

EXCELLENCE AND LEADERSHIP IN RESEARCH, TEACHING AND SERVICE

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THE HITCHING POST

STAFF, FACULTY HONORED FOR IMPACT

MU College of Veterinary Medicine Dean Neil C. Olson selected three individuals to receive the 2014 Dean's Impact Awards. The awards, established in 1993, recognize individuals who have had an outstanding and sustained impact on the College of Veterinary Medicine. Each year, the CVM dean selects up to three people for the honors. For the 2014 honors Olson selected two staff members and one member of the faculty.

The honorees received an engraved wall 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 Stephanie Bossaller, Irene Ganjam and Dr. Gary Johnson.

Bossaller is a manager of information technology and works within the Office of Academic Affairs providing instructional technology support. Olson commended Bossaller for her efforts administering tests and willingness to respond to email requests for technical assistance at all hours. He also noted that it was

due to Bossaller's examination of security camera tapes that the college was able to identify and apprehend the individual responsible for a series of thefts in the women's locker room.

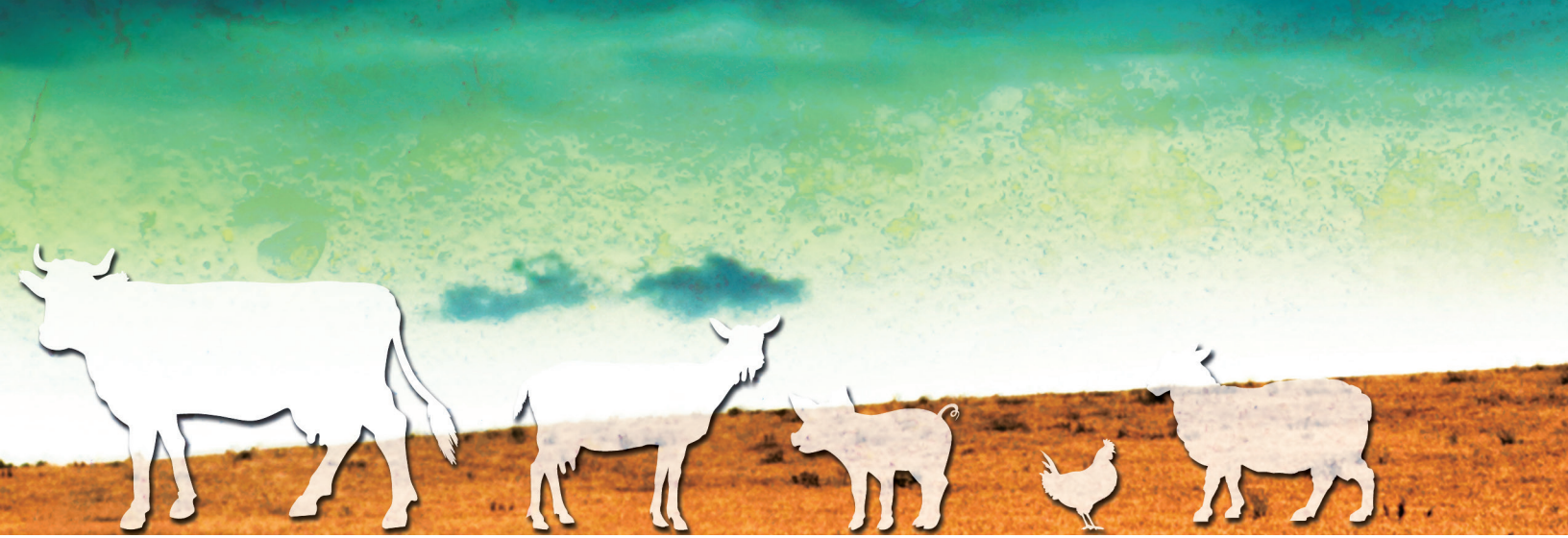
Bossaller was also credited for helping to put in place new educational software, which was cited as one of her longest lasting contributions. With her help, the college was able to implement clinical competency tracking vital to receiving accreditation from the American Veterinary Medical Association Council on Education.

The dean presented a second Impact Award to the Veterinary Medical Diagnostic Laboratory's bacteriology supervisor Irene Ganjam. Ganjam, who has been with the college for 24 years, supervises an operation that involves 19,000 cultures and 9,000 antimicrobial susceptibility tests per year. She is renowned for her work ethic, not only putting in long hours during the week, but also on weekends and holidays. She has been known to walk to work when snow has halted vehicle traffic.



(From top) CVM Dean Neil C. Olson is pictured with 2014 Impact Award winners Stephanie Bossaller, Irene Ganjam and Dr. Gary Johnson

Continued on page 2



Recognitions and Honors

Craig Franklin received the American College of Laboratory Animal Medicine (ACLAM) Comparative Medicine Scientist Award for 2014. In addition to his position as professor within the Department of Veterinary Pathology, Franklin, DVM, PhD, is the director of the MU Mutant Mouse Regional Resource Center, a position he has held since 2011. He has also served as director of Comparative Medicine Program since 1998 and head of the Veterinary Research Scholars Program since 2005. The Comparative Medicine Scientist Award is the ACLAM's highest honor for scientific achievement in comparative medicine. Judging is based on outstanding contributions to the field through research publications, reviews, book chapters and lectures over a period of time between five and 20 years. The award criteria states that recipients must have had a significant impact on the field of animal-based biomedical research.

Neil C. Olson, dean of the MU College of Veterinary Medicine, was appointed to serve on the National Agricultural Research, Extension, Education, and Economics (NAREEE) Advisory Board. Olson, DVM, PhD, will serve a three-year term on the board representing American colleges of veterinary medicine.

The board advises the secretary of Agriculture and land-grant colleg-

Continued on page 3

Impact, continued

Her nominators for the award called Ganjam the glue that held the institution together during the early 1990s when money and staffing were in short supply. She was credited with helping to train many technicians, pre-veterinary students and colleagues and for co-authoring several scientific papers.

Olson presented his third Impact Award to Dr. Gary Johnson, CVM associate professor of veterinary pathobiology. Olson noted that Johnson's work collecting clinical records and DNA samples from animals with clinically diagnosed genetic abnormalities had resulted in a collection of samples from almost 100,000 animals representing hundreds of breed and dozens of inherited diseases.

"This resource is an absolute gold mine and has led to MU researchers discovering the causal mutations underlying at least five diseases in the last two years," according to one of the letters submitted in support of Johnson's nomination for the award.

In addition to advancing the research of his colleagues, Johnson himself has identified nearly two dozen canine mutations in his laboratory and as part of collaborations.

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

Dean's Office:

Jason Wisdom, 10 years

David Willis, 15 years

Biomedical Sciences:

Jan Ivey, 15 years

VMDL:

Megan Young, 5 years

Margaret Dunsmore, 10 years

Mike Wimmenauer, 25 years

Carla Sears, 30 years

Veterinary Medicine & Surgery:

Stephanie Adams, 5 years

Kathleen Backus, 5 years

Alyssa Doner, 5 years

Carrie Duran, 5 years

Anastasia Glahn, 5 years

Antonio Rainey, 5 years

Paulette Smith, 5 years

Terry Stockton, 5 years

Kimberly Terry, 5 years

Billy Jamison, 10 years

Kim Morrison, 15 years

Kathleen Smith, 20 years

Veterinary Pathobiology:

Christine Bethune, 5 years

Anagha Bock, 5 years

Brad Uppinghouse, 5 years

Mark Foecking, 15 years

Liz Hansen, 15 years

Allen Maddy, 25 years



Honors, continued

es and universities on top national priorities and policies for food and agricultural research, education, extension and economics. In addition, the board holds stakeholder listening sessions, reviews draft guidance for competitive-grant programs, advises the Agriculture Research Service on its scientific peer review process for national programs, conducts an annual review of all agricultural research, extension, or education activities conducted or funded by the department for relevance to national priorities and adequacy of funding, and advises the USDA's Research, Education, and Economics (REE) Mission Area in the development of its draft strategic plan.

Carolyn Henry, DVM, MS, was named associate dean for the Office of Research and Graduate Studies at the MU College of Veterinary Medicine. She has served as the interim associate dean since Sept. 1, 2013, replacing Ron Terjung, PhD, who retired.

Henry said her interest in seeking the position stemmed from her commitment to animal health and agriculture and the advancement of biomedical discovery.

"Veterinary medical researchers and educators play an essential role in everything from leading advances in companion animal health to ensuring a safe and sustainable food

Continued on page 4

POTENTIAL CHOLESTEROL DRUG HAS BREAST CANCER FIGHTING CAPABILITIES

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Researchers at the University of Missouri have proven that a compound initially developed as a cholesterol-fighting molecule not only halts the progression of breast cancer, but also can kill the cancerous cells.

"Cholesterol is a molecule found in all animal cells and serves as a structural component of cell membranes," said Salman Hyder, the Zalk Endowed Professor in Tumor Angiogenesis and professor of biomedical sciences in the College of Veterinary Medicine and the Dalton Cardiovascular Research Center at MU. "Because tumor cells grow rapidly they need to synthesize more cholesterol. Scientists working to cure breast cancer often seek out alternative targets that might slow or stop the progression of the disease, including the elimination of the cancerous cells. In our study, we targeted the production of cholesterol in cancer cells leading to death of breast cancer cells."

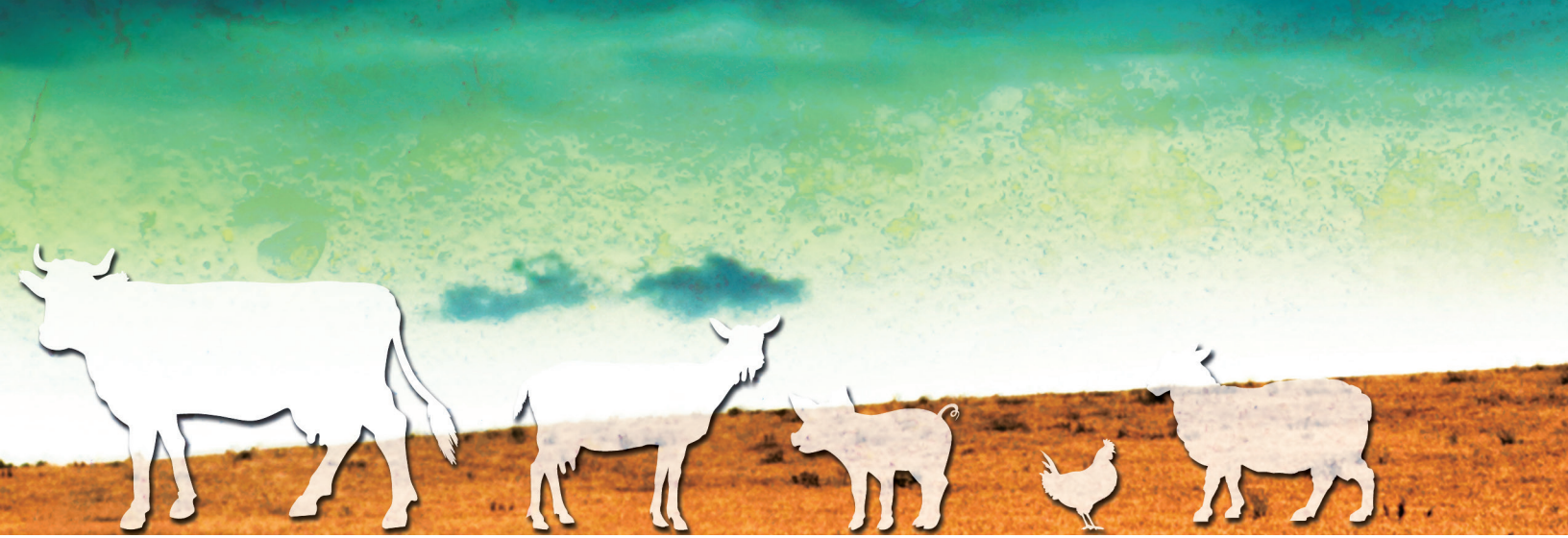
Previous studies suggest that 70 percent of breast cancers found



Dr. Salman Hyder

in women are hormone dependent and can be treated with anti-hormone medicines such as tamoxifen. Although tumor cells may initially respond to therapies, most eventually develop resistance which causes breast cancer cells to grow and spread. Cholesterol also can contribute to the development of anti-hormone resistance because cholesterol is converted into hormones in tumor cells.

Continued on page 4



Honors, continued

supply and solving complex global health problems," she noted in her application to the search committee tasked with filling the position.

Henry has worked to advance collaborations in human and animal medicine at Mizzou. She serves as the faculty facilitator for the One Health/One Medicine Mizzou Advantage for the MU Office of the Provost, a position she has held since 2010, and as the associate director of research at Ellis Fischel Cancer Center since 2012.

Ron Cott, MU DVM '73, MU College of Veterinary Medicine associate dean of Student and Alumni Affairs and director of Advancement, was named a Veterinary Leadership Experience (VLE) Hall of Fame member for his contributions to the program.

The Veterinary Leadership Institute sponsors the national leadership training retreat to encourage participants to "think outside the box" for personal and professional growth. During the week-long program, veterinary students and faculty, industry representatives, private practitioners, technicians and other veterinary professionals explore the concepts of emotional intelligence, teamwork, effective communication and servant-leadership in a facilitated small-group learning environment.

Cott served as a VLE facilitator for seven years and as a member of

Continued on page 5

Breast cancer, continued

Therefore, these cholesterol-forming pathways are attractive therapeutic targets for the treatment of breast cancer.

Using compounds initially developed by Roche Pharmaceuticals for the treatment of high cholesterol, which reduces cholesterol in a different manner than the widely used statins, Hyder and his team administered the molecule to human breast cancer cells. They found that the compound was effective in reducing human breast cancer cell growth and often caused cancer cell death. Most interestingly they found that the cholesterol lowering drug they tested destroyed an estrogen receptor, a protein which encourages the tumor cells to grow.

Equipped with this information, Hyder and the team tested the results in mice with breast cancer. Following injection of the compound, Hyder found that the molecule was effective at killing breast cancer cells by reducing the presence of estrogen receptors in tumor cells, Hyder said.

"The compound exhibited anti-tumor properties in both human samples, which were outside the body, and in samples that were administered by injection into the

mice," Hyder said. "In both cases, the proteins that cause tumors to grow were eliminated, leading to more aggressive cell death."

Hyder believes that further clinical testing can lead to a drug that has the dual purpose of fighting high cholesterol and cancer.

Researchers involved with the study included Yayun Liang, research associate professor at Dalton Cardiovascular Research Center; Cynthia Besch-Williford, professor of veterinary pathobiology at MU; Benford Mafuvadze, post-doctoral fellow at Dalton Cardiovascular Research Center; Matthew Cook, pre-doctoral fellow in Biomedical Sciences; and Xiaoqin Zou, associate professor of physics and biochemistry and a researcher at the Dalton Cardiovascular Research Center. Johannes Aebi from Roche Pharmaceuticals also contributed to the research.

The study, "Cholesterol biosynthesis inhibitors as potent novel anti-cancer agents: suppression of hormone-dependent breast cancer by the oxidosqualene cyclase inhibitor RO 48-8071," was published in *Breast Cancer Research and Treatment* and was funded by a grant from the Department of Defense Breast Cancer Program.



Honors, continued

the institute's board of directors for three years.

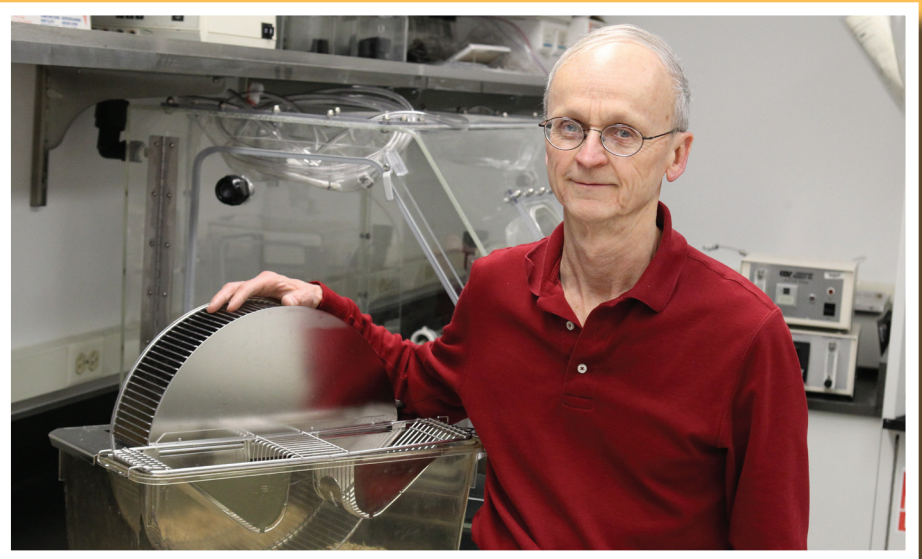
Alexander Franz, PhD, assistant professor in the Department of Veterinary Pathobiology at the MU College of Veterinary Medicine, has won the 2014 award for best paper in the journal *Insect Molecular Biology*. Sponsored by the Royal Entomological Society, the award recognizes the best paper over a two-year period.

The paper, "Transgene-mediated suppression of the RNA interference pathway in *Aedes aegypti* interferes with gene silencing and enhances Sindbis virus and dengue virus type 2 replication," was published in February 2013. Franz's co-authors were C.C.H. Khoo, J.B. Doty, M.S. Heersink and K.E. Olson, all of Colorado State University. The research was funded by the National Institutes of Health and the National Institute of Allergy and Infectious Diseases.

Franz's research focuses on the molecular interactions of arboviruses with the yellow fever mosquito, *Aedes aegypti*. Arboviruses cause numerous emerging and resurgent human and veterinary diseases, including those that cause dengue and chikungunya, which are arboviruses the Franz group is studying.

Drs. Chris Baines and Rebecca Johnson were among the 10 recipients of MU's Excellence in Education Awards for 2014. Baines is an as-

Continued on page 6



Dr. Frank Booth

Genetic Pre-Disposition Toward Exercise and Mental Development May be Linked, MU Study Finds

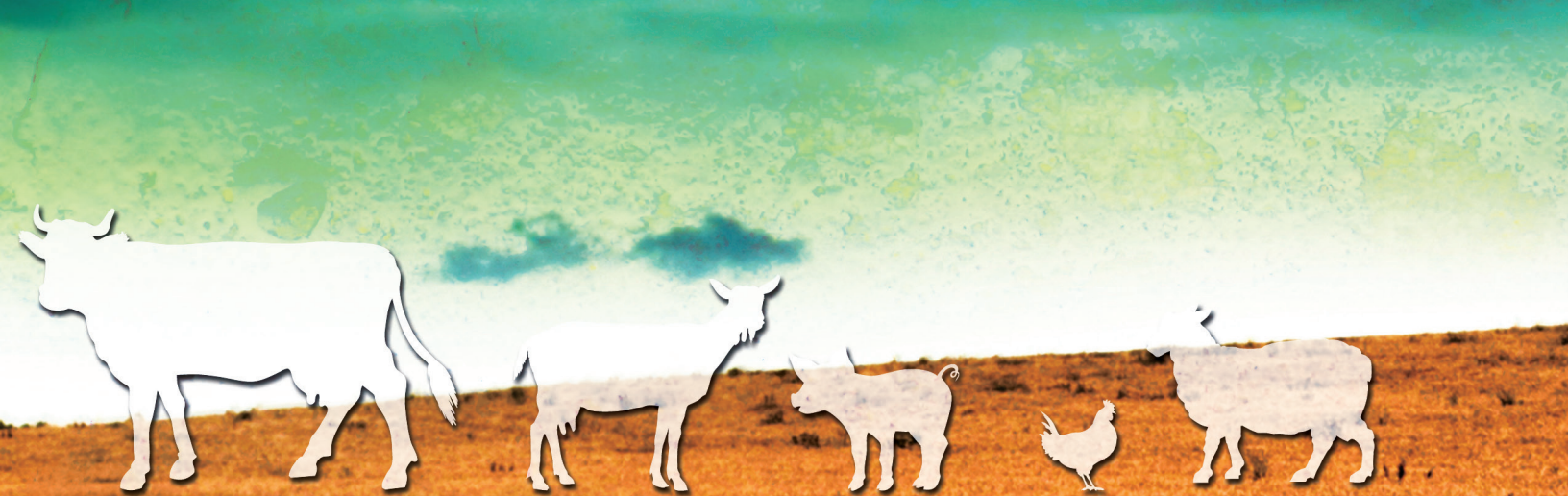
University of Missouri researchers have previously shown that a genetic pre-disposition to be more or less motivated to exercise exists. In a new study, Frank Booth, a professor in the MU College of Veterinary Medicine, has found a potential link between the genetic pre-disposition for high levels of exercise motivation and the speed at which mental maturation occurs.

For his study, Booth selectively bred rats that exhibited traits of either extreme activity or extreme laziness. Booth then put the rats in cages with running wheels and measured how much

each rat willingly ran on their wheels during a six-day period. He then bred the top 26 runners with each other and bred the 26 rats that ran the least with each other. They repeated this process through 10 generations and found that the line of running rats chose to run 10 times more than the line of "lazy" rats.

Booth studied the brains of the rats and found much higher levels of neural maturation in the brains of the active rats than in the brains of the lazy rats. "We looked at the part of the brain known as the 'grand central station,' or the hub where the brain

Continued on page 6



Honors, continued

sistant professor of biomedical sciences at MU College of Veterinary Medicine and an investigator at the Dalton Cardiovascular Research Center. Johnson is a professor at the CVM, director of the Research Center for Human-Animal Interaction, and the Millsap Professor of Gerontological Nursing in the Sinclair School of Nursing.

Co-sponsored by the Division of Student Affairs and the MU Parents Leadership Council, the awards recognize faculty members, advisers and academic administrators who have made significant contributions to the out-of-class learning experiences of MU students and who have demonstrated a long-standing commitment to student learning and personal development.

Kevin Donnelly, DVM '10, a third-year veterinary ophthalmology resident at the MU College of Veterinary Medicine, has received a national Phi Zeta award for outstanding research in the basic science category. Donnelly's manuscript, "Decorin-PEI nanoconstruct attenuates equine corneal fibroblast differentiation," was published in *Veterinary Ophthalmology* in May 2013. His co-authors were Elizabeth Giuliano, DVM, MS, an associate professor of veterinary ophthalmology; Ajay Sharma, PhD, an assistant research professor of veterinary ophthalmology; Ashish Tandon, PhD, a postdoctoral fellow; Jason T. Rodier, MD, a post-

Continued on page 7

Exercise, continued

is constantly sending and receiving signals," Booth said. "We found a big difference between the amount of molecules present in the brains of active rats compared to the brains of lazy rats. This suggests that the active rats were experiencing faster development of neural pathways than the lazy rats."

Booth says 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.

"This study illustrates a potentially important link between exercise and the development of these neural pathways," Booth said. "Ultimately, this could show the benefits of exercise for mental development in humans, especially young children with constantly growing brains."

The study, "Nucleus accumbens neuronal maturation differences in young rats bred for low versus high voluntary running behavior," was published in the *Journal of Physiology*. Booth also is a professor in the Department of Physiology in the School of Medicine as well as a research investigator in the Dalton Cardiovascular Research Center at MU.

STUDENTS AND FACULTY HONORED AT BANQUET

More than \$289,000 was awarded May 13 during the annual Honors Banquet recognizing some of the most accomplished MU College of Veterinary Medicine students. The event featured the presentation of awards acknowledging scholastic achievement, clinical proficiency, community service and leadership. Several of the scholarships were offered in memory of former students and beloved pets.

While the recipients of most awards were MU veterinary students, they shared the spotlight and honors with faculty members, technicians, interns and residents. The students themselves gave several awards to peers and mentors whose teaching and leadership have helped guide them through the veterinary curriculum. Students in each academic class selected an outstanding teacher to receive 2014 Golden Aesculapius Teaching Awards. Winners were Dr. Christopher Baines, honored by the Class

Continued on page 7



Honors, continued

doctoral fellow; and Rajiv R. Mohan, PhD, MSc, the Ruth M. Kraeuchi Endowed Professor in Veterinary Ophthalmology.

In the research described in Donnelly's manuscript, the team used nanoparticle gene therapy to insert DNA that codes for an antifibrotic protein, decorin, into normal equine corneal cells in cell culture and then simulated injury. The goal was to cause the corneal cells to overproduce the antifibrotic protein to reduce scarring. The researchers demonstrated that gene therapy with this protein was safe and effective at inhibiting fibrosis in an in vitro model of equine corneal fibrosis.

Brandie Morgan, PhD, a postdoctoral fellow in ophthalmology at the MU College of Veterinary Medicine, had her research abstract featured as a "Hot Topic" by the Association for Research in Vision and Ophthalmology. The distinction, awarded to less than 3 percent of all 2014 abstracts submitted for the group's annual meeting, recognizes research that holds potential interest to the press and the public.

Morgan's abstract, "Hybrid Gold Nanoparticles: Cellular and Molecular Toxicity to Human Corneal Fibroblasts," was co-authored by Ajay Sharma, PhD, Rachel A. Waller, Nishant R. Sinha, Prashant R. Sinha, Audra N. Stallard, Saad Siddiqui and Rajiv R. Mohan, PhD, MSc.

Awards, continued

of 2017; Dr. Charles Wiedmeyer, honored by the Class of 2016; Dr. Dawna Voelkl, recognized by the Class of 2015; and Dr. Mirae Wood, who was the honoree chosen by the graduating Class of 2014.

Wood, who is an assistant teaching professor of small animal surgery in the Department of Veterinary Medicine and Surgery, went on to win yet another honor when she was named the recipient of this year's Zoetis Distinguished Veterinary Teacher Award. The award is supported by Zoetis, and the winner is chosen by members of the graduating class, who select an outstanding teacher who, through ability, dedication, character and leadership, contributes to the advancement of the profession.

Zoetis also sponsored the Zoetis Award for Veterinary Research Excellence, which this year was presented to Dr. Rajiv Mohan. Mohan, PhD, is the Ruth M. Kraeuchi Endowed Professor in Veterinary Ophthalmology at the CVM.

The recipient of this year's Dadd Award was Dr. William Fales. The Dadd Award honors excellence in veterinary medicine teaching, and its recipients are selected by their faculty peers. Fales, PhD, is a professor within the Department of Veterinary Pathobiology. He teaches diagnostic veterinary bacteriology and mycology and pharmacology of antimicrobial agents.



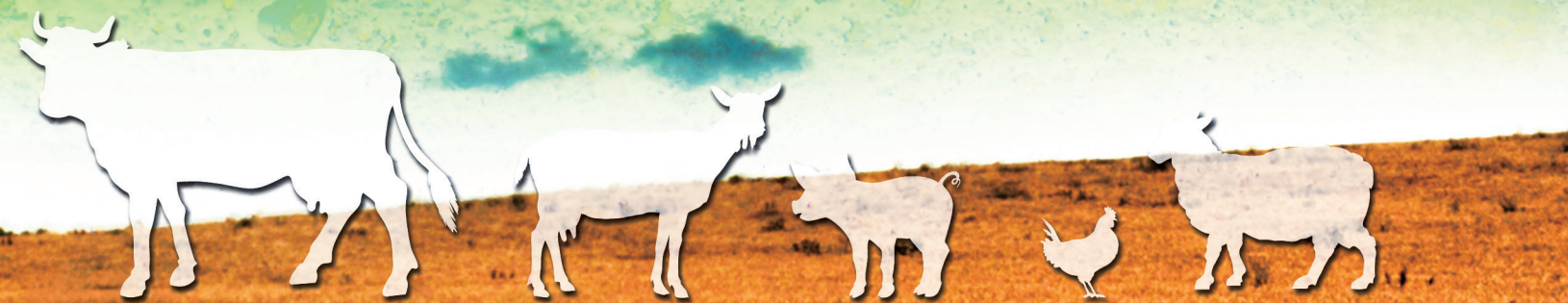
The CVM Class of 2014 selected Dr. Mirae Wood (second from left) as the recipient of the year's Zoetis Distinguished Veterinary Teacher Award. She is pictured with last year's winner, Dr. Dusty Nagy (left), CVM Dean Dr. Neil Olson, and Dr. Marnie Mellencamp, academic liaison for Zoetis.



Dr. Neil Olson presented the 2014 Dadd Award to Dr. William Fales.



Dr. Rajiv Mohan (right) received the Zoetis Award for Veterinary Research Excellence.



NEW MRI ADVANCES CARE AND RESEARCH

Diagnostic and research capabilities took a leap forward at the University of Missouri College of Veterinary Medicine May 29 with the launching of a new 3T Magnetic Resonance Imaging machine. The college held a ribbon cutting for the device and the facility housing it at the Veterinary Medical Teaching Hospital.

CVM Dean Neil C. Olson, DVM, PhD, told the group gathered for the event that a great veterinary college needs not only top-notch faculty, students and staff, but also up-to-date facilities and equipment. He noted that with the addition of the new MRI to the college's existing imaging capabilities, which include positron emission tomography (PET), computed tomography (CT), and superior digital radiography, MU becomes one of only a few veterinary schools in the country with such advanced technology available.

The new MRI replaced an old system that was built in 1997 and housed in a trailer outside of the veterinary teaching hospital. The new equipment is faster, reducing the time needed for animals to be anesthetized, and provides improved anatomic detail of soft tissue. Another improvement is that the 3T MRI is housed in a custom-designed addi-



MU College of Veterinary Medicine Dean Neil C. Olson cuts the yellow ribbon held by members of the Columbia Chamber of Commerce Ambassadors to celebrate the opening of the college's new Magnetic Resonance Imaging facility.

tion to the veterinary hospital. This new facility allows access for larger animals, such as horses whose limbs are particularly susceptible to injury, said VMTH Director and Professor of Equine Surgery David Wilson, DVM.

Improved and expanded patient care is not the only benefit of the new facility and equipment, Olson said. The ability to image larger animals also advances the college's research ability. The 3T MRI is also the only such magnet in Missouri that will be available not only to researchers throughout MU, but also to investi-

gators from other academic institutions and animal health companies. This access is expected to facilitate partnerships, advance scientific investigation and serve as an economic development tool for the college. MU Interim Provost Ken Dean also spoke during the ribbon cutting and said that it is also a tool that will attract faculty to the campus.

The college acquired the 3T MRI through a partnership with Toshiba, which upgraded the system's technology in exchange for the CVM sharing imaging research with the company.



DOG OWNERSHIP BENEFITS FAMILIES OF CHILDREN WITH AUTISM

Parents should consider the sensitivities of children with autism when choosing a pet

Many families face the decision of whether to get a dog. For families of children with autism, the decision can be even more challenging. Now, a University of Missouri researcher has studied dog ownership decisions in families of children with autism and found, regardless of whether they owned dogs, the parents reported the benefits of dog ownership included companionship, stress relief and opportunities for their children to learn responsibility.

“Children with autism spectrum disorders often struggle with interacting with others, which can make it difficult for them to form friendships,” said Gretchen Carlisle, a research fellow at the Research Center for Human-Animal Interaction (ReCHAI) in the MU College of Veterinary Medicine. “Children with autism may especially benefit from interacting with dogs, which can provide unconditional, nonjudgmental love and companionship to the children.”

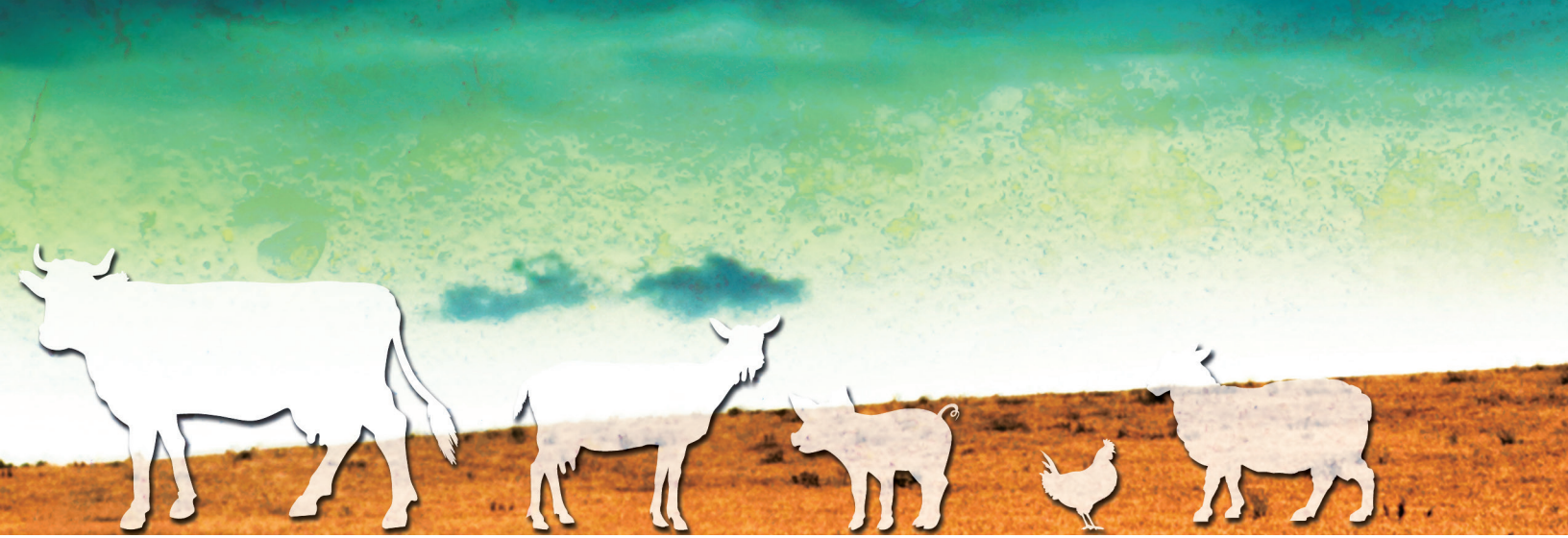
Carlisle interviewed 70 parents of children with autism who were patients at the MU Thompson Center for Autism and Neurodevelopmental Disorders. Nearly two-thirds of the parents in the study owned dogs, and of those parents, 94 percent reported their



children with autism were bonded to their dogs. Even in families without dogs, 70 percent of parents said their children with autism liked dogs. Many dog-owning parents said they specifically chose to get dogs because of the perceived benefits to their children with autism, Carlisle said.

“Dogs can help children with autism by acting as a social lubricant,” Carlisle said. “For example, children with autism may find it difficult to interact with other neighborhood children. If the children with autism invite their peers to play with their dogs, then the dogs can serve as bridges that help the children with autism communicate with their peers.”

Continued on page 10



Autism, continued

Parents of children with autism should consider their children's sensitivities carefully when choosing a dog in order to ensure a good match between pet and child, Carlisle said.

"Bringing a dog into any family is a big step, but for families of children with autism, getting a dog should be a decision that's taken very seriously," Carlisle said. "If a child with autism is sensitive to loud noises, choosing a dog that is likely to bark will not provide the best match for the child and the family. If the child has touch sensitivities, perhaps a dog with a softer coat, such as a poodle, would be better than a dog with a wiry or rough coat, such as a terrier."

Carlisle recommends parents involve their children with autism when choosing a dog.

"Many children with autism know the qualities they want in a dog," Carlisle said. "If parents could involve their kids in choosing dogs for their families, it may be more likely the children will have positive experiences with the animals when they are brought home." Although her study only addressed dog ownership among families affected by autism, Carlisle said dogs might not be the best pet for every child with autism. "If you know one child with autism, you know one child with autism," Carlisle said. "Dogs may be best for some families, although other pets such as cats, horses or rabbits might be better suited to other children with autism and their particular sensitivities and interests."

"This research adds scientific credibility to the benefits of human-animal interaction," said Rebecca Johnson, a professor at the MU College of Veterinary Medicine, director of ReCHAI, and the Millsap Professor

"Dogs may be best for some families, although other pets such as cats, horses or rabbits might be better suited to other children with autism and their particular sensitivities and interests."

— Gretchen Carlisle, research fellow, Research Center for Human-Animal Interaction

of Gerontological Nursing in the MU Sinclair School of Nursing. "This research helps us understand the role of companion animals in improving the lives of children with autism and helps health professionals learn how to best guide families in choosing pets for their families."

The study, "Pet Dog Ownership Decisions for Parents of Children With Autism Spectrum Disorder," was published in the *Journal of Pediatric Nursing* earlier this year. Carlisle completed the study, which was funded by Sigma Theta Tau Alpha Iota chapter, as part of her doctoral dissertation.

The MU Thompson Center for Autism and Neurodevelopmental Disorders is a national leader in confronting the challenges of autism and other developmental conditions through its collaborative research, training and service programs. Based on the medical home model, MU Thompson Center diagnostic, assessment and treatment services emphasize family-centered care that is comprehensive, coordinated, compassionate, culturally sensitive, and accessible. The center aims to support families from the point of initial contact through access to needed services in the community with routine follow-up care over time to ensure the best possible outcome for each child and family.



NOVEL TREATMENT SAVES AILING FOAL

At two weeks old, Maggie seemed happy and healthy. Then the foal suddenly began struggling to breathe, developed nasal discharge and a fever, and became lethargic. Her trainer took her to his veterinarian, who referred the paint filly to the MU Veterinary Medical Teaching Hospital for diagnosis and treatment.

Maggie, who is training to be a show horse, arrived at the VMTH in the middle of the night. Veterinarians quickly performed a physical examination, routine blood tests and an ultrasound scan of the chest. The results led to a diagnosis of bilateral pleuropneumonia. Uncommon in foals, the severe infection primarily affected the pleural cavity, the surface of the lungs, the interior of the chest wall and the space between them. Normally, a small quantity of fluid in this space helps to lubricate the movement of the lungs against the chest wall. However, Maggie's infection caused inflammation that provoked an excessive quantity of fluid to accumulate, which prevented her lungs from expanding completely and led to difficulty with breathing.

The initial treatment involved draining fluid from the chest, antibiotics and efforts to determine the cause. Determining the cause was important to ensure the infection wasn't contagious and to iden-

tify the best antibiotics to use, said Dr. Philip Johnson, a professor of equine internal medicine at the MU College of Veterinary Medicine who treated Maggie.

In her chest fluid, veterinarians identified excessive fibrin, a thick inflammatory protein that interfered with their ability to drain the fluid and provide Maggie relief. The protein eventually forms a fibrous, or scar-like, attachment between the lung surface and chest wall, an outcome that would have permanently interfered with Maggie's breathing.

To address the fibrin, veterinarians tried a novel treatment. They injected tissue plasminogen activator (TPA), a "clot buster" used in human medicine to treat strokes. When injected into the chest cavity, it can help dissolve fibrin.

"The more conventional treatment is drainage of chest fluid alongside antimicrobials, but fibrin accumulation, if it is significant, can both impede treatment effectiveness and render the patient incapable of a normal life from a breathing perspective," Johnson said.

Maggie improved quickly with the TPA, and both the fibrin and the excessive pleural fluid disappeared within a few days. Maggie's tests identified two pathogens that likely contributed to development of pneumonia, *Streptococcus pneumoniae*



Veterinarians at the MU Veterinary Medical Teaching Hospital diagnosed Maggie, a 2-week-old paint filly, with bilateral pleuropneumonia, a severe infection that is uncommon in foals.

and a gammaherpesvirus. Although her veterinarians couldn't be completely certain, they speculated that the gammaherpesvirus may have been the "first attack," causing damage and inhibiting the foal's immune system, Johnson said. They believe it was followed by the *Streptococcus pneumoniae*. She likely acquired the pathogens from other horses in her environment.

"Young foals have not developed a fully effective immune system. At this age they are encountering lots of potential respiratory viral and bacterial micropathogens from co-mingled horse stock, Johnson said.

Maggie is now back to normal. Her trainer said he was very pleased by her care at the VMTH.

REAR HITCH

CVM GRADUATES 112 NEW VETERINARIANS

The University of Missouri College of Veterinary Medicine graduated 112 new veterinarians May 16 during the college's 65th annual commencement. Dean Neil C. Olson, DVM, PhD, served as the master of ceremonies for the event.

During her commencement address, Janet Donlin, DVM, chief executive officer of the American Veterinary Medical Association Professional Liability Insurance Trust, shared some of the lessons she has learned in the years since she earned her doctor of veterinary medicine degree.

She said she finds inspiration in a quote by Steve Jobs: "Don't just live a life; build your life."

"To me that really resonates," Donlin told the graduates. "The fact that you're sitting in these chairs means that you get that. You are building your life."

Donlin encouraged the graduates to be unafraid to take risks when opportunities arise and to focus on their strengths rather than their weaknesses.

"What do we all want to be?" she said. "Passionate, committed, successful veterinarians. You will do that by establishing your own personal goals, knowing how you want to build your life. Make sure you're brave and you're bold."

David Prigel, 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, Bill Fales, PhD, professor of veterinary pathobiology, and Mirae Wood, DVM, assistant teaching professor of veterinary medicine and surgery. Former Missouri Supreme Court Judge Ann K. Covington, a member of the UM Board of Curators, conferred the doctor of veterinary medicine degree to the class members.



A group of newly graduated doctors of veterinary medicine celebrate following commencement ceremonies held May 16 at Jesse Hall.

Members of the Class of 2014 selected Nathan Feyerabend to give a response on their behalf.

"It certainly feels unreal to be standing here celebrating this day, which once seemed so far away," he said. "Years of hard work, sleepless nights and occasionally substandard hygiene have all culminated in this moment."

Feyerabend recalled the challenges the graduates faced throughout their four years of veterinary college, from their first two years in the classroom through their clinical experiences, in which he said, "We dressed like doctors, talked like doctors and ran around like marathon runners." He thanked the families, friends and instructors who helped the graduates succeed and encouraged his classmates to be confident as they begin their careers.

"No matter where this great profession takes you, remember to enjoy the journey," Feyerabend said.