

Rodrigo Gallardo (left) and Maurice Pitesky combine their talents to improve poultry health in California and around the world.

An Eggcellent Collaboration

Commercial chicken farmers and backyard enthusiasts alike have something to crow about—a new “poultry group” at the school. Rodrigo Gallardo, assistant professor in Avian Medicine, and Maurice Pitesky, assistant specialist in Cooperative Extension, form a strong duo working to solve California’s poultry needs.

Gallardo’s expertise as a molecular virologist leads to better understanding viral diseases in poultry. He’s part of an international research team working on a five-year project in Africa to determine which chicken breeds can tolerate hot climates and resist infectious diseases — specifically the devastating Newcastle disease.

Pitesky focuses on poultry epidemiology, food safety, and sustainability. For example, Pitesky uses GIS mapping techniques to understand how poultry diseases move in space and time in order to better mitigate the spread of poultry related diseases.

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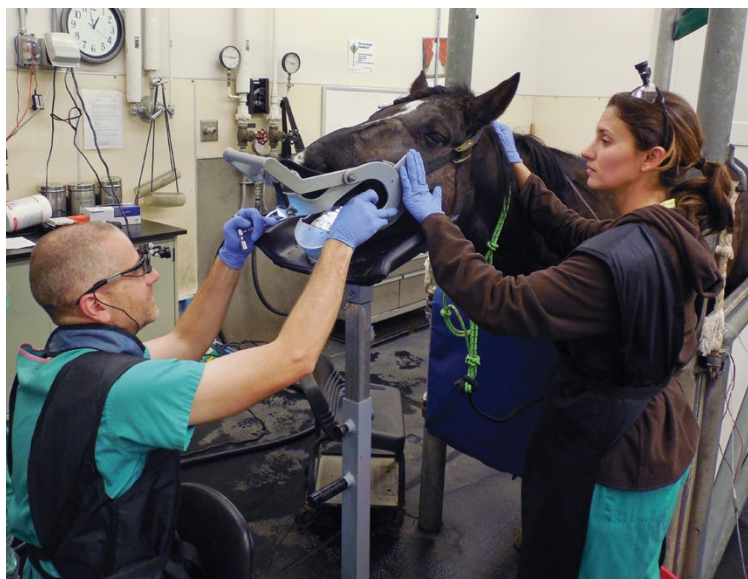
Equine Specialist Translates Research to Clinical Application

When a major equine herpesvirus-1 (EHV-1) outbreak occurred in 2011 and lingered into 2012, equestrians turned to veterinarians at the school to lead the charge on quelling the problem. The research and clinical experience of one faculty member in particular proved invaluable.

Nicola Pusterla has devoted his 20-year veterinary career to equine infectious diseases. His research focuses on selected aspects of the diseases with an emphasis on epidemiology, clinical disease understanding, diagnostics, prevention, and treatment. He has become one of the foremost authorities in the world on many facets of the broad subject.

Pusterla’s experience in infectious diseases and molecular epidemiology has allowed his lab to develop a structured concept on how to approach, investigate and control infectious disorders, independent of their nature. His ongoing research focuses on EHV-1, equine influenza, equine coronavirus (ECoV), and equine protozoal myeloencephalitis, among others. Pusterla’s clinical experience allows him a first-hand look at some of the most concerning aspects of these diseases in horses, including how they change patterns and how viruses skirt vaccines.

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Safeguarding Public Health

Christopher Kilonzo grew up in the sprawling city of Nairobi, Kenya—not exactly the place where he’d have much contact with large animals. Fortunately, his dad owned a small farm in the country where Kilonzo spent many weekends and holidays among cattle, goats and dogs.

Kilonzo’s love for animals led him to a DVM from the University of Nairobi in 2009. During his veterinary training, Kilonzo spent two months at the school as a visiting student attached to the teaching hospital’s Large Animal Anesthesia and Equine Surgery Services. After hearing about the MPVM program, Kilonzo realized that additional training would offer him desired expertise in food safety and public health. Immediately after finishing his DVM in Kenya, Kilonzo returned to UC Davis to complete the MPVM program in 2010.

“Foodborne disease is responsible for numerous deaths in developing countries, particularly among infants, which underscores the importance of understanding the epidemiology of these organisms,” Kilonzo said.

Kilonzo’s MPVM project focused on *E. coli* O157:H7 shedding in sheep. This strain of *E. coli* is responsible for numerous foodborne outbreaks that have resulted in illness, death and considerable economic losses. Under the mentorship of Professors Bruce Hoar and Rob Atwill, Kilonzo studied the pathogen’s molecular epidemiology in sheep on three farms in Yolo, Mendocino and Solano Counties. The sheep were raised in three different environments: on a feedlot, fed a high grain ration; on pasture with access to native grasses year-round; and on native pastures in the summer and fed alfalfa in the winter.

He found that the feedlot sheep were greater *E. coli* O157:H7 shedders. The other major finding was that there is strong



Christopher Kilonzo

correlation between shedding and warmer months of the year—prime time for county fairs and petting zoos that often feature sheep.

“By understanding the risk factors associated with fecal shedding of foodborne pathogens, we can focus on those risks and hopefully reduce the opportunities for disease transmission—whether in a fair environment or in a final meat product,” said Kilonzo, who is now a PhD candidate in the epidemiology group. He aims to graduate in the fall of 2014.

“Eventually, I want to return to Kenya and use the skills acquired from UC Davis to help improve public health,” Kilonzo said.

To learn more about the MPVM program, visit www.vetmed.ucdavis.edu/mpvm/.



A Dog’s Nose Knows

Researchers with the school’s Western Institute for Food Safety and Security (WIFSS) recently discovered that specially-trained dogs can find small amounts of fecal matter on raw agricultural commodities such as Roma tomatoes, cilantro, romaine lettuce and baby spinach. Their study, published in the *Journal of Food Protection*, suggests that canines can also assist the produce industry and food safety regulators better identify trace amounts of fecal contamination during critical events such as produce outbreak investigations, or survey a fallow field to detect problematic sections before planting occurs.

This research is only one example of activities undertaken by WIFSS to protect people from foodborne outbreaks in the U.S. As a critical partner in ensuring the nation’s food safety, WIFSS received a \$10.5M grant renewal from the FDA for the next five years. Funds from this grant support the core research and administrative functions of the Western Center

for Food Safety at WIFSS—one of four FDA Centers of Excellence in the U.S. Core functions involve an annual allocation for conducting critical food safety research, outreach, and training for FDA regulated foods, which at this time is heavily focused on assisting the FDA with the national implementation of the proposed Produce Safety Rule and part of the Food Safety Modernization Act.

School Takes Steps to Improve Animal Welfare

Animal welfare, always a hot topic in veterinary medicine, is being addressed by faculty on multiple fronts.

The school's International Animal Welfare Training Institute (IAWTI) is dedicated to facilitating training, education and dialogue for animal welfare by bringing together veterinarians, animal scientists, and other stakeholders to improve animal wellbeing.

Cooperative Extension Specialist Carolyn Stull has been a member of the school's team for many years promoting animal welfare strategies associated with livestock production operations, transportation stress on livestock and horses, understanding the issues surrounding unwanted and abandoned horses, and studies on re-feeding the starving horse.

World-renowned cattle behaviorist Temple Grandin recently spoke at the school's 3rd Annual Beef Improvement and Low Stress Cattle Handling Seminar. The sold-out continuing education (CE) event served as a platform for ranchers to improve the welfare of their herds and learn how to utilize best practices when caring for their cattle.

The American Veterinary Medical Association (AVMA) recently established the American College of Animal Welfare to recognize it as a veterinary specialty, and faculty members John Madigan and Joanne Paul-Murphy are among its first diplomats.



Paul-Murphy also participated in the recent AVMA conference, "Can You Hear Me Now?

The Conversation," to bring together internationally-renowned veterinarians, animal scientists, and ethicists to discuss, among other items, increasing the presence of veterinarians in animal welfare decision-making opportunities.

Launched in 2001, the Koret Shelter Medicine Program (KSMP) was the first of its kind in the world to concentrate on disease prevention in animal shelters. By using

veterinary science to protect the health of shelter animals, more of them survive to find lifelong homes. The program recently developed the UC Davis Virtual Consultant, a free online self-evaluation tool for shelter staff, veterinarians, and volunteers world wide, to help improve the well-being of shelter animals and to assess a shelter's policies, practices and procedures.

Hundreds of pages of information sheets, "frequently asked questions," and articles are available, as well as updates about lectures and upcoming CE events. As a new feature, the program has added related links and resources to the right of many pages. For instance, an information sheet on parvovirus might have a related lecture, some pertinent FAQs, and an article or two to expand on the basic information in the "info sheet."

The KSMP operates entirely through the generosity of donors. Learn more about the KSMP at: www.sheltermedicine.com, and IAWTI at: www.vetmed.ucdavis.edu/iawti.



Annual House Officer Seminar Day

Anesthetic administration for castration of alpacas, CPR on pets, and potential zoonotic disease on fish farms were just a few of the topics covered at the teaching hospital's annual House Officer Seminar Day, where dozens of house officers (residents, fellows and interns) presented their research findings. With the largest and most diverse clinical training program of any veterinary teaching hospital, the school is able to offer its house officers research opportunities not available elsewhere.

New Leadership at the Center for Companion Animal Health



Michael Kent, an oncologist, now serves as director of the Center for Companion Animal Health (CCAH). He brings a broad knowledge of small animal medicine and surgery, and the personality, enthusiasm and vision necessary to ensuring the CCAH meets its mission to promote the health of small companion animals. Kent's research activities include the transcriptional profiling of dogs

with transitional cell carcinoma and therapeutic strategies against canine lymphoma.



Danika Bannasch, a veterinary geneticist and holder of the Maxine Adler Endowed Chair in Genetics, now serves as associate director for the Center for Companion Animal Health Genetics Program. As a researcher, Bannasch focuses on the genetic basis of inherited diseases in dogs and horses. As associate director, she administers the CCAH Genetics program, leads program

development, cultivates potential donors, and fosters faculty and staff development.



Kate Hurley, a shelter medicine specialist, now serves as associate director for the CCAH Koret Shelter Medicine Program. Hurley was the first in the world to undertake a residency in Shelter Medicine at the school. Her primary areas of research and clinical interest include cat and dog infectious disease management, shelter animal housing, and welfare and community cat management.

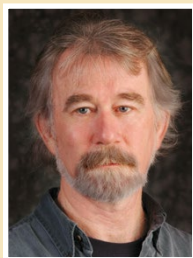
In her new role, Hurley administers shelter medicine programs directly associated with CCAH, including fundraising activities, and faculty and staff development.



Robert Rebhun, an oncologist, now serves as associate director for the CCAH Cancer Program. He is responsible for administration and development of the program, including fundraising activities, faculty and staff development, and coordination of CCAH related activities congruent to the mission of CCAH and the school. His research focus is in the field of comparative and translational

oncology, with specific interests in metastasis and novel therapeutics.

Leading the Way



Alan Conley, a reproductive physiologist, now serves as chair of the Department of Population Health and Reproduction. Conley brings considerable leadership and administrative skills to his new position. He has served as a member and chair of the Executive Committee and provides sustained effort in the development, implementation, and delivery of the new professional

curriculum. His international reputation reflects the impact of his basic and translational scholarship in comparative reproductive biology.



Patricia Conrad, a veterinary parasitologist, now serves as associate dean for Global Programs. She was elected to the Institute of Medicine in 2011 and has long been instrumental in developing One Health initiatives at the UC Davis campus and throughout the UC system. Conrad works

with faculty, staff and students to foster global programs in education, research, and service; creates databases to track world-wide projects; builds extra-mural resources; and identifies potential partnerships.



Janel Lang has been appointed the school's first director of Career and Professional Development. She will develop and execute a multi-year strategic and tactical plan to strengthen and expand professional opportunities for DVM students to achieve higher placement rates and salaries for graduates. By researching, identifying and implementing tools,

techniques and programs designed to prepare DVM students for the job search, she will help prepare students for success in a competitive job market.

New Faculty

Jenna Burton

Assistant Professor of Clinical Medical Oncology, Department of Surgical and Radiological Sciences



Education

- Diplomate, American College of Veterinary Internal Medicine, 2011
- MS, Colorado State University, 2011
- DVM, The Ohio State University, 2006

Experience

- Assistant Professor of Oncology and Oncology Clinical Trials Coordinator, Colorado State University, 2011-2013

Special Interests

- Design and implementation of veterinary clinical trials
- Comparative and translational oncology with an emphasis on evidence-based evaluation of traditional, targeted, and metronomic therapies for improving the standard of care in veterinary medical oncology

Francisco Carvalho

Assistant Professor of Clinical Diagnostic Veterinary Pathology, California Animal Health and Food Safety Laboratory System, San Bernardino



Education

- Diplomate, American College of Veterinary Pathologists, 2011
- DSc, Universidad Nacional Autonoma de Mexico, 2007
- DVM, Universidad Austral de Chile, 2001

Experience

- Assistant Professor, Universidad de Chile, 2012-2013
- Post-doc fellow, Pfizer, 2011-2012
- Assistant Professor in Residence, University of Connecticut, 2010-2011
- Resident, University of Connecticut, Storrs, 2007-2010

Special Interests

- Neuropathology and small ruminant pathology

Lark Coffey

Assistant Professor of Virology, Department of Pathology, Microbiology and Immunology



Education

- PhD, University of Texas Medical Branch, 2005

Experience

- Post-doc fellow, Blood Systems Research Institute, UC San Francisco, 2011-2013
- Post-doc fellow, Pasteur Institute, France, 2006-2011

Special Interests

- Evolution and transmission dynamics of arboviruses, with an emphasis in understanding mechanisms of cross-species transfers mediated by modifications in host range, altered virus-host interactions, or changing ecology and environments

Leaders – Promoting Strength, Supporting Student Success

The school is developing faculty and staff leaders from its broad team of experts, to support career growth opportunities and expand program needs as a major goal of the Strategic Plan (bullet #6). During this quarter new leaders have been appointed (previous page) to lead critical initiatives to advance animal health, promote department administrative duties, expand global programs, and create a new career center. More than 30 faculty and staff leaders also completed a series of three leadership training sessions which included topics on leadership styles, communication strategies and conflict management. A new series of open lunchtime leadership seminars was recently launched which will cover topics such as: simple strategies for improved communications; making meetings more productive; and managing time better.

The Seven 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

Woutrina Smith

Associate Professor in Infectious Disease Epidemiology, Department of Medicine and Epidemiology



Education

- PhD, UC Davis, 2004
- DVM and MPVM, UC Davis, 2001

Experience

- Education Coordinator for the One Health Center of Expertise in the UC Global Health Institute, 2010-current
- Capacity Tracking Coordinator for the USAID PREDICT Program, 2009-current
- Assistant Adjunct Professor, UC Davis, 2007-2013

Special Interests

- Epidemiology of zoonotic pathogens at human-animal-environment interfaces in Africa, Asia, and North America

Poultry Continued from page 1

“Understanding where and when disease(s) cluster is important from a poultry health and food safety perspective,” Pitesky said. “In addition, it allows disease control resources to be focused appropriately.”

Pitesky and Gallardo work closely with the California Animal Health and Food Safety Laboratory System (CAHFS) and the Department of Animal Sciences in the UC Davis College of Agricultural and Environmental Sciences. Ongoing collaborative research projects include: understanding the epidemiology of how very virulent Infectious Bursal Disease Virus (vvIBDV) spreads in California; creating an ante-mortem test for vvIBDV; developing preventive measures and understanding Infectious Bronchitis Virus; testing new poultry vaccination strategies and techniques; and better understanding Salmonella Heidelberg (SH) to improve food safety.

This particular Salmonella strain associated with human outbreaks has been a problem for the state’s commercial growers since last year. In collaboration with Huaijun Zhou from the UC Davis animal science department, Gallardo and Pitesky will



use molecular techniques to look at the gene expression of this strain and to discover how this pathogen reacts from a molecular perspective when challenged with different processing plant conditions.

In their teaching endeavors, Gallardo and Pitesky engage third year students by taking them on field trips to commercial chicken layer and broiler farms, where they learn about biosecurity, poultry production, poultry health and job possibilities in the industry. The students also visit the CAHFS facility in Turlock to witness

necropsies—an important factor in determining cause of death for backyard chickens and commercial flocks alike.

Occasionally, when a pet chicken is brought to CAPE—the Companion Exotic Animal Medicine and Surgery Service at the teaching hospital—Gallardo and Pitesky are asked to help identify potential illness.

“We have approximately 26 million egg-laying hens, and over 250 million broilers and 15 million turkeys produced commercially in California every year,” Gallardo said. “We have a real need to ensure their health and well-being as well as keeping us healthy and our food supply safe.”

Evaluating Reproduction Concerns in Endangered Species

Faculty member Bruce Christensen and DVM student Maureen D’Souza-Anjo recently traveled to Wolf Haven International, a sanctuary in Tenino, Washington. The facility has attempted to breed endangered wolves naturally in their habitat. Not having success, they asked Christensen to evaluate their reproduction concerns. Christensen was able to biopsy the uterine walls of two red wolves and two Mexican gray wolves to determine if the issues lie with the females. The biopsy results ruled out any female reproductive problems so Wolf Haven will move on to evaluate the males. This spring, Christensen will evaluate similar concerns on a lion, tiger and leopard at the St. Louis Zoo. In the summer, he will travel to the Bronx Zoo to perform biopsies on endangered African painted dogs.



DVM student Maureen D’Souza-Anjo and faculty member Bruce Christensen utilize endoscopy equipment to review and retrieve uterine cells from endangered wolves.

Investing in the Future of Veterinary Scientists

Morton LaPittus, DVM 1961, knew at the age of six that he wanted to become a veterinarian. His lifelong passion for animals and a rewarding veterinary career inspired him and his wife, Susan, to establish the Morton and Susan LaPittus Future of UC Davis Award, supporting future veterinary scientists.

Even as a young boy, LaPittus demonstrated a gentle, healing touch. He recalled bringing his pet parakeet to see a veterinarian for treatment of a broken leg. The bird had a cast applied, but repeatedly removed it with his beak. To stop this, LaPittus cleverly devised an e-collar out of a cardboard toilet tissue roll.

Determined to go to veterinary school, LaPittus saved money for his education by working at a dairy—even taking the midnight shift milking cows. He pursued his boyhood dream and was accepted to the School of Veterinary Medicine in 1957.

Enjoying a distinguished career, LaPittus worked in private practice for several years and later served as an instructor at a community college. He also traveled extensively, developed an international speaker series, and co-authored a book entitled, *A Complete Guide to Healthy Pets*.

The LaPittuses value the tremendous influence veterinary medicine has had on their lives and have given a gift in appreciation to the school. “We strongly feel that the future of veterinary medicine lies in the hands, minds, and knowledge of the



Morton LaPittus, DVM 1961, and his wife, Susan, pictured here with Dean Lairmore, have established a fellowship to support future veterinary leaders.

next generation of veterinarians, and therefore, we wish to help with their accomplishments by investing in their future.”

For information about making a gift, please contact the Development Office at (530) 752-7024.

Equine Research Continued from page 1

One of Pusterla's recently completed studies focused on the emergence of ECoV in mature horses. Long known to exist in foals, ECoV's recent presence in adults is alarming to veterinarians, and has not been well documented until now. Pusterla's study, presented at the American Association of Equine Practitioners convention, examined 268 horses from eight outbreaks in six states, including California. The researchers were able to determine several items, including length of infectiousness, common clinical signs, and the most effective method of testing.

As ECoV and other infectious diseases continue to plague the equine world, a team approach is needed to combat these diseases, explained Pusterla. Not just with academic colleagues, but also staying connected with the equine industry to tackle these pertinent issues.

One of the most challenging aspects of his work is getting to outbreaks early enough to collect samples for studies, but with the help of technological advancements, the school's Center for Equine Health and the multitude of research opportunities, the school's equine researchers are gaining a better understanding of

the immune system of horses and continually making progress toward best practices for treating these diseases.

When asked where opportunities at the school can take researchers and clinicians, Pusterla responded, “The sky is the limit at the School of Veterinary Medicine.”

Mark Your Calendar: Alumni Reunion Weekend

October 3-5, 2014, the School of Veterinary Medicine welcomes the reunion classes of 1952, 1953, 1954, 1964, 1974, 1984, 1989, 1994 and 2004 back to campus to renew old friendships, celebrate classmates' successes, and reminisce with faculty and others. It is sure to be a fun weekend, so make your plans and come to Davis! For more information, call (530) 752-7024 or visit www.vetmed.ucdavis.edu/alumni/reunions.

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CE *Calendar*

Veterinary Continuing Education

(530) 752-3905 • Fax: (530) 752-6728
cecenter@ucdavis.edu

Saturday & Sunday July 26 & 27

7th Annual Back to School Veterinary
Technician and Assistant Continuing Education
Seminar, Gladys Valley Hall

Sunday, August 24

One Health Interdisciplinary Seminar
Gladys Valley Hall

Friday – Sunday September 5 – 7

International Conference on Feline Health
Gladys Valley Hall

**For information on these and other events,
please visit www.vetmed.ucdavis.edu/ce.**



Professor Mary Christopher (in back, center) spent several months in Egypt as a Fulbright scholar in the time surrounding the 2011 revolution. Despite the political turmoil, Christopher was able to teach and interact widely with universities and ministries around the country. She documents her experiences in a photo exhibit, "A Fulbright in Egypt: Continuity Amid Change," now on display in Gladys Valley Hall through June 2014. View online at www.vetmed.ucdavis.edu/egypt_exhibit/.

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