

Spring/Summer 2000
College of Veterinary Medicine • University of Missouri-Columbia

Veterinary

M E D I C A L R E V I E W



A New Mission for
George Shelton

Leading the
Herd in North
America

MU
**Food
Animal
Clinic**

- Project PetSafe
- Escaping from Communism
- Return of the Woolly Mammoth
- Pet Assisted Love and Support
- Knee Research for Animals Helps People
- Artificial Insemination Saves Asian Elephant
- 2 MU CVM Grads Balance Writing and Veterinary Medicine

Letter to the Editor

Dear Editor;

I was interested in the article about the Missouri Mules in the Fall/Winter edition of Veterinary Medical Review. The "Missouri and the Mule" section was elucidating, and pointed to the importance of mules in the history of our country.

The article cited the use of mules in military service during the Civil War (where the animal's ability to pack heavy loads across rugged terrain was highly prized) and that mules were still being used in World War II in remote areas.

Mules were the prime movers for the 10th Mountain Division in World War II, carrying weapons, supplies, oats—you name it. The 10th used the 75-mm pack howitzer, which was broken down into seven loads to be carried on the mules' packsaddles—hence, the name "Mule Pack Artillery." The division trained in the Colorado mountains at 10,000 feet and was based at Camp Hale. They saw combat in Italy in 1944-45.

Of course, we relied on the mules as being strong and sure footed—though they were not always compliant. A pack howitzer is used at MU football games to celebrate scores.

Incidentally, my dad, Dr. Adrian J. Durant, was chair of the Veterinary Science Department prior to its becoming a college. I used to frequent Connaway Hall when I was a kid and my friend, Dr. John W. Connaway, used to write little anecdotes and short poems for me. After 65 years, I can still remember the indefinable mystique that old building had for me.

Col. Adrian J. Durant, Jr.
Champaign, Illinois

Letters to the editor are welcomed. Send your letters to Editor, Veterinary Medical Review, W-207 Vet Med Building, College of Veterinary Medicine, University of Missouri-Columbia, Columbia, Mo. 65211.

VMR

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ON THE COVER



Clinical Assistant Professor Dr. Dawn Shore and a bovine patient.

Veterinary

M E D I C A L R E V I E W

Spring/Summer 2000

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VMR

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The accreditation process has not always been a positive experience. After a history of limited or probationary accreditation, the College now enjoys full accreditation for two consecutive, seven-year periods.

Giving Credit *and Thanks* for Accreditation

The November 15, 1999 letter from Dr. Don Simmons, Director of the Division of Education and Research at the American Veterinary Medical Association (AVMA), was simple and to the point. The concluding sentence of the first paragraph said it all, "Congratulations on receiving full accreditation for a period of seven years." The College's accreditation status was determined by the AVMA's Council on Education after an intensive review of our programs February 6-10, last year.

As most of you know, the accreditation process has not always been such a positive experience at MU. In fact, for 39 of our 53-year history, we have been on limited or probationary accreditation for assorted deficiencies, most relating to inadequate facilities or faculty numbers. As recently as 1984, the AVMA felt compelled to inform us that "if the deficiencies have not been corrected, accreditation may be withheld. It is recommended that, if it appears that it will not be possible to correct the deficiencies, enrollment of new students be discontinued at an early date."

Now, for the first time, we have been granted full accreditation for consecutive seven-year periods. Indeed, the future is extremely bright for the College, as evidenced by the quality of our students and a series of programmatic advancements that continue to unfold.

There are so many people to thank for our successful accreditation. One hesitates to name individuals for fear of leaving someone out; however, allow me the prerogative to thank my two immediate predecessors, former Deans Bob Kahrs and Richard Adams and their wives Evelyn Kahrs and Janet Parker. Bob and Evelyn Kahrs were instrumental in developing support for the construction of our new teaching hospital, Clydesdale Hall. If there is a single turning point in the history of this College, Clydesdale

Hall is probably it. And, Richard Adams provided such strong leadership during a critical time when our base state budget was threatened and in then gaining support for substantial additional investments in both facilities and faculty positions.

But, the adage that administrators probably get too much credit for a unit's success, and, alas, too much blame for one's shortcomings, undoubtedly applies here. The true heroes of the accreditation process are our faculty, staff, and students, past and present, and those alumni, clients, and other supporters who have worked so hard in developing and promoting our programs. These heroes range from faculty who have worked well into the night developing a lecture, providing care to a patient, or writing a grant or paper; to staff who have viewed their positions as much more than jobs in fulfilling critical responsibilities; to our students who are, without doubt, our best ambassadors; to our many alumni and other practicing veterinarians who have supported the College to the many animal owners who have entrusted their beloved companions and livestock to our care and then become such ardent advocates; to legislators whose support has been essential to our long term success; and to university administrators who have come to realize what a jewel they have in MU's College of Veterinary Medicine.

The many people who share the credit for our successful accreditation can now bask in the glory associated with this accomplishment. However, as you might imagine, much work remains to be done to become the best we can be. Just as before, we'll need your help and counsel in moving forward. For the time being, though, take a minute to reflect upon the role that you have played in our success. You truly share in the credit and have our thanks!

\$1.27 Million Training Initiative Provides New Opportunities For Minority Biomedical Grad Students

Oncologists know that melanoma, the most common malignant tumor in the mouth of dogs, is easy to diagnose when the melanin pigment is plentiful. When this pigment is scarce, the diagnosis can be difficult or impossible. A test to identify unpigmented melanomas would be helpful.

Amirah Fard, a College of Veterinary Medicine graduate student from Kansas City, is participating in a project to examine the reliability of an immunologic test for MelanA in the diagnosis of canine oral melanomas.

Fard's project, and nine others in progress, made possible by a fellowship she received through the University of Missouri-Columbia's new Minority Biomedical Researchers Training Initiative (MBRTI).

As a collaborative effort between the Graduate School and departments in the biomedical sciences, the program is designed to recruit and train underrepresented minority graduate students as future researchers. A \$1.27 million grant from the National Institutes of Health will fund the program over the next four years.

Also working on a research project at the College of Veterinary Medicine this year is Nicole Holloway, from St. Louis.

"Underrepresented minorities are a continually untapped population for biomedical research careers," said Dr. Gerald Buening, MBRTI Program Manager and Associate Dean for Research and Postdoctoral Studies for the College of Veterinary Medicine. "We are committed to reversing this trend."

Rather than restricting MBRTI to the veterinary medical college, Dr. Buening chose to create an interdisciplinary biomedical program that would encompass a number of colleges and departments. "MBRTI will complement several other efforts being implemented at MU that are designed to increase the number of talented students in the biomedical sciences," Dr. Buening said. "Our overall goal is to increase the aggregate number of minority students by more than double during the program."

Over the next four years, the program



Dr. Keith Kenter (left), MU School of Medicine, compares notes with Dr. James Cook, MU College of Veterinary Medicine.

will provide fellowships for 20 non-degree graduate students, 20 graduate research assistants, and 12 faculty development candidates. Recipients will work in one of the following fields: animal science, biochemistry, biological and agricultural engineering, biological science, medical entomology, food science and human nutrition, genetics, laboratory animal science, molecular microbiology, immunology, veterinary pathobiology, physiology, medical informatics, and veterinary biomedical sciences.

Non-degree graduate students who are awarded fellowships receive one year of financial support. This includes an \$8,000 stipend, tuition and fees, and \$4,000 for supplies, travel, and other expenses. Graduate research assistants receive two years of financial support with an option to continue for a doctoral degree. They are awarded a \$14,000 stipend, tuition and fees, and \$4,000 for expenses. Faculty development candidates receive a \$14,000 stipend for three months and \$4,000 for expenses.

The program is accepting applications for next year's positions. The deadline is June 1, 2000 for the fall semester and November 15, 2000 for the spring semester. For more information about MBRTI and an application, contact Barbra A.B. Horrell, MBRTI Program Coordinator and Director of Recruitment and Retention at the College of Veterinary Medicine at (573) 882-4397 or email to: HorrellB@missouri.edu.

New MU Laboratory To Find Joint Solutions For Human, Animal Disease

Researchers in human and veterinary medicine always have had something in common: solve puzzling mysteries of disease and injury with new treatments. Historically, veterinarians and physicians have worked independently to solve similar medical problems.

In the last decade, however, there's been a growing trend toward comparative medicine, a concept where researchers from both camps combine efforts. As a result, both people and animals are healed more quickly and efficiently.

This summer, a team of researchers at the University of Missouri-Columbia formed the MU Comparative Orthopaedic Laboratory—the first in Missouri and only the third in the nation. Dr. James (Jimi) Cook and Dr. Keith Kenter are among those who have put their minds, research interests, and resources together to open the new laboratory. Dr. Cook is an Assistant Professor of Small Animal Orthopedics at the MU College of Veterinary Medicine, and Dr. Kenter is an Assistant Professor of Orthopedic Surgery at the MU School of Medicine.

Their first mission: to make quick progress toward something that has never been done before—regenerating connective tissue in the knee. Dr. Cook has already successfully performed the first surgery of its kind on a dog. Next, the team hopes to restore human knee menisci.

The doctors already have seen advantages in working together. Dr. Kenter said many treatments need animal research before human approval, and Dr. Cook said that he has never before had a clear answer from his patients about how they feel. Both said they've become better doctors after getting the chance to apply what they know to a different species.

Dr. Kenter last summer visited the MU Veterinary Medical Teaching Hospital to help Dr. Cook develop an arthroscopic repair technique similar to the one he uses with human patients. As with other comparative studies in the lab, Dr. Cook's students also will benefit from the learning experience.

Initial funding for the lab has come from service fees, and internal and external research grants, including major ones from DePuy, Inc., the National Institutes of Health, Pfizer, and MU.

AVMA President-Elect to Speak at 2000 Graduation Ceremony



Dr. James Nave

Dr. James Edward Nave, 1968 graduate of the MU College of Veterinary Medicine and president-elect of the American Veterinary Medical Association, will be the commencement speaker for the College's 2000 graduation ceremony.

He was born on 14 August 1944 in Protem, Missouri, the only son of an Ozark farm couple, Jebbert and Edna Nave.

After graduating from MU, he served as a captain in the Army Veterinary Corps stationed in Vietnam. When his term of service was completed, Dr. Nave moved to Las Vegas where, in 1971, he entered private veterinary medical practice at the Paradise Pet Clinic. In 1974, he established the Tropicana Animal Hospital and has since owned and managed multiple veterinary hospitals in southern Nevada.

Dr. Nave was Nevada's delegate or alternate delegate to the AVMA House of Delegates from 1985-1991. In 1985-1986, he was vice president and president of the Nevada VMA. In 1988, he was selected as Nevada's Veterinarian of the Year.

Dr. Nave has remained active in Missouri community and civic affairs. He served as

Chair of the University of Missouri-Columbia College of Veterinary Medicine Development committee, from 1986 to 1992, and was named Alumnus of the Year by the College in 1987.

An interest outside of veterinary medicine involves boxing, and he is the vice chair of the Nevada Athletic Commission. This led to his being named Boxing Commissioner of the Year four times by the World Boxing Council and once by the North American Boxing Federation.

Dr. Nave will receive the gavel of the AVMA president at the 137th Annual

AVMA Convention in Salt Lake City in July 2000.

Annual Food Drive Is a Success Again

The veterinary medical classes of 2002 and 2003 collected more than 550 pounds of canned and non-perishable food in their annual holiday food drive for the needy, in what has become a College tradition.

The food was distributed by the Central Missouri Food Bank during the Thanksgiving and Christmas holidays.

PEOPLE

Alumni Association Recognizes Director of Recruiting



Barbra Horrell waves to the crowd at the 1999 MU Homecoming parade.

In her more than 35 years of service to the University of Missouri, Barbara Horrell, the College of Veterinary Medicine's Director of Student Recruitment and Retention, has won several awards. Her latest accolade came with more than a certificate—she got a ride in a red convertible during the University's homecoming parade.

Barbara was recognized as the 1999 Distinguished Alumni by the MU Black Alumni Association. She was one of the organization's founding members and first executive chair.

The Black Alumni Association is part of the MU Alumni Association and sponsors activities and scholarships.

Horrell was born and raised in Columbia, Mo. and received her BS degree in Higher and Adult Education from the University of Missouri-Columbia. She previously was director of training and development at MU's University Hospital and Clinics, as well as co-director of Continuing Medical Education, MU School of Medicine. Before joining the College of Veterinary Medicine, she was director/coordinator of recruitment for the College of Agriculture, Food, and Natural Resources, and MU School of Medicine. She also served on the MU National Alumni Board of Directors.

College Announces Endowed Professorship In Microbial Pathogenesis

Building on a mission enhancement project, the College of Veterinary Medicine has established the Charles and Charlene McKee Professorship in Microbial Pathogenesis. The new professorship builds on a cooperative effort between the Veterinary Pathobiology Department and the Molecular Microbiology and Immunology Department at the MU School of Medicine.

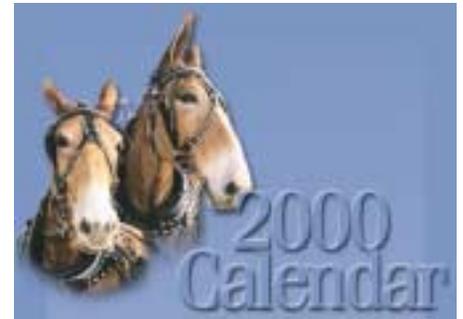
"There is a natural synergy between veterinary and medical school faculty involved in infectious disease research," said Dr. Joe Kornegay, Dean of the College. "Some organisms have zoonotic potential, which is to say they may infect either humans or animals. Obviously, research on these organisms has value to both man and the particular animal affected. But, even research on organisms with no zoonotic potential may have tremendous comparative value. Often,

the same strategies used to treat or prevent an infection in one species can be applied to a similar disease in another animal or man."

In keeping with the wishes of the McKees, the research conducted under the professorship must be relevant to food-producing animals, such as cattle and hogs. However, the research may have application to other species, including humans, and potentially be funded by both the U.S. Department of Agriculture and the National Institutes of Health.

"We all realize the difficult times faced by our livestock producers in recent years; profit margins have been slim to nonexistent," Dr. Kornegay said. "Infectious diseases, and their prevention, may make the difference between turning a profit or operating in the red. The McKee Professor will work with other MU faculty, practicing veterinarians, and producers to develop effective strategies to treat and prevent these diseases."

The late Charles McKee was a graduate of the Missouri School of Journalism.



**2000
Calendar**

- March 3-4
CVM Open House
- March 13-17
Spring Break
- April 1
Parents' Day and Gentle Doctor Benefit
- May 3
Honors Banquet
- May 5
Commencement:
1 PM in Jesse Auditorium
- May 29
Closed for Memorial Day
- June 26
VM-2 and VM-3 Summer vacation
- Sept. 16
Alumni Day and Annual Fall Conference

P E O P L E

Giving the Mules a Treat For Almost Two Decades

In the early 1990s, the just-retired College Dean Dr. Roberts Kahrs and his wife Evelyn were ready to leave Columbia, Mo. and return to Maryland. One problem: Mrs. Kahrs had made it a tradition to feed treats to the recently-acquired College mule mascots.

Just before the departure, Mrs. Kahrs asked Virginia Etheridge, a friend of the College, to carry on the tradition. Mrs. Etheridge did, and continues to visit the mules



Virginia Etheridge and friends Jill and Shirley.

with fresh carrots and apples most Sunday afternoons, now almost two decades after the original request.

Mrs. Etheridge's obligation doubled in the mid-1990s when a second team of mules, purchased by Mrs. Etheridge, joined the College and allowed the original team to enjoy their retirement.

Mrs. Etheridge was no stranger to the College. She lived next door to Dr. John Connaway, retired head of the MU veterinary science department, and worked for the Department of Veterinary Medicine in 1939-45.

Accolades

Dr. Catherine Beckwith, graduate research assistant in veterinary pathobiology, received the Young Investigator Award at the 10th Annual International Workshop on Campylobacter, Helicobacter and Related Organisms.



Dr. Alex Bermudez, associate professor in the Veterinary Medical Diagnostic Laboratory, presided over the Board of Governors Meeting of the American College of Poultry Veterinarians, held last summer in New Orleans.

Dr. Magalie Boucher, resident in the Veterinary Medical Diagnostic Laboratory, received the B.S. Pomeroy Award for Best Graduate Student Paper at the 50th North Central Avian Disease Conference. She presented the paper "Effects of Cochlosoma anatis Infection in Turkeys."

Dr. Gerald Buening, veterinary pathobiology acting chair, served as the administrative advisor for NC-197 Research in support of a National Eradication Program for Pseudorabies. The event was held this autumn in San Diego.



Dr. Charles (Andy) Carson, professor of veterinary pathobiology, spoke at the Global Change and Agro-Environmental Policies: Millennium Challenge, held in February in Columbia, Mo.



Dr. Stan Casteel, associate professor at the Veterinary Medical Diagnostic Laboratory, chaired the Long-Range Planning Committee of the American Board of Veterinary Toxicology, held last summer in New Orleans.



Dr. Gheorghe Constantinescu, professor of veterinary biomedical sciences, was an honored guest at the first Romanian-U.S. Presidents' Conference in Sibiu, Romania.



Dr. Allen Hahn, professor of veterinary medicine, in October chaired the American Veterinary Medical Association's Standards Subcommittee on Veterinary Medical Informatics.



Dr. Lonnie Kendall, a post-doctoral fellow in veterinary pathobiology, was certified as a Diplomate of the American College of Laboratory Animal Medicine.



Dr. Robert McClure, veterinary biomedical sciences professor, was elected president of the American Veterinary Medical History Society.

Dr. Ron McLaughlin, veterinary associate professor of pathobiology and director of laboratory animal resources, chaired the annual business meeting of the American Association for Accreditation of Laboratory Animal Care held last autumn in Bethesda, Maryland.



Dr. Dennis O'Brien, associate professor in veterinary medicine and surgery, was elected president of the Neurology Specialty section of the American College of Veterinary Internal Medicine.



Dr. Lanny Pace, associate professor of veterinary pathobiology, was chosen as the 2000 Alumnus of the Year by the College of Veterinary Medicine, Mississippi State University.

Dr. F.T. Satalowich, adjunct professor in veterinary pathobiology, received the Helwig-Jennings Award for significant and lasting contribution to veterinary preventive medicine from the American College of Veterinary Preventive Medicine.

The award recognized him for his efforts with the World Health Organization in establishing rabies surveillance programs in the Southern Hemisphere, work with remote sensing of disease patterns with NASA, and his work as an epidemiologist with the Missouri Department of Health. The American Veterinary Medical Association also recognized him for his leadership and service in the AVMA's House of Delegates and House Advisory Committee that he chaired.

P E O P L E

And the Band Plays On at the Veterinary College

Other colleges may boast more students or larger buildings, but few can say that they have an 18-piece college band.

The MU College of Veterinary Medicine's band, called The College Band, formed last year. Made up of students, staff, and faculty, the group is a self-described "mish-mash" of brass, woodwinds, and a few stringed instruments. Membership is open to anyone owning an instrument and wanting to play.

In their first year, the band has played at College Christmas parties, awards banquets, and other events. Matt Shivelbine, class of 2002, is the current director and sometimes lead violinist. He said the band has enjoyed an enthusiastic reception by the College and the band's membership has almost doubled from the original group. The band specializes in concert-type music and jazz.

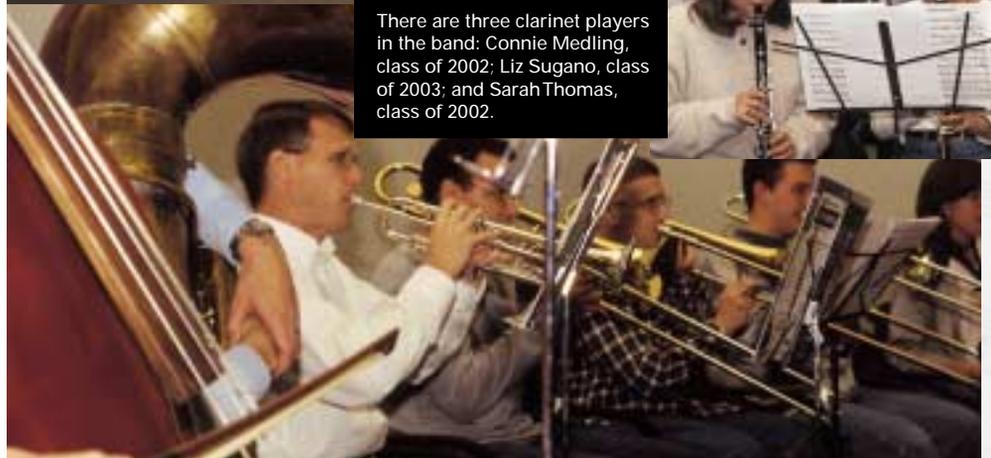
The band will be breaking into the big time this spring when it will play at the College's Gentle Doctor Benefit and Parents' Day.



The College Band rehearses in the Adams Conference Center each Wednesday evening. Conducting is Matt Shivelbine, class of 2002.



Playing the drums is Dr. Sherman Canapp, intern in small animal medicine.



There are three clarinet players in the band: Connie Medling, class of 2002; Liz Sugano, class of 2003; and Sarah Thomas, class of 2002.

Part of The College Band's brass section includes (left to right): Art Smith, senior computer programmer, playing tuba; Dr. Michael Scott, VMDL assistant professor, playing trumpet; Anthony Gary, class of 2003, playing trombone; Jason Nickell, class of 2003, playing trombone; Jason Syrcle, class of 2003, playing trombone; and Julia Stiens, class of 2002, playing alto sax. Playing the string bass is Matthew Keeler, computer programmer.



Food
Animal Clinic
Leading the Herd in North America



Missouri ranks number two nationally in beef cattle numbers and has more registered beef cattle than any other state. These cattle represent a substantial and important force in the state's economy. To serve this industry, MU's Food Animal Clinic has been quietly re-casting itself as a resource to help maintain the health and productivity of the state's animal agriculture.

And, three years after this effort was started, the team has begun to show results. According to 1998 year-end caseload figures reported to the American Association of Veterinary Medical Colleges, the faculty, staff, and students at MU's food animal clinic handled more than double the average number of patients of any clinic in North America. MU's clinic saw 1,765 cases; the average annual caseload for the 31 veterinary medical colleges in North America was 826. In addition, MU's ambulatory caseload increased 20 percent last year.

The MU clinic not only treats cattle, sheep, goats, and pigs that are sick, but assists in diagnosing causes for low productivity—not producing enough milk, not growing fast enough, or not producing enough offspring.

“For example, we help identify underlying management flaws that create medical problems, thus limiting livestock production. From an economic efficiency standpoint, it is more important to prevent disease than to fix problems,” said Dr. Jeff Tyler, Associate Professor of Veterinary Medicine and Surgery and head of the food animal section. “As we improve animal health, we not only improve the health of the livestock we treat, we increase the income of the farming people we serve.”

Dr. Tyler said the strong support of veterinarians across the state, through referrals and invitations to investigate has also helped them maintain a strong educational program. The high caseload, coupled with the small class sizes at MU, means each MU student handles three to four times as many animals as the average veterinary student.

A Stronger Academic Effort
in the Food Animal Program

In addition to serving patients, clinical faculty and students also conduct research on such diseases as cancer and micronutrient deficiencies in cattle, immunity and disease resistance in baby calves, mastitis, and lameness.

One research project is being conducted by Dr. Ron Tessman, a resident under the direction of Drs. Jeff Tyler and Jeff Lakritz, faculty in the College's Food Animal Clinic. This project involves determining how copper deficiency can affect the immune system of beef calves. In humans and mice, copper deficiency depresses immune function, making that person or animal more susceptible to disease. In cattle, one of the biggest economic threats involving cattle being shipped to feedlots involves respiratory disease, such as pneumonia. Dr. Tessman hopes that his study identifies practical methods to prevent immune deficiency and related problems, such as some respiratory disease. His work is being funded through a five-year National Science Foundation grant.

Preliminary study results have been dramatic. Twenty percent of Missouri feeder calves tested have been copper deficient. It was also found that Missouri feeds are

both copper deficient, and high in molybdenum, iron, and sulfates—compounds known to interfere with the absorption of copper. This recently completed study documenting the prevalence of copper deficiency in Missouri was the single largest survey of micronutrient status in cattle ever completed in the United States.

"The exciting part about our research is that we have identified widespread, severe copper deficiency throughout Missouri," Dr. Tessman said. "Identification and correction of these deficiencies will likely cause profound increases in productivity and survival of Missouri beef cattle. These benefits have the potential to dramatically impact the Missouri economy as beef cattle comprise the state's single most important agricultural commodity. Missouri has in excess of two million beef cattle.

"The opportunity that this fellowship has provided is immeasurable," Dr. Tessman continued. "It has provided the necessary resources to continue my education at an excellent university. It has also allowed me to pursue an area of great personal interest; beef cattle health. I am grateful for the opportunity to benefit an industry for which I have the highest regard."

In another project, Dr. Dusty Weaver, a PhD student, also under the direction of

Dr. Tyler, is conducting an investigation into the epidemiology of neonatal transmission of bovine leukosis virus in cattle. It is estimated that 86 percent of the dairy herds in the United States are infected with this virus. In a small percentage of cattle, bovine leukosis virus will cause a fatal cancer, lymphosarcoma. However, the most economically devastating problem with viral infection is the loss of export markets.

Some states, including Missouri, have instituted volunteer eradication certification programs. Dr. Weaver hopes that her project will enable the development of better eradication protocols that are not as costly to the farmer. Her work is also being funded through a five-year National Science Foundation grant.

"This project is in its infancy as far as the completion of the research. However, I am confident and excited about the prospects that it brings to farmers in the control and eradication of this virus." Dr. Weaver said. "The award from the National Science Foundation has provided me with an opportunity to complete my research and further my education, while allowing me to provide useful information for the growth and prosperity of animal agriculture."



Dr. Ron Tessman, and his fellow doctoral student, Dr. Dusty Weaver, each recently received five-year, \$120,000 fellowship grants from the National Science Foundation to support their doctoral studies.

Dr. Jeff Tyler, head of the food animal section, and Dr. Robert Youngquist, Professor and Associate Chair of Veterinary Medicine and Surgery, use an ultrasound machine to check on the health of a patient.





Using Artificial Insemination to Save the Asian Elephant

With little media fanfare, a MU alumnus has perfected a technique that may help save one of the world's endangered species

Dr. Dennis Schmitt for 15 years researched elephant reproduction. His work was rewarded last autumn with the birth of Haji, the first elephant born using artificial insemination techniques. Standing behind Haji is his mother, Moola.

The Asian elephant is an endangered species. Poaching and human encroachment on their habitat have decreased their numbers to fewer than 40,000 in the world—with about 15,000 of these in captivity. Without help, the species could pass into oblivion within a generation.

Elephants can breed in captivity, but most pairs in the world's zoos are too old to be viable breeding candidates. Bringing young males and females together from their different zoos at the proper time for a successful natural mating is a logistics nightmare and usually unproductive. Anything that can increase the

breeding productivity of the remaining animals will help ensure the elephant's survival.

One person working to help save the species is Dr. Dennis Schmitt, DVM '78. A Southwest Missouri State University Agriculture Associate Professor, he has spent 15 years researching artificial insemination techniques in elephants, mostly working with animals at the Springfield, Mo. Dicksen Park Zoo. In November 1999, his work with the zoo's Asian elephant, Moola, was rewarded with the birth (after a 674 day gestation) of a 378 pound son, Haji—the first elephant (Asian or African) born through artificial insemination.

"This opens possibilities in a number of areas, the main goal being the conservation of the animal," says Michael Hutchins, Director of Conservation and Science for the American Zoo and Aquarium Association in Maryland. His group is one of several working on an elephant species survival plan. "This is another way that we can use captive animals to help preserve wild elephants and their place in nature."

Veterinarians have tried since the mid-1980s to impregnate an Asian elephant through artificial insemination with no success. Typical artificial insemination techniques used in other large animals such as cattle have proven unsuccessful.

In researching the causes of previous failures, Dr. Schmitt determined that the female Asian elephant's reproductive cycle has several key differences from other animals. Unique to elephants is the presence of two LH peaks per estrous cycle. The first LH peak is non-ovulatory, the second LH peak, 21 days later during a short estrus, is ovulatory.

The detection of the first peak was the key to success-

fully timing artificial insemination, Dr. Schmitt said. Other important differences: The estrous cycle of elephants is about 16 weeks in length. Elephants also usually exhibit a modest elevation of progesterone prior to ovulation. The semen collected from Asian elephants, unlike Africans, also undergoes a spontaneous acrosome reaction that prevents it from fertilizing an oocyte, unless treated to protect the acrosomal membrane until it is deposited in the female elephant's reproductive tract.

Using this information, three African elephants have also been impregnated since Haji's birth. Dr. Schmitt is scheduled to help with several other attempts in Asian and African elephants for zoos around the country.

The effort is important because of the aging population of captive breeding animals. Only nine zoos have male Asian elephants capable of breeding and there are only about 35 females that have recently had offspring in North America. Using Dr. Schmitt's research, semen from available bulls can be shipped to many females with a good chance of creating several pregnancies.

"It's a lot easier to move semen than elephants," says Dr. Schmitt.

Without such artificial insemination techniques and at the current birth rate of Asian and African elephants, there will be fewer than 40 elephants left in North America in 20 years, according to a study by Dr. Bob Wiese of the Fort Worth Zoo, the Population Geneticist for the Elephant Species Survival Plan.

Dr. Schmitt is also undertaking a two-year project to transfer the technology learned in elephants to artificially inseminate White Rhinoceros, another endangered animal.

COTT AND KAY FOX CREATE A LASTING TRIBUTE TO THE BOND BETWEEN PETS, THEIR OWNERS, AND THEIR VETERINARIANS

As confirmed animal lovers themselves, Cottrell and Kay Fox learned long ago to recognize—and to treasure—veterinarians with a true dedication to the deep bond between animals and humans. The Foxes found Dr. James Schuessler and Dr. Fred Bendick, Jr., to be consummate veterinary medical professionals who exhibited great sensitivity in caring for animals and for working with their owners as well.

The best tribute to these two St. Louis veterinarians, the Foxes decided, would be to help instill the same qualities in succeeding generations of veterinarians. With that in mind, the Foxes have established in their estate plan a generous endowment for state-of-the-art medical and surgical care at the MU Veterinary Medical Teaching Hospital. Their endowment also provides subsidies to offset the cost of care for companion animal patients, and for ongoing improvements at the hospital.

Dr. Schuessler and Dr. Bendick are both graduates of MU's College of Veterinary Medicine, now increasingly regarded as one of the nation's best veterinary schools. This gift from the Foxes will do a great deal to ensure that the kind of work they have done will go on for a long time to come.

Planned giving approaches can help you create a legacy that makes a real difference.

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College of
Veterinary Medicine

PLANNED GIFTS & BEQUESTS

University of Missouri-Columbia

Cottrell and Kay Fox, very much at home with their springer spaniels, Molokai and Otis.

PROJECT PetSafe

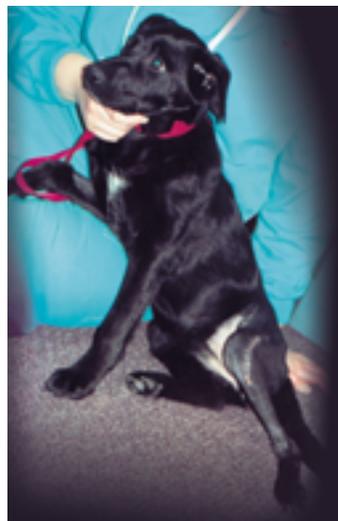
Many abused spouses and children won't flee domestic violence until they know their pets are safe. A new College program can help.



Connie Sullivan, Assistant Prosecuting Attorney for Columbia, Missouri, frequently prosecutes people who commit domestic and animal violence.

Before Connie Sullivan met Brittany, a five-month-old Labrador retriever, she never realized how important animals are to getting abused people out of domestic violence situations. • As assistant prosecuting attorney for Boone County, Missouri, Sullivan was handling a case against a defendant accused of repeatedly assaulting his live-in

girlfriend. The woman remained in the relationship despite the attacks because no abuse shelter would accept her and her dog, Brittany. Finally, the boyfriend broke the puppy's pelvis for urinating on the floor. Brittany went to the MU Veterinary Medical Teaching Hospital and, freed of her obligation, the woman fled into a shelter for abuse victims.



- Veterinarians are starting to play a larger role in the reporting of abuses of all kinds by looking for warning signs in pets. For example, if there is a household where many animals live, but none reach the age of two, domestic abuse may be responsible. Other possible signs of abuse are injuries to pets that don't correspond to the owner's explanation.

- Human and animal abuse is often related. When animals are being neglected, the children are too. Sometimes, providing animal care institutions can respond sooner to reports of neglect than overloaded child services divisions.



Ron Haffey, MU Veterinary Medical Teaching Hospital Administrator.

■ Those who commit serial or mass criminal violence often use animals as “rehearsal” tools in their adolescence to work themselves up to the eventual abuse or killing of people. That means children who torture animals should be taken seriously and dealt with quickly. The child may be disturbed because he/she is being abused or may be building up to something worse.

This situation highlighted how frequently abuse victims remain in a troubled household because there is no option to shelter loved animals. A 1996 survey of shelters for women who are battered revealed that more than 85 percent consider pet abuse or fear of abuse as a factor in the decision to leave a troubled home.

Brittany’s case spurred a new partnership between law enforcement and the MU College of Veterinary Medicine. In cases where an abuse victim is reluctant to leave a pet or the animal is threatened with harm, the teaching hospital will temporarily shelter the animal until the victim can reestablish a new home or place the animal with a new owner. The program, instituted last summer, is called Project PetSafe. Brittany was its first client.

All animals accepted into the program must be referred by an agency dealing with domestic violence, said Ron Haffey, MU Veterinary Medical Teaching Hospital Administrator, who worked with Sullivan to start the program. The pair has established working agreements between the Hospital and mid-Missouri sheriff departments, city police departments, animal control agencies, and shelters for domestic violence.

Crafting the program was no quick task. An abused animal may be considered evidence with strict procedures for handling. Security was another concern—what process should be followed if a potential abuser demands return of an animal? Also, how do you deal with the emotional turmoil of a broken family where a pet is both a cause for worry and provider of emotional stability? To help here, clients will be provided space and time to visit their pets during the three-week stay that organizers hope will be long enough for them to stabilize their situation and become reunited with their animals.

Haffey and Sullivan patterned MU’s program on a similar one at Purdue University in Indiana. In the past five years, Purdue has averaged 20 pets a year in its program.

“This program is extremely important to those people who need it,” said Janice Sojka, Associate Professor at Purdue’s School of Veterinary Medicine. “Most of the families have children and it’s been

shown that pets are extremely important in the lives of children and families. It’s important for the families to know that a member who is helpless, such as an animal, won’t be discarded. It really helps keep some sense of continuity. Many times, the pets are the only bright spot in their lives.”

With students, staff, and faculty volunteering their time, the total cost of the program is only about \$3,000 annually. MU Veterinary Medical Teaching Hospital officials also expect about 20 pets a year to take advantage of the program.

Implementing the Plan

With the MU program established, Pet-Safe coordination is accomplished by the College’s PALS organization—Pet Assisted Love and Support. This group of College staff, student, and faculty volunteers and others, typically visit Missouri hospices, hospitals, senior citizen homes, and other institutions with small animals to bring joy and happiness to people who may otherwise lack substantial human and animal interaction. With this training and experience, the PALS group is uniquely suited for dealing with victims in emotional distress.

PALS volunteers will provide the PetSafe animals care, feeding, and any needed immunizations and medical treatment. They will also arrange for animal adoption, if that option is needed. They will make themselves available 24 hours a day and have made provisions to deal with a variety of pets—from goldfish to boa constrictors. At least two abused mid-Missouri-area women have owned horses who were endangered by an ex-spouse.

The PetSafe program is an addition to an existing Hospital program that provides shelter for animals of crime victims or those displaced by natural disasters such as tornadoes and floods.

The College of Veterinary Medicine was a logical choice for this partnership, Sullivan said, because of security available around the clock, space, and knowledgeable people willing to volunteer. “It can’t help but benefit the community,” she said. “I think it is a wonderful thing for the College to do. I’m just ecstatic that they would do this.

“We’re hoping eventually that this will

be a preventive thing, where a woman can leave for a shelter before she gets beaten up,” Sullivan said. “It’s not going to be a requirement that a pet needs stitches to get here.”

Easy Targets

PetSafe organizers have learned how critical it is for victims to know that their pets are safe. Typically, abuse victims suffer from low self-esteem and the pet is perhaps their only source of love. This can make the pet an easy target.

Rene Atkins, a detective with the Columbia, Mo. Police Department’s Domestic Violence Enforcement Unit (DOVE), has never forgotten a story she heard from an abuse victim. The woman’s ex-husband killed the dog and left it on the hood of her car. “Domestic violence is all about control,” Jeff Westbrook, another detective with the DOVE unit, said. “Violence against an animal is another way to exert control.”

Using a pet as a way to retrieve someone who has fled is another danger. Dr. Nancy Bumby, Assistant Professor of Psychiatry/Neurology at MU’s University Physicians and who assists MU law students in understanding the cycle of domestic violence, remembered one woman who left her abusing partner in such a rush that she bolted out of the house with nothing but the clothes she was wearing. “She left her cat at home,” Dr. Bumby said. “He told her to come home, or he would hurt the cat. Then, he sent her pictures of him dismembering the cat. He cut off the cat’s ears, cut off its tail; he essentially tortured the cat.”

Abused children, especially, refuse to leave unless they know their pets are safe. In a recent mid-Missouri case, Atkins and other officers spent more than 12 hours searching for a puppy that had been thrown against a wall and then over a backyard fence. The six-week-old chow-shepherd mix had to be found and sent for medical attention before the abused family agreed to enter a shelter that protected their safety. Eventually, the family surrendered the dog to new owners.

“I suspect many veterinarians know, from daily observations, just how deep the human-animal bond really is,” says

Dr. Richard Meadows, Director of the Small Animal Community Practice Section of the Veterinary Medical Teaching Hospital and who will direct Project PetSafe. “It seems logical to me that the victims of domestic abuse would be deeply attached to the only living creature they know who demonstrates unconditional acceptance and devotion to them. They feel their pet is truly a part of the family and they respond to that devotion by being reluctant to walk away and leave the pet in harm’s way.

“According to the American Animal Hospital Association, approximately 88 percent of pets living in households with domestic abuse are either abused or killed. Of all the women who enter shelters to escape abuse, 57 percent have a pet killed by their abuser,” Dr. Meadows continued. “Because of grim statistics like this and the strength of the human-animal bond, we know this program is important.”

Helping Provide a Better Ending

The first pet to come into the MU program, Brittany, was treated for her injuries. Despite her scars and post-oper-

ative pain, she enthusiastically greeted everyone at the teaching hospital.

Brittany was surrendered by her owner and adopted into a new home. The woman who had been battered put her life in order, too. She left her mid-Missouri safehouse and has started a new life in another community. Her boyfriend was prosecuted by Sullivan, convicted of assault and animal cruelty, and was incarcerated.



Dr. Richard Meadows, Director of the Community Practice Section of the Veterinary Medical Teaching Hospital, directs Project PetSafe.

More Than One Response

The MU College of Veterinary Medicine program works in parallel with an earlier program operated by Miller-Roth, a mid-Missouri agency devoted to animal welfare and named after two MU College of Veterinary Medicine alumni killed in a car accident. Ann Huber, co-founder and president of Miller-Roth, said in the last year more than 12 clients, some with more than one pet, have been helped. Her agency funds a 30-day placement of animals with local veterinarians and does not require an agency referral.



Only months before crafting their plan to escape to the West, a Bucharest photographer snapped this family portrait.

Our from Com

By Dr. Gheorghe Constantinescu

■ From World War II's ruins until 1989 when a firing squad bullet ended his life, Nicolae Ceausescu presided over a paranoid Romanian communist police state. One out of every three citizens was coerced into becoming an informant. Phones were bugged and a mention of baseball, or even a crossword puzzle, was considered a subversive evil. Casual conversations were monitored so no dissent was even implied about Ceausescu's bizarre social economic perversions that tried to



On a cold day in January 1982

we were informed that my wife Ileana, a veterinary microbiologist with the Milk Plant in

Timisoara, Romania, had been arbitrarily assigned by the communist rulers to work at a countryside station some 40 kilometers away and to bring our three-year-old daughter, Adina, with her. Ileana was required to establish permanent residence there without permission to commute. Ileana refused and was fired.

For 17 years I had taught anatomy as an Associate Professor at the Faculty (College) of Veterinary Medicine, Agronomic Institute of Timisoara. Ileana's job loss was the last drop to fill our glass of humiliations, moral oppressions, and misery. We were restrained from speaking freely and traveling where we wanted, lived in fear of being exposed for some political infraction, denied personal contact with colleagues beyond the iron curtain, and had no access to professional journals or books from the West. We could not even attend a wedding or church service for fear of losing our jobs. To survive, we obeyed and followed communist rules, wasting our time in endless party, union, and faculty meetings. This was not the life that we wanted to live. We decided to escape and created a plan that would get us, and our daughter and grown son, out of Romania.

A Former Student Considers Turning Informant

Applying for a tourist passport was a great danger. Applicants were suspected and harassed by party zealots. The communists refused to let children travel with their parents—keeping them hostages or “moral guarantees” that the parents would not defect.

Ileana and I got our passports and crossed the border into Yugoslavia on August 19, 1982, leaving Adina in Roma-

nia with our family. My son, Alexandru Razvan Constantinescu, was a student at the Faculty of Medicine.

Our passports were only issued on the basis of a formal invitation from a former student living in Seleus-Alibunar, a Romanian-speaking village in Yugoslavia. We spent several days with our hosts, accompanied by their daughter who was with us to inform on our every move. Her

parents would be held responsible for our actions.

Under pretense of a morning sightseeing drive in our Romanian-built version of the Renault 12, we drove to the Austrian Consulate in Belgrade, where we asked for visitor visas. We were told that our application processing would take one month. We gave up and returned to the village.

Escape



This Romanian-built version of the Renault 12 was, literally, the vehicle that took the Constantinescu family to freedom. Shortly after fleeing to Germany, Gheorghe snapped a photo of his wife, Ileana, and the car in a German rest area. The "B" on the license plate referred to the car being registered in Bucharest.

cut Romania off from the rest of the world. The worse crime: defection. ■ University professor Dr. Gheorghe Constantinescu, and his wife Ileana, became fed up and escaped, leaving behind everything they owned. Facing prison if caught, they motored around Yugoslavia in a little blue-green car looking for their chance. Today, Gheorghe is a Professor of Anatomy at the MU College of Veterinary Medicine, and Ileana is a Clinical Instructor.

During lunch, the father of my old student nervously rushed into the dining room and abruptly requested that we pack our luggage and go back to Romania. He insisted that he accompany us to the border, probably to make sure that we did not go in a different direction.

Driving back to the border, he suddenly ordered us to stop in the city Vrsac to talk to a district attorney, a relative of his, to turn us in for attempting to get the visas. Luckily, approaching the office, his fear caused him to reconsider the idea. He held a short family council, after which my former student joined us breathlessly saying: "You don't want my father to stab you to death, do you? You don't want a blood bath, do you?"

"You were my student," I said, "I was your thesis advisor. Aren't you ashamed of yourself?"

After more deliberations, our hosts demanded that we continue on our forced trip toward the border.

Ileana and I knew that on the Romanian side of the border, we might never have another chance to escape. I whispered to my wife: "Give me the passports." As soon as we reached the border post, I jumped out and ran to the customs office, asking for anyone who could speak Romanian. I was lucky to find a man who translated to the customs chief that we honored the invitation of a family—I pointed to my hosts—and we had a visa for one full month. I said they were trying to force us to return to Romania. I asked whether we were legally permitted to stay in Yugoslavia for the rest of the month. The customs chief said, "Of course, you

can stay," and returned our passports. We were free to drive back. But where?

Ileana and I were disoriented, angry, and scared. In the meantime, the customs chief invited our former hosts into his office and we could hear him yelling at them. That was a gleam of hope that not all people in Yugoslavia were our enemies.

Caught Crossing the Border

We decided to go to Belgrade and call a good friend, a Romanian who was a German citizen and lived in Munich. We asked for help. He promised that in two days he would meet us in the parking lot of the Habakkuk Motel in Maribor, Yugoslavia (now Croatia), close to the Austrian border. We nervously slept two nights in our small car. The little money we had was barely enough for bread and bologna.

On August 27, our friend found us. He advised us to leave our car in Maribor and sneak across a rural part of border, using the heavy woods as cover. He would wait for us at the Agip gas station



The Constantinescu family's journey to freedom. 1: Timisoara, Romania. 2: Seieus, Yugoslavia. 3: Banatsko Novo Selo, Yugoslavia. 4: Maribor, Yugoslavia. 5: Salzburg, Austria. 6: Konigsee, West Germany.

in Austria. Our friend took our car keys and luggage. He was confident that we would make it.

It was not to be. Patrolling Yugoslavian Frontier Guards, armed with sub-machine guns, caught us, cuffed me, and threw us in the Maribor jail.

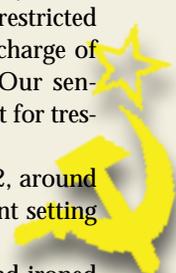
I was put into a cell with nine other men. My wife's cell had five other women. Both cells were in poor condition and the meals were very bad. We had no way to communicate. We were repeatedly interrogated and threatened for six days. Our captors had only caught us in a restricted area and lacked evidence for a charge of trying to escape into Austria. Our sentence was six days' imprisonment for trespassing.

We were freed on September 2, around noon. We still keep the document setting us free from the Maribor Jail!

My wife, who had washed and ironed bed sheets for the jail, was paid 50 Dinars. A jailed Austrian bootlegger (God bless him!) gave me 500 Shilling (about \$10). We used the money to again call our friend in Munich and ask him to bring us our car keys and luggage. He was to arrive the following day.

We spent almost all of our money on the phone call. With the rest, we bought bread and a piece of mortadella (a kind of bologna). We kept telling each other, "You eat it, I am not hungry."

The following day, our Munich friend arrived with the keys and luggage. He gave us 50 Deutchmarks (about \$18)—not much. We returned via Belgrade to Banatsko Novo Selo, found shelter for three more days, and worked on another





Today, Gheorghe and Ileana Constantinescu work at the MU College of Veterinary Medicine where Gheorghe specializes in technically precise anatomic drawings.

strategy. We drove back to Belgrade and looked for Amnesty International. In a barber's shop, we learned the address (5, Rjsanska St.), went there, and filled out forms to immigrate to the United States, Canada, or Australia.

Amnesty International told us that we could enter Austria from Yugoslavia without an Austrian visa. But we no longer trusted anyone. We went to the Romanian Embassy in Belgrade for Austrian visas. The officer aggressively told us that the Embassy did not issue such visas. We didn't know at that time that a tourist passport with a Yugoslavian visa was enough to be admitted to Austria.

We returned to Banatsko Novo Selo and investigated leaving Yugoslavia through

Austria or Italy. It might be possible to cross the border to Italy, blending in with the seasonal workers. That was too risky and we ultimately decided to act on Amnesty International's information: Go to the Austrian border with just the Yugoslavian visas.

Another Attempt

We pawned some of Ileana's jewelry and got 19,000 Dinars (about \$180). On September 7, we headed for Maribor. We slept in our little car in a huge parking lot

and the following morning—I remember it was cloudy and rainy—we heard a knock on the window and heard a woman's voice—how sweet it sounded—asking in Romanian “Would you like some hot coffee?” Behind our car was a

Mercedes with a camper attached, and inside the camper were Dieter Nadicsek, MD, his wife Tina, and their 6-year old daughter Patricia. They invited us to breakfast.

The Nadicseks were native Romanians. Dieter's father was a German citizen who died two years before. Dieter and family were allowed to go to the funeral and never returned to Romania.

We cautiously mentioned that we were

planning to make a short visit to Austria and then to return to Romania. They invited us to visit them in Regensburg.

Traveling with them might make our actions seem less suspicious. We might even have less trouble getting through the border checkpoint. Dieter followed us toward the border checkpoint, but somehow we lost them in the traffic. Our slim confidence disappeared with him and we felt even more alone. We reached the border, parked our car close to the customs post, and waited for Dieter, hoping that



Daughter Adina is reunited with her mother at the Munich, Germany airport.

we could still pass through the checkpoint together.

Several hours passed, and our friends did not show up. The border guards watched with suspicion. We nervously considered our options and decided to attempt to cross the border without Dieter. The border guards were waiting for us.

The checkpoint officer viewed us suspiciously and sternly asked us why we had waited so long. We said we were waiting for our friends and showed him their handwritten address. The officer was unconvinced: “Your purpose is not to visit Austria and Germany but to flee Romania!”

Desperation and panic gripped me, but I couldn't let it show. How could I respond?

I produced photographs of my children and a document showing that we owned an apartment in Timisoara, trying to persuade him that those were good reasons for us to return to Romania.

The checkpoint officer considered my statements without emotion. He joined the nearby guards and consulted with them for minutes, but what seemed an eternity for us. Would we be arrested again?

Finally, without ceremony, he walked back and waved us through the checkpoint, allowing us to enter Austria. We drove under the raised barriers—at last we were free—and passed into the free world! We could hardly believe it. We drove for over an hour until we stopped. We couldn't even talk to each other—we were speechless. That was September 8, St. Mary's Day in the Orthodox religion.

Caught On the Last Step to Freedom

From Graz, Austria we again called our Munich friend and asked for help. We met in Salzburg, and he showed us where we could secretly cross the border through some secluded woods into West Germany where we could claim political asylum. Though we had fled communism, we had no permission to enter Germany.

Sneaking across the border, we were caught again by the police and taken to the police station. After coming so far, could we be sent back to Romania for a certain prison sentence?

This time, the Frontier Guards told us: "Don't be afraid, we are not going to send you back to Romania. Welcome to Germany." That happened on September 10, 1982. After two years living in mountainous Koenigsee, Bavaria, we departed for the United States on February 23, 1984.

Before leaving for America, we had one more person to rescue from Romania—our three-year-old daughter, Adina. Our plan was to make no public statements against the communist regime or give the government any reason to consider us a threat in the free world, and carefully submit the proper paperwork.

On April 29, 1983 Adina, now our four-and-a-half-year-old daughter, joined us in Munich after eight and one-half months of separation. And on June 19, 1988, my 28-year-old son Alexandru Razvan joined us in the United States. Getting him out of Romania was harder, but we got substantial help from Steny H. Hoyer, Chairman of the U.S. Congress Commission on Security and Cooperation in Europe, to whom we are still very grateful.

We are also grateful to Dr. Bob McClure from the MU College of Veterinary Medicine who arranged the interview for the position I now hold, and to the Reagan Administration for giving us a new country and making us American citizens.

Today, Adina is a junior at Columbia College majoring in Biology and Chemistry. My son, Alexandru Razvan, a MD from Romania, passed the National Board Examination and the Clinical Competency Test, finished his residency program in Pediatrics with a specialization in Pediatric Nephrology, and is now Assistant Professor at Rutgers University in New Jersey. My wife Ileana served the University of Missouri as a Senior Research Specialist in Food Science and Human Nutrition, and is now an Instructor in Veterinary Anatomy at the College of Veterinary Medicine. We are working together.

After so many years, the memory of those dramatic events is still fresh in our minds. On holidays, when we get together with friends, we retell the story of our escape and whenever we click a glass of wine we say in our language: "Good luck and may God have mercy!"

VMR



Dr. Moore Named Head of Teaching Hospital

Distinguished teacher brings a wealth of experience and respect to position

Dr. Cecil Moore has been named Chair of the Department of Veterinary Medicine and Surgery and Director of the Veterinary Medical Teaching Hospital. He previously served as Acting Chair and Director and succeeds Dr. Joe Kornegay, now Dean of the MU College of Veterinary Medicine.

Dr. Moore received his DVM degree from the University of Missouri in 1972. After six years of private practice experience, he returned to MU where he completed a residency in Veterinary Ophthalmology in 1980. He joined the faculty of the University of Wisconsin in 1982 and completed a graduate degree at the medical school there in 1986. He returned to MU in 1986 where he served as Head of the Ophthalmology Section, Small Animal Area Coordinator, and Interim Associate Department Chair.

Dr. Moore is a Diplomate of the American College of Veterinary Ophthalmologists and served as that organization's president in 1999. He received the Carl J. Norden Distinguished Teaching Award in 1993 and is a two-time recipient (1988 and 1992) of the Golden Aesculapius Award for Teaching Excellence. He received the University of Missouri Veterinary Alumnus of the Year Award in 1997.

He has served as editorial reviewer for numerous veterinary medical journals and texts and frequently speaks at state and national meetings and conferences. Dr. Moore's research interests have focused on epidemiology and therapy of equine keratitis, and on spontaneous tear film diseases of dogs. An experimental canine *keratoconjunctivitis sicca* model is currently funded by the National Institutes of Health.

"Dr. Moore brings a wealth of experience to this position and is well respected throughout the profession," Dr. Kornegay said. "I am confident that the Department and Hospital will flourish under his leadership."

VMR



Above: A favorite PALS team is Peter Bondy, class of 2000, and Jazz. Left: PALS visits are designed to provide a basic human need: a smile.

The College has a weapon against the loneliness and isolation of hospitalization or institutionalization

Send in the

PALS

Veterinary medical student, Theresa Bruemmer, class of '98, was the founder of the MU PALS. She is now a veterinarian practicing in the St. Louis area.



The mission of the MU College of Veterinary Medicine's PALS (Pet Assisted Love and Support) organization came into sharp focus for Kimberly Renner one autumn evening at a Columbia, Mo. hospital.

Renner had just visited a group of patients who loved petting her Bouvier, Sunny, and talking about their pets at home or from long ago. For an hour, they forgot their maladies and happily joined in an animal-centered get-together.

As Renner was leaving, a therapist asked her if she could visit a man who had chosen not to join the group.

That hospital room was dark and the television's sound was turned low. Sunny quietly walked up to the bed-ridden man, as if he had known him for years. Immediately, the man's hand came down to touch the dog.

Renner, PALS President and Senior Clerk at the College, started a conversation with the man who said he was hospitalized with a severe stroke that would leave him largely incapacitated.

Gradually, the talk turned to happier things. The man described his youth and a dog, not unlike Sunny, who was once his constant companion.

Renner was happy to see the man smile as he touched and hugged the dog. Their meeting over, the man made Renner and Sunny promise to return. He said he was looking forward to the next visit.

The therapist caught up with Renner and Sunny in the hallway. Since his surgery, the man had been angry and uncooperative. He refused contact with anyone and would not leave his room, even to eat dinner.

The meeting was the first time the man had shown any hope. Later visits drew him out of his room and into contact with other patients. His smile beamed when he saw Sunny. He relented in his refusal for therapy, mostly because of an opportunity to get closer to Sunny.

To Renner and the other volunteers, it was a textbook case of what the PALS organization wanted to accomplish, and added one more friend to a growing circle.

New Implementation of an Old Idea

Animals have had an established role in tending the sick and lonely for at least 200 years. At the York Retreat, a mental hospice in Europe, companion animals were used to help teach patients self-control and responsibility by caring for creatures weaker than themselves.

In 1944, the American Red Cross established a rehabilitation program for disabled airmen in which patients participated in dog handling classes. The program was not a new vocation, but designed to help veterans focus away from lost limbs and chronic pain and onto a relationship with a living being who did not judge them on their disabilities.

In 1960, Boris Levinson of Yeshiva University in New York published the book *Pet-Oriented Psychotherapy* that proved contact with animals is emotionally beneficial to children and the elderly, and provides medical benefits such as lowering blood pressure and relieving some chronic pain. He wrote that the simple act of touching and talking to a pet decreases anxiety, and can reduce the chances of stroke and diabetes.

The MU College of Veterinary Medicine PALS program began in 1994 when veterinary medical student Theresa Bruemmer, and six other volunteers from the class of 1998, wanted to put these findings into practice. They targeted children's hospitals, rehabilitation centers, and assisted living facilities.

It took the group, made up of veterinary medical students and College faculty and staff, almost a year to establish training programs, protocols, and related legal and insurance matters, before the first visit. PALS initially visited a Columbia hospital, then a nursing home.

The PALS objective to decrease feelings of isolation was immediately met. Patients loved seeing the dogs and talking to the visiting veterinary medical personnel. Some relived memories of better days, and for a short time escaped their hospitalization. The visit's afterglow lasted for weeks and helped erase some isolationist feelings by giving patients a common topic of conversation and joy.

Hospital administrators immediately saw the benefit and raved about the professionalism of the MU human-animal



PALS animals have to have a mature and calm disposition to be able to deal with people who may immediately want to get close.

team. Most importantly, PALS gave people in a hospital or institution one of the most basic forms of human enjoyment, a smile. The PALS organization quickly doubled in size and visits.

Today, PALS teams regularly visit a half-dozen local healthcare facilities, and sometimes connect in ways beyond the original idea. For example, a child facing balloon angioplasty surgery found himself petting a dog who had undergone the same procedure for his heart defect—including the same ultrasound imaging the child had just completed. Looking at the happy dog and seeing its healed scar, the child had new hope that he, too, would recover quickly.

In another case, an 11-year-old girl mauled by a large dog, learned to regain her trust of some animals and people through the quiet presence of a dog from PALS. The organization also helps people facing long-term institutionalization, such as people with cerebral palsy.

Training to be a PAL

Not every animal can handle the strict behavioral guidelines for working with children, the sick, and the elderly. To qualify, animals must pass a PALS behavioral training program.

The program stresses reliable obedience. A dog unable to keep its four feet planted on the floor could knock over a sick child or elderly person. A dog that shows fear at a person in a wheelchair may reinforce that person's feeling of loss.

Barking, also, would be inappropriate in a healthcare setting.

Training starts with typical obedience basics such as sitting on command and walking at the side of the handler. Past the basics, animals go through simulations to accustom them to what they may encounter—people on crutches or strange noises such as loud speaker announcements. With patients who may excitedly grab at the animal, wanting to immediately gratify their need for contact, the animal must react in a mature and gentle way to what may otherwise seem to be a threat by a stranger.

Experienced PALS members coach new teams on how to interrelate with patients. Since veterans perform a one-hour visit almost every week, they quickly get to know patients and can advise new teams with special insights.

The course completed, both volunteer and animal are rewarded with a new bandana and a photo I.D. badge.

The training does not supply the magic that animals can intuitively add. In one case, while an elderly bed-ridden man described his long-gone canine companion, a PALS dog first put one foot, then another, on the side of his bed. As the man described his youthful adventures with his dog, the PALS dog quietly joined the man in his bed. The action, allowed by the PALS member who understood its significance, not only eliminated a long reach by a bed-ridden man, but reinforced the man's feeling of self worth in a way that words could never accomplish. The PALS visit was added to his list of important memories—not just of a young man whose self-worth was taken for granted, but as an old and feeble man who still deserved unconditional love.

In Demand

Today there are almost two dozen PALS teams with connections to almost every hospital and institution around Columbia—with additional requests for visits coming in almost every week.

In the past five years, hundreds of patients and clients have experienced a PALS visit—one of them was the angry man who the therapist asked Renner to visit. He concentrated on his therapy and was released to recover at home. VME

For more information about PALS, contact Kimberly Renner at the MU Veterinary Medical Teaching Hospital, 573/882-7821.

Return of the Woolly Mammoth?

Bound for Columbia, Missouri. In early February a piece of the Siberian Woolly Mammoth was released for shipment to Dr. Lela Riley.



Explorer Bernard Buigues learned about the mammoth in 1977 and decided to lead a nine-member invitation-only team to exhume and analyze it. Buigues reportedly became especially excited after he trained a hair dryer on the animal's head and its smell—as best he could determine—came flooding back.

In 1977 a Russian bulldozer operator working in the perpetually frozen Arctic Taimyr Peninsula of Siberia noticed a block of muddy ice containing a dark mass. On closer inspection, he was amazed to see the contours of an elephant-like creature. He had discovered a complete and preserved adult male Woolly Mammoth.

The Woolly Mammoth, *mammuthus primigenius*, roamed the Pleistocene era

and is well known from cave paintings. Adult males lived 50 to 80 years and usually stood about 13 feet tall, about the same size as a full-grown African bull elephant. They could consume 500 pounds of vegetation a day and became extinct about 12 centuries ago.

Mammoth fossils, chunks of preserved flesh, and even bits of preserved fur, had been found before. This was the first time that an extinct mammoth had been dis-

The MU College of Veterinary Medicine may help investigate what diseases haunted these elephant-like creatures, and may assist in a project to produce a living example.

covered intact. It was big—11 feet tall at the shoulder—and burly—about 8 tons. The frozen Taimyr mammoth, estimated to be about 40 years old, was named Zharkov in honor of the person who found it. Researchers believe it stopped to drink from a semi-frozen pond, fell in, drowned, and became frozen in the ice.

In October 1999, two international research teams exhumed the mammoth's body, 23,000 years after it perished. This began a series of worldwide research programs to study how the animal lived, what diseases plagued it, and why its kind became extinct. Funded by The Discovery Channel, the Smithsonian, and U.S. universities and zoos, scientists in France, the United Kingdom, and several U.S. academic institutions have started research projects—among them is someone from the University of Missouri's College of Veterinary Medicine.

In a project funded by the Indiana Zoological Foundation, Dr. Lela Riley, Director of the College's Research Animal Diagnostic and Investigative Laboratory (RADIL), is collaborating with John Critser, PhD and professor at the University of Indiana's School of Medicine. Dr. Riley hopes to study samples of the beast to determine what infectious agents—bacteria or viruses—may have impacted mammoth life. Using the same techniques and expertise that she and her colleagues use to find diseases that afflict today's animals, she hopes to develop a better knowledge of the Woolly Mammoth's life by determining what microorganisms made it sick.

RADIL is the University's primary laboratory that specializes in research animal diagnostic investigations. Assisting MU researchers hoping to discover cures for disease, RADIL provides health monitoring, diagnostic problem solving, consulta-

tive, and research services to all scientists on the MU campus who utilize research animals. RADIL also has the specialized equipment—including a containment laboratory needed to isolate possible viruses such as those that may have died with the mammoth—to study collected samples.

So far, however, getting any mammoth sample to the RADIL lab has been dogged by delay. Dr. Riley hoped to have a chunk of the animal last November—but the transfer has been delayed by governmental agencies that have not yet determined policies for moving pieces of Zharkov. If these difficulties are resolved and the sample yields positive results, Dr. Riley said, then an intriguing second part of the investigation may begin.

Jurassic Park, the Midwestern Connection?

A possible second part of the project, led by Dr. Critser, an expert in cryo-biology and cloning, is out of a science fiction book. Dr. Critser, assisted by Dr. Riley, hopes to gather and revive frozen semen from the mammoth to attempt an in-vitro fertilization of an Asian elephant, a cousin of the mammoth family. If this happens, scientists will be able to study more than a corpse, but a living and breathing example.

Research in the 1980s by Massachusetts Institute of Technology scientist James Creak, shows that 56 of 58 of the mammoth chromosomes match that of the elephant, resulting in only small differences in the genetic makeup of the two animals. Any resulting creature would be half-mammoth, half-elephant, but over time, selective breeding of the hybrids might produce a nearly pure mammoth, Dr. Riley said.

To collect the material, Drs. Riley and Critser would have to go to the desolate Siberian cave in Khatanga where Zharkov is being kept in cold storage, to find and collect any useful samples. Dr. Riley said she hoped to leave for Siberia in January.

Should that project not be fantastic enough, if the semen samples prove not to be viable, the team may attempt to collect enough viable mammoth DNA to use in a cloning attempt, Dr. Riley said.

The idea of a living baby mammoth centuries after the creature became extinct began with Explorer Bernard Buigues, a leader of one of the teams examining the mammoth. In his autumn 1999 press



Dr. Lela Riley, Director of the MU College of Veterinary Medicine's Research Animal Diagnostic and Investigative Laboratory.

announcement of the idea, he generated headlines all over the world even though Buigues played down expectations of Jurassic Park-style reconstruction. "People often dream about resurrecting the mammoth using well preserved cells, but you have to be more modest," Buigues said. "We don't expect to find red flesh, but rather a kind of freeze-dried meat."

Dr. Riley, too, plays down the likelihood of success, but points out that that such an opportunity is rare and worth a try. Advances in DNA research did create Dolly, the Scottish cloned sheep, she said.

Some paleontologists, too, have raised doubts about the possibility to obtain useful DNA from Zharkov, however. They say the effort is already doomed.

"It's a question of getting quality DNA," says Yves Coppens, a French paleontologist who has studied parts of the Siberian mammoth. Coppens says temperatures in the ice cellar where scientists will gradually thaw the mammoth for study are too warm to preserve the DNA needed for cloning. DNA can survive at temperatures of minus 22 degrees or lower, he said. The temperature in the Siberian ice cellar, where Zharkov was moved to, is minus 14 degrees to 4 degrees.

Dr. Riley said she hopes the long-delayed mammoth chunk will give an indication if viable DNA is still available before she or Dr. Critser leaves for Siberia.

Mammoth DNA could come from the mammoth's bone marrow or internal organs. The best option on cloning a mammoth is the nuclear-transfer method developed by Dr. Ian Wilmut at Scotland's

Roslin Institute, the creator of Dolly. If nuclear-transfer works, the cloning would produce an offspring that is genetically 100 percent mammoth. On the minus side, that method probably is even more of a long shot than the elephant egg-insemination plan.

Amplifying DNA?

The key to any cloning attempt will be obtaining enough intact DNA, the genetic blueprint of the animal, Dr. Riley said. No one expects a large amount of viable DNA from Zharkov, but even minute amounts have yielded results in RADIL's lab through amplification techniques.

In cases where only a little viable DNA can be obtained, RADIL uses the Polymerase Chain Reaction (PCR) technique to amplify the number of copies of a specific region of DNA to produce enough material to be useful. RADIL typically uses this technique to identify, with a very high-probability from a very small sample, disease-causing viruses or bacteria. PCR is also the technique used in legal investigations to establish the genetic identity of a deceased person or a criminal suspect.

With this amplification process, there is often enough DNA in one-tenth of one-millionth of a liter (0.1 micro-liter) to use the PCR system to amplify the genetic sequence of a human being. Enough DNA has been captured from insects trapped within 80 million year-old amber (fossilized pine resin) to be amplified by the PCR technique. Unfortunately, that DNA was not viable.

DNA amplification of a relatively recently-dead subject is not easy, either. Researchers who tried to verify that a body buried in Jesse James' grave in Kearney, Mo. was indeed the famous outlaw, could not find enough viable DNA material (from old bones and teeth) to match it to known living relatives. That body had been buried for a mere 150 years—not the 23,000 of the Woolly Mammoth. Still, Jesse's body had not been frozen.

Dr. Riley is the first to admit overcoming the bureaucratic, financial, and scientific obstacles make any chance of success small, at best. Still, the opportunity makes the effort worth a try. "If we don't have the technology and techniques today," Dr. Riley said, "we probably will in ten years."

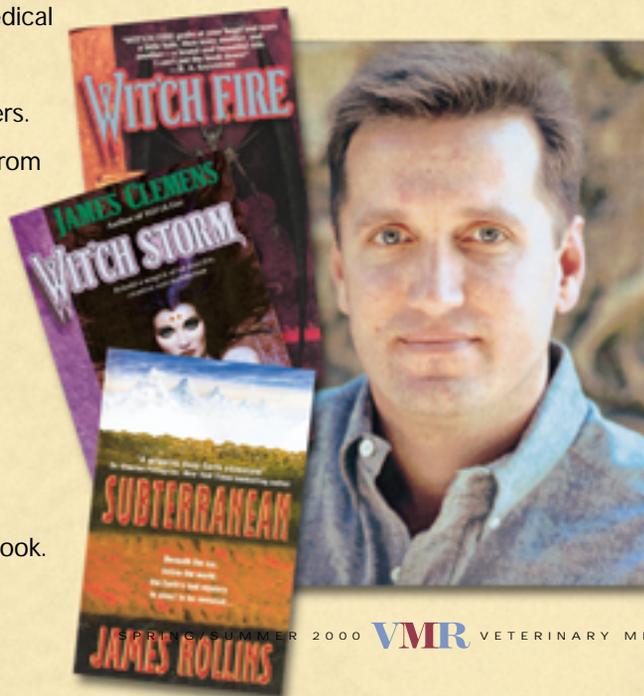
mixing Literary

2 MU CVM Grads Live Lives of Published Authors



Anyone who has ever achieved any success has been told, "You should write a novel." With the demands of patients, running a business, and keeping up with the latest medical techniques, writing a book is only a dream to most veterinarians. ■ Two MU College of Veterinary Medicine graduates have broken through the barriers to be published by major publishing houses. Their books even now grace your bookstore's shelves. ■ Since 1996, Fawcett Books has published three mystery novels by Lillian Roberts, DVM '87: *Almost Human*, *Riding for a Fall* and *The Hand That Feeds You*. The series features a female veterinarian/sleuth. In 1998, she wrote the non-fiction book *Emergency Vet*. ■ In the last decade, Dr.

James Czajkowski, DVM '85, has written two fantasy novels, *Witch Fire* and *Witch Storm* under the pen name of James Clemens, published by Ballentine Books. His just-published book, with the pen name of James Rollins, is the thriller *Subterranean* that hit two best-sellers' lists and has been optioned for a possible TV mini-series. ■ What's it like to mix literary with veterinary? To find out, Veterinary Medical Review posed several questions to both writers. Dr. Czajkowski spoke from his home in Sacramento. Dr. Roberts, who practices in Palm Desert, Calif., was found in South America where she is researching her next book.



What prompted you to take up writing and how did you first get published?

Czajkowski I always dabbled with writing in high school and college, but once I was accepted into vet school, I put that all aside. Even after graduation, my time and energy were consumed by getting my veterinary career off the ground. In the back of my mind, I kept saying, "One of these days, I'll write that novel." Over time, those days stretched into years. One evening, I finally realized the difference between a writer and a daydreamer was someone who actually put words on paper. And I did—and they were horrible! After this, it took three years of practice, reading, and self-teaching until I was ready to tackle my first novel, *Subterranean*. Once done, I spent three months coercing a literary agent into representing me. After fifty rejections, I finally hooked someone who got the novel out and sold in ten days.

Roberts I've always enjoyed expressing myself through writing. My teachers encouraged me, but writing as a living was very frightening—so much uncertainty in coming up with ideas, getting published, etc. Instead, I chose a profession with specific hoops through which one must jump in order to practice—veterinary medicine. I still love practice, but once I attained stable work, I realized I still had a creative side that medicine didn't fulfill. In the meantime, I noticed other professionals who were writing mysteries and thrillers, and being a physician or a lawyer appeared to be an asset in getting published. So I joined a writers' group and went to seminars, all the while madly scribbling away. It took three years and two-and-a-half manuscripts before I found a publisher.

with *Veterinary*

While Balancing the Demands of Their Veterinary Practices

How successful are your books and why do people buy them?

Roberts My books have average success for paperback mysteries. Each of the four had a second printing, and the return rate (books returned to the publisher by booksellers) has been low. However, I decided to discontinue the mystery series because of the low pay for an enormous amount of work. I'm working on something far more ambitious now. It remains to be seen whether I can pull it off!

Czajkowski My fantasy novels *Wit'ch Fire* and *Wit'ch Storm* have been selling very well. But the archaeological thriller *Subterranean* climbed onto USA Today's bestseller's list in the first week of release and reached the New York Times bestseller's the next week. In regards to readership, I've gotten fan letters from both grandmothers and thirteen-year-old children. So the spectrum of readers for the novels seems pretty broad.

Who's the hero or villain in your latest book. Any autobiography?

Roberts My series features an amateur sleuth/veterinarian named Andi Pauling. She looks like me, practices in the same area, and faces the same struggles—the same ones any DVM faces. By making her life like mine, I could write with little research, and I had a perfect understanding of my characters' world. In retrospect, I wish I'd made her less like me. My clients read the books and get us confused. Just to confuse things more, I also wrote a non-fiction autobiographical book called *Emergency Vet: True Stories From the Animal Emergency Clinic*. An awful lot of people who read this and the mysteries think that I've

done the things attributed to Andi. Once a client said to me, "When you took that video camera to the dog fight I was so worried because I knew you could get caught any second!" All I could do was gently let her know that I'd made all that stuff up.

Czajkowski The heroes in *Subterranean*, are a pair of explorers: Ben Brust, an Aussie caving expert, and Ashley Carter, a paleo-anthropologist, who lead a team of scientists into an extensive cavern system buried two miles under Antarctica. Besides the hostile native life there, the team also hides a traitor: Khalid, an Egyptian geologist. Now as to autobiographical elements, I think there are certain aspects—both good and bad—that I share with my characters. In some ways, writing is great therapy. You explore secret corners of your psyche . . . without being hauled to jail.

Are you trying to communicate anything through your writing?

Roberts Some writers have agendas, but I've never been one of them. Each of my novels addressed a social issue about which I had strong feelings—AIDS, child sexual abuse, animal cruelty, human euthanasia—but no issue ever dominated my life or fiction. Having said that, recently I've gotten involved in South American wildlife conservation. I decided to write about parrot smuggling. I researched the topic, which led me to an organization called BioBrasil and their incredible conservation work. I spent five weeks in Brazil, and I'll probably go back in June of 2000. Keep in mind that I have to make elaborate arrangements to leave my solo practice for extended periods of time, and the cost is significant. But, I have high hopes for this book. Getting the scoop on what they've

done has provided me great material. You wouldn't think there's much intrigue in conservation, but reality is almost stranger than the fiction. My hope for this book, and probably one or two more, is to relate how urgently we need to conserve the world's bio-diversity. You can see how boring that is when stated baldly, so it can only be an underlying philosophy within an entertaining story. Like any writer who hopes to be successful, my primary objective is to entertain.

Czajkowski While I try to include thematic elements in my stories, something that speaks to the greater spirit, I mainly write to entertain. My goal is to thrill and excite my readers, to glue them to the pages of the book. I want them reading until the early hours of the morning, unable to put the book down.

Are there times when you particularly hate or love writing?

Czajkowski Oh yeah! There are times the story flows like water. Nothing is better. It's almost a drug. But other times, I can spend hours on a single page, and writing becomes like pulling teeth—nothing flows, the dialogue is stilted, and all the descriptions are clichéd. It's what I call "root canal days." I'd rather be having a root canal than writing.

Roberts Like other writers, I love everything about being a writer, except writing. The novel most people consume in a few days represents a year of sweat and self-doubt. Writing is brutal for the self-esteem, and some days putting words down is an excruciating exercise. I write early in the morning, before I go to work. If it goes well, my day will invariably be great. If I sit staring at the blinking cursor, or worse—typing garbage and recognizing it for what it is

and deleting it and starting over—then my workday has a sense of guilt. It's worse with a deadline—that represents an agreement I have to live up to, and every day that I don't add to my page count is like a promise unfulfilled.

Does your veterinary medical training or MU experience influence your characters or story?

Roberts As far as using alumni or faculty as character models, I admit I've done this with some minor characters, but I won't tell you who they are! I have also used a few real incidents as the basis for things I referred to, particularly in *Riding For A Fall*. And I sent Andi to MU because it felt natural to do so. I think my veterinary training will always impact my writing. It has to—it's a huge part of who I am. It influences every aspect of my life and probably always will. In *Emergency Vet*, I talk about some real cases and mention a few people by name. I tried to make that one as accurate as I could, within the limits of my memory.

Czajkowski My MU undergraduate and graduate years had a great impact. My biological science background helped in constructing the ecosystem and animal life in *Subterranean*. The countryside around Columbia influenced a lot of my fantasy novels' terrain, especially the abundant woodlands, lakes, and creeks.

How do you balance your veterinary medical practice with the time demands of writing? Where and how do you write?

Czajkowski When I wrote *Subterranean* and the first fantasy novel, *Wit'ch Fire*, I owned my own practice where I worked 50-60 hours a week. My writing time was limited, but I set myself a goal of writing three pages each day — good or bad. I wrote those pages in whatever cracks of time I could manage. It took eleven months to complete each novel. Since then, I've sold my practice and pulled myself down to part-time at the clinic that I once owned. The change has allowed me to set broader writing goals.

Palm Springs veterinarian Andi Pauling is astonished when Gilda Hopkins makes an impassioned—and controversial—request. Gilda, dying painfully of cancer, asks Andi to kill her. Before Andi can recover from the shock, Gilda breathes her last.

Gilda's grown daughter suddenly accuses Andi of murder, forcing Andi to scramble for the truth. Striving to uphold her reputation, Andi soon confronts menace from a devious newspaperman, and a threat that could leave her stranded out in the desert with only the vultures for company. . . .

—from the description of *Almost Human*

First of all, the author is a liar. Do not proceed deeper into this work without accepting this fact and holding it firmly in your mind as you grasp this translation in hand. The author will try to confuse your mind, to cloud your reason. Beware of his many traps.

...for this reason, this version...has been released for postgraduate studies only. Your instructor has been properly trained and licensed in the safe reading of the text. Do not scrutinize the book without this instruction.

—from the forward to *Wit'ch Fire*

Roberts I have to laugh at this question, because at the moment I am sitting cross-legged on an unyielding mattress in a small hotel in Puerto Iguacu, Argentina, with my computer balanced on one of the hardest pillows I've ever encountered. The power went out half an hour ago, which isn't unusual in South America. Over the past month I've gotten a lot of writing done—certainly more than if I had been home practicing and trying to imagine South America instead of being here experiencing it. At home, I get up between 4:30 and 5 a.m. to get my writing done before I go to work. I discovered long ago that by the end of the day my brain is full of the clutter that builds up from

dealing with sick animals, clients' questions, and the everyday low-level stress of getting the bills paid. For some reason I can write non-fiction at that time, and I wrote a lot of *Emergency Vet* in between appointments. But, fiction requires a lot more focus. So I get up before the sun, make some coffee, and sit down to face the blinking cursor.

Is your literary world filled with gala events, TV interviews, literary agents, champagne, and celebrities? Your veterinary world?

Czajkowski Not even close. Most of my days are spent locked up with my computer. My biggest kick is from my veterinary clients—they are my biggest and most vocal fans. I do occasional book signings or sit on a writing panel, but otherwise, writing is pretty much a solitary endeavor. The closest I came to celebrity status was when NBC picked up the film rights to *Subterranean*.

Roberts That's an easy one—a resolute NO! Whenever a new book comes out, there's a flurry of activity associated with promotion. Most people don't realize it's up to the author to promote his or her work at our own expense—except for the fortunate few on top of the best-sellers' list. So we're always on the lookout for venues and free publicity. I have a terrific agent, and she does live in Hollywood—a city I find greatly overrated. I've been on TV more as a vet than as a writer.

Are there any circumstances where you would give up veterinary medicine to write full time?

Czajkowski Nope, but I would like to reverse my previous life's roles. Before, veterinary medicine was my primary income source, and writing was just a hobby. In the future, I'd like my novels to generate my primary salary, leaving me free to dabble in aspects of veterinary medicine that excite me but are not necessarily "profitable," such as humane society work, wildlife medicine, and disaster rescue.

Roberts Sure! As soon as I get a multi-

million-dollar advance for my next book, my clinic is on the auction block! Seriously, it will only happen if the writing income eclipses the practice income to such an extent that the daily grind seems pointless. Every writer dreams of being the next Nicholas Evans, John Grisham, or Dick Francis. But for every miraculous success story, there are a hundred dreamers like me. Like any other practice owner, I worked very hard to open and build my practice, and it isn't something I would just walk away from. I think that sets me apart from most writers with "day jobs." I know many who can't wait to quit so they can write full time. I'm very fortunate to have two great careers. While they may interfere with each other, I derive great satisfaction from both. So far the books have added little or no net income (once you deduct the promotion costs) but they do impress my clients. So the fact that I'm a writer has helped my income indirectly, both with local publicity and because once my clients read the books they feel they know me better and become loyal clients.

Any future projects, movies or TV shows?

Czajkowski NBC optioned the film rights to *Subterranean* for a potential TV miniseries, but it's a long shot if it will ever reach the small screen. Hollywood purchases many more projects than are ever made, too. But my fingers are crossed. As to upcoming projects, the third book in my fantasy series is titled *Wit'ch War* and will be out this spring, and my next thriller, *Excavation*, will be out this summer. Anyone can keep abreast of my work on my two websites: www.jamesclemens.com and www.jamesrollins.com.

Roberts I don't feel the mysteries would work as a movie or TV show, and there's already a show called *Emergency Vet*—though it bears no relation to my book of the same name! My current project is far more visual, and I confess I have worked in several scenes with an eye toward selling movie rights. It's a bigger story, with broader appeal, and both my agent and I have high hopes for it. Stay tuned!

Class Notes

50's

Paul Nicoletti, DVM '56, recently received the Florida Veterinary Medical Association's highest award: the Distinguished Service Award. He lives in Gainesville, Florida and is a professor of epidemiology at the University of Florida College of Veterinary Medicine. Dr. Nicoletti served as president of the Florida VMA from 1995-1996, the American College of Veterinary Preventative Medicine from 1997-1998, and Phi Zeta from 1997-1999.

80's

Brad Bolon, DVM '86, and his wife announced the birth of a daughter, Beth Nicole Bolon, born on August 19, 1999. Dr. Bolon reports that he is in cancer remission after surgery and radiation therapy. The family lives in Thousand Oaks, Calif.

Roger Fingland, DVM '81, was named interim head of the department of clinical sciences at Kansas State University's College of Veterinary Medicine. A K-State faculty member since 1987, he also serves as director of the Veterinary Medical Teaching Hospital.

Charles Barry, DVM '87, recently added laser surgery capability to his Lifetime Animal Hospital in Warrensburg, Mo. The carbon dioxide laser is designed to replace many forms of surgery that otherwise would be performed with a scalpel, including tumor and cyst removal.

90's

Maureen Finch, wife of **Steven Finch**, DVM '94, graduated with honors from the University of Missouri-St. Louis School of Optometry as a Doctor of Optometry. She worked

two years in the MU Veterinary Medical Library and now practices in St. Louis.

Mark Gutzmer, DVM '90, and his wife announced the birth of their second child, Jared Alan Gutzmer, born August 29, 1999. The family lives in St. Joseph, Mo.

Brent Herrin, DVM '92, is working toward having his Cassville, Mo. clinic accredited by the American Animal Hospital Association.

Mark Huff, DVM '91, has opened a second practice in Lee County, Florida. He was also elected the 1999 Best Veterinarian in the County in a local newspaper poll. He lives in Cape Coral, Florida.

Christopher Hussion, DVM '91, recently opened a new facility, the Old Mill Veterinary Hospital (www.oldmillpets.com), in Leesburg, Virginia. He and his wife Kerriann Silvia Hussion also announced the birth of a daughter, Katherine Elizabeth Hussion, born on February 16, 1999.

Carol (Ryan) Rhodes, DVM '92, and husband **Bruce Rhodes**, DVM '91, announced the birth of a daughter, Brianna, born on June 9, 1999. The couple also has a three-year-old son, Payton. Dr. Carol Rhodes is employed by the Troy and Wentzville Veterinary Clinics, and Dr. Bruce Rhodes recently purchased the Elsberry Animal Hospital in Wentzville, Mo.

In Memoriam

Judith Johnessee, DVM '77, died August 2, 1999. She was a small animal practitioner in Mamaronek, New York, and was a diplomate of the American College of Veterinary Internal Medicine.

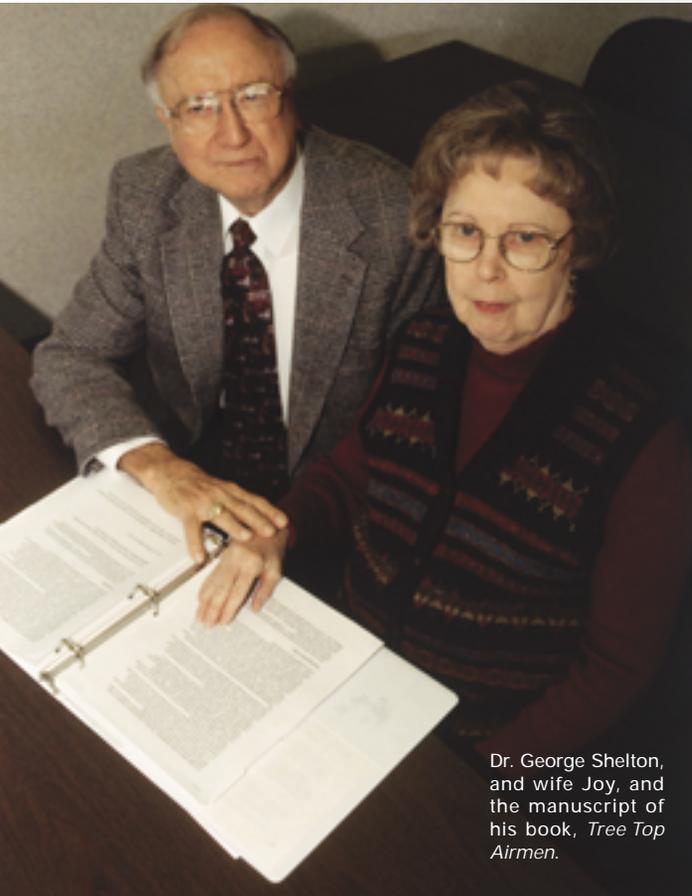
Mary Wernert, DVM '86, died on September 13, 1999. She lived in Foristell, Mo.

The MU College of Veterinary Medicine will match donations up to \$15,000 in memory of deceased graduates and others who have been connected with the College. Proceeds go to student scholarships. Donations can be mailed to: College of Veterinary Medicine, Office of the Associate Dean, W-203 Vet Med Building, University of Missouri-Columbia, Columbia, Mo. 65211.

'99 Alumna of the Year

The 1999 MU College of Veterinary Medicine Alumna of the Year Award was presented to Dr. Steven Holmstrom, DVM '72. He operates a specialty veterinary dentistry practice in San Carlos, California and is a diplomate of the American Veterinary Dental College. He was chosen by vote of his fellow alumni.





Dr. George Shelton, and wife Joy, and the manuscript of his book, *Tree Top Airmen*.

A New Mission for George Shelton

Before his successful MU College of Veterinary Medicine academic career, Dr. George Shelton flew 50 combat missions with the Fifth Air Force.

His new project: share the stories of his celebrated comrades, Ken's Kids.

World War II air combat movies

inevitably show straight-and-level bombers flying formation at high altitudes and dropping bombs on big industrial cities. Nothing could be further from the tactics developed by the Fifth Air Force in New Guinea in the Pacific. Tasked with stopping the Japanese from conquering nearby Aus-

tralia, the Fifth faced an enemy hidden by jungle and supplied by heavily armed ships. It was a war that demanded unique tactics.

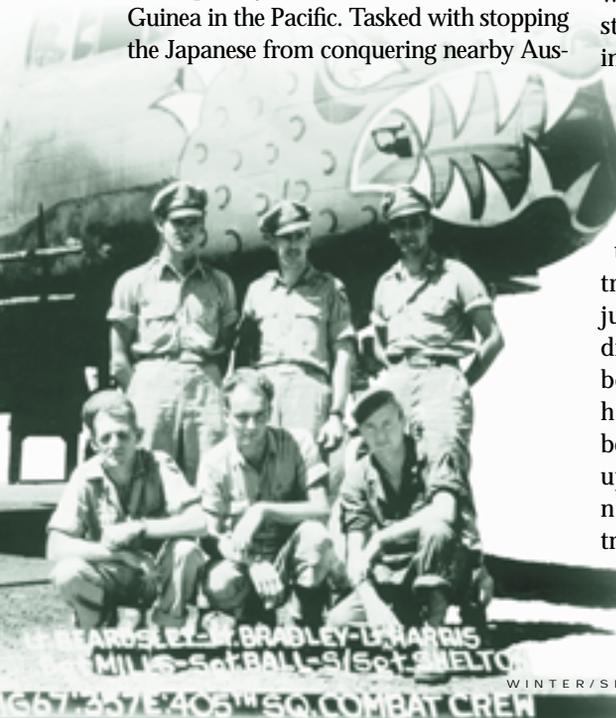
Commanded by a young maverick general, George Kenney, the Fifth threw traditional military air combat precepts into the ashcan and started over. With no cities to bomb, Gen. Kenney and team field modified their meager bombers with eight forward-firing 50-caliber machine guns to strafe Japanese naval commerce. This flying was low, close-up, and at full throttle.

Against larger warships in the close quarters of bays and inlets, Kenney's pilots learned "skip-bombing," a technique that skipped bombs like a stone across a pond into the sides of Japanese destroyers. To stop troop movements hidden by rain forest jungle, Ken's Kids as they were called, dropped small bomblets called parafrag bombs. Slowed by parachute to let the hedge-hopping bomber speed away before the explosions, the parafrags blew up at treetop level, raining a line of scrapnel down onto the Imperial Japanese troops hiding below.

A 19-year-old Texas staff sergeant had a gunsight view of this war. S.Sgt. George Shelton served as a waist gunner and radio operator in a Kansas City-built B-25J bomber modified to a ship-hunting gunship. Fifty-five years after that war, that sergeant, after a long and successful career as Associate Dean for the MU College of Veterinary Medicine (and Dean of Texas A&M's school), undertook a retirement project to chronicle Ken's Kids. With a mission to recognize their skill, bravery, daring, and effectiveness, he is contacting publishers around the country to publish his thick manuscript, *Tree Top Airmen*.

A Veterinary Career Interrupted by War

George C. Shelton was born in 1923 on the family dairy farm near Stephenville, Texas, 69 miles southwest of Ft. Worth. Farm life was tough, even without the remnants of the dust bowl drought and Depression. Chores started before dawn with milking the cows and didn't stop until long after sunset. A small city of only a few thousand people, distractions



S.Sgt. George Shelton (first row, far right) and his B-25 bomber crew in New Guinea. His squadron, the 405th, painted the noses of their airplanes to resemble a green dragon and called themselves by that name. Notice the gunpowder stains from the twin 50 caliber machine guns under the co-pilot's side window. The airplane's co-pilot, standing behind Shelton, was killed by anti-aircraft fire.

like movies were rare in Stephenville.

One bright spot was an outgoing and flamboyant veterinarian who helped with the family's cattle and entertained the watchful kids. That vet made an impression on young George, who entered an accelerated pre-vet college program just as war was breaking out in Europe. In December 1942, a year after the disastrous Pearl Harbor raid that brought the U.S. into the war, George finished his classes and volunteered for the Army Air Corps.

"Our missions were mostly against Japanese commerce shipping," Shelton said. "Strafing and sinking Japanese convoy ships denied their troops the food and ammunition needed to press their advance. We also skip bombed from low altitude. We were most effective against Japanese airfields where our eight forward-firing machine guns shot up aircraft on the ground and burned their maintenance hangars." Shelton said the Fifth's attacks were relentless, often lasting for 24 hours and not stopping until every target was sunk or burning. Some of the worst missions were strafing flak-intense Japanese oil refineries in Borneo. Once, both of his airplane's wingmen were shot down by anti-aircraft fire. "My plane was pretty shot up on that trip, but we got back" he said.

With New Guinea and the Philippines finally secure, Sgt. Shelton had enough combat "points" and missions to go home. Within three months, he was entering the doors of Texas A&M's College of Veterinary Medicine with a \$50 a month stipend from the G.I. Bill.

Detour to the
MU College of Veterinary Medicine

"After air combat, classroom work was pretty simple," Dr. Shelton said. "I was focused, mature, and knew what I wanted to do."

After graduation from Texas A&M, he spent one semester at the MU College of Veterinary Medicine as a grad student. "I liked Missouri with its hunting and fishing, and woods. I saw an opportunity for a good life. I decided to stay and start a mixed practice in California, Mo." Dr. Shelton did go back to Texas briefly to propose to a girl that he met in fifth grade, Joy Stephens. They were married in 1949.

"I would still be at my practice in California if I hadn't contracted brucellosis, a disease that you can get from cattle," Dr. Shelton said. "I was very sick for quite a while. When you have this disease, you're not physically able to work a general farm practice. I wasn't sure where I was going next."

During his convalescence, he was approached by Dr. A.H. Groth, the new Dean of the MU College of Veterinary Medicine. Would Dr. Shelton consider joining the school as an instructor in microbiology and parasitology?

"I decided to try education and began to like it," Dr. Shelton said. "I loved working with veterinary medical students—they were always eager, focused, and ready to learn."

In the next seven years, Dr. Shelton developed his teaching techniques and received a master's degree (financed in part by a scholarship by the R.C. Cola Bottling Company). Then, to become a better teacher and start research projects, he completed a parasitology-microbiology Ph.D. program at the University of Minnesota. When he got back, the MU Dean wanted to see him.

"Dr. B.W. Kingrey, the Dean, was twisting my arm to get me to go into the College's administration. I told him I didn't know beans about administration. He said that people are either born with administrative talent or they learn it with on-the-job training. I wasn't fully convinced, but it didn't seem to matter. I was being moved by sheer force into the Dean's office as Assistant Dean."

Either by talent-at-birth or training, Dr. Shelton's administrative career took off. Soon, there were new College research projects and improvements in the physical plant to strengthen the educational mission. The number of faculty had tripled, too—no small feat for a struggling college competing against established institutions. Soon, Dr. Shelton was also Chair of the microbiology-parasitology department, growing that part of the College.

In 1972, Dr. Shelton had the most stunning 24 hours in his life. On one day he was offered the position of Dean at both the MU and Texas A&M veterinary medical colleges. With still a hint of uncertainty about his administrative strength,



Dr. Shelton (left) studies microscope slides with Marc Markway, DVM '71, in one of Connaway Hall's labs sometime in 1968.

he wasn't sure he wanted to be the Dean of any college.

"It was a hard decision," Dr. Shelton said. "I had been at MU 24 years and loved it. Still, I felt that I could contribute more with a fresh start at a new institution." The student representative on the Texas search committee was a young Joe Kornegay, now Dean of the MU College of Veterinary Medicine.

Dr. Shelton served 15 years in his home state before retiring in 1989. He returned to Missouri for the same reasons that brought him here in 1949.

Retirement and a Mission

In addition to enjoying his children and grandchildren, Dr. Shelton today keeps busy with several volunteer and civic organizations. He chairs the benefits committee of MU's Retiree Association and is involved in two Kiwanas projects—one to fund cardiac care at the MU University Hospital and Clinics, and another to provide needed minerals to Third World children. In better weather he spends hours gardening, where "he is in constant combat with the deer."

But his passion of the last two years is his self-given mission to write and publish a book to recognize his World War II comrades. Having never spoken about his war experiences—even to his wife—until this effort, he now wants to enter into the public record his first-hand account of how Ken's Kids so bravely and effectively fought the Imperial Japanese Army. [VMMR](#)

Who's the biggest single campus consumer of ice cream from Buck's Ice Cream Place at MU?

Ag school?

Alumni center?

University administration?

Nope, it's the College of Veterinary Medicine.

The Veterinary Medicine

SCOOP

On BUCK'S MIZZOU ICE CREAM



Between alumni events, open house, and hungry faculty and students, more Tiger Stripe Ice Cream and other creamy concoctions

find their way into vet school stomachs than any other campus group, says Dr. Robert Marshall, recently retired MU ag school professor of food science and nutrition and faculty advisor for the ice cream parlor. That's not surprising, really, as the campus ice cream hangout and veterinary education have been neighbors since horse-drawn wagons delivered ice.

How many quarts does this all add up to each year? Sorry, no one has ever totaled the amount. But if you consider that each of the 1,000 or so of the College's Gentle Doctor Benefit attendees get at least one cup, and the College's open house event easily goes into several gallons, you get an idea of the relationship. In fact, in many ways Buck's ice cream is woven into the fabric of the College. On nice days, VM-2 and -3 students often eat it while discussing cases. It's a staple at the Spring Picnic. Buck's ice cream is also traditionally served at each new class orientation, says Ron Haffey, MU Veterinary Medical Teaching Hospital Administrator, who uses it as an incentive to get students to return surveys.

It's a relationship that doesn't end after graduation either, Dr. Marshall said. It's

not uncommon for vet alumni from all over the country to have some ice cream shipped to far-away get-togethers when they want to remember 'ol Mizzou in a tangible way.

Buck's, located in Eckles Hall, is not a business, per se, but part of a food and nutrition education. Like the veterinary medical teaching hospital, students enrolled in food science classes experience ice cream in a practical hands-on way where the sciences of what people want to eat, and how to make it and sell it, are studied in detail.

The ice cream parlor and the veterinary medicine community have co-existed for a long-time—even before the veterinary science department became the college of veterinary medicine—through wars, the Depression, and the social upheavals of the 1960s. Like the College of Veterinary Medicine, MU ice cream has had some scrapes with insufficient financing. In 1972, the ice cream sales outlet disappeared when fund-

ing cuts forced the closing of the MU Dairy Plant, Dr. Marshall said.

MU ice cream was saved when MU graduates Wendell and Ruth Arbuckle, retired from rewarding careers in the ice cream industry, remembered the opportunities MU had given them. In 1987, they established an endowment to bring ice cream education back. Leadership by the Arbuckles and the reputation of the family name prompted Buck's Ice Cream Place's sales room to be named Arbuckle's.

Today, both Buck's and the College enjoy their status as key elements on the University's east campus, both providing a service as well as an education.

More than 20 flavors are made at Buck's, but Tiger Stripe is the favorite. Tiger Stripe, a mixture of French vanilla and chocolate fudge that simulates the stripes of a tiger, is a flavor that Dr. Marshall helped create.

While the College is a big customer, it is not the only one. More than 9,000 half-pints of Tiger Stripe were shipped last summer to the Missouri State Fair in Sedalia, the largest non-campus consumer of the ice cream. While that's a lot of ice cream, says Dr. Marshall, it still isn't as important as the decades-long day-in-day-out relationship with the College of Veterinary Medicine, down the street from Buck's.

VMR



Hendi Hungerbuhler and Sarah Bailey, both class of 2002, enjoy a time-honored veterinary medicine pastime: Buck's ice cream.



Gentle Doctor Benefit

2000

Auction & Dinner

...is an annual fundraising event conceptualized by Friends of Veterinary Medicine, Inc. and a group of parents of veterinary students to support the MU College of Veterinary Medicine. Approximately 400 items will be auctioned. Income generated will help fulfill the Parents Organizing Committee's \$100,000 pledge to a permanently endowed fund—the "Gentle Doctor Benefit Parents Committee Scholarship Trust". The scholarship will provide financial assistance to students furthering their veterinary education.



Sponsored by the Friends of Veterinary Medicine, Inc., a not-for-profit corporation



Saturday

April 1

Hearnes Center

How Can I Help?

By attending and purchasing items at the auction. Admittance is by invitation only. For details, contact the benefit office.

By donating items of interest valued at \$25 or more. These items can include veterinary supplies and equipment, artwork, crafts, jewelry, gift certificates, sporting event tickets, specialty kitchen items, appliances, furniture, quilts, camping gear, boating or recreational equipment, or other like items.

By becoming an Individual Sponsor Contribute \$25 or more and each donor's name will be acknowledged in the Benefit program.

By becoming a Corporate Sponsor. Corporate sponsors contribute \$1,000 each and are acknowledged in the Benefit Program and related mailings to more than 5,000 veterinary medical students, alumni, faculty, and friends of the College. Space for a full page advertisement in the Benefit Program is provided as well as a table for eight guests.

Reservations to attend
\$25 advance
\$30 door
\$15 veterinary medical students

For additional information, contact:
Gentle Doctor Benefit
PO Box 582
Columbia, Missouri 65205
573/882-3254
(FAX 573/884-5044)

Caring



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- Besides helping educate veterinarians, the University of Missouri's Veterinary Medical Teaching Hospital provides outstanding primary and referral care for horses and food animals from all over the Midwest
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Veterinary
MEDICAL REVIEW



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