary Medical Center brings together the school’s community of scholars, clinicians and veterinary students in facilities designed to provide efficient patient care with immediate access to state-of-the-art technologies. The facility design will encourage the application of scientific discoveries from multiple disciplines to the clinical setting to enhance patient care and the educational environment for veterinary students and residents.

The Livestock and Field Service Center is the first patient service area to come online. The center has been designed in consultation with Temple Grandin, PhD, well known for her groundbreaking work in engineering humane animal facilities and is a fellow in the Society of Biological and Agricultural Engineers. Grandin partnered with us to refine preliminary plans and design the best possible environment for livestock patient handling, care and clinical teaching emphasizing modern concepts in animal welfare.



Basic technical skills and knowledge of livestock and the roles of livestock in our society are an important part of the student educational experience. By providing a safe and controlled environment and a diverse caseload, rotations through the Livestock Medicine Service allow students to participate in surgeries such as castrations, common abdominal surgeries, C-sections and leg fracture repairs. This rotation also offers students additional experience with radiology, ultrasound, endoscopy, and even laparoscopy, CT and MRI.

CONNECTING ANIMAL HEALTHCARE AND PHARMACY EDUCATION

Recognizing the pet owner trend to obtain prescriptions for their pets from community-based pharmacies, online retailers or compounding facilities, the American Veterinary Medical Association recently announced its plans to work with the National Association of Boards of Pharmacy to offer veterinary education for pharmacists. Currently, schools of pharmacy in the U.S. are not required to include veterinary pharmacology in their curriculum. Already at the forefront, the school has established training for Doctor of Pharmacy (PharmD) graduates through a residency at the veterinary hospital and the Clinical Pharmacy Fellowship Program at the UC Veterinary Medical Center, San Diego. UC Davis is one of only four recognized programs across the country that offers advanced training for pharmacists, specifically designed to integrate them in veterinary medicine and prepare professionals who are well-suited to meet the growing industry needs in veterinary medicine.



Residents and fellows divide their time between Davis and San Diego. Through advanced clinical training in all aspects of small animal clinical pharmacology and rigorous research, post graduate pharmacists are able to understand and participate in the management of small animal patients with a variety of common diseases, perform basic compounding procedures and oversee technical staff performing compounding functions.

The pharmacy residency and fellowship programs rely exclusively on partnerships for funding to support the operational needs of the program, which includes research and innovative clinical training support.

UC DAVIS EXPANDS CARDIOLOGY SERVICES IN SAN DIEGO

With a growing number of patients in need of expert cardiology services in the San Diego community, the UC Veterinary Medical Center – San Diego (UCVMC-SD) has opened a second location in San Marcos. Board-certified cardiologists Tim Hodge and Joao Orvalho offer a wide array of medical and interventional cardiology procedures. The team is always available for consultations with the referral veterinary community throughout California, and encourage general practitioners to contact them with questions surrounding their patients' cardiac health.

Medical cardiology procedures offered by UCVMC-SD include: cardiovascular consultations, echocardiography (2-D, color Doppler, spectral Doppler, tissue Doppler, transesophageal and live 3-D), electrocardiography (digital 12 lead electrocardiograms, Holter monitors, and event monitors), digital radiography and fluoroscopy, and blood pressure measurement (indirect and direct methods).

Interventional cardiology procedures include: angiography (selective and non-selective), pacemaker implantation (single and dual-chamber pacing), patent ductus arteriosus (PDA) occlusion (PDA coil embolization, vascular plugs and amplatz canine ductal occluders), and balloon valvuloplasty (pulmonic, tricuspid and mitral valve stenosis, as well as ballooning of other congenital cardiac defects).

In a recent case Elsa, a 2-year-old Labrador retriever, was diagnosed with PDA. This congenital defect is a communication between the aorta and pulmonary artery that is supposed to close approximately 24 hours after birth. Many dogs with this defect will go into congestive heart failure by the time they are 1 year of age. Elsa was diagnosed and a minimally invasive procedure to occlude the PDA was performed by Drs. Hodge and Orvalho. Elsa was discharged from the hospital the next day with no congestive heart failure medications, and continues to do fine.

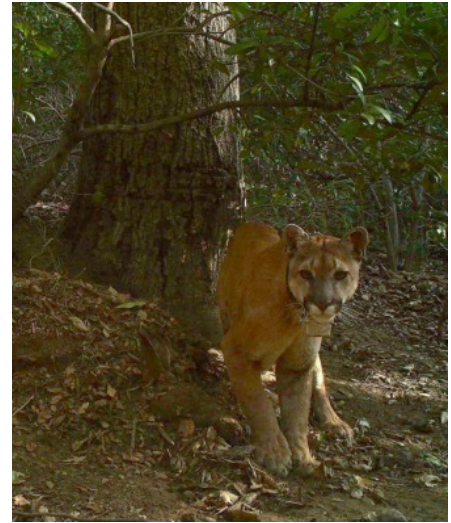


SOUTHERN CALIFORNIA MOUNTAIN LIONS' GENETIC CONNECTIVITY DANGEROUSLY LOW

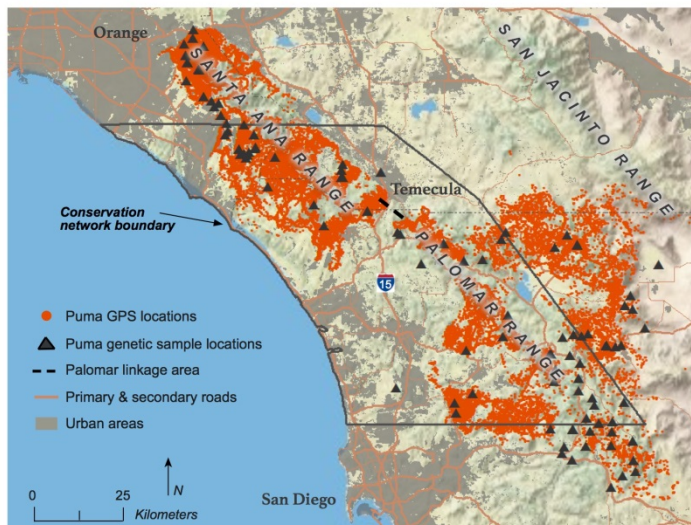
If a dangerously inbred puma population in Southern California is to survive in the future, an urgent need for genetic connectivity must be met, according to two scientific papers from a team of researchers coordinated by UC Davis, and involving scientists at the University of Wyoming and the University of Massachusetts–Amherst. The first paper, published in the journal *Royal Society Open Science* in May, reports that the puma population of

about 20 adults in the Santa Ana Mountains has the lowest genetic diversity ever reported for pumas besides the Florida panther, which nearly went extinct from genetic causes. The pumas' isolation is primarily due to surrounding urbanization from Los Angeles and San Diego. Puma movements in and out of the Santa Ana Mountains require them to cross I-15 — an 8-10 lane interstate highway.

University of Wyoming researchers conducted genetic analyses of both radiocollared and uncollared pumas to develop a multigeneration pedigree. This showed where pumas and their offspring were born, and whether they successfully migrated and reproduced after crossing I-15. Although seven males crossed I-15 over the past 20 years, only one — male puma #86 (M86) — was able to successfully produce offspring in the Santa Anas after migrating from the genetically diverse population to the east. By producing a total of 11 detected offspring, M86 rapidly disseminated unique genes into the inbred population, which reduced the level of inbreeding and significantly increased genetic diversity. Unfortunately, M86 was hit by a car between 2014 and 2015, and more than half of his offspring are either now deceased or in captivity.



“This is consistent with mortality rates we found previously in the region,” said Winston Vickers, a wildlife veterinarian from UC Davis’ Karen C. Drayer Wildlife Health Center who conducted most of the field research. “Only one other migrant, named M119, remains in the Santa Ana Mountains, but whether he is alive or produced offspring is uncertain.”



That single male mountain lion, M86, performed what amounts to a “genetic rescue,” said senior author Holly Ernest, a wildlife population geneticist and research veterinarian at the University of Wyoming. “Our study also shows how quickly his genetics were lost by high mortality levels of his offspring. This population needs help to regain healthy genetic diversity and persist in the Southern California landscape.”

The second paper, published in the journal *PLOS ONE*, provides a potential solution to this issue. In it, the researchers propose a conservation network for pumas spanning the Santa Ana Mountains and the Eastern Peninsular Mountains. Using genetic data

and data from GPS radio-collared pumas, this analysis identified critical habitat patches, movement corridors, and key road crossing locations across I-15 that would allow pumas to persist and increase genetic diversity.

“Without continued emigration into the Santa Ana Mountains by pumas coming from the east of I-15, eroding genetic diversity and continued inbreeding are expected to resume,” said veterinarian Walter Boyce, co-director of the Wildlife Health Center’s Southern California Mountain Lion Study with Vickers.

Primary financial support for the research was provided by the San Diego County Association of Governments, and the California Department of Fish and Wildlife.

RX ONE HEALTH COURSE

The goal of the *Rx One Health 2017* course is to provide a “prescription” or Rx for early career health professionals to prepare them for immediate engagement in global health careers that will demand effective problem solving skills, cross-disciplinary engagements, and solid foundations in field and laboratory activities. This intensive course is aimed at a level appropriate for recent graduates or students in medical and veterinary schools around the world, as well as other early career health, agriculture, and conservation professionals. The course is based on the principles and practices of One Health. Participants will be immersed in settings that will illustrate that the health of people, animals and the environment are inextricably linked.

Rx One Health 2017 will provide participants with direct access to mentors, tools, and knowledge to allow them to apply a One Health approach to their lives’ work. Course activities will all center on exposing participants to real-world One Health situations, challenging them to consider the many inter-related issues that are typical of complex problems, and to see firsthand, and even develop themselves, One Health strategies for overcoming these challenges. All participants will improve their understanding and grasp of One Health competencies in the areas of: cross-disciplinary communications; professional integrity, ethics and diplomacy; vision integration and advocacy for change; teamwork; and systems thinking. In addition, exposure to concepts and skills necessary for designing and participating in emerging infectious disease and toxin control programs will be provided.

Led by the UC Davis One Health Institute, University of Rwanda, and Sokoine University of Agriculture, Rx One Health is being taught for the first time in June 2017 to a maximum of 22 students. Its curriculum has been built on the tremendous legacy of a course called Envirovet Summer Institute that was co-led by UC Davis and offered multiple times throughout the 1990s and 2000s, and which trained more than 400 veterinarians and veterinary students from around the world in ecosystem health (a precursor to One Health). Rx One Health will be an immersion-style, hands-on, intensive training course delivered over a 4-week period, with all coursework occurring in Tanzania and Rwanda in 2017.

In Tanzania, students gained first-hand knowledge and experience with a variety of One Health challenges and solutions, including topics such as: animal-based food systems and zoonotic disease challenges (e.g. bovine tuberculosis); emerging infectious disease identification and control; wildlife capture; biosafety and security; cultural and ecological tourism; wildlife conservation and park management; water quality and delivery systems; health and food challenges facing underserved communities; and environmental contaminants.



After two weeks in Tanzania students traveled to Rwanda, where they will engage in an immersive exercise to envision a One Health Cooperative for a community outside Volcanoes National Park that would address, balance, and solve very real challenges facing the community with regard to safe and efficient livestock production and welfare (dairy cows); nutrition (milk quality, production, and delivery), community health (maternal/child health care interventions) and wildlife conservation (mitigating wildlife-human contact outside the park) amidst changing climate and socioeconomic environments. Together with mentors and stakeholders, the students will lay the groundwork for a One Health Cooperative called Kinigi Farms, and will create a plan and materials that can be used by partners in Rwanda to garner support for this and similar initiatives that strive to balance conservation, health, and livelihoods.

ORTHOPEDIC SURGEONS SUCCESSFULLY UTILIZE BONE REGROWTH TECHNOLOGY

Five years ago, UC Davis veterinary oral surgeons started using a bone growth stimulator to regrow jawbones in dogs. To date, they have successfully regrown nearly three dozen jawbones. Now, that technology is being utilized in orthopedic surgery to repair bone injuries in dogs’ legs.

Dr. Amy Kapatkin, chief of the Orthopedic Surgery Service, has implemented the regrowth strategy in 11 dogs, with nine returning to full function and two with acceptable function. All 11 cases involved dogs with nonunion fractures in their limbs, meaning previous attempts to repair their breaks failed to unite the bone as one again. All dogs in the study had at least one previous surgery, while some had as many as five previous attempts to heal their bone properly.

While not all regrowth surgeries are the same, the basic premise of the procedure is to place a scaffold (called a compression resistant matrix [CRM]) saturated with a bone morphogenetic protein (BMP) into the bone defect in hopes of stimulating additional bone growth from the surrounding, healthy native bone. The use of CRM and BMP specifically targeted areas of persistent bone defect after at least one failed surgery. Previously, the only additional treatment would be to try to set the break again in the same fashion with the dog's own graft, which in many cases, carries the same potential fail rate due to a lack of blood supply to the bone.



“We are excited about this new treatment, and are optimistic that our use in orthopedics can have the same long-term positive results our oral surgeons have seen with jawbones,” said Dr. Kapatkin. “This initial success holds great promise for future patients – not just at UC Davis, but throughout the veterinary community.”

These cases at UC Davis represent the first large case series use of BMP to treat long bone nonunions in veterinary medicine, an example of how the faculty are leading the way in new treatment discoveries and advancing veterinary medicine to new heights.

GENETIC RISK FACTOR FOR EQUINE EYE CANCER IDENTIFIED

In the cover article for the *International Journal of Cancer*, scientists announced the discovery of a genetic mutation in horses that is hypothesized to impact the ability of damage specific DNA binding protein 2 to carry out its standard role. Normally, the protein conducts DNA surveillance, looking for UV damage and then calling in other proteins to help repair the harm.



“The mutation is predicted to alter the shape of the protein so it can’t recognize UV-damaged DNA,” said Dr. Rebecca Bellone, an equine geneticist at the Veterinary Genetics Laboratory and associate adjunct professor at the school. “We believe this is a risk factor because cells can’t repair the damage and accumulate mutations in the DNA that lead to cancer.”

Several equine breeds, including Haflingers, have a higher occurrence of limbal SCC, the form of the disease that originates in the junction between the cornea—the clear surface of the eyeball—and the conjunctiva that covers the white of the eye. A former study, conducted by Bellone and one of her research partners, Dr. Mary Lassaline, found that about 26 percent of SCC-affected horses in a retrospective study were Haflingers.

“The fact that we see this type of cancer in a relatively small breed with a narrow pedigree makes it a good model to study,” said Lassaline, associate professor of clinical equine ophthalmology.

Ocular SCC can lead to vision loss and even loss of the eye. In advanced cases, SCC can be locally invasive and spread to the orbit and eat away at bone and eventually the brain—leading to loss of life. These recent study results offer a huge application in identifying horses at risk for developing SCC on two fronts.

“First, it’s important for the individual horse with a known risk and we can be more vigilant about exams as well as protecting their eyes from UV exposure,” Lassaline said. “If detected early, we can remove the tumor and save the eye. Secondly, that knowledge is important for making informed breeding decisions.”

Scientists at the UC Davis Veterinary Genetics Laboratory were able to develop a genetic test for horses based on the research. The test determines if a horse carries the mutation or has two copies of the risk variant, putting it at highest risk for cancer.

In addition to improving the health of horses, this study may have implications for human health as well. The gene found to be associated with equine SCC is also linked in humans to xeroderma pigmentosum complementation group E—a disease characterized by sun sensitivity and increased risk of cutaneous SCC and melanoma. “There is an interesting parallel in humans with mutation in this protein,” Bellone said. “Now we have the ability to understand why it’s affecting the eyes of horses as well as the skin of humans.”

This research was supported in part by generous donors to the Center for Equine Health as well as the Morris Animal Foundation.

SAFER SEDATION FOR CATS ON THE HORIZON

Advancing patient care is one of the primary goals of the Center for Companion Animal Health (CCAH). Often the best way to achieve that goal is to fund research projects that lay a foundation for larger clinical trials that eventually make their way into practice. Thanks to CCAH donors who support these endeavors, veterinary anesthesiologist Bruno Pypendop recently published a study in *Veterinary Anesthesia and Analgesia* that may lead to safer sedation techniques for cats. His research examined the cardiovascular effects of dexmedetomidine, with or without MK-467, when given intravenously to cats. Dexmedetomidine is widely used to sedate animals or provide pain relief. However, the drug does come with adverse cardiovascular effects such as vasoconstriction and decreased heart rate.



“Our study showed that by adding MK-467 when administering dexmedetomidine, we can blunt some of its cardiovascular side effects without affecting its anesthetic/analgesic properties,” Pypendop said.

He pointed out that young, healthy cats are better able to tolerate the effects of dexmedetomidine, while older, sicker cats are more likely to suffer adverse effects, so its use is often avoided. Several studies from Finland show MK-467 to be effective at mediating some of the negative cardiovascular effects in dogs and Pypendop was asked by colleagues there to pursue this initial study on cats. With the help of two primary CCAH grants, Pypendop and his team was able to launch an investigation into the efficacy of using MK-467 in cats. He approached the Winn Feline Foundation for further funding with the support of a matching commitment from the CCAH.

While MK-467 is still being explored through research and not commercially available, Pypendop said the drug shows promise as a means of improving sedation and anesthesia for cats, especially for older felines or those with systemic disease.

THE CHANGING FACE OF VETERINARY MEDICINE

We live in a rich multi-cultural society where veterinarians and pet owners have different world views, languages, religious beliefs, biases, gender identity, abilities and other diverse characteristics. As a veterinary community, it’s important that we accept these differences, learn from each other and appreciate the unifying element we all share – the desire to help animals. Forty-three percent of the incoming veterinary students (Class of 2021) at UC Davis are non-Caucasian, which reflects the changing demographics of California and the nation.

How might cultural diversity impact veterinary communications? A language barrier between veterinarian and client could impact the client's understanding of the prescription dose instructions. Due to cultural norms, that client may be reticent to ask for clarification. That difference could result in an overdose. Eye contact is another example. In some cultures, making eye contact is considered disrespectful, but westerners see direct eye contact as a sign of attention and trust.



Students, faculty and staff at the school have the opportunity to participate in educational activities, workshops and seminars to learn about and embrace the range of cultural differences that make up society, and help us to deliver better veterinary care. One initiative funded annually by the school provides for ten students, faculty and staff to participate in the online certificate training program offered by the Center for Excellence for Diversity and Inclusion in Veterinary Medicine, jointly sponsored by Purdue University College of Veterinary Medicine and the Association of American Veterinary Medical Colleges. The program is designed to improve their communication, leadership, teaching, learning, and cultural competency skills.

"I found the program worthwhile as there is so much research into inclusion and diversity that I did not know and some of the recommendations for how to approach a diverse client population were new to me."

~ Katherine Hansen, Assistant Professor

Program participants complete a series of 13 learning modules, three hours of community engagement, four one-hour pertinent activities (i.e. lectures, festivals, art exhibits), and a final capstone paper. Certificates and nine hours of continuing education credit are awarded upon completion.

HOSPITAL ACQUIRES NEW CARDIAC SURGERY EQUIPMENT

Thanks to an anonymous foundation that enjoys supporting feline-focused needs, a donation was recently made to the hospital to purchase a state-of-the-art fluoroscopy unit for the Cardiology Service. The OEC 9900 Elite Mobile C-arm (with an advanced cardiac package) will soon replace a similar unit the hospital has been using for more than 15 years.

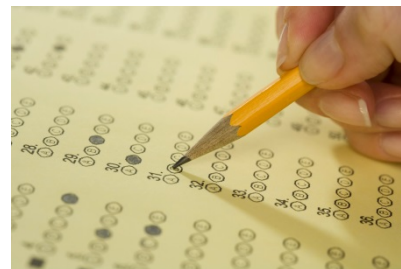


The equipment supports interventional cardiology procedures by providing live motion radiology observed by the cardiologists to help guide them intraoperatively during surgeries. The use of "live x-rays" is also being utilized by UC Davis' Soft Tissue Surgery Service to guide surgeons minimally invasively through the body. This cutting-edge technology has made surgeries quicker and safer, and in some cases, offered viable surgical intervention where there were previously no treatment options.

This new fluoroscopy unit provides better quality imaging with higher resolution and adaptability for cardiovascular imaging than the previous version. These images are now more readily imported into hospital servers for easier consultation with other specialists who may be in another part of the hospital. Finally, the unit provides improved radiation safety for the veterinarians, technicians, and students in the operating room. Some of the procedures most commonly performed to fix congenital heart defects using this equipment include: placement of pacemakers, balloon valvuloplasty for pulmonic stenosis, and closure of patent ductus arteriosus – a vessel that allows blood to skip circulation to the lungs. Recently, the service used the fluoroscopy unit to place a pacemaker in a donkey and perform an angiogram study on a parrot.

LICENSURE FOR UNIVERSITY VETERINARIANS IN CALIFORNIA

Beginning in January 2017, licensure is now required for veterinarians who participate in patient care within universities in California. Previously veterinarians were exempt from licensure as there are a relatively small number of veterinarians with the level of advanced training needed to maintain the quality of our clinical programs worldwide, therefore it is essential to be able to recruit internationally for this expertise. If those veterinarians were required to obtain individual licensure by state board examination and possibly also the ECFVG, this would cripple the school's ability to recruit and retain those individuals and have far-reaching impacts on the quality of our programs.



In order to meet this requirement, administrators from UC Davis and Western University of Health Sciences worked with the California Veterinary Medical Board (CVMB) to develop a University Veterinary License. Veterinarians are issued a University Veterinary License after they attend the 26-hour California Licensing Curriculum, receive a background check, and pass the CVMB Veterinary Licensing Examination.

In early 2017, the Veterinary Medical Teaching Hospital established a taskforce to develop a California Licensing Curriculum that could be delivered on-site to faculty and house officers, which was chaired by Jane Sykes, Chief Veterinary Medical Officer, and included Drs. Lane Johnson, Joan Dean Rowe, Joie Watson and Bret McNabb. The curriculum was approved by the CVMB on May 25, 2017.

From June 1-3, 2017, 44 faculty members and house officers took the California Licensing Curriculum, which was delivered by 12 prominent veterinarians from both within and outside the school. The curriculum will be offered again from August 3-5, 2017, and on an annual basis electronically to incoming house officers and faculty. Currently another 43 veterinarians are scheduled to take the curriculum in August. University veterinarians can also take the curriculum offered in northern and southern California in March and November if they are unable to attend the curriculum offered by the university. Licenses will be issued once the CVMB has completed updates to their BreEze online submission site to allow processing for University Veterinary Licenses. This is anticipated to occur in late 2017.

AWARDS AND HONORS

The school's 2017 Alumni Achievement Awards were presented during the Commencement Ceremonies. This year's recipients were:

- *Dallas Hyde* - In recognition of his outstanding leadership and accomplishments in administration, research, postgraduate education and professional service in the school.
- *Jonna Mazet* - In recognition of her superior research and teaching toward improving global health for people and animals, and conservation of threatened species. (pictured)
- Bill Rood - In recognition of his leadership and community impact as the co-founder of Rood and Riddle Equine Hospital.
- *Ted Stashak* - In recognition of his sustained commitment and efforts to advance the education and knowledge of veterinarians, farriers, and horse owners to improve the health and wellbeing of horses.
- *John Stuelpnagel* - In recognition of extraordinary contributions to society through his pioneering work, entrepreneurial spirit and vision for the application of genetic sequencing.



Each year members of the faculty receive awards in recognition of their service, research, and teaching contributions. This year the following faculty were honored:

- *Patricia Conrad*, 2017 AVMA Lifetime Excellence in Research Award
- *Larry Cowgill*, 2016 Hill's American College of Veterinary Emergency and Critic Care Jack Mara Scientific Achievement Award
- *Travis Henry*, Robert Wiggs 2016 American Veterinary Dental College Outstanding Candidate Award
- *Kate Hurley*, 2017 Maddie Hero Award, Maddies Fund
- *Marguerite Knipe*, UC Davis Academic Federation's 2017 Award for Excellence in Teaching
- *Christine Kreuder Johnson*, UC Davis Academic Senate's 2017 Distinguished Public Service Award
- *Jonna Mazet*, 2016 Zoetis Award for Research Excellence
- *Jonna Mazet*, 2017 Remarkable Women of UC
- *Jonna Mazet*, 2017 Tom Hall/Nelson Sewankambo Mid-Career Award from the Consortium of Universities for Global Health (CUGH)
- *Jorge Nieto*, 2016 SVM Faculty Clinical Excellence Award
- *Joanne Paul-Murphy*, Award for Outstanding Services to Kakapo Conservation (pictured)
- *Sue Stover*, 2016 University of Kentucky Equine Research Hall of Fame
- *Sue Stover*, 2016 AVMA Lifetime Excellence in Research Award
- *Bill Vernau*, UC Davis Academic Senate's 2017 Distinguished Teaching Award
- *Bill Vernau*, School of Veterinary Medicine 2016 Distinguished Faculty Teaching Award



Upcoming Continuing Education Offerings

July 22-23 10th Annual Back to School Seminar, UC Davis

October 13-15 Fall Festival, UC Davis

For a full listing of CE programs please visit the web site at: <http://www.vetmed.ucdavis.edu/CE/>

RECENT FACULTY PUBLICATIONS

A missense mutation in damage-specific DNA binding protein 2 is a genetic risk factor for limbal squamous cell carcinoma in horses

[Bellone RR](#), [Liu J](#), [Petersen JL](#), [Mack M](#), [Singer-Berk M](#), [Drögemüller C](#), [Malvick J](#), [Wallner B](#), [Brem G](#), [Penedo MC](#), [Lassaline M](#).

[Int J Cancer](#). 2017 Apr 20. doi: 10.1002/ijc.30744. [Epub ahead of print]

<http://onlinelibrary.wiley.com/doi/10.1002/ijc.30744/full>

Outcome of nonunion fractures in dogs treated with fixation, compression resistant matrix, and recombinant human bone morphogenetic protein-2

[Massie AM](#), [Kapatkin AS](#)¹, [Fuller MC](#), [Verstraete FJ](#), [Arzi B](#).

[Vet Comp Orthop Traumatol](#). 2017 Mar 20;30(2):153-159. doi: 10.3415/VCOT-16-05-0082. Epub 2017 Jan 17.

<https://vcot.schattauer.de/en/contents/archivstandard/issue/2465/manuscript/27052.html>

Human and feline adipose-derived mesenchymal stem cells have comparable phenotype, immunomodulatory functions, and transcriptome

[Clark KC](#), [Fierro FA](#), [Ko EM](#), [Walker NJ](#), [Arzi B](#), [Tepper CG](#), [Dahlenburg H](#), [Cicchetto A](#), [Kol A](#), [Marsh L](#), [Murphy WJ](#), [Fazel N](#), [Borjesson DL](#)

[Stem Cell Res Ther](#). 2017 Mar 20;8(1):69. doi: 10.1186/s13287-017-0528-z.

<https://stemcellres.biomedcentral.com/articles/10.1186/s13287-017-0528-z>

Polychlorinated biphenyl and polybrominated diphenyl ether profiles in serum from cattle, sheep, and goats across California

[Sethi S](#), [Chen X](#), [Kass PH](#), [Puschner B](#).

[Chemosphere](#). 2017 Aug;181:63-73. doi: 10.1016/j.chemosphere.2017.04.059. Epub 2017 Apr 14.

<http://www.sciencedirect.com/science/article/pii/S0045653517305957>

Detection of 3,3'-Dichlorobiphenyl in Human Maternal Plasma and Its Effects on Axonal and Dendritic Growth in Primary Rat Neurons

[Sethi S](#), [Keil KP](#), [Chen H](#), [Hayakawa K](#), [Li X](#), [Lin Y](#), [Lehmler HJ](#), [Puschner B](#), [Lein PJ](#).

[Toxicol Sci](#). 2017 May 16. doi: 10.1093/toxsci/kfx100. [Epub ahead of print]

<https://academic.oup.com/toxsci/article-lookup/doi/10.1093/toxsci/kfx100>

Evolution of avian encephalomyelitis virus during embryo-adaptation

[Hauck R](#), [Sentíes-Cué CG](#), [Wang Y](#), [Kern C](#), [Shivaprasad HL](#), [Zhou H](#), [Gallardo RA](#)

PMID: 28532787 DOI: [10.1016/j.vetmic.2017.04.005](https://doi.org/10.1016/j.vetmic.2017.04.005)

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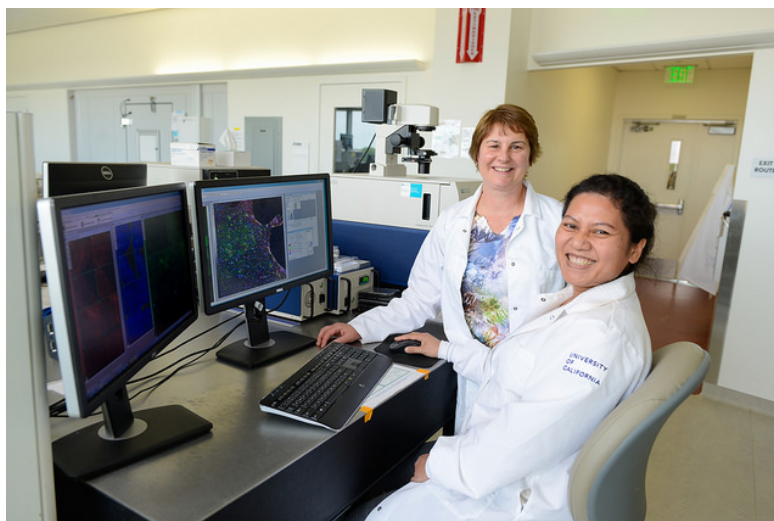
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Outcome after medical and surgical intervention in horses with temporohyoid osteoarthropathy

[Espinosa PM](#), [Nieto JE](#), [Estell KE](#), [Kass PH](#), [Aleman M](#)

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Dr. Pamela Lein, Director CounterACT Center of Excellence, examines brain samples with post-doctoral researcher Suangsuda Supasai.