

EXCELLENCE AND LEADERSHIP IN RESEARCH, TEACHING AND SERVICE

SUMMER 2013 VOLUME THREE ISSUE THREE

THE HITCHING POST

NEW VETERINARIANS LEARN VALUE OF NORMAL



Led by Craig Payne, president of the Missouri Veterinary Medical Association, the Class of 2013 recites the Veterinarian's Oath.

The University of Missouri College of Veterinary Medicine graduated 102 new veterinarians on May 17 during the College's 64th annual commencement. College Dean Neil C. Olson served as the master of ceremonies for the event and introduced the platform party including the speakers.

Peggy Fisher, president of the CVM's Alumni Association, greeted the class on behalf of the organization. Olson then introduced speaker Jim Rhoades, a member of the Class of 1992, who now works in vaccine development for Swiss pharmaceutical giant Novartis.

Rhoades shared with the graduates wisdom he learned from his boss, the president of Novartis, who told him that the key to job satisfaction is recognizing that normal is extraordinary, particularly when a family member or pet is ill. "People want things to get back to nor-

mal. You have the skills and talents to restore normal," Rhoades told the CVM Class of 2013.

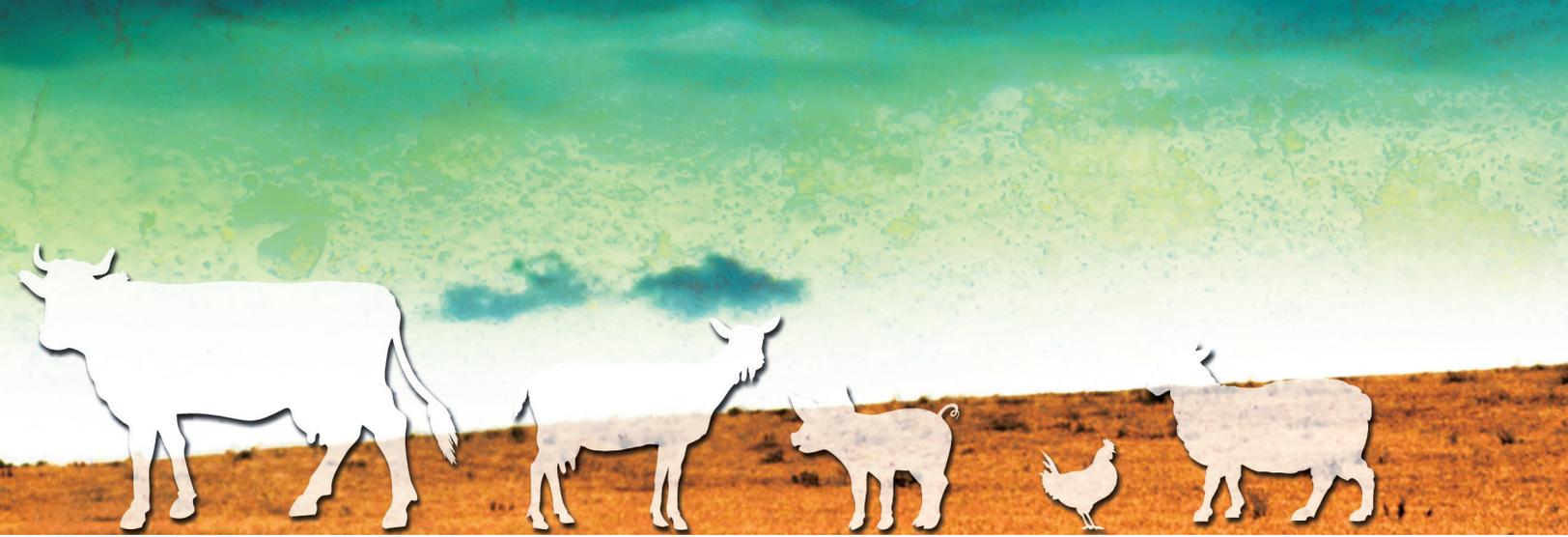
He also told them those same skills and talents that they developed during their four-year professional veterinary curriculum would allow them to pursue careers they may not know exist. "You have a degree that will open a million doors," he said.

Rhoades advised the class members to thank the people who had helped them succeed in their veterinary training. He also cautioned them that while they would change lives, they would also be called upon to help future clients through difficult times. "Not everything you're going to do will have a happy ending." He told the class that the best way to console a grieving client is with complete honesty.

He told them not to be afraid to be scared. Rhoades confessed that when he first graduated the College of Veterinary Medicine, he feared that he had not learned enough and would never possess a knowledge base equal to that of his mentors. He shared the advice he was given from one of his professors at the time: "You will miss so much more from not looking than you will ever miss from not knowing," he said.

Craig Payne, president of the Missouri Veterinary Medical Association, led the graduates in reciting the Veterinarian's Oath. Ron Cott, associate dean for Student and Alumni Affairs and director of Development, presented the graduating class for investiture, which was conducted by Dusty Nagy, assistant teaching professor,

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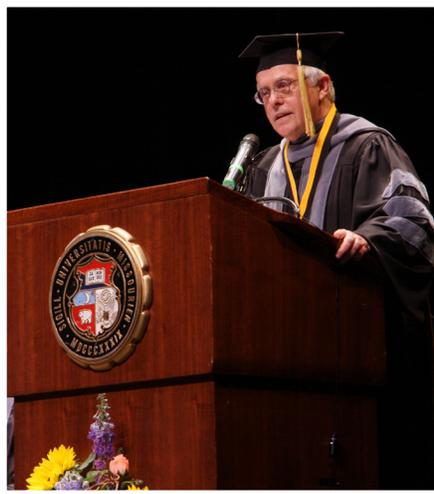
Graduation, continued

Brian Frappier, associate clinical professor, and Linda Berent, associate dean for academic affairs. 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.

“Today is a dream realized,” Daniel Tappmeyer said. Members of the Class of 2013 selected Tappmeyer to give a response on their behalf. He told the audience that none of the country’s newest veterinarians had reached that point on their own. All had received support from friends and family. “Thank you so much for loving your veterinarian through the good times and the bad,” he said.

He also told his classmates that they should expect bumps in the road during their careers and quoted his father, a veterinarian in Wright City, Mo., and a member of the CVM Class of 1974. “The worst thing that happens Monday morning, often makes the best story by Friday evening.”

Tappmeyer talked about the shifts that are under way in veterinary medicine. “The profession is not dying, it’s changing,” he stated, “we are in a position to ride or create that change as it’s happening.”



CVM Dean Neil C. Olson recognizes the friends, family members, mentors and faculty members who helped the CVM Class of 2013 succeed.



Daniel Tappmeyer gives a response on behalf of the Class of 2013.

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

New Director at Mizzou Animal Cancer Care

For Julie Wentz, DVM, taking over as the director of Mizzou Animal Cancer Care is more than an opportunity to help pets with cancer, it is a chance to build relationships. Wentz, who has spent 22 years working in emergency veterinary medicine, said she was ready to take her career in a different direction.

“I like the idea of treating cancer patients,” Wentz said. “This will allow me to get to know my patients instead of treating them and sending them on their way, which is a lot of what I did in emergency medicine.”

Wentz replaced George Buckaloo, DVM, as the director of Mizzou Animal Cancer Care in mid-June. Buckaloo, who retired at the end of June, operated the center since it opened in 2011. Wentz was scheduled to begin work at MACC July 1, however, on May 31 a tornado caused heavy damage to the Animal Emergency Clinic in Bridgeton where she had been working, effectively shutting down the facility and prompting Wentz to move up her start date at the University of Missouri College of Veterinary Medicine satellite operation.

Continued on page 3



Wentz, continued

The cancer treatment facility provides radiation therapy to cats and dogs referred there for treatment by their regular veterinarians. Located in Wentzville, Mo., MACC makes cancer treatment for pets more convenient for St. Louis-area animal owners, who, in the past, made the four-hour round-trip drive to the Veterinary Medical Teaching Hospital in Columbia.



Julie Wentz, DVM

Wentz, a native of Granite City, Ill., has practiced veterinary medicine in the St. Louis area since earning her DVM from the University of Illinois in 1991. In addition to working at the emergency clinic, she has performed relief work for several St. Louis small animal practices, and was an independent contractor for emergency and medical coverage at the Nestle- Purina Research Facility in Gray Summit, Mo. She and her husband, who is also a veterinarian specializing in the care of exotic mammals, own the Ferguson Animal Hospital.

Wentz said her years of experience in the St. Louis area have allowed her to develop connections with referring veterinarians in the region, which should foster the confidence needed for them to refer their clients to MACC for cancer treatment services and diagnostic CT scans.

Wentz and her husband have four daughters, as well as five cats, four bearded dragons and fish. In her spare time she enjoys spending time with her family and preserving memories through scrapbooking.

ASSOCIATE DEAN OF RESEARCH, GRAD STUDIES TO RETIRE

Ronald Terjung, PhD, associate dean for research and postdoctoral studies at the MU College of Veterinary Medicine, has announced his retirement effective Sept. 1. Terjung has served as professor of physiology and associate chairman of the Department of Biomedical Sciences since 1997. He has held joint appointments in the School of Medicine Department of Pharmacology and Physiology, and as a senior investigator at the Dalton Cardiovascular Research Center.

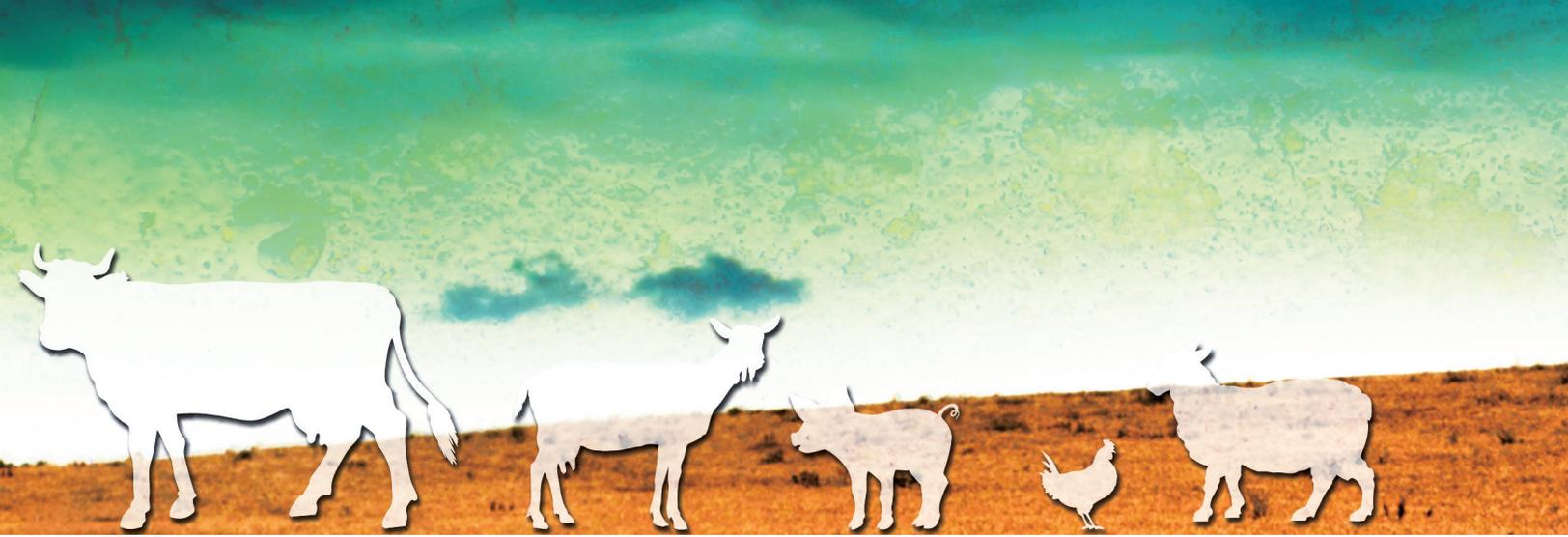


Ronald Terjung, PhD

During his appointment at the CVM, he has been honored with the Golden Chalk Award by the Graduate Professional Council (2000), the Pfizer Award for Research Excellence, the Citation Award from the American College of Sport Medicine (1996) and both the Adolph Lecture (2008) and the Honor Award (2012) from the Environmental and Exercise Section of the American Physiological Society.

Terjung has served on editorial boards of the Journal of Applied Physiology, Exercise and Sport Sciences Reviews and Medicine and Science in Sports and Exercise. He has also served as editor of Exercise and Sport

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RUBIN IS GRADUATE SCHOOL INTERIM DEAN

University of Missouri Provost Brian Foster has announced that Leona Rubin, professor in the Department of Biomedical Sciences in the College of Veterinary Medicine, has been named interim dean of the MU Graduate School. Rubin, who has been a professor at MU since 1989, began serving as interim dean effective June 1. Rubin received a bachelor's degree in biology from Temple University, a master's degree in zoology from Rutgers University and a doctoral degree in cell biology from the University of Colorado Health Sciences Center. Her research focuses on understanding cellular pathways that regulate cardiovascular function. She teaches histology and cardiovascular physiology at MU. She is a member of the MU doctoral faculty and has mentored numerous graduate students, postdoctoral fellows and professional students.

"The roles and duties of the graduate dean are different than those of oth-

er schools and colleges because the graduate dean is dealing with the campus broadly," Foster said. "It's a campus-wide position and it requires productive relationships with all other deans and faculty. As her leadership with the Faculty Council, her success in obtaining external funding and publishing her research, and her ability to train professional students in the art of research demonstrates, Leona is perfect for this position."

Rubin is a member of the Center for Gender Physiology and Environmental Adaptation at MU and is a research investigator for the Dalton Cardiovascular Research Center.



Leona Rubin, PhD

She also was chair of the University of Missouri Faculty Council on University Policy in 2009 and 2010, and named a fellow of the University of Missouri President's Academic Leadership Institute in 2008. Rubin also is a Wakonse Teaching Fellow and an honorary member of Phi Zeta, an honorary veterinary society.

"Given what is happening on campus with Mizzou Advantage and building interdisciplinary graduate programs, it's an exciting time for the Graduate School," said Rubin. Rubin recently was an American Council on Education Fellow at the University of Iowa where she studied predictive analytics. Using predictive analytics, educators can assess the probability of success based on students who have graduated and make recommendations to current students about their academic paths. Rubin replaces George Justice who served as the Graduate School dean since 2010.

Terjung, continued

Sciences Reviews, associate editor of Journal of Applied Physiology and editor-in-chief of Comprehensive Physiology (Online Handbooks of Physiology) 2009-2013. He has served on National Institutes of Health and American Heart Association study sections as well as a number of national and internation-

al review boards. Terjung has been continuously funded by the American Heart Association or NIH since 1974. During his career he published more than 115 peer-reviewed papers and more than 40 invited reviews and book chapters.

Effective Sept. 1, Dr. Carolyn Henry, DVM, will become the interim

associate dean for research and graduate studies. Henry is a professor of veterinary oncology who holds a dual appointment in the MU School of Medicine, as well as serving as the interim associate director of research at Ellis Fischel Cancer Center and as the faculty facilitator for the One Health/One Medicine Mizzou Advantage.



MINIMALLY INVASIVE REPAIRS SPEED RECOVERY

Kenny Rost isn't certain of Angelo's breed. He thinks the dog he adopted five years ago from the Jefferson City Animal Shelter is a mix of German shepherd dog, Australian heeler and Labrador. What is certain — he's no cattle dog.

"He thinks he can work cattle, but he's not very good at it," Rost laughs. Despite his lack of herding skills, Angelo is the cattle farmer's constant companion. "He goes everywhere I go. We have 257 acres, and he has the run of the place."

Angelo was tearing around Rost's Chamois-area farm one Sunday afternoon last summer when a truck suddenly turned from the highway that runs along the property into the driveway, surprising the dog who failed to move out of the way. The accident left Angelo with a shattered tibia in one of his hind legs. Rost took Angelo to a veterinarian in Hermann who, after reviewing radiographs of the dog's injured leg, recommended taking him to the MU Veterinary Medical Teaching Hospital in Columbia.

At MU, James Tomlinson, DVM, MVSci, examined Angelo and determined the dog's injury made him a good candidate for a technique known as minimally invasive osteosynthesis fracture fixation. Tom-



James Tomlinson, DVM, assesses the recovery of his patient Angelo.

linson, a professor of small animal orthopaedic surgery, began developing minimally invasive techniques for orthopaedic surgery in canines about 10 years ago. The MU Veterinary Medical Teaching Hospital is one of only a few places where the procedures are offered.

Tomlinson said that in injuries such as Angelo's comminuted fracture, where the bone is splintered or crushed, he does not attempt to put the bone pieces back exactly in place.

"Among the advantages of using this procedure is we are not disturb-

ing the pieces of the fractured bone, which means we are less likely to destroy the blood supply to the bone. The blood supply is needed for healing," Tomlinson explained.

To repair Angelo's shattered bone, Tomlinson used an I-Loc Interlocking Nail fixator designed by Dr. Loïc M. Déjardin of Michigan State University and manufactured by BioMedtrix to be specific to veterinary patients. The procedure involved inserting a locking nail system into Angelo's tibia using a small incision rather than opening up the skin along the injured bone. Minimally invasive orthopaedic repairs are common in human medicine. Tomlinson can offer them to veterinary patients at the VMTH because of the availability of an intraoperative fluoroscopy — a type of intraoperative X-ray machine. The intraoperative fluoroscopy allows for real-time imaging during the sur-



A radiograph shows the I-Loc Interlocking Nail fixator used to fix Angelo's leg.

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Minimally Invasive, continued

gery, which makes it possible for Tomlinson to precisely implant the nail within the fractured bone.

The I-Loc fixator is primarily used in fractures of long bones, such as the tibia and femur. Tomlinson also on occasion uses a device consisting of locking plates developed by Synthes for injured bones that have sustained long fractures. The surgical procedure involves using an instrument to create a tunnel under the animal's skin and then sliding a plate into the tunnel alongside the bone. The plate is then secured in place with locking head screw that locks into place. The plate and screw stabilize the bone until it has healed, a process that usually takes six weeks. Tomlinson first used the locking plate procedure in 2005 and is one of only a small number of veterinary orthopaedic surgeons currently offering the minimally invasive process in small animals.

The I-Loc fixator is used for medium to large dogs due to the size of nails that are available. However, the locking plates can be used on dogs of any size, as well as cats. Tomlinson said he also performs minimally invasive techniques for other types of bone injury, such as fractures of the condyle, or rounded portion, of the elbow and dislocations of the sacroiliac joint in the pelvis.

The advantages of the minimally invasive procedures are less pain for the injured animal, a decreased infection risk, and faster recovery. The procedures are no more costly than conventional orthopaedic surgery. In fact, Tomlinson said, the interlocking nail system is potentially less expensive due to the speed with which he can implant the device means less time is spent under anesthesia.

Rost said he was amazed by Angelo's recovery following his surgery. "After a week or two, we couldn't believe how well he was doing. It was about eight weeks from the accident to him getting the go-ahead to do whatever he wants. Now, you wouldn't know anything had happened to him."

Emerging Professional of the Year



*Congratulations to MU College of Veterinary Medicine Development Officer **Kylene Richardson**, who was presented with the Columbia Chamber of Commerce 2013 Emerging Professional of the Year Award. Richardson, who has a bachelor's degree in communications from MU and is completing a master's degree in business administration from Stephens College in Columbia, has been a member of chamber's EPIC Executive Committee since 2007 and served as the co-chair from 2010-2012. Pictured with Richardson (second from left) are (from left) Meagan Schaffner, director, administration; Victoria Brees, director, program development; Richardson's husband, Matt Melton, and son, Declan Melton; Matt McCormick, chamber president; Elizabeth Tate, director, Women's Network; and Sedel Marino, director, communication services.*



RESEARCHERS TARGET CANCER WITH NANOPARTICLES



CVM Welcomes New Event Planner

Heather Carlton has joined the College of Veterinary Medicine as the special events coordinator. Carlton brings with her a background in higher education event planning. She previously worked as the Advancement events planner at Central Methodist University in Fayette. Her experience has been in building relationships for the academic setting through alumni relations.

Carlton, a Joplin, Mo. native, was raised on her parents' hobby farm surrounded by goats, horses and companion animals. She graduated in 2011 with a bachelor of science degree in communications from Missouri Southern State University in Joplin, where she majored in public relations and minored in marketing.

She is a fan of Mizzou sports, in particular football and basketball.

Cancers of all types become most deadly when they metastasize and spread tumors throughout the body. Once cancer has reached this stage, it becomes very difficult for doctors to locate and treat the numerous tumors that can develop. Now, researchers at the University of Missouri have found a way to create radioactive nanoparticles that target lymphoma tumor cells wherever they may be in the body. Michael Lewis, an associate professor of oncology in the MU College of Veterinary Medicine, says being able to target secondary tumors is vital to successfully treating patients with progressive cancers.

“Depending on the type of cancer, primary tumors usually are not the cause of death for cancer patients,” Lewis said. “If a cancer metastasizes, or spreads creating hard-to-find tumors, it often becomes fatal. Having a way to identify and shrink these secondary tumors is of utmost importance when fighting to save people with these diseases.”

In an effort to find a way to locate and kill secondary tumors, Lewis, and J. David Robertson, director of research at the MU Research Reac-

tor and professor of chemistry in the College of Arts and Science, have created nanoparticles made of a radioactive form of the element lutetium. The MU scientists then covered the lutetium nanoparticles with gold shells and attached targeting agents.

In previous research, Lewis has already proven the effectiveness of similar targeting agents in mice and dogs suffering from tumors. In that research, the targeting agents were attached to single radioactive atoms that were introduced into the bodies of animals with cancer. The targeting agents were able to seek out the tumors existing within the animals, which were then revealed through radio-imaging of those animals.

In their current research, the MU scientists have shown the targeting agents can deliver the new radioactive lutetium nanoparticles to lymphoma tumor cells without attaching to and damaging healthy cells in the process. Robertson says this is an important step toward developing therapies for lymphoma and other advanced-stage cancers.

“The ability to deliver multiple radioactive atoms to individual cancer cells should greatly increase our ability to selectively kill these cells,” Robertson said.



CVM PART OF CANINE CANCER STUDY TEAM

The AKC Canine Health Foundation (CHF) and the Golden Retriever Foundation (GRF) announced the joint funding of nearly \$1.5 million in canine cancer research. The foundations worked together to select two canine cancer research projects that will potentially make real progress in the fight against canine cancer. The research results are expected to significantly improve the understanding and diagnosis of canine cancer so that dogs live longer, healthier lives. The research will be conducted through collaborative team efforts of top scientists, bringing unique synergy of talent and resources together for a greater outcome.

Receiving a grant totaling \$404,813 is a research project led by Dr. Jeffrey Bryan of the MU College of Veterinary Medicine, Dr. Anne Avery of Colorado State University and Dr. Heather Wilson-Robles of Texas A&M University. The study will focus on discovery of novel protein, blood and epigenetic biomarkers to enhance diagnosis and treatment of cancer in dogs.

Lymphoma strikes one in eight golden retrievers, making them one of the most commonly affected breeds. Through the investigation,

the researchers expect to identify aberrant epigenetic (DNA methylation) changes in lymphoma cells to develop biomarkers of each class of lymphoma, and in turn, identify new therapy targets for affected golden retrievers. More significantly, because DNA methylation changes occur so early in the process of cancer formation, they may serve as biomarkers of risk, allowing medicine or diet to prevent lymphoma in golden retrievers before it develops.

Another component of the study aims to fully phenotype cancer stem cells in lymphoma by surface markers and DNA methylation changes for the purpose of targeting cells that feed cancer metastasis. The discoveries made in each segment of the study can be combined, correlated, and translated into biomarkers of risk, diagnosis, and prognosis to advance the prevention and management of lymphoma in golden retrievers. Based on data from other species these investigators expect epigenetic changes to occur across all breeds and anticipate this study will open the door for a deeper understanding of cancer in all dogs.

The CHF and GRF also funded a collaborative study by Dr. Jaime Modiano of the University of Min-



nesota, Dr. Matthew Breen of North Carolina State University and Dr. Kerstin Lindblad-Toh of The Broad Institute of MIT and Harvard. They will focus their efforts on the establishment of genetic risk alleles, defining the gene expression profile and the role of cellular activation in lymphoma and hemangiosarcoma.

“These grants are an exciting step forward in the field of cancer research for dogs,” said Dr. Shila Nordone, CHF's chief scientific officer. While the research grants will primarily focus on golden retrievers, both projects emphasize a better understanding of the mechanism of how cancer begins and spreads, resulting in research that will be applicable across all breeds of dogs. “These results will have a One Health application, impacting human medicine as well,” Nordone added.



CVM Reports Passing of Former Dean, Faculty Member

Dr. Kenneth D. Weide

Dr. Kenneth D. Weide of Lincoln, Neb., who served as the dean of the MU College of Veterinary Medicine from 1973 to 1981, died March 31, 2013, 49 days shy of his 80th birthday.

He was born at the Horton, Kan. Hospital on May 19, 1933, the only child of Vertis C. and Bernice J. (Randolph) Weide. He graduated from Topeka High School in 1951. He attended Kansas State University where he received his bachelor of science (1956), doctor of veterinary medicine (1958) and master of science (1958). Following private practice in Platte City, Mo., he attended Michigan State University where he received his PhD in 1962. While working on his PhD, he served on the faculty of the Ohio Agricultural Experiment Station from 1959 to 1962.

Dr. Weide returned to Kansas State where he was associate professor of pathology and the first director of the KSU Veterinary Medical Diagnostic Laboratory. In 1967 he was appointed head of the Department of Veterinary Science and first director of the Animal Disease Research and Diagnostic Laboratory at South

Dakota State University. He was credited with originating animal disease diagnostic laboratory services in both Kansas and South Dakota.

In 1971, he was appointed the first extension veterinarian for the State of Arizona and in 1973 became the third dean of the MU CVM. He was appointed the first executive director of the Western Veterinary Conference in 1984, a position he held for 14 years. He retired in 1998.

He was preceded in death by his wife of 42 years, Thelma F. (Yung) Weide. He is survived by his daughter, Kim C. Weide of Lincoln; two sons, William C. Weide and his wife, Laurie (Ohlson) and granddaughter, Paige Weide all of Portland, Ore., and Lee R. Weide and his wife, Jennifer (Martin) and grandsons, Ryan and Kyle Weide all of Crete.

Audrey Rottinghaus

Audrey Rottinghaus, 62, of Columbia, Mo., an instructor at the University of Missouri College of Veterinary Medicine and longtime head of the serology section at the Veterinary Medical Diagnostic Laboratory, passed away Wednesday, May 29, 2013, at her

home following a brief struggle with cancer.

She was born in Chicago, Ill., on Oct. 7, 1950, to Walter Joseph and Lillian (Hacker) Adrick. On Aug. 26, 1972, she married George Rottinghaus and he survives.

Mrs. Rottinghaus graduated with a bachelor's degree from Blackburn College in Carlinville, Ill., and went on to receive a master's degree from Iowa State University in immunobiology. She was employed at the CVM for 31 years until the time of her illness. Away from work, she was an avid reader, a dedicated mother and a loving wife.

In addition to her husband, she is survived by their son, Brian Rottinghaus of Columbia, Mo., daughter, Erin Rottinghaus (Stephen Romano) of Roswell, Ga., step-grandson, Anthony Romano of Roswell, Ga., sister, Cheryl Kleina (Keith) of Tinley Park, Ill., brother, Frank Adrick of Blue Island, Ill., and mother, Lillian Adrick of Blue Island, Ill. She was preceded in death by her father.

Memorial donations may be made to Daniel Boone Regional Library, 100 W. Broadway Columbia, Mo., 65203.

REAR HITCH

STUDENTS, FACULTY HONORED AT BANQUET

Attendees at the 2013 Honors Banquet for the University of Missouri College of Veterinary Medicine saw \$306,419 in scholarships and other awards presented to some of the College's most accomplished students. The annual event, held this year at the Courtyard by Marriott in Columbia on May 14, celebrates students' scholastic achievements and clinical proficiency. Awards were also given for community service, leadership, and in memory of former students and beloved pets.

Veterinary students shared the evening's spotlight with faculty members, technicians, interns and residents, and also presented awards to peers and mentors whose support, teaching and guidance have helped them succeed as they pursue their goal of earning a DVM.

Students in each academic class selected an outstanding teacher to receive 2013 Golden Aesculapius Awards. Winners were Dr. Eileen Hasser, honored by the Class of 2016; Dr. Deborah Fine, honored by the Class of 2015; Dr. Tim Evans, recognized by the Class of 2014; and Dr. Dawna Voelkl, whom the graduating class selected as its honoree.

Other faculty members also received recognition. Dr. Venkateshu Ganjam, was posthumously



CVM Dean Dr. Neil C. Olson presents the Dadd Award to Dr. Venkateshu Ganjam's widow, Irene Ganjam, and his daughter, Ricarda Ganjam. Also pictured is Dr. Joanne Kramer, the 2012 recipient of the award.



Dr. Neil C. Olson congratulates Dr. Charles Brown as the recipient of the Zoetis Award for Veterinary Research Excellence. Dr. Carol Reinero, last year's winner, helped present this year's honor.

given the Dadd Award. Dr. Ganjam was a professor in the Department of Biomedical Sciences at the MU College of Veterinary Medicine. The award honors excellence in veterinary medicine teaching and its recipients are selected by their faculty peers. The Zoetis Award for Veteri-



The Class of 2013 chose Dr. Dusty Nagy as this year's Zoetis Distinguished Veterinary Teacher Award. Presenting the award are Dr. Neil C. Olson and last year's winner, Dr. Tim Evans.

nary Research Excellence was presented to Dr. Charles Brown, a professor in the CVM Department of Veterinary Pathobiology. The final award of the evening was the Zoetis Distinguished Teacher Award. The award is supported by Zoetis and chosen by members of the graduating class, who select as the recipient an outstanding teacher, who through ability, dedication, character and leadership, contributes to the advancement of the profession. The 2013 honoree was Dr. Dusty Nagy, an assistant teaching professor of large animal medicine in the CVM's Department of Veterinary Medicine and Surgery.

A complete list of winners can be found at http://www.cvm.missouri.edu/news/2013award_recipients.pdf