

VETERINARY MEDICINE

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WELCOME NEW DEAN

New Dean Looks Forward to "Mission-focused" Programs

Faculty, staff and students welcome Michael D. Lairmore, veterinarian, cancer researcher and top administrator at The Ohio State University College of Veterinary Medicine, as dean of the School of Veterinary Medicine, following a nationwide search.

"It will be an honor to serve as dean of one of the premier institutions of its kind in the world," says Lairmore. He points to the school's "extensive history of providing outstanding education for society-ready veterinarians and producing innovative research findings to address important problems ranging from clinical veterinary medicine to public health.

"I look forward to working with the faculty, alumni, staff and students as we build mission-focused programs from the strong foundations established at UC Davis," Lairmore adds. "I find it incredibly rewarding to know that I'll be part of the UC Davis community and will be contributing to the health of the animals and people we serve, while being good stewards of the environment and the economy of California."

UC Davis announced the appointment August 11; his starting date was set for October 24.

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Michael Lairmore's career has included success in private practice, research and academia.

Faculty Implement New Curriculum

The class of 2015 will face many new experiences as first-year students, and this year the faculty are also taking a new tack as they phase in the first new curriculum since 1990.

The student-centered curriculum incorporates problem solving, critical thinking, adult learning approaches and life-long learning skills.

Traditional lectures, laboratory sessions and case-based learning are



hallmarks of the new curriculum. Students will spend more time in independent or group study according to their learning styles. Firstyear students will gain clinical experience, too, working with senior students during regularly scheduled hospital rotations. With each rotation, students will learn how their basic knowledge forms the foundation to clinical veterinary medicine.

Course work is organized by body system and presented in integrated "blocks" of related material on a semester schedule. The largest block for first-year students introduces essentials of histology, pathology,

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UC DAVIS VETERINARY MEDICINE NEWS

VMTRC Team Brings New Expertise to Tulare Region

The Veterinary Medicine Teaching and Research Center has welcomed fresh faces and developed new directions. Terry Lehenbauer, an expert in dairy cattle health, welfare and economics who joined the faculty in 2008, became the center's director in June 2011. His background as a California dairy practitioner and faculty member at Oklahoma State University has prepared him well for the position. He oversees academic and clinical training programs for veterinary and pre-veterinary students. He manages the Dairy Production Medicine residency, works with the community to develop research and training programs, and supervises clinical services for more than a dozen clients who own more than 100,000 animals.

Lehenbauer is a hands-on director, filling in on farm calls and collaborating on studies. Research examples include a national investigation of bovine respiratory disease funded by the USDA in 2011 and an investigation of cooling systems for cow comfort.

Productive Research

Sharif Aly, a veterinary epidemiologist specializing in infectious diseases of dairy cattle, has conducted studies on Johne's disease, mastitis prevention, colostrum replacement,



Assistant Professor Heidi Rossow, left (with Mary Pride Clark, class of 2010), performs applied research on dairy nutrition at local dairy farms.



Hands on: Terry Lehenbauer conducts research and makes farm calls as well as administering the Tulare program.

euthanasia procedures, and the testing of milk and milk shipments to processing plants as disease surveillance tools.

Heidi Rossow brings expertise and research in applied ruminant nutrition and nutrient management. She employs computer models to calculate the balance between what a cow eats and what it produces. She is also measuring nutrient and water consumption, rumen pH and blood parameters to examine interactions of water and feed with milk production and cow health.

John Champagne, a VMTRC clinician since 2008, now heads the Dairy Production Medicine Service, the basis for veterinary student and resident training. In addition to their herd health approach, faculty are reemphasizing individual cow health and welfare. Champagne is also a co-investigator on Aly's mastitis project.

After his residency at Tulare, Alister Kenyon joined the team in 2011 as a Dairy Production Medicine clinician. He teaches veterinary students and residents and provides service to clients in Tulare, Kings and Kern counties.

Having served 15 years as the center's director, James Cullor, director of the Dairy Food Safety Laboratory, is now experimenting with ultraviolet light technology as an adjunct to milk pasteurization. He has also made several trips to China on behalf of the international China Veterinary Collaboration to train workers in modern dairy management. Along with Lehenbauer, he has participated in the selection of rural veterinarians for awards from the USDA veterinary medicine loan repayment program.

New Clues about Lymphoma

Veterinary and human medicine researchers have identified a protein that appears to play a key role in the formation of lymphoma by inhibiting a tumor-suppressing gene.

The protein (RNPC1) may be a target for diagnosing and treating lymphoma in humans and animals, says Xinbin Chen, a veterinary oncologist based at the school's Comparative Cancer Center (www.vetmed.ucdavis.edu/ccc/index.cfm).

Lymphoma, a group of blood cancers that start in the lymphatic system, represents six percent of canine cancers. It is remarkably similar to lymphoma in humans.

Researchers already know that the "p53" gene plays an important role in suppressing cancer. However, p53 itself can mutate and produce undesirable proteins. Such proteins are present in 60 percent of all cancerous human tumors. Mutations also are active in the formation of cancerous tumors in other mammals, including dogs, cats and horses. More recent studies have also shown that p53 can be inactivated in human cancers by means other than mutation.

Investigators are extremely interested in the regulation of this gene, leading Chen, et al to examine the RNPC1 gene.

RNPC1, an RNA-binding protein, regulates how other genes produce proteins. The research team suspected that RNPC1 might play a role in causing lymphomas by inactivating the p53 gene.

The researchers examined several types of human and mouse cancer cells. In experiments, the RNPC1 gene inhibited the activity of the p53 gene and reduced levels of the p53 protein in these cells. Conversely, p53 protein levels increased when RNPC1 was out of the picture.

Additional data from canine patients with spontaneously occurring lymphoma showed that the RNPC1 gene is frequently



Xinbin Chen investigates target genes of the "p53" family proteins and their functions in the suppression or development of tumors in dogs, cats and other species.

overactive in dog lymphomas and may play a role in their formation by inactivating the p53 gene.

Chen and other veterinary faculty are among more than 200 members of UC Davis Cancer Center's Integrated Cancer Research Program. This consortium of scientists are addressing the causes of cancer and potential therapies in people and animals. The study, funded in part by the National Institutes for Health, was published July 15 in *Genes & Development* (http://genesdev.cshlp.org/content/25/14/1528.short).

Diagnostics: Amino Acid Laboratory

Based in the Department of Molecular Biosciences, the Amino Acid Laboratory is part of the research enterprise of Andrea Fascetti, professor and chief of the Nutrition Support Service. The technical team also performs analyses for diagnostic purposes.

Most analyses take five to ten days to complete. The facility handles a variety of sample types, whether from animals or in feed. Complete amino acids, free amino acids, taurine, and mineral analyses are available. Faculty also offer follow-up advice regarding amino acid results if needed.

Reference data, fee information and instructions for sample submission are available on the laboratory website, www.vetmed.ucdavis.edu/vmb/aal/.

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At Ohio State, Lairmore served simultaneously as associate dean for research and graduate studies at the veterinary college and as associate director of the university's Comprehensive Cancer Center. Lairmore administered a successful sponsored research and commercialization program. He held an appointment as professor of veterinary biosciences in the College of Veterinary Medicine and as adjunct faculty member in molecular virology, immunology and medical genetics in the College of Medicine. He acted as primary adviser for more than 25 pre- and postdoctoral students.

Lairmore received his Doctor of Veterinary Medicine degree from the University of Missouri in 1981 and worked two years as a dairy and small animal veterinarian. He completed a pathology residency in 1985 and a doctorate in experimental pathology in 1987, both at Colorado State University. Lairmore is board certified in anatomic pathology as well as virology and immunology.

He followed a research path in the 1980s with positions at the National Institutes of Health – National Cancer Institute, the US Agency for International Development and the Centers for Disease Control.

Lairmore's expertise bridges multiple disciplines to address basic questions

about viral causes of cancer and the biology of retroviruses. Among his accomplishments is the development of one of the first animal models of AIDS-associated pediatric pneumonia.

Author or co-author of more than 175 scientific publications, Lairmore has achieved breakthroughs regarding the molecular pathogenesis and regulation of human T-lymphotropic virus, HTLV-1, which is associated with adult T-cell leukemia and lymphoma. He also discovered the first HTLV-2 infection now recognized as an endemic infection among American Indian populations of North and South America.

He is a member of the Institute of Medicine and a fellow of the American Academy of Microbiology.

New Curriculum Continued from page 1

biochemistry, pharmacology and population health – the foundation of all the other blocks.

Linking Theory to Practice

Course work exposes students to the context that links theory to practice. In the musculoskeletal block, for example, students will learn the anatomy, histology and physiology necessary for understanding how the form and function of bones, joints, muscles and tendons work to produce locomotion. Students will also discover how the musculoskeletal system responds to injury. The first two years will include blocks for each body system. Other blocks cover oncology, immunology and infectious disease and population health. The clinical foundations block will follow, introducing the principles of anesthesia, surgery, emergency medicine, imaging and clinical pathology across all species.

One other significant change is a simplification of the "core and track" system. Third-year students will select one of three streams – small animal, equine or food animal – with options for more elective blocks in wildlife, environmental health, preventive medicine and research or more clinical experience in the teaching hospital.

The faculty curriculum committee worked to set a standard for excellence and competency in veterinary education using evidence-based methods.

"The integrated curriculum is outcome-based, defining what a

Doctor of Veterinary Medicine from UC Davis needs to know and do at graduation," says Jan Ilkiw, associate dean for Academic Programs. "It has been built on the DVM learning outcomes and the core competencies that the faculty have established with input from stakeholders in the veterinary profession."



The new curriculum, emphasizing student-centered learning, will expose students early and often to clinical experience.

New Service: Small and Exotic Animal Acupuncture

Marilyn Koski (DVM 1992), has practiced for 10 years in the Companion Avian and Exotic Pet Service. Several days each week, however, she uses neither medication nor surgery to treat her patients.

Koski is a veterinary acupuncturist, trained at the Chi Institute of Chinese Medicine, and the Small Animal Clinic now offers Koski's services directly to new patients, hospital in-patients, and patients referred by outside veterinarians.

Acupuncture involves inserting fine needles into various points of the body to rebalance the body's energy, or qi (chi). Practiced in China for more than 2,500 years, acupuncture has achieved greater acceptance in Western medical and veterinary practice. Koski has written that even gaining a general understanding of acupuncture and other alternative therapies will help a practitioner better address clients' questions regarding this complementary form of veterinary medicine.

Acupuncture is particularly effective with certain medical conditions, Koski says. She has worked with dogs, cats, rabbits, tortoises, birds and other small pets to address weakness, intervertebral disc disease, post-surgical rehabilitation and pain management. She applies acupuncture to reduce nausea and diarrhea associated with chemotherapy. Geriatric patients with arthritis or degenerative joint disease can experience pain relief with acupuncture when standard medications cannot be prescribed due to side effects.



Rabbits and other exotic animal patients as well as dogs and cats may receive acupuncture in conjunction with other therapies. Clients are usually present and involved during treatments.

Koski works with a client's veterinarian to integrate acupuncture into a comprehensive treatment plan. "Traditional Chinese Veterinary Medicine treats the whole creature, not the individual ailments," she says. The number of treatments depends on the condition, entailing a single appointment or 4-6 weekly sessions, and then tapering to occasional visits. Each appointment lasts 45-60 minutes.

For an appointment, call (530) 752-1393.

In the Large Animal Clinic, equine surgeon Sarah le Jeune, also trained at the Chi Institute, provides acupuncture treatment for up to 20 horses per week. Call (530) 752-0290 for an equine appointment.

High Levels of Dietary Sugar Increase Risk Factors for Heart Disease

A dults who consume high levels of sugar have significantly elevated levels of several risk factors for heart disease, according to an NIH-funded study by researchers in the Department of Molecular Biosciences and colleagues in Japan.

The study results suggest that U.S. dietary guidelines for maximal amounts of added sugars may be too high and should be reconsidered, the researchers say. "While there is population-based evidence that people who consume large amounts of sugar are more likely to have heart disease or diabetes, it has been controversial as to whether high-sugar diets may actually promote these diseases," said Kimber Stanhope, the study's senior author and a research scientist working with Professor Peter Havel.

"Our new findings demonstrate that several factors associated with an elevated risk for cardiovascular disease were increased in individuals who consumed 25 percent of their calories as fructose or high fructose corn syrup," Stanhope added. The researchers found that within a two-week period, study participants consuming fructose or high fructose corn syrup exhibited increased concentrations of three known risk factors for heart disease in the circulation: LDL cholesterol, triglycerides and a protein known as apolipoprotein-B, which can lead to plaque buildup in arteries.

The findings were announced in July by the *Journal of Clinical Endocrinology & Metabolism*, which planned to publish the study in the journal's October print edition.

Welcome New Faculty

Peter B. Ernst

Head, Division of Comparative Pathology and Comparative Medicine; Co-Director, UC Veterinary Medical Center – San Diego; Departments of Pathology (UCSD) and Pathology, Microbiology & Immunology (UC Davis)

Education

- PhD, McMaster University, 1986
- DVM, MSc, University of Guelph, 1981
- BSc, University of Toronto, 1977

Experience

- Professor, University of California, San Diego, 2011 to present
- Professor, University of Virginia, 2001-2011
- Associate Professor/Professor, University of Texas Medical Branch, 1992-2001
- Assistant/Associate Professor, McMaster University, 1985-1992
- Locums in Emergency Hospital in Ontario, Canada, 1984-1985
- Associate, private practice in Ontario, Canada, 1981-1982

Special interests

- Basic research in comparative (human to mouse) immunology
- Immunopathogenesis of microbial infections associated with acute and chronic gastrointestinal disease
- Post-graduate research training for veterinarians

Ashley Hill

Associate Professor of Clinical Diagnostic Epidemiology, California Animal Health and Food Safety Laboratory, Veterinary Medicine and Epidemiology

Education

- PhD, UC Davis, 2003
- MPVM, UC Davis, 1999
- DVM, UC Davis, 1998

Experience

- Assistant Professor of Epidemiology, Colorado State University, 2004-2011
- Lecturer, UC Davis, 2003
- Guest Scientist, International EpiLab, Copenhagen, Denmark, 2003

Special interests

- Sampling strategies for disease detection
- Properties of diagnostic tests
- Infectious diseases of small ruminants
- Musculoskeletal injuries of racehorses



Stephen McSorley

Associate Professor, Center for Comparative Medicine, Anatomy, Physiology & Cell Biology

Education

- PhD, Glasgow University, 1995
- BSc, Glasgow University, 1992

Experience

• Assistant/Associate Professor, University of Minnesota, 2005-2011

Special interests

- Innate and adaptive immune response to Salmonella infection
- Mucosal Immunology

Alumni Weekend 2011 - A Time of Celebration and Good Memories



The class of 1961 celebrated its 50th anniversary reunion and carried on the traditional Rose Ceremony, a special time to recognize each member of the class with a rose and a memory. Members paid tribute to the school with a class gift to support an endowed scholarship.

School of Veterinary Medicine alumni from Six classes returned to UC Davis to celebrate Alumni Weekend October 1-2. Alumni and their families from the classes of 1961, 1971, 1981, 1986, 1991 and 2001 reunited and enjoyed the chance to renew old friendships.

The events included a gala dinner, a tour of the new buildings in the veterinary medicine health science complex and the prestigious annual Oscar W. Schalm Lectureship. The distinguished lecturer was Stephen Badylak, professor in the Department of Surgery and deputy director of the McGowan Institute for Regenerative Medicine at the University of Pittsburgh. His lecture focused on biologic scaffolds for regenerative medicine. The weekend concluded with the Practitioners Seminar continuing education program offered by the William R. Pritchard Veterinary Medical Teaching Hospital.

THANK YOU NOTES

Kennedy Endowed Fellowship: Training the Next Generation of Veterinary Pathologists

During her residency in anatomic pathology, Dr. Jennifer Luff became interested in studying canine papillomaviruses (CPV) after biopsying a mass on her sister's dog, Deacon. At the time there was only one known CPV. Determined to learn more, Dr. Luff decided to pursue research in this area during her residency and now her doctoral training.

Advanced Training

A recipient of the prestigious Peter C. Kennedy Endowed Fellowship in Veterinary Anatomic Pathology, Dr. Luff is working toward a PhD in comparative pathology in the laboratory of Professor of Pathology Peter F. Moore, now with funding support from a National Institutes of Health Training Grant directed by Distinguished Professor of Pathology Stephen Barthold. In the first few years of her research, five different CPVs have been identified using samples from Deacon. One of the viruses isolated is possibly associated with skin cancer in dogs. "For my PhD, I wanted to expand further from just identifying new viruses to actually study the mechanisms behind how the virus is recognized by the immune system. These fundamental mechanisms of viral recognition can be applicable to other DNA viral infections in sites other than just the skin," says Dr. Luff. "As a Kennedy fellow, I am honored and grateful for the opportunity the fellowship has provided me to help advance research to benefit our canine companions."

Future Leaders

The fellowship was established in 2002 to honor the late Dr. Kennedy and his extraordinary career in veterinary pathology. The fellowship invests in the future of a training program that has graduated leading scientists in veterinary anatomic pathology.

The initial endowment campaign was spearheaded by Professor N. James MacLachlan and Dr. William Spangler. "Peter Kennedy was one of the true

New Associate Director for Large Animal Clinic

On July 1, Gregory L. Ferraro, (DVM 1971), became the new associate director of the William R. Pritchard Veterinary Medical Teaching Hospital. He oversees the Large Animal Clinic, managing emergency, inpatient and on-farm services for horses, food animals, camelids and backyard livestock. Ferraro, an equine surgeon, also leads the large animal clinical training program for veterinary students and supervises the large animal and equine



residencies. He remains director of the Center for Equine Health. Ferraro says, "I look forward to enhancing linkages between hospital services and CEH research initiatives to create greater opportunities for research, clinical studies, and other new knowledge and to translate them quickly to clinical use."



Dr. Jennifer Luff is the recipient of the prestigious Peter C. Kennedy Endowed Fellowship in Veterinary Anatomic Pathology.

pioneers in veterinary pathology. He not only helped to establish the highest of scientific standards for our profession, but he also challenged and encouraged his students to become its future leaders," says Professor MacLachlan.

"Peter had a vision that funds associated with his endowment would be available specifically for pathology graduate student researchers to study mechanisms relevant to animal diseases. The Peter C. Kennedy Endowed Fellowship has paved the way for that to happen, and Peter would be pleased with Dr. Luff's contribution to pathology using these funds," says Dr. Spangler.

Contributions to this fellowship are still being accepted. It is a goal to increase the endowed funds so that annual earnings can fully fund the cost of the education and training of one or more graduate students. Endowed funds ensure that financial support will endure long into the future so that the school can continue to train top-notch academic veterinary scientists. For more information, please contact the Development Office at (530) 752-7024.



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CE *Calendar* 2011

Veterinary Continuing Education

(530) 752-3905, Fax: (530) 752-6728 center4cpe@ucdavis.edu, www.vetmed.ucdavis.edu/ce

November 2-9, 2011

George H. Muller Veterinary Dermatology Seminar, the Big Island, Hawaii. Contact: Sherry Cooper, (530) 752-1581, slcooper@ucdavis.edu

November 6, 2011

VMTH/San Francisco SPCA Fall Veterinary Symposium, San Francisco.

November 12-13 and December 17-18, 2011

Practical Ultrasonography – Beginning/Review, Davis.

November 29 - December 6, 2011

Veterinary Endocrinology & Internal Medicine Seminar, Maui, Hawaii. Contact: Sherry Cooper, (530) 752-1581, slcooper@ucdavis.edu

January 14-15, 2012

Camelid Symposium, Davis. Contact: www.camelidsymposium.com Public welcome

January 28, 2012

26th Annual Charles Heumphreus Memorial Lecture, Davis. Public welcome

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To reach prospective associates, visit the Placement Services website, http://www.vetmed.ucdavis.edu/placementservices. This online resource contains the 2012 Senior Directory, a listing of student contact information, educational background, special training, experience and career interests. Employers may also post career

positions and parttime jobs on this site at no charge. Questions? Contact symplacement@ ucdavis.edu or (530) 752-1383



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