

## **MU RESEARCHER MAKES \$1 MILLION GIFT**

rank Booth, a resident of Columbia and a professor in the University of Missouri College of Veterinary Medicine, School of Medicine and MU Dalton Cardiovascular Research Center, has given a \$1 million gift to MU to fund his research into physical activity and health and to endow the Frank Booth Fellowship in Physical Activity and Health in the MU School of Medicine in perpetuity. Booth, an expert on genetic motivations for exercise and activity, has made research into unhealthy effects of physical inactivity on the brain and aerobic capacity his life's work. He says his gift is motivated by a passion to help humans and animals live longer lives free from chronic diseases.

"Throughout my years of research, I have discovered the true importance of exercise and physical activity on health," Booth said. "Unfortunately, many people fail to realize how much they could improve their health by remaining physically active. My goal with this gift is to support continuing research on the effects of exercise and to help communicate the importance of exercise



Frank Booth

to overall health, including the prevention of chronic diseases."

Booth's gift, in conjunction with past giving to MU, will continue to fund his exercise physiology research for years into the future. He says his two research priorities will include the discovery of what motivates people to be either active or "couch potatoes," as well as the search for what genes cause humans to lose their ability to remain physically active as they age. Booth says he wants to help people remain capable of playing with their grandchildren even as they enter the latter stages of life. The Frank Booth Fellowship in Physical Activity and Health will be funded by an estate

gift from Booth and will provide fellowship awards for second and third-year graduate students who are engaged in research on physical health and exercise at the MU Health Activity Center.

"In his 15 years at MU, Frank Booth has worked tirelessly to research exercise in animals and people and the impact of a sedentary lifestyle on health and longevity," said Neil Olson, dean of the MU College of Veterinary Medicine. "If you know Dr. Booth, you know that he doesn't just walk the walk, he runs the run — jogging to work, between his offices, and to conduct most of his errands. Dr. Booth also runs the run when it comes to championing the College of Veterinary Medicine and University of Missouri, not only with his time and talent, but also with his financial support. We are so grateful to Frank for his generosity, not only because it helps ensure this important area of research will continue, but also because it speaks volumes when our faculty members take such pride in our in-

Continued on page 2



Booth, continued

stitution and believe in our work that they personally invest in it."

"Through his generosity and dedication to his work, it is obvious that Dr. Booth is passionate about helping people remain healthy throughout their lifetimes," said MU Chancellor R. Bowen Loftin. "Dr. Booth is a credit to the MU faculty and to the entire academic community and a model of how giving back to his university can not only improve education and important research, but also advance the goals and dreams of donors beyond their lifetimes."

Booth has more than 40 years of research experience in physiological, biochemical, molecular and genetic adaptations that occur during exercise. Some of his most recent research has focused on genetic pre-dispositions to exercise. He has succeeded in breeding rats that exhibited traits of either extreme activity or extreme laziness. Booth believes these findings may suggest a link between the genes responsible for exercise motivation and the genes responsible for mental development. He also says this research hints that exercising at a young age could help develop more neural pathways for motivation to be physically active.

Booth has been awarded three honor awards for his work: an honor award from the 13th International Conference on the Biochemistry of Exercise in 2006; an honor award from the Environmental and Exercise Section of American Physiological Society in 2009; and an honor award from the American College of Sports Medicine in 2010. He is a member of the editorial boards of Journal of Applied Physiology, American Journal of Physiology: Cell Physiology, Physiological Genomics and CardioMetabolic Syndrome.



Chancellor Loftin shares a laugh with Dr. James Nave and Jan Dils during a reception held in the chancellor's honor in Henderson, Nevada. Loftin presented Nave with a few host gifts, including a copy of "Mizzou 175, The Remarkable Story of Missouri's Flagship University from 1839 to 2014."

### **Alumnus Welcomes Chancellor**

Dr. James Nave, a 1968 graduate of the MU College of Veterinary Medicine, recently hosted a reception for MU Chancellor R. Bowen Loftin at Nave's Henderson, Nevada, home. The social function was held as part of the new MU chancellor's outreach to alumni and other friends of the university. Loftin was inaugurated as the 22nd chief executive officer of the university on Sept. 18. The gathering hosted by Nave created an opportunity for Loftin to introduce himself to veterinary alumni and University of Missouri supporters in the Las Vegas area and beyond.

Nave, a Missouri native, served in the United States Army from 1968 to 1971 before entering private practice in Las Vegas in 1971. In 1974, he established the Tropicana Animal Hospital, an accredited member hospital of the American Animal Hospital Association. He continues to own and manage Tropicana Animal Hospital as well as 14 other veterinary hospitals in the Las Vegas area. He was joined at the reception by approximately 30 other people, including MU College of Veterinary Medicine Dean Neil C. Olson.



## **MVMA PRESIDENT HONORS CVM DEAN**

U College of Veterinary Medicine Dean Neil C. Olson, DVM, PhD, was honored with the President's Award during the Missouri Veterinary Medical Association annual convention held Jan. 22-25, 2015, in St. Charles, Missouri. During the awards banquet, outgoing MVMA President David Prigel, DVM, announced Olson as the recipient he selected for the President's Award. The award is given each year to recognize an individual who was instrumental to the president's efforts to advance the veterinary profession for the betterment of animal health in the state. Prigel thanked Olson for his efforts working with the organization, his responsiveness and his open communication.

Olson was one of several people with college ties recognized during the event. William A. Wolff, DVM, MS, a retired CVM faculty member, received the organization's Veterinarian of the Year Award. The award is given to an individual who has made outstanding contributions to community, state and the people whose lives they have touched. Wolff, who spent many years teaching and conducting research in foreign animal diseases and whose volunteer service includes serving as the director of the Missouri Volunteer Vet-



2014 MVMA President David Prigel presents the President's Award to CVM Dean Neil C. Olson.

erinary Corps and the chairman of the MVMA Emergency Management and Public Health Committee, was also honored when the MVMA Volunteerism Award was renamed the William A. Wolff Volunteerism Award. MU Distinguished Librarian Curator of the Medical and Veterinary Historical Collections C. Trenton Boyd received the Missouri Veterinary Medical Foundation's Distinguished Service Award. Clark Fobian, DVM, a member of the CVM Class of 1977, received the Robert E. Hertzog Leadership Award.

Ron Cott, DVM, CVM associate dean of Student and Alumni Affairs and director of Advancement, and William Fales, MS, PhD, a professor of bacteriology, infectious disease and microbiology in the Department of Veterinary Pathobiology, were inducted as new Lifetime Members.

The Missouri Academy of Veterinary Practice honored David Wilson, DVM, MS, director of the MU Veterinary Medical Teaching Hospital, as its MAVP Honorary Member.

College faculty were also active giving educational presentations. Leading continuing education lectures were Joan Coates, DVM, MS, professor of veterinary neurology and neurosurgery; Tim Evans, DVM, MS, PhD, associate professor of toxicology; Stephanie Gilliam, RVT, CCRP, a neurology and neurosurgery technician who works in canine rehabilitation; Elizabeth Giuliano, DVM, MS, professor of veterinary ophthalmology; F.A. (Tony) Mann, DVM, MS, professor and director of small animal surgery and emergency and critical care; Daniela Mauler, DVM, assistant teaching professor of neurology and neurosurgery; Richard Meadows, DVM, Curators' Distinguished Teaching Professor and director of the community practice section; Dennis O'Brien, DVM, MS, PhD, professor and Chancellor's Chair in Comparative Neurology; Shannon Reed, DVM, MS, assistant teaching professor of equine surgery and lameness; and David Wilson, DVM, MS, professor of equine surgery and VMTH director.



### RECOGNITIONS AND HONORS

An article co-authored by CVM student **W. Dane Foxwell,** "Sell Veterinary Clients on Your Service," was the eighth most-read article for 2014 on *DVM 360*. Foxwell wrote penned the piece with guidnace from a mentor, Andrew Roark, DVM.

Ryan McCally, MS, DVM, a thirdyear resident in small animal surgery at the MU College of Veterinary Medicine, received an award for Best Clinical Abstract at the Small Animal Residents' Forum during the 2014 American College of Veterinary Surgeons Surgery Summit in San Diego. Mc-Cally's abstract, "A Comparison of the Analgesic Efficacy of Epidural Anesthesia and Two Peripheral Nerve Blockades After Tibial Plateau Leveling Osteotomy," was coauthored with faculty members Alex D. Bukoski, DVM, PhD; Keith R. Branson, DVM, MS; Derek B. Fox, DVM, PhD; and James L. Cook, DVM, PhD.

Kim Selting, DVM, MS, DACVIM (oncology), DACVR (radiation oncology), assistant professor of oncology at the MU College of Veterinary Medicine, has been elected president-elect of the Veterinary Cancer Society. Selting was installed as president-elect during the 2014 Veterinary Cancer Society. Continued on page 5

## **Testosterone May Contribute to Tumor Growth**

Previous cancer research has revealed that women are less likely than men to suffer from non-sex specific cancers such as cancer of the colon, pancreas and stomach. Scientists theorized that perhaps this trend was due to a protecting effect created by female hormones, such as estrogen, that help prevent tumors from forming. Now, researchers at the University of Missouri have found evidence suggesting that the male hormone testosterone may actually be a contributing factor in the formation of colon cancer tumors.

In his study, James Amos-Landgraf, an assistant professor of veterinary pathobiology in the MU College of Veterinary Medicine, observed normal levels of naturally occurring colon cancer in a group of male rats. He then removed testosterone from those rats and colon cancer rates decreased dramatically. After reintroducing testosterone, the colon cancer rates returned to normal.

"Previously, scientists believed that female hormones may have lent some sort of protection against tumor susceptibility," Amos-Landgraf said. "However, by showing that removing testosterone from rats leads to a drastic decrease in colon cancer susceptibility, it appears that male hormones may actually contribute to colon tumor growth rather than



James Amos-Landgraf

female hormones being protective."

Amos-Land-

graf also points to higher rates of colon cancer in postmenopausal women as potential ev-

idence to support testosterone as a contributing agent to tumor growth.

"All women have some level of testosterone in their bodies naturally, but those levels typically are much lower than estrogen and other female hormones," Amos-Landgraf said. "Once women experience menopause and their female hormone levels decrease, their testosterone levels become relatively higher. This corresponds to the time when they begin to experience higher rates of colon cancer and could be a sign of a relationship between testosterone levels and colon tumor growth."

This study was published in the *Proceedings of the National Academy of Sciences* and was funded by two grants from the National Institutes of Health (Grants R01 CA63677 and R01 CA125591) and support from the American Cancer Society and University of Missouri.



#### Honors, continued

ety annual conference in St. Louis. The VCS has a membership of nearly 1,000 people, including specialists in medical, surgical and radiation oncology, internists, pathologists, pharmacologists and general practitioners worldwide. Selting will serve the VCS executive committee for two years as president-elect before becoming president. After two years in that role, she will spend another two years as the past president.

Pamela Adkins, DVM, MS, recently became a diplomate of the American College of Veterinary Internal Medicine in the specialty of large animal internal medicine. Adkins is a postdoctoral fellow in food animal medicine and surgery at the MU College of Veterinary Medicine. Adkins completed her veterinary studies at The Ohio State University, where she also received a master's degree in veterinary preventive medicine. After an internship at Ohio State, she came to MU in 2011 to complete a food animal medicine and surgery residency and pursue a doctorate in pathobiology.

**Charles Maitz, DVM, PhD**, recently became a diplomate of the American College of Veterinary Radiology in the subspecialty of radiation oncology. Maitz, an assistant professor of radiation on-

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# CVM STUDENTS PLACE SECOND IN CHALLENGE

magine a petsitter is caring for your dog while you are out of town when the dog suddenly develops severe breathing problems. The sitter rushes him to a veterinary hospital. In an emergency, time and health history are of the essence. But the sitter probably won't know the pet's full history, and quickly gathering medical records from your pet's regular veterinarian can be nearly impossible.

To address this and related problems, MU College of Veterinary Medicine students Brandon Thornberry and Nick Harrison have developed a veterinary innovation, MyDVM. They recently won second place for the business idea in the Veterinary Innovation Challenge, an international competition designed to encourage entrepreneurial thinking and innovative ideas among veterinary students to help drive the future of the industry.

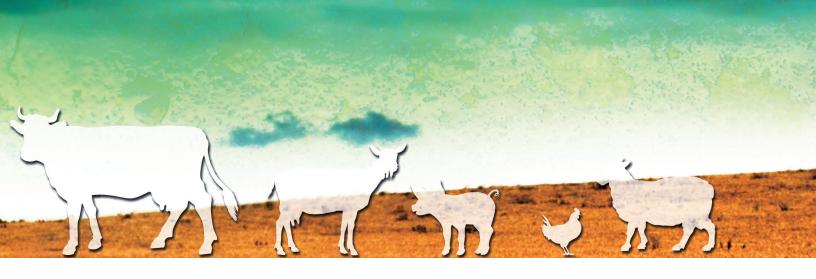
The third-year students won \$5,000 in the competition, which was founded by University of Pennsylvania veterinary students. Veterinary students from American Veterinary Medical Association-accredited schools lead the teams, but people from other disciplines could be team members.



Nick Harrison and Brandon Thornberry, third-year students at the MU College of Veterinary Medicine, placed second in the Veterinary Innovation Challenge

Developing their business plan was a time-intensive process, Thornberry and Harrison said. Thirty-four teams submitted proposals in May, and in June the top eight finalists were announced. They had until August to submit a more formal and detailed business plan. In September they traveled to Philadelphia to present their ideas before judges who evaluated the quality of the business plans and viability of the ideas.

Continued on page 6



#### Honors, continued

cology, joined the CVM faculty in July. He holds a joint position with the School of Medicine's Department of Radiology and the International Institute of Nano and Molecular Medicine. Maitz earned his DVM and completed a residency in radiation oncology and a PhD in radiochemistry at MU.

The CVM Comparative Ophthalmology Service recently made a successful trip to Fort Worth, Texas, for the American College of Veterinary Ophthalmologists annual conference. Kevin Donnelly, DVM '10, who completed his residency at MU this summer and recently achieved ACVO diplomate status, won the 2014 Dr. Cynthia Wheeler Memorial Award for best case report or review article by a resident. Donnelly's co-authors were Jacqueline Pearce, DVM, MS; Elizabeth Giuliano, DVM, MS; Pamela Fry, DVM, MS; and John Middleton, DVM, PhD. Pearce is an assistant teaching professor of veterinary ophthalmology, and Giuliano is an associate professor of veterinary ophthalmology and section head of the MU ophthalmology service. Fry is a postdoctoral fellow in food animal medicine and surgery, and Middleton is a professor in food animal medicine and surgery.

**no** was elected vice president of the ACVO board of regents.

Innovations, continued

Although he admitted the finals competition was a little nerve-wracking, Harrison said he and Thornberry prepared extensively for their presentation and were confident their idea could succeed. They were extremely impressed by all of the ideas presented during the finals, and both said they were somewhat surprised when the winners were announced.

"We were confident going into the finals and knew we had given a strong presentation," Thornberry said. "It was so neat to see all our hard work culminate" in a second-place finish.

Because they plan to develop their idea into an actual business, the duo isn't divulging many details right now. Their general description is as follows: "MyDVM is on the forefront of the next generation of communication, information sharing and diagnostics within veterinary medicine. Through MyDVM services, pet owners will be able to engage with their veterinarian in a manner unlike anything that currently exists within the animal health industry."

"Our business idea centers on addressing a need to enhance communication between the veterinarian and pet owner, as well as addressing a need in emergency medicine for information in a pet's medical history to be more immediately available," Thornberry said.

The idea developed from real-world experience, lessons learned in veterinary school and research.

"Each of us had a vision for how we wanted to help the veterinary industry, and when we started thinking together, we merged our ideas into one business plan," Thornberry said. "We started getting into the entrepreneur mindset about how to bring our ideas to fruition, and entering this competition helped us to really work out the details."

Both students had an interest in business before the competition. Harrison and Thornberry are members of the Veterinary Business Management Association, which provides business education to veterinary students all over the world. Thornberry was the president of Missouri's VBMA chapter last year and is now the association's national marketing director. Harrison served as secretary of the Missouri VBMA board.

To supplement their classroom and VBMA education, the team did extensive research about the veterinary industry, business management and finances, and how to connect with and penetrate the market, Harrison said. The process was extremely educational, Thornberry said.

"Just like veterinary medicine in the classroom, you can really only learn so much from a Powerpoint," he said. "You have to get out there and try and not be afraid of failure."



## CHILDREN WITH AUTISM WHO LIVE WITH PETS ARE MORE ASSERTIVE

ogs and other pets play an important role in individuals' social lives, and they can act as catalysts for social interaction, previous research has shown. Although much media attention has focused on how dogs can improve the social skills of children with autism, a University of Missouri researcher recently found that children with autism have stronger social skills when any kind of pet lived in the home.

"When I compared the social skills of children with autism who lived with dogs to those who did not, the children with dogs appeared to have greater social skills," said Gretchen Carlisle, research fellow at the Research Center for Human-Animal Interaction (ReCHAI) in the MU College of Veterinary Medicine.

"More significantly, however, the data revealed that children with any kind of pet in the home reported being more likely to engage in behaviors such as introducing themselves, asking for information or responding to other people's questions. These kinds of social skills typically are difficult for kids with autism, but this study showed children's assertiveness was greater if they lived with a pet."



Pets often serve as "social lubricants," Carlisle said. When pets are present in social settings or a classroom, children talk and engage more with one another. This effect also seems to apply to children with autism and could account for their increased assertiveness when the children are living in a home with pets, Carlisle said.

"When children with disabilities take their service dogs out in public, other kids stop and engage," Carlisle said. "Kids with autism don't always readily engage with others, but if there's a pet in the home that the child is bonded with and a visitor starts asking about the pet, the child may be more likely to respond."

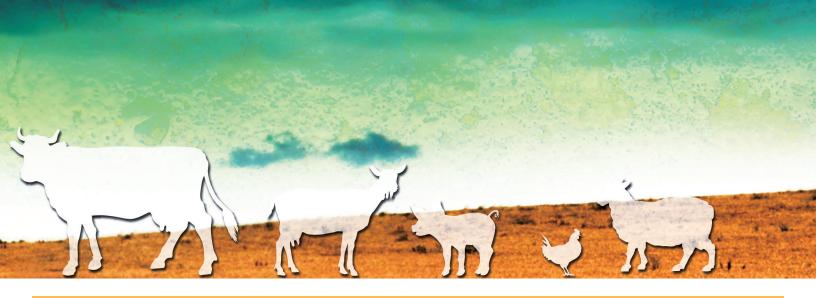
Carlisle also found that children's social skills increased the longer a family had owned a dog, yet older children rated their relationships with their dogs as weaker. When children were asked, they reported the strongest attachments to smaller dogs, Carlisle found.

"Finding children with autism to be more strongly bonded to smaller dogs, and parents reporting strong attachments between their children and other pets, such as rabbits or cats, serves as evidence that other types of pets could benefit children with autism as well," Carlisle said.

Carlisle surveyed 70 families who had children with autism between the ages of 8 and 18. The children were patients at the MU Thompson Center for Autism and Neurodevelopmental Disorders. Almost 70 percent of the families that participated had dogs, and about half of the families had cats. Other pets included fish, farm animals, rodents, rabbits, reptiles, a bird and even one spider.

"The Social Skills and Attachment to Dogs of Children with Autism Spectrum Disorder" was published in the *Journal of Autism and Developmental Disorders*. Sigma Theta Tau-Alpha Iota provided funding for the project.

ReCHAI is a collaboration between the MU Sinclair School of Nursing and the MU College of Veterinary Medicine.



## **MU Students Compete at AABP Quiz Bowl**

Two teams of students represented the MU College of Veterinary Medicine in the American Association of Bovine Practitioners Quiz Bowl on Sept. 19 in Albuquerque, New Mexico. The event was held during the AABP annual meeting.

Both MU teams, each consisting of four students, placed second in their respective opening rounds. Each opening round pitted four teams against each other, with the winner moving on to further competition. Twenty-three teams of veterinary students from colleges across the country entered the competition, which was ultimately won by a team from Texas A&M.

The MU students split into two teams based on gender. The women's team featured second-year students Jill Abel, Brianne Bishop, Elena Esparza and Alyssa Thomas. Competing on the men's team were fourth-years Lynn Barton and Logan Williams and third-years Cody Dalton and Clint Eastburn.

Although the MU team members didn't do any special preparation before the competition, they said they had a great time and were pleased with their performance.

"I wish I could do it again," said Williams, the MU CVM AABP senior delegate. "It was a lot of fun."

The questions addressed topics such as reproduction, pathology and production. Esparza said she was surprised that even though her team of second-year students was still completing their preclinical classroom curriculum they knew many of the answers.

It can be hard to tell how relevant some of the information learned in the class-room is when applied to clinical settings, she said, and the questions made her realize that many of those issues are important in the field.

Thomas and Dalton said the students who aren't graduating would like to return to the Quiz Bowl again next year and hope to perform even better now that they know what to expect.

"We're taking home the trophy next year," Dalton said.

Despite some disappointment at not winning the competition, the students said they had a fantastic time at the conference, especially because of the networking opportunities.

Besides the ability to meet potential employers and future colleagues, Dalton said networking events offered the chance to have dinner with people whose research articles he has been reading for years.

Sponsors of the students' trip included the Wolff Fund and Zoetis.



The women's team included students: (from left) Brianne Bishop, Jill Abel, Alyssa Thomas and Elena Esparza.



The men's team was made up of (from left) Logan Williams, Cody Dalton, Clint Eastburn and Lynn Barton, who is not pictured.



## **CLASS OF 2016 MEMBERS BEGIN CLINICS**

he MU College of Veterinary Medicine held a White Coat Ceremony Sunday, Oct. 19, 2014, to celebrate the transition of Class of 2016 members from classroom to clinics. The event marked the midpoint in the students' professional curriculum. The first two years of preclinical training provided them with a foundation in biomedical sciences and included courses in anatomy, physiology, cell and molecular biology, pathology, pharmacology, microbiology, virology and toxicology. They also learned fundamentals in clinical disciplines, including anesthesiology, clinical pathology, radiology, public health and medicine and surgery, that they will need for the rest of their veterinary education.

They will now spend nearly two years working in the Veterinary Medical Teaching Hospital Small Animal, Food Animal and Equine clinics, as well as undertaking preceptorships on their way to completing their Doctor of Veterinary Medicine degrees.

The 108 students who took part in the ceremony selected a family member, friend or mentor to present their white coats and assist in donning them.



Student Lauren Geiger receives a white coat from her fiancé, Alex Callow.

Dean Dr. Neil C. Olson congratulated the class members on their success in reaching this milestone and reminded them they were closer to the end of their DVM education than the beginning. Dr. John Dodam, chairman of Veterinary Medicine and Surgery Department, welcomed the students to the Teaching Hospital. Dr. Ron Cott, director of Advancement and associate dean of Student and Alumni Affairs, served as the emcee for the ceremony. Dr. David Prigel, president of the Missouri Veterinary Medical Association (MVMA), and Richard Antweiler, executive director of MVMA, presented each student in the class with a veterinary medicine lapel pin from the MVMA.

The platform party also included Dr. Linda Berent, associate dean of



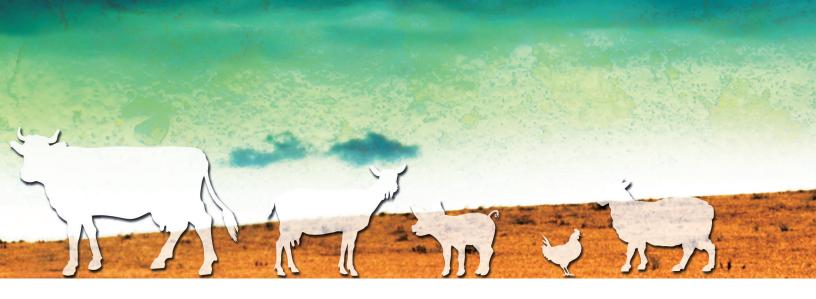
Lacy Jones gives the response on behalf of the Class of 2016.



Dr. John Dodam congratulates student Stephanie Loden as Dr. David Wilson and Dr. Shuping Zhang await their opportunity to greet her. Dean Neil C. Olson congratulates her father, Don Loden, who presented her white laboratory coat.

Academic Affairs, Dr. David Wilson, director of the Veterinary Medical Teaching Hospital, and Dr. Shuping Zhang, director of the Veterinary Medical Diagnostic Laboratory.

Lacy Jones gave the response on behalf of her classmates.



## STUDENTS EXPLORE OPPORTUNITIES

any domestic and foreign U.S. military installations have veterinary clinics on the post to provide care for soldiers' pets, working dogs, horses and local livestock. Those clinics need veterinarians to staff them, and that need brought U.S. Army Staff Sgt. Marcus Bates to the MU College of Veterinary Medicine's 18th annual Veterinary Products Day on Oct. 21.

"We're hoping to provide scholarship opportunities to students who are still looking for funding opportunities," Bates said of the Army's presence at the event.

Veterinary Products Day once again proved a big draw with approximately 375 veterinary students attending. In addition to the Army booth, 19 other vendors came to the College to display their products, offer samples and answer student questions.

As Bates and two of his fellow servicemen discussed benefits, such as tuition, books and a monthly stipend of more than \$2,000, veterinary students could earn by joining the Army's Veterinary Corps, Josh Norsworthy talked about the animal health care products his company has to offer.

Norsworthy, who was attending his first Veterinary Products Day, was present to represent Ceva Animal Health, headquartered in Lenexa, Kansas. The seventh-largest animal health company in the world, Ceva produces a wide variety of products, including Vectra 3D, an anti-parasitic for dogs, a line of dermatological treatments and synthetic pheromones to help pet owners when their dogs and cats are experiencing periods of stress. Norsworthy hoped to expand the company's future clientele by explaining the available products to future veterinarians.

"We're here because we want to partner with veterinarians," he said.



At the U.S. Army table students were able to make dog tags for themselves or their pets. Sgt. 1st Class Paul Walter holds up a dog tag for student Angela Garcia to inspect.

Students who attended the event learned about the products and services offered by a variety of animal health and food companies, including Addison Biological Laboratories, Banfield, Boehringer-Ingelheim, Dechra Veterinary Products, Elanco, Hill's Pet, iVet, Merial, MWI Veterinary Supply, Norbrook Inc., Nutramax Labs, Pet King Brands, Platinum Performance, Purina, Royal Canin and Zoetis. ProPartners Wealth - AVMA GHLIT, which provides insurance for veterinarians, and the U.S. Department of Agriculture Food Safety and Inspection Service also sponsored the event and had representatives on hand.

A buffet-style dinner was provided, and drawings were held for several prizes including a stethoscope, with Sarah Wilken as the winner, a Roku player, which Stacie Stilinovic won, a tailgating gift basket, which went to Liz Farnan, and three \$50 Visa gift cards, won by William Meyers, Nicole Freeman and Jacqueline Burrell.



**CVM Lectures and Wet Lab** 



































