

# Advance

UC DAVIS SCHOOL OF VETERINARY MEDICINE

Winter 2017



Thanks to the generosity of our donors and friends, the school's scholarship program helps to reduce the average debt of our DVM students at graduation.



## Addressing Student Debt

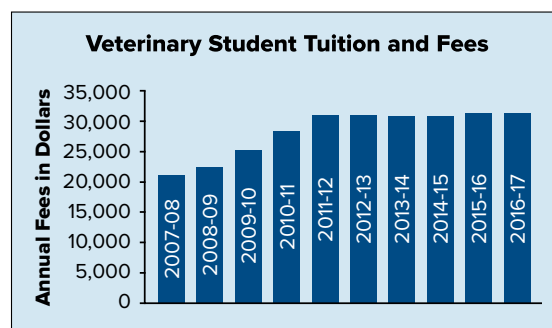
The cost of a quality professional education can be a significant impediment for our students as they strive to reach their dream of becoming veterinarians. The school has taken multiple steps to increase financial aid and scholarship support, thus stabilizing tuition and fees, and reducing the financial burden on students.

### Tuition and Fees Stabilized

We have stabilized tuition and fees since 2011. Our current annual cost for the veterinary program is \$31,320. Student fees for the DVM program have been modestly increased only once in six years to keep pace with inflation rates.

### Increased Financial Aid

Our aggressive approach to increase financial aid through loans, grants and scholarship support has made a significant impact in helping our students. At the university, approximately one-third of all tuition is returned to students as financial aid. Veterinary students receive an average of \$6,700 annually in financial aid grants in addition to scholarship support. The school's scholarship endowment has now grown to more than \$68.7 million, making it one of the largest in the country. In 2016, we were able to provide \$2.7 million in scholarships and another \$4 million in financial aid, as well as \$500 to each first-year student for computer support.



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# Imaging Modalities

## Help Translate Research to Clinical Care

With some of the most advanced and exclusive equine imaging capabilities available in veterinary medicine, UC Davis is able to stay at the cutting edge of detecting, diagnosing and treating horse racing injuries. By utilizing information learned through the school's J.D. Wheat Veterinary Orthopedic Research Laboratory, radiologists and clinicians at the veterinary hospital advance the care and rehabilitation of equine athletes.

Magnetic resonance imaging (MRI) uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of organs, soft tissues, and other internal body structures. Detailed MRIs allow veterinary radiologists to better evaluate injuries that may not be assessed adequately with other imaging methods such as x-ray, ultrasound or computed tomography. MRIs can provide early detection of tendon and ligament lesions in horses, potentially reducing the severity of the injury.

A brand new imaging modality now available is positron emission tomography (PET scan). Used mostly in human medicine, UC Davis is introducing PET scanning to the equine world. Following testing of a prototype PET scanner for equine research last year, the hospital recently acquired its own PET scanner through donations from the Carol Green Sundance Ranch Fund. PET imaging of horses has not previously been

possible due to the difficulty of positioning equine patients inside the standard PET instruments. With the new portable design, this molecular imaging modality can now be applied to improve management of equine lameness.

### Imaging Assistance with Stem Cells

Radiologists at the school are also pioneering the use of imaging technology to monitor stem cell positioning in acute tendon lesions in horses. Although stem cells hold tremendous promise for repairing injured tissue, getting cells to the site of injury is not always clear. Thus, veterinary researchers have relied on tracking technologies to monitor the persistence and location of stem cells after administration. Better visualization of the location is a necessity to advance regenerative medicine therapies. Nuclear medicine (scintigraphy and PET) and MRI can be used for stem cell tracking. Scintigraphy documents regional distribution and persistence of stem cells while MRI illustrates the exact location of stem cells after administration. Applications of the newly acquired PET scanner toward this goal hold exciting promise for the future, as faculty work with stem cells to continue to improve the treatment of cartilage and tendon injuries.



Dr. Mathieu Spriet positions a horse's leg in UC Davis' new portable PET scanner.



## Financial Aid Guidance

The new Veterinary Medicine Student Services and Administration Center opening in March will house the academic and student program teams, committed to supporting students through a wide range of services and programs. To help students successfully obtain funding, manage their finances and control their debt, the team provides financial counseling services, information and on-line resources.

## Career Resources

We ensure a smooth transition into the veterinary workforce by providing multiple professional career services including resume writing, interviewing, and career counseling and exploration. The school has also established the following resources:

- **VetMedJobs** – a free online job board used by more than 950 students and alumni, and 500 employers. [www.vetmed.ucdavis.edu/students/clw/career/index.cfm](http://www.vetmed.ucdavis.edu/students/clw/career/index.cfm)
- **Career and Networking Night** – an annual event to facilitate interactions between our students and veterinary professionals to explore extended learning and employment opportunities.
- **The Mentor Network** – an informal student-driven information network designed to connect current DVM students to professionals who represent a wide variety of careers in veterinary medicine. [www.vetmed.ucdavis.edu/students/clw/career/mentor-network.cfm](http://www.vetmed.ucdavis.edu/students/clw/career/mentor-network.cfm)

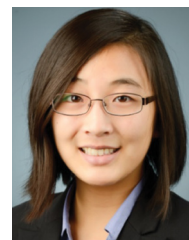
Thanks to these efforts, 90 percent of our graduates are employed or entering advanced training (internships or residencies) at the time of graduation.

“We are deeply grateful for the generous support of our individual, alumni, association and corporate scholarship donors who invest in our students—the future leaders in veterinary medicine and science who will make the world a better place,” said Dean Michael Lairmore.

Join us by making an online donation:  
<https://give.ucdavis.edu/Go/DVMscholarship>

**“I was ecstatic when I learned I was accepted at UC Davis, but also worried about how I would pay off all the money I would need to borrow to pay for veterinary school.”**

– Catherine Deng, Class of 2019



**“I want to make the most of every opportunity because of the scholarship that I was fortunate to receive. I feel like I have a partner going through school, helping me to achieve success.”**

– Christian Munevar, Class of 2018



## CAHFS Lab Opening

Rain couldn't dampen the celebration on October 28th at the dedication ceremony for a new 29,000-square-foot facility as part of the California Animal Health and Food Safety Laboratory System in Tulare. The school operates the lab system for the state Department of Food and Agriculture to protect animal health and performance, and safeguard public health.

“As we dedicate this new laboratory in Tulare, we are reminded that skilled scientists with state-of-the-art diagnostic equipment are truly at the front line,” said Karen Ross, secretary of the Department of Food and Agriculture. “They work with farmers, ranchers and veterinarians to protect the safety and security of our nation's food supply.”

The \$49.4 million lab, paid for by the state, is named in honor of Professor Emeritus Alex A. Ardans, distinguished former director of CAHFS for 21 years.

“It is quite fitting as we celebrate the construction of the new Tulare facility that we also honor Dr. Ardans, whose vision enabled the statewide laboratory system to become a national



leader in detecting and preventing livestock and poultry diseases,” said Dean Michael Lairmore.

The lab will provide rapid detection and response to both routine illnesses and catastrophic, emerging animal diseases. Testing will be available for livestock, poultry and horses. In addition to the Tulare location and the central diagnostic lab at UC Davis, the statewide laboratory system has branches in San Bernardino and Turlock.

## Investing in Future **Veterinary Leaders**

**T**hanks to the generosity of the Northern San Joaquin Veterinary Medical Association (NSJVMA), the school will create an endowed scholarship to invest in future veterinary leaders, helping address a growing need for more veterinarians in the region. During its annual dinner held in November, NSJVMA President Dr. Frankie Bonifacio ('96) announced the attainment of establishing the NSJVMA Endowed Scholarship Fund.

The scholarship will be awarded annually to one or more DVM students who plan to enter into small or large animal clinical practice, with preference to students who graduated from a high school in the northern San Joaquin region.

"NSJVMA is a leader in our valley in promoting wellness care for both companion pets and livestock. We are pleased to help sponsor new veterinary clinicians from UC Davis that come from our area and recognize that we are doing what we can to help offset the cost of educating our new member veterinarians," Bonifacio said. "We thank our many members for years of helping raise the funds that we are using to set up this scholarship fund."

Building on this momentum, NSJVMA Treasurer Dr. Paul Sessa ('84) encouraged members to continue supporting the scholarship to increase its impact.

"Our school is deeply grateful to the NSJVMA for their gift," said Dr. Karl Jandrey, associate dean for Student Programs. "This investment in our future veterinary leaders



Pictured left to right are Drs. Frankie Bonifacio, Karl Jandrey and Paul Sessa.

will benefit animals, people and the environment for decades to come."

Established in 1942, the association has a membership of more than 100 veterinarians who play vital roles serving the communities of Stanislaus and San Joaquin counties—providing care for pets and livestock, serving as experts in herd health and reproduction, and helping local community projects.

For information about making a gift to the NSJVMA Endowed Scholarship Fund, please contact the Office of Development at 530-752-7024.

## Unraveling One of the

# Zika Virus Mysteries



**T**hird-year student Hannah Laurence took a big step this past year in her journey to become a veterinary research scientist. Not only did she complete a year-long program as a Howard Hughes Medical Institute



Hannah Laurence

(HHMI) fellow (one of 68 in the nation), but the biomedical research study she participated in recently appeared in the journal *Science*.

Laurence worked in the laboratory of Professor Jeff Kieft

in the Department of Biochemistry and Molecular Genetics at the University of Colorado School of Medicine, where the research team discovered the molecular process used by the Zika virus to "hijack" cells, and potentially how the virus makes molecules that are directly linked to disease.

"Stepping out of the veterinary curriculum for a year was challenging but ultimately an extraordinary experience," Laurence said. "I have an incredible amount of support from our faculty here at UC Davis, and I am grateful to those who have helped me in pursuing my dream of becoming a veterinary research scientist."

In addition to working in the Kieft lab, Laurence attended six different research conferences around the



# Zoo Medicine Resident Brings Unique Background

The diversity of species in zoological medicine keeps resident Dr. Matt Marinkovich on his toes. His morning at the Sacramento Zoo starts with a health check on a pair of newly acquired sifaka lemurs that the zoo hopes to breed. It moves on to a yearly wellness examination (which all zoo animals receive) on a California tiger salamander, and a check-up on a spiny tailed iguana that has been a bit under the weather. Marinkovich administers antibiotics and subcutaneous fluids to the iguana and is encouraged that it has gained four grams in the last four days.

His duties continue with monitoring the recovery of a bale of western pond turtles from shell infections that, according to Marinkovich, exemplify the important role a zoo veterinarian plays. It will take long-term care and continual treatment and monitoring to achieve a renewed level of wellness in the turtles. With expert care from Marinkovich and the team, all of the zoo's animals will maintain a high quality of health.


Like all first-year residents in the Zoological Medicine Service, Marinkovich spends much of his time at the zoo. As part of the UC Davis team, which also includes faculty members and students, he cares for more than 500 animals that reside at the zoo. No two days are the same, and Marinkovich prefers it that way. The variety of animals at the zoo was one of the main reasons why UC Davis was his first choice for a residency.

"While this large number of animals has its challenges, it's also part of the excitement," Marinkovich said. "Plus, the opportunity to follow in George Kollias' (Cornell professor and UC Davis' first ever zoo medicine resident) footsteps made UC Davis the right residency for me."

Growing up in San Diego, Marinkovich frequented Sea World and the San Diego Zoo as much as possible. There isn't a time

he can remember when he didn't aspire to a career with animals. While working with the Santa Barbara Marine Mammal Center as an undergraduate at Westmont College, those aspirations focused on becoming a veterinarian.

To prepare for his eventual acceptance into the Cornell University College of Veterinary Medicine, Marinkovich spent a year in South America (Bolivia, Chile and Peru) working with wildlife agencies, and two years as a veterinary assistant at an emergency clinic in San Diego. Then, for a summer during veterinary school, he worked with Gorilla Doctors in Uganda, Rwanda and the Democratic Republic of the Congo. These experiences influenced his decision to work with exotic animals and to help save them. Now as a resident, he is honing his skills to achieve his ultimate career goal of being a zoo veterinarian at a facility where he can participate in animal conservation and international field work.



First-year zoo medicine resident Dr. Matt Marinkovich holds a six-banded armadillo at the Sacramento Zoo.

country, including the Meriel-NIH National Veterinary Scholars Symposium. Networking at the conferences and sharing her research proved a big part of the fellowship and helped her bond with other HHMI fellows. Her experiences are exactly why Dr. Isaac Pessah, associate dean for Research and Graduate Education, remains excited to see students pursue research opportunities.

"Ms. Laurence exemplifies the exceptional preparation and dedication of our students to not only address real word challenges, but also make fundamental research contributions that have translational impact," he said.

Coming back into veterinary school proved a little challenging in the beginning for Laurence because she had to integrate into a new class of students, but instead of one family of classmates, she now belongs to two. She credits the fellowship as a valuable experience in terms of professional and personal growth.

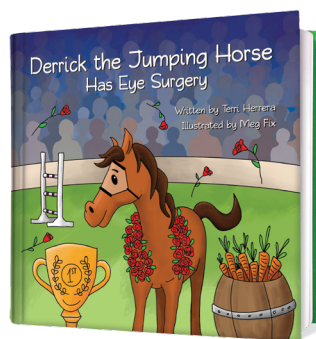
"My year in the lab fostered independent thinking and creativity. I had to approach problems from different perspectives—that can't be taught in the classroom," Laurence said. "I feel like I came a long way in becoming a truly analytical scientist and medical professional."

# Equine Ophthalmology Care Inspires *Children's Book*

At UC Davis, difficult health issues and limited treatment options are challenges faced by the professional teams on a daily basis.

Derrick, an 8-year-old Dutch Warmblood gelding, developed cataracts in both eyes. As a talented jumper that owner Terri Herrera planned to convert to a hunter, Derrick's intended career didn't allow much room for imperfect vision. After consulting with her veterinarian in Southern California, Herrera decided to make the 8-hour drive north to see the equine ophthalmology experts at the UC Davis veterinary hospital. It was there that she met Dr. Mary Lassaline, whom she credits with saving Derrick's life.

On Derrick's initial visit to Davis, Lassaline elected to insert cyclosporine implants into each eye. These implants delivered therapeutic levels of cyclosporine to the eye, thus decreasing the frequency and severity of uveitis flare-ups. After a two-night stay, Derrick left the hospital and soon returned to work. Although the vision in his right eye was compromised, he was able to compete successfully that season in the hunter division with vision only in his left eye. Herrera praises Lassaline's work, stating that without Lassaline's intervention, she would never have seen Derrick show, an experience she greatly treasures.



Proceeds from the children's book will benefit the Equine Ophthalmology Service.

Several months later, however, Derrick's vision worsened. A mature cataract in his left eye threatened blindness. Believing nothing could be done, Herrera made the heart-wrenching decision to euthanize him and canceled Derrick's future appointment at the hospital, explaining the situation. Within minutes, Lassaline called her back, determined to save Derrick's life. Derrick spent the next 40 days at the hospital receiving cataract surgery and continual care from the veterinarians, technicians and students.

Despite their best efforts, Derrick ultimately lost his vision. Herrera considers the surgery and her entire experience at UC Davis to be an overwhelming success, however, because it certainly saved Derrick's life. In fact, she was inspired to write a children's book based on Derrick's ordeal to encourage others. Proceeds from *Derrick the Jumping Horse Has Eye Surgery* will be donated to the hospital's Equine Ophthalmology Service and to pediatric uveitis research.

Herrera views this book, available March 17 on [www.derrickthehorse.com](http://www.derrickthehorse.com), as part of Derrick's new purpose. He continues to be Herrera's special equine companion and she hopes his story will inspire others.

## Strategic Planning: Preparing Veterinarians to Meet Societal Needs

Faculty, students and alumni are active all over the world, working to solve complex problems that impact animal, human and environmental health. The school's rigorous four-year program prepares graduates to pursue diverse career opportunities in veterinary medicine and serve the ever-expanding needs of society.

### 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

Beginning with the Class of 2015, a new curriculum designed around learning outcomes and core competencies was implemented. This dynamic outcomes-based curriculum is comparative across species, integrates material vertically and horizontally, is centered on body systems rather than by disciplines, and is taught using problems, cases, lectures, small group discussions and labs. Students learn normal and abnormal content together in context of how the material will be applied in practice. Strengths of the curriculum include:

- An emphasis on research, problem-solving, critical thinking and life-long learning skills
- Student participation in one clinic day every three weeks beginning with the first year
- A core material and comparative approach for the first two years for all students
- The ability for third- and fourth-year students to continue to learn comparative approaches and select an emphasis in small animal or large animals (equine, livestock or zoological medicine)
- Evaluation of clinical competencies prior to graduation



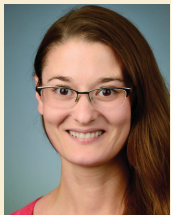
# Welcome New Faculty and New Leadership



## Dr. Ingrid Balsa

Assistant Professor of Clinical Small Animal Soft Tissue Surgery

Special Interests: minimally invasive surgery; interventional radiology



## Dr. Jenessa Gjeltrema

Assistant Professor of Zoological Medicine

Special Interests: noninfectious and environmental disease affecting zoological species and ecosystem health



## Dr. Ilana Halperin

Health Sciences Assistant Clinical Professor of Community Medicine

Special Interests: small animal pain management and dental health



## Dr. Jill Hicks

Assistant Professor of Clinical Neurology/Neurosurgery

Special Interests: local chemotherapy treatment for brain tumors; brain tumor-associated epilepsy; biomarkers of spinal cord injury



## Dr. Blythe Jurewicz

Health Sciences Assistant Clinical Professor of Community Medicine

Special Interests: feline medicine; dermatology; dentistry



## Dr. Isabelle Kilcoyne

Assistant Professor of Clinical Equine Surgical and Emergency Critical Care

Special Interests: gastrointestinal surgery and diagnostics; orthopedic infection and treatments



## Dr. Luke Wittenburg

Assistant Professor of Developmental Cancer Therapeutics

Special Interests: cancer biology; clinical pharmacology; pharmacokinetic/pharmacodynamic relationships in cancer therapy



## Dr. Kate Hopper

was appointed director of the Small Animal Clinic. She previously served as interim director and as co-director of the residency

training program for the Small Animal Emergency and Critical Care Services. As Chief of Veterinary Medical Staff for the small animal clinic, she continues to be responsible for the educational, patient care and client/referring veterinarian service programs of the clinic, including operational, fiscal and facilities issues. Hopper's research interests include clinical acid base and electrolyte disorders, cardiopulmonary resuscitation and mechanical ventilation.



## Dr. Karl Jandrey

was appointed associate dean for Student Programs. He manages the DVM admissions process, coordinates support services and student ceremonies, and assists with pre-veterinary

outreach activities. He leads efforts to enhance student experiences and promote awareness of career opportunities in academia, research, private practice and public health. Jandrey promotes the school's strategic efforts to broaden the diversity of the student community to better reflect societal demographics, and works to communicate the value and relevance of veterinary medicine to underrepresented communities. Prior to this appointment, Jandrey served as director of the Center for Continuing Professional Education.



## Jason LeGrand

joined the school as the new senior director of development. LeGrand comes from the University of Maryland where, for the last nine

years, he led the effort to cultivate major gifts for the West Coast. Prior to that, he began his 17-year career in development at Cornell University in 1999, and has held posts at the University of Denver and the University of Nevada, Las Vegas. He graduated from Southeast Missouri State University in 1997.

[www.vetmed.ucdavis.edu](http://www.vetmed.ucdavis.edu)

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## Veterinary Continuing Education

# Calendar

530-752-3905 • Fax: 530-752-6728  
[tweddale@ucdavis.edu](mailto:tweddale@ucdavis.edu)

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/](http://www.vetmed.ucdavis.edu/CE/)

### 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

### June 2-4

Blood Bank Boot Camp – UC Davis

### July 22-23

10th Annual Back to School Seminar – UC Davis

### August 7-10

Explorer Series – Munich, Germany

## 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:

- Osteosarcoma in dogs
- Urinary incontinence in dogs
- Corneal endothelial dystrophy in dogs
- Upper respiratory tract disease in cats
- Lymphoma in cats
- Bilateral corneal stromal loss in horses
- Limbal squamous cell carcinoma in horses

For more information on these and other ongoing clinical trials, visit: [www.vetmed.ucdavis.edu/clinicaltrials](http://www.vetmed.ucdavis.edu/clinicaltrials).



## Alumni Reunion Weekend

Alumni from the classes of 1952, 1956, 1966, 1976, 1986, 1996 and 2006 celebrated their milestone reunions in October. It was a wonderful opportunity for classmates to return to campus to reconnect and see how the school has grown. Pictured at the 50th anniversary reunion dinner are classmates sharing some fond memories from when they were veterinary students (from left to right are Drs. John Etchart, Ronald Morein and Tom Schrimsher).



[www.vetmed.ucdavis.edu](http://www.vetmed.ucdavis.edu)