

EXCELLENCE AND LEADERSHIP IN RESEARCH, TEACHING AND SERVICE

SUMMER 2015 VOLUME FIVE ISSUE THREE

THE HITCHING POST

CVM GRADUATES 114 NEW VETERINARIANS

Jerry Jaax, DVM, attended veterinary school at Kansas State University fully expecting to emulate famed veterinarian and author James Herriot and work in a veterinary clinic. However, when he graduated in 1972, “The Vietnam War was raging, and hiring,” he said. Jaax joined the U.S. Army Veterinary Corps, as did his wife, Nancy Jaax, DVM, one year later. The couple, who met while in veterinary school, went on to pursue their careers together, their combined active duty service totaling 54 years.

Jaax addressed the MU College of Veterinary Medicine Class of 2015 during commencement exercises May 15. He recounted his and his wife’s intertwined careers in the field of one medicine – the convergence of animal and human health -- even before the term “one medicine” became commonly used. The duo’s military career included several years in Germany, where they cared for Army sentry dogs and isolated a coronavirus that infected some of the animals; working with deadly pathogens at the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick,



Members of the Class of 2015 prepare to recite the Veterinarian’s Oath.

Maryland; immunizing horses with botulinum toxin during Operation Desert Storm; and responding to an Ebola outbreak in monkeys in Reston, Virginia.

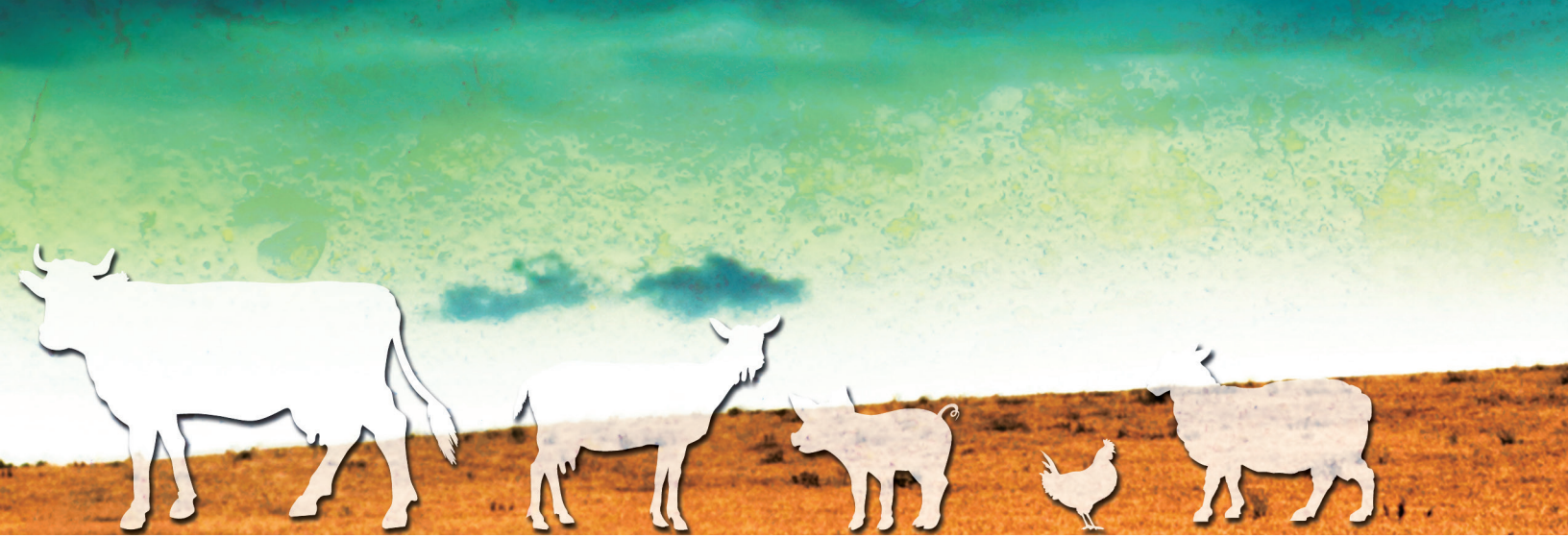
Jaax encouraged the graduates to consider the possibility that they may come to a similar fork in the road of their own career paths.

“It happened to us and it might happen to you,” he said. “When it comes to your personal goals, aspi-



rations and dreams, why couldn’t it be you, indeed?”

Continued on page 2



Retired Army Officer to Lead Infectious Disease Research

Jeffery Adamovicz, PhD, has been named the new director of the Laboratory for Infectious Disease Research (LIDR) at the University of Missouri. The MU LIDR is one of 12 regional biocontainment laboratories established by the National Institutes of Health. The laboratory conducts research designed to prevent and treat infections caused by biothreat and emerging infectious diseases agents.

Adamovicz is a retired U.S. Army lieutenant colonel. He previously served as scientific director of the University of Wyoming veterinary BSL-3 laboratory, chief scientist for the Midwest Research Institute, and chief of the bacteriology division at the U.S. Army Medical Research In-

Continued on page 3

Graduation, continued

Dean Neil C. Olson served as the master of ceremonies for the 66th annual commencement during which 114 students received their DVM. Charles Barry, DVM, president of the Missouri Veterinary Medical Association, led the graduates in reciting the Veterinarian's Oath. Ron Cott, DVM, associate dean for Student and Alumni Affairs and director of Advancement, presented the graduating class for investiture, which was conducted by Linda Berent, associate dean for Academic Affairs, Carrie Duran, DVM, adjunct teaching professor, and Joan Coates, DVM, professor. Cathleen Kovarik, DVM, and Brian Frappier, DVM, both associate teaching professors, also assisted in the investiture. MU Chancellor R. Bowen Loftin conferred the doctor of veterinary medicine degree to the class members.

Veterinarians completing internships, residencies and graduate programs at the CVM also received recognition during the ceremony.

Members of the Class of 2015 selected Katherine Nadolny, DVM, to give the response on their behalf. Nadolny spoke about first meeting her classmates as strangers at the Veterinary Enrichment and Teambuilding orientation, where they shared bunk beds and awkward hugs, climbed on inflatable floats in a lake, and talked about their feelings for hours.



Katherine Nadolny, DVM, gives the response on behalf of her classmates.

“Our lives have been intertwined for the last four years,” she said.

She recalled eating stale three-day old Chinese food at 2 a.m. while working in the Small Animal Emergency and Critical Care Section, and congratulated her classmates for their hard work that was rewarded with a 100 percent pass rate on the national licensing exam.

She also thanked the clinicians and house officers for going above and beyond in teaching.

“Your passion and work ethic has been an example to us,” she said.

Nadolny noted that the students had experienced many sleepless nights while undertaking the veterinary curriculum, and that they were aware there will be many more future sleepless nights in their future.

“This is the life that we have chosen, the life that we love.”



College Welcomes New Director of Advancement

Growing up on a farm near Kirksville, Missouri, Robyn Kollar developed an appreciation for the importance of veterinary medicine. From her experiences as a youngster involved in 4-H and FFA showing and judging cattle, she said she feels a connection to veterinarians and others who share her affinity for animals.

“There is an integrity there, that is really important to me,” she said.

When the opportunity to become a part of the team at the University

Continued on page 5

Adamovicz, *continued*

stitute of Infectious Diseases (USAMRIID). At USAMRIID, Adamovicz directed vaccine and therapeutics development programs against bacterial diseases such as anthrax, plague and glanders.

Adamovicz earned a doctorate in microbiology from the Uniformed Services University of Health Sciences and a bachelor’s degree in biotechnology from the University of Northern Iowa. In addition to his duties as the director of the LIDR, Adamovicz is also an associate professor in the Department of Veterinary Pathobiology at the College of Veterinary Medicine.

DEAN PRESENTS HONORS FOR IMPACT ON COLLEGE

MU College of Veterinary Medicine Dean Neil C. Olson selected two individuals from within the college and two veterinarians and their clinic as recipients of the 2015 Dean’s Impact Awards. The awards, established in 1993, recognize individuals who have had an outstanding and sustained positive impact on the College of Veterinary Medicine.

The honorees received an engraved crystal plaque presented during a reception that also recognized staff members who achieved milestones in their years of service to the University of Missouri. This year’s Impact Award winners were Kate Anderson, James Tomlinson, DVM, MVSc, and Richard F. Taylor, DVM, and Kenneth M. Vroman, DVM, and their Howard County Veterinary Services Clinic located in Fayette, Missouri.

Anderson is the head librarian in the Zalk Veterinary Medical Library. In announcing the recipient, Olson noted the assistance Anderson provides to faculty and students performing searches for teaching and research purposes in which she provides comprehensive and timely results. She continually teaches faculty, students and residents how to navigate information resources and to optimize reference software.

Her assistance is also crucial in supporting the promotion and tenure process and in assembling bibliographies for faculty.

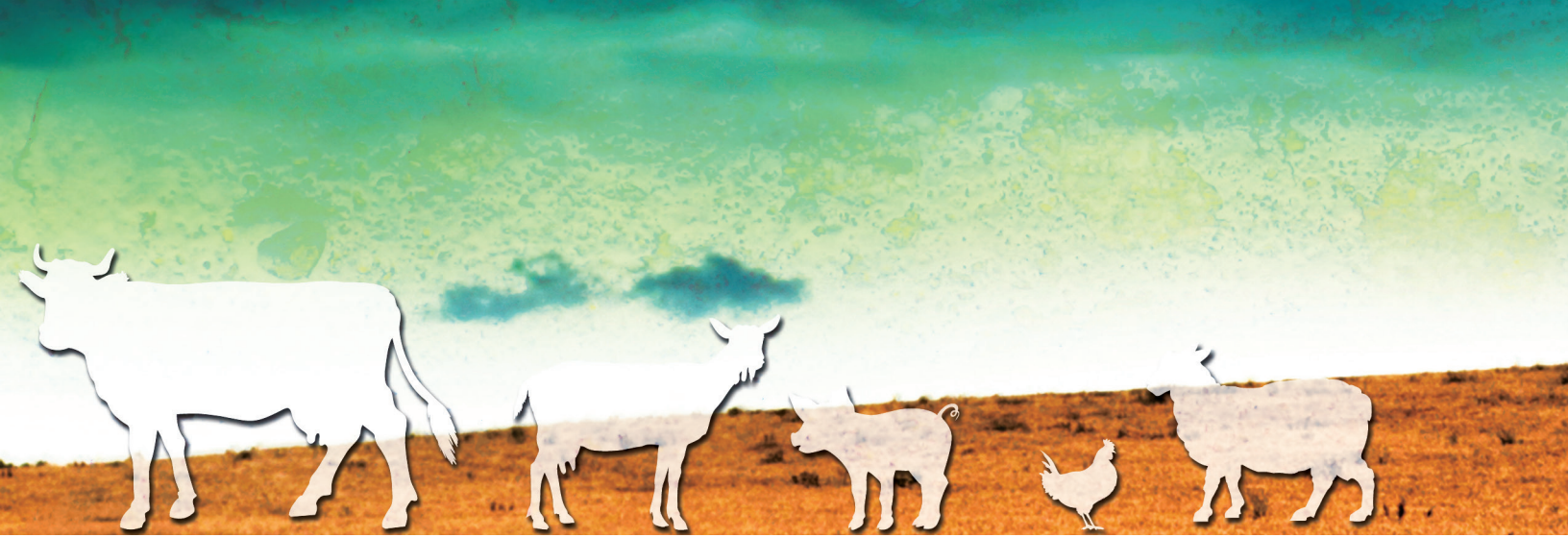
Tomlinson is a professor of veterinary orthopedic surgery whose career at MU spans 34 years. He has mentored 42 residents, 10 interns and 30 graduate students. Olson noted that Tomlinson’s clinical acumen, national reputation and expertise as an orthopedic and neurologic surgeon are among the most exemplary in the country, if not the world.

He pioneered minimally invasive surgical techniques and spine surgery in small animals, as well as total hip replacement surgery and the use of arthroscopy in dogs.

“It is not an exaggeration to say that he has served as a pillar on which the University of Missouri’s Veterinary Medical Teaching Hospital has rested for nearly 35 years,” Olson said.

CVM alumni Taylor, CVM ’62, and Vroman, CVM ’69, were honored for championing the college for the past 50 years. In the early 1980s, when the college was faced with accreditation problems and a lack of funding, the honorees pressed organized veterinary medical groups to offer their support.

Continued on page 4



Impact, continued

At their own expense, they generated hundreds of letters to the Missouri Legislature, the MU administration and agriculture commodity groups, such as the Farm Bureau, urging support of the college. They also testified at Missouri Senate and House agriculture appropriations committees hearings.

They have helped through the years by serving on CVM committees and by helping the Gentle Doctor Benefit. They have mentored more than 300 DVM students while teaching them the value of organized veterinary medicine and to advocate for their alma mater.

The following staff members were also recognized for their years of service to the college:

Dean's Office:

- Raymond Vaught, 5 years
- Karla Driskill, 10 years
- Janice Seagraves, 10 years
- Kim Bussard, 15 years
- Stephanie Bossaller, 20 years
- Teresa Seidel, 25 years
- Chris Shaw, 25 years
- Greg Kelly, 30 years

Biomedical Sciences:

- Bobby Colley 30 years

Veterinary Diagnostic Laboratory:

- Abel Vega, 10 years



CVM Dean Neil C. Olson presents the Dean's Impact Award for faculty to Professor James Tomlinson (top left). Kate Anderson was the recipient of the Dean's Impact Award presented to a staff member. Olson also honored the Howard County Veterinary Services Clinic and its veterinarians Kenneth Vroman and Richard Taylor.

Irene Ganjam, 25 years

Geri Hegsted, 25 years

Jeffrey Peters, 25 years

Rankin Martin, 30 years

Veterinary Medicine and Surgery:

Justin Atkisson, 5 years

Teresa Egbert, 5 years

Krista Huscher, 5 years

Sara Kohl, 5 years

Bryan McGinty, 5 years

Jodelle Rhodes, 5 years

Adrienne Siddens, 5 years

Jennifer Terrock, 5 years

Margaret Ashbaugh, 10 years

Lori Freie, 10 years

Kacey Lundy, 10 years

Jay McCallie, 10 years

Donna Tindal, 10 years

Robert Rankin, 15 years

Karen Siegler, 20 years

Jennifer Polkow-Haight, 25 years

Deborah Tate, 25 years

Priscilla Foster, 30 years

Veterinary Pathobiology:

Eli Marchbanks, 5 years

Michelle McDowell, 5 years

Jan Nicholson, 35 years



Kollar, continued

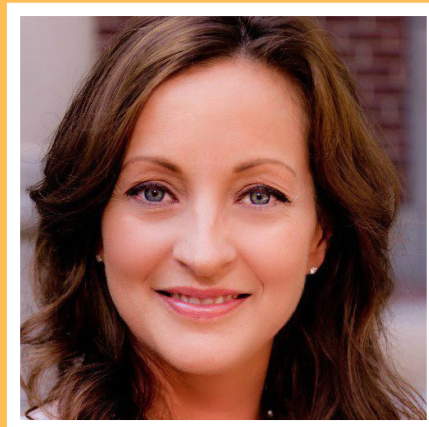
of Missouri College of Veterinary Medicine opened up, she jumped at the chance.

“MU has been a place I admired from afar for some time. This is a really great opportunity,” she said.

Kollar recently joined the CVM as the new senior director of Advancement. She will work with Ron Cott, DVM, executive director of Advancement, and Kylene Richardson, advancement officer, in raising financial support for the college.

Kollar comes to the college from her alma mater, Truman State University in Kirksville, where she served as the manager of the annual giving program for nearly eight years. In addition to leading a program that achieved record annual giving levels for the university’s Foundation, she worked to expand donor support for Truman’s athletics programs, managed the Parents Fund, and built partnerships to support the Kohlenberg Lyceum Series, a program of cultural events for northeast Missouri.

Previously, she spent five years as the associate director of Development at A.T. Still University of Health Sciences in Kirksville, focusing on local, regional and national fundraising campaigns to increase support from physician alumni, faculty, staff and business leaders.



Robyn Kollar

Kollar has also used her fundraising talents in a volunteer capacity, helping the United Way of Adair County/Northeast Missouri since 2003. Among the roles she filled for that organization were campaign chair, division chair, fundraising committee co-chair and board member.

Kollar said she is beginning her new position by learning more about the college’s research programs and facility needs from the faculty and administration, as well as speaking with current students and alumni about their experiences at the CVM.

“I think it’s important to build on what is already working,” she said.

Kollar has a bachelor of arts degree in communication and a minor in business management. In her spare time she enjoys kayaking, hiking and reading.

Bird Flu Epidemic Warrants Increased Biosecurity, Expert Says

Recent outbreaks of highly contagious avian influenza, more commonly known as bird flu, have killed thousands of turkeys and chickens in poultry farms throughout the Midwest. This outbreak is causing egg shortages and could lead to increased turkey and chicken prices, especially around the holidays. Dan Shaw, a professor in the MU College of Veterinary Medicine and a specialist in poultry disease, says these outbreaks point to the need for more awareness and enhanced practice of biosecurity at poultry farms.

“This strain of avian influenza, or H5N2, is very difficult to catch before it begins killing birds in large numbers,” Shaw said. “During previous past outbreaks, signs of infection, including depressed appetites, lethargy and ulceration of bare skin on infected birds, have allowed producers time to quarantine individual production houses. This strain gives little warning before birds begin dying, making it very difficult to stop the disease from spreading throughout whole farms. Within just a couple of days, poultry farms can go from healthy to completely devastated.” Shaw says that experts believe this current outbreak of avian influenza is spread by waterfowl migrating from southern wintering grounds to nesting areas in Canada as the seasonal weather changes. Waterfowl, such as ducks, may be infected but do not develop se-

Continued on page 6



NEW AWARDS RECORD SET DURING HONORS BANQUET

A record \$325,000 was awarded May 12 during the MU College of Veterinary Medicine 2015 Honors Banquet. The annual event recognized the accomplishments of veterinary students, faculty, technicians, interns and residents. The event featured awards and scholarships to acknowledge student scholastic achievement, clinical proficiency, community service and leadership. The students in turn gave awards to peers and mentors for teaching excellence and leadership.

Students in each academic class selected an outstanding teacher to receive 2015 Golden Aesculapius Teaching Awards. Winners were Associate Teaching Professor Brian Frappier, DVM, PhD, honored by the Class of 2018; Associate Clinical Professor Catherine Vogelweid, DVM, PhD, honored by the Class of 2017; Associate Teaching Professor Dusty Nagy, DVM, PhD, recognized by the Class of 2016; and Assistant Clinical Professor Fred Williams, DVM, chosen by the graduating class.

CVM Dean Neil C. Olson presented two awards sponsored by Zoetis to faculty. The Zoetis Award for Veterinary Research Excellence honors a faculty member or graduate student whose research is related to veterinary medicine and has a promise of national recognition. Peers nominate the recipient for the honor, which includes



Brian Frappier (right) accepted the Zoetis Distinguished Veterinary Teaching Award from CVM Dean Neil C. Olson and Marnie Mellancamp, DVM, academic liaison for Zoetis.

a plaque and \$1,000 cash award. John Middleton, DVM, PhD, a professor of large animal internal medicine, was this year's recipient.

Middleton was recognized for his mastitis research. He received the American Dairy Science Association West Agro Award for Outstanding Contributions to Milk Quality Research in 2009 and the 2015 National Mastitis Council Distinguished Service Award. His MU trainees have received seven Phi Zeta research awards and three American College of Veterinary Internal Medicine Resident Research Awards. He also has 74 peer-reviewed publications, has authored five book chapters and is credited with 157 abstract proceedings.

Continued on page 7

Bird flu, *continued*

vere disease. While infected, they can shed the virus in their droppings. The infected fowl stop at ponds and lakes which may be near poultry operations. It also has been theorized that infected droppings may contaminate chaff from grain fields where the birds have been feeding. This contaminated chaff can blow into nearby poultry farms and carry the virus. Shaw has suggestions for poultry farmers to help protect their flocks and prevent the disease spread.

“Obviously, poultry producers should focus on isolating their poultry flocks as much as possible. It is best to avoid sharing equipment and workers between farms. All shared equipment should be thoroughly cleaned and disinfected before being brought onto the farm and workers should change all outerwear and footwear before entering the premise. The practice of sharing equipment and workers, while cost-effective in the short term, could end up costing producers their entire stocks if the disease is spread between farms by a careless worker or infected piece of equipment. Producers should calculate the cost of losing their whole stock against the savings of sharing equipment. That may help them decide it is worthwhile to purchase their own equipment to help mitigate infection risk.”

With the waterfowl migration north into Canada, there is hope the outbreak will begin to dissipate in the Midwest. However, Shaw says there are fears that the disease will return with the fall migration and possibly spread to other parts of the country.



Awards, continued



Ron Cott, DVM, associate dean of Student and Alumni Affairs and director of Advancement, served as the master of ceremonies for the 2015 Honors Banquet.

The second award supported by Zoetis Animal Health was the Distinguished Veterinary Teaching Award. The 2015 graduating class, which selects the recipient of the plaque and \$1,000, awarded Frappier his second honor of the night. Frappier joined the CVM in 1988. He teaches veterinary micro-anatomy, large animal gross anatomy and veterinary neuroscience.

Olson noted that the honoree is no stranger to teaching accolades, having previously won a number of Outstanding Teaching Awards from the Student Chapter of the American Veterinary Medicine Association while at MU and at The Ohio State University, numerous Golden Aesculapius Teaching Awards, a Gold Chalk Award from the MU Graduate Professional Council, the CVM Dean's Impact Award in 1998, and the William T. Kemper Fellowship for Teaching Excellence in 2001.



Comparative Medicine Resident Sarah Hansen reviews her research examining sarcoma development in rats with CVM Professors Joan Coates and Craig Franklin.

PHI ZETA RESEARCH DAY EXPANDS AT MIZZOU

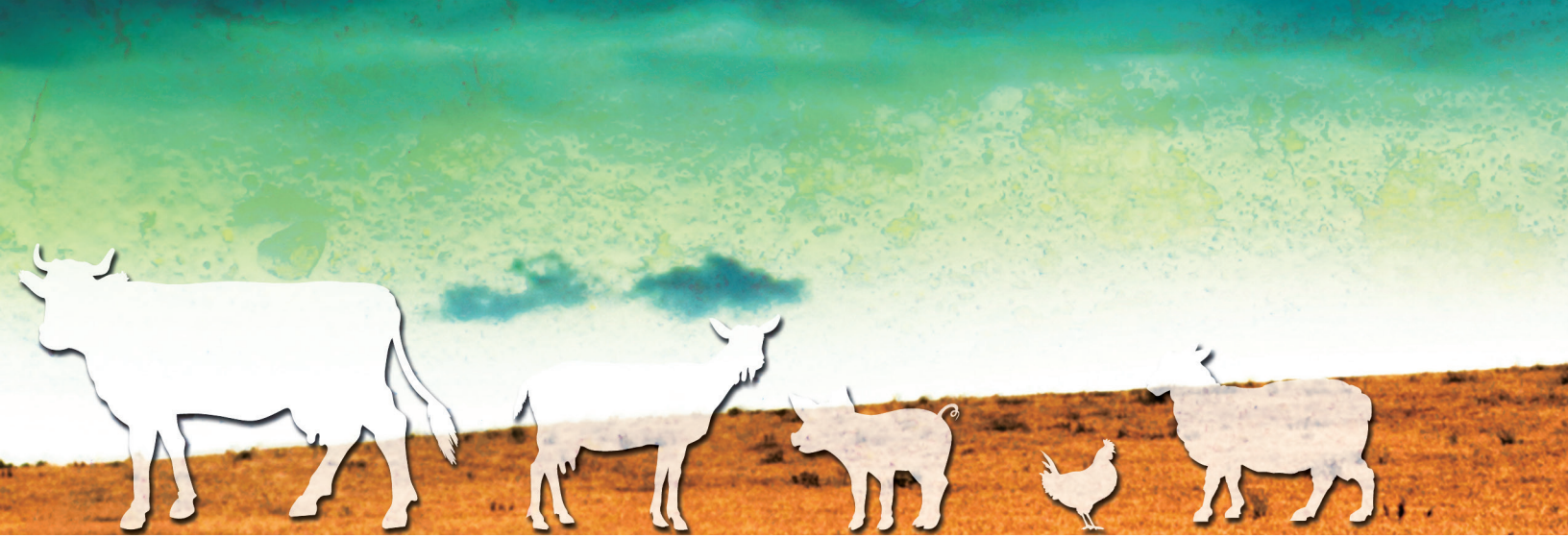
The 38th annual Phi Zeta Research Day held May 8, 2015, at the MU College of Veterinary Medicine saw a record number of participants. Phi Zeta is the honor society of veterinary medicine.

“Phi Zeta Research Day provides an ideal venue to display the varied research being performed at the college by our professional students, interns, residents, graduate students and post-doctoral fellows,” said Charles Wiedmeyer, associate professor of veterinary clinical pathology at the CVM

and coordinator for Phi Zeta Research Day. “This year, we had a record 88 abstracts presented and gave out over \$9,000 in awards. Through a concerted effort, this event satisfies Phi Zeta’s goal of promoting scholarly activities within our profession and we hope to continue to grow.”

Participants presented studies and research findings in either a poster or a lecture. There were 68 posters on display in the Adams Conference Center, and 20 oral presentations were given.

Continued on page 8



Phi Zeta, continued

In addition to the research presentation, Dr. Jerry Taylor offered a keynote address, “Adventures in Second Generation Sequencing.” Taylor is the Curators Professor of Genetics and Animal Sciences and the Wurdack Chair of Animal Genomics at the MU College of Agriculture, Food and Natural Resources. He is known internationally as one of the top scholars and influencers in the field of animal genomics.

The keynote speech was presented in cooperation with the Niemeyer Lecture Series. Other Phi Zeta Research Day sponsors were the CVM Dean’s Office and Office of Research, Nestle Purina, Inc., Avacta, and the Hartley Endowment.

The following students earned awards for their presentations:

Poster Categories:

Veterinary Professional Students

- Brian Jochems, first place
- Sarah Shippy, second place
- Katherine LaVallee, third place
- Liz Farnan, fourth place
- Noelany Cruz Rivera, fourth place

Interns, First-year Residents and Graduate Students

- Lindsay Ledbetter, first place
- Jessica Lovstad, second place
- Nicholas Olivarez, third place

Second- and Third-year Residents and Graduate Students

- Marcia Hart, first place

Ming Yang, second place

Susheel Busi, third place

Daniel Davis, third place

Presentation Categories:

Veterinary Professional Students

- Damian Peyton, first place
- Jeremiah Nichols, second place

Interns, First-year Residents and Graduate Students

- Kim Menard, first place
- Dan Montonye, second place
- Megan Haney, third place

Second- and Third-year Residents and Graduate Students

- Mike Fink, first place
- Christine Sibigtroth, second place
- Carolyn Lacey, third place

Combined Poster and Presentation Categories

Advanced Graduate Students and Post Docs

- T. Dylan Olver, first place
- Miqdad Dhariwala, second place
- Erkan Osman, third place
- Linda Alex, fourth place

Best Overall: Veterinary Professional Student

Kari Deininger

Best Overall: Interns, Residents, Graduate Students and Post Docs

Jessica Hiemstra
Marina McCoy

During an evening banquet, new members were inducted into Phi Zeta. They included:

From the Class of 2015:

- Lynn Richard Barton
- Amanda Jane Brehm
- Sarah Church
- Ashley Clarke
- Nicole Freeman
- Gina Marie Holen
- Evelyn MacKay
- Nancy Lynn Mueller
- Mindy Neiuwboer
- Jillian L. Paegelow
- Karen Elizabeth Trott
- Jacqueline Roberts
- Ainsley Storm Todd

From the Class of 2016

- Lisa Anderson
- Ellen Marie Cole
- Celia Friedman Cowan
- Chris Kennedy
- Anna Kathleen McManamey
- Justin Michael Nash
- Shanna R. Nelson
- Christina Scudder
- Rowena Woode
- Jaclyn Zangre

Residents

- Erin Burton
- Michael Fink
- Marina McCoy Hanson
- Maria Hart
- Sarah Hooper

Faculty

- Michael Calcutt
- Charles Maitz
- Jerry Taylor



CVM STUDENTS TAKE ON NATIONAL LEADERSHIP ROLES

Two third-year students at the MU College of Veterinary Medicine, Brian Jochems and Jessi Kraemer, have been selected to join the executive boards of national veterinary student organizations.

Jochems Joins SAVMA Board

Jochems was chosen to be the international exchange officer-elect for the Student American Veterinary Medical Association executive board.

Jochems will serve one year as the SAVMA board's international exchange officer-elect and the following year as the international exchange officer. In these positions, he will represent SAVMA internationally and serve as a resource for veterinary students interested in international experiences, he said.

Jochems said he is passionate about international travel and has experienced the benefits of international education firsthand. As an undergraduate at MU, Jochems spent a semester studying in the United Kingdom. In addition to taking classes not available at MU, it was an opportunity to meet new people, try new things and step out of his comfort zone, he said. After his classes ended, he capped off the experience with a three-week sightseeing tour of 14 countries.

"That sparked my interest in international experiences and the benefit of getting different perspectives from other cultures and countries," Jochems said.



Brian Jochems

Continued on page 10

CVM Student Receives Grant to Study Canine Airway Microbiota

Alexa Personett, a second-year student at the MU College of Veterinary Medicine, has been named a 2015 Morris Animal Foundation Veterinary Student Scholar. The competitive program provides veterinary students an opportunity to become involved in mentored research that enhances the health and welfare of companion animals and wildlife.



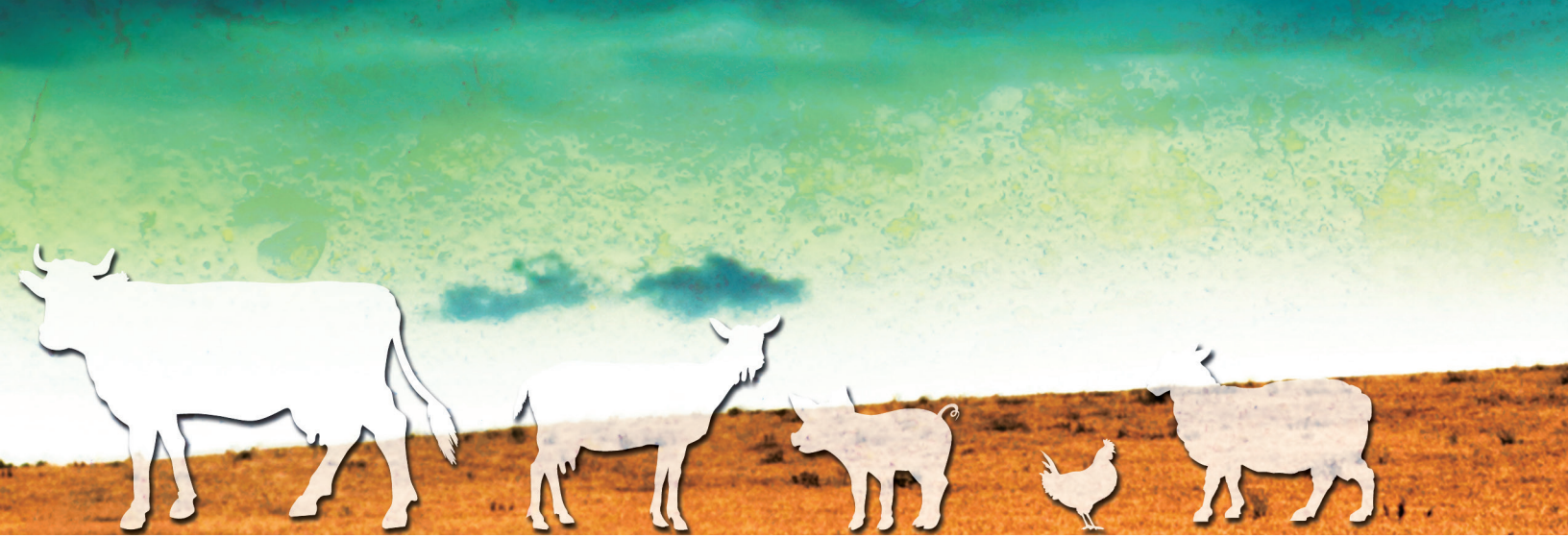
Alexa Personett

Personett will receive a \$5,000 grant from the foundation.

Through the program, Personett will spend her summer researching canine airway microbiota in chronic bronchitis. Until recently, she said, the lungs were considered a sterile organ without the presence of bacteria. However, it has now been shown in humans that the lungs harbor their own community of beneficial bacteria, similar to the gut. These beneficial bacteria, called the airway microbiota, are believed to have necessary functions that maintain the health of the lungs, such as supporting the immune system and fighting off harmful bacteria. If these beneficial bacteria are reduced, harmful bacteria may invade and cause disease.

"In humans, the bacterial populations are different in healthy lungs compared to those with respiratory diseases like asthma or COPD," Personett said. "The project I will be working on involves determining the airway microbiota in dogs diagnosed with chronic bronchitis and comparing it to the microbiota that is present in healthy dogs."

Continued on page 10



Leaders, continued

Since starting his veterinary education, Jochems has met international veterinary students at conferences and through other experiences. Through their “mutual passion for animal welfare and well-being,” he learned about some of the ways veterinary medicine can differ depending on location.

Jochems’ new position will require a large time commitment and a lot of travel, but it will be worth it, he said. He will be taking four trips during his two years in office, starting with two weeks in Romania this summer followed by trips to Taiwan, Austria and Istanbul later. He will also attend all annual AVMA conventions and SAVMA symposiums.

Kraemer Joins VBMA Board

Jessi Kraemer was selected to join the Veterinary Business Management Association’s 2016 national executive board.

The VBMA is a student-driven organization dedicated to advancing the veterinary profession by increasing business knowledge, creating networking opportunities and empowering students to achieve their personal and professional goals. Its board is composed of six officers: president, vice president, treasurer, business certificate director, marketing director and compliance chair. In July, Kraemer will find out which office she will hold. Kraemer will officially start in January 2016 and serve until the end of the year.

“VBMA has shown me my niche of passion in veterinary medicine,” she said.

Kraemer said VBMA teaches veterinary students skills they might not learn elsewhere, such as negotiating first jobs, pay off debts or run a business. These skills help students become better veterinarians and better people, she said.



Jessi Kramer

Grant, continued

Personett’s research project will be conducted under the guidance of two faculty mentors, Aaron Ericsson, DVM, PhD, and Carol Reinero, DVM, PhD. Ericsson, an assistant research professor in the Department of Veterinary Pathobiology, is the director of the MU Metagenomics Center and the lead scientist for microbiota research for the Mutant Mouse Resource and Research Center and Rat Resource and Research Center. Reinero is an associate professor of small animal internal medicine and the director of the MU Comparative Internal Medicine Laboratory.

“To our knowledge, it will be the first study to determine the microbiota that is present in the canine airways using advanced sequencing technologies,” Personett said. “It will be the first step in determining if respiratory disease in dogs is linked to an imbalance of bacterial populations, which will provide novel information relevant to the disease process of chronic bronchitis. I am also very excited by the clinical applications the results of the study could supply, as we may be able to provide alternative treatments for this disease.”

Chronic bronchitis is a common and irreversible disorder that affects all dog breeds. Steroids must be given lifelong to reduce clinical signs and airway inflammation.

“The results of this study could potentially lead to the development of new, alternative treatments for pet dogs with chronic bronchitis by shifting the airway bacteria toward the growth of beneficial bacteria,” Personett said. “It is well known that the gut microbiota plays an important role in intestinal health, so it is very likely that the airway microbiota is also involved in maintaining the health of the respiratory system. This research study will serve as the basis for future studies to beneficially modulate the airway microbiota with probiotics, antibiotics or other immunomodulators.”

REAR HITCH

“99 LIVES” PROJECT SEQUENCES CAT GENES

Within the last few months, scientists have completed the first-ever genetic sequencing of a cat. Now, scientists at the University of Missouri are searching for ways to fund the genetic sequencing of more cats through a project called “99 Lives.” Leslie Lyons, the Gilbreath-McLorn Endowed Professor of Comparative Medicine in the MU College of Veterinary Medicine, says cats suffer from many of the same genetic diseases as humans, and if scientists can sequence the genes of more cats, they can gain a better understanding of how to treat these diseases in cats and in humans.

“Many cats suffer from obesity, diabetes, asthma, urinary tract infections, cancers, heart disease and infectious diseases, just like humans,” Lyons said. “The responsible DNA variations for any individual birth defect or inherited condition that affects health later in life can now be identified in any individual cat. Tens of thousands of humans and hundreds of dogs have had full genome sequencing, which has helped create a robust, diverse genetic map for those species; however, we currently only have one cat’s genetic map to study. The more cats we can genetically sequence, the better we will understand what causes many genetic disorders and possibly even how to prevent those problems.”

Scientists at MU only need a small amount of blood to sequence the genes of individual cats. However, because the process is complicated and time-



consuming, it costs more than \$7,000 to complete a full gene sequence of each cat. Lyons hopes that if she can raise enough money from private donors to help fund the research, she can sequence close to 100 cats. Lyons says that small donations are as important as large ones.

“We are targeting the number of 100 (or 99) cats to be sequenced because that number would really help us understand the normal and positive genetic variations of cats,” Lyons said. “This will allow us to more easily find the negative genetic variants that cause health problems and disease. The more genetic variations we can identify, the better we can isolate the causes of different genetic problems.”

Lyons says the 99 Lives project is interested in sequencing the DNA of all kinds of cats, from house cats to large

felines like bobcats, palace cats and even tigers. She says that interested donors can not only give money to help fund the project, but also can donate DNA samples of their own cats to help the cause.

Lyons hopes to raise nearly \$500,000 for the project. She and her colleagues have currently raised more than \$370,000 but are still looking for about \$120,000 more. To find out more information about the 99 Lives project or to donate money, visit: <http://feline-genetics.missouri.edu/99lives>

This project is a result of collaboration through the One Health, One Medicine area of Mizzou Advantage. Mizzou Advantage is a program that focuses on four areas of strength: food for the future, media of the future, one health, one medicine, and sustainable energy.