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On September 1, the College of Veterinary Medicine lost a combined 351 years of experience, as nine faculty and four staff members took advantage of an early retirement program offered by the University. The program is intended to save salary dollars, as theoretically, higher-salaried individuals can be replaced with “up and comers” at lower cost to the University.

Of course, the program has a substantial downside. How do you replace all of that experience, especially when you lose such a large number all at once? Let’s have a look at who were losing. You’ll notice that the list is essentially a “who’s who” of the College of Veterinary Medicine.

To start with, the pathobiology department and our diagnostic laboratories are collectively losing seven faculty, Drs. John Berg, Ted Green, Harvey Gosser, Reuel (Bob) Hook, Ron M. Laughlin, Jim Thorne, and Joe Wagner and three key staff members, JoAnne Adams, Sylvia Bradfield, and David Wendell. While the other two departments are each losing only one faculty member, they’re key people, Bob McClure and Harvey Gosser, and David Wendell. While the other two departments are each losing only one faculty member, they’re key people, Bob McClure and Harvey Gosser, and David Wendell. While the other two departments are each losing only one faculty member, they’re key people, Bob McClure and Harvey Gosser, and David Wendell. While the other two departments are each losing only one faculty member, they’re key people, Bob McClure and Harvey Gosser, and David Wendell.

The nine faculty have held important positions in every phase of the College’s programs, extending back to 1960, when Bob McClure came to MU. Bob was known as “an anatomist’s anatomist” because of his excellent grasp of the subject material. He also chaired the Department of Anatomy throughout the ’60s. Bob Hook joined the University’s Sinclair Research Farm in 1968 and later was appointed to the College of Veterinary Medicine faculty. He played a key role in the comparative medicine program at MU, holding a faculty appointment at the School of Medicine and contributing to the Research Animal Diagnostic and Investigative Laboratory (RADIL). Joe Wagner was appointed to the faculty in 1969 and went on to have one of the most distinguished academic careers in the annals of the University of Missouri. Joe chaired the Department of Pathology, founded the RADIL program, and was awarded a Curator’s Professorship in 1989. At that point, only seven such awards had been made in the 150-year history of the University.

Interestingly, Al Hahn actually beat Joe and the two Bobs to Missouri as a student. He received his DVM from MU in 1958, and, fortunately for us, came home to join the faculty in 1969. Al was involved in research and clinics and also somehow found time to serve in several key administrative positions, most recently Chair of the MU Faculty Council. Jim Thorne is another Missouri graduate, receiving his DVM in 1961. He gained valuable experience in private practice and at the University of Georgia before returning to MU as a faculty member in Medicine and Surgery in 1974. Jim’s interests extended from clinics to more basic research, with expertise in epidemiology being at the heart of each. John Berg was appointed to the microbiology department faculty in 1972. His research and graduate student mentorship in bacteriology set a high standard, leading to his appointment as Director of Graduate Studies for the College in the 1980s.

Ted Green joined our faculty in parasitology in 1980 and made important contributions in teaching and research. I suspect Ted will treasure the special relationship he had with students most. He was particularly effective in undergraduate parasitology instruction and advising, receiving awards in both areas. The year 1980 was a good one for MU’s overall research program, as Ron M. Laughlin also joined the University to direct our laboratory animal medicine program. Ron played a key role in directing the graduate program in this discipline for a number of years and, in addition, held leadership positions in laboratory animal medicine at the national level. And, finally, the “youngster” among the group, Harvey Gosser, came to MU in 1988 as a faculty member in pathology and as Director of the Veterinary Medical Diagnostic Laboratory. This represented another homecoming, as he had received his PhD from MU in 1970. Harvey has been a great ambassador for the College, interacting closely with state veterinarians and serving as President of the VMCA.

And while fewer in number, the four retiring staff have all played important roles in the College. As the saying goes, “As faculty and students come and go, the staff runs the show!” Delores Melloway has been at MU since 1963, serving in the microbiology department and ultimately becoming the Executive Staff Assistant to the Associate Dean for Academic Affairs, and, more recently, the Director of Student and Alumni Affairs. Delores has had an extremely positive impact on our students throughout her tenure. Sylvia Bradfield has been with the College since 1972, filling key staff positions within the pathology department and the RADIL program. She has been a steady influence as we have progressed, over the years, through several administrative changes. David Wendell has served in the pathology department and diagnostic laboratory as a research laboratory technician since 1975. JoAnne Adams joined the diagnostic laboratory four years later, in 1979, as a medical technologist in clinical pathology. Through their efforts and those of other staff, the laboratory has remained at the cutting edge of diagnostic procedures.

Fortunately, most of these quality folks have committed to continue their association with the College. They will be involved principally in teaching, where their loss would otherwise be felt most critically. As a result, we’ll have a bit of “breathing room,” in advance of completing recruitments for several of these positions.

And, while we selfishly fret about how to fill the void their retirement will leave, let’s celebrate the contributions these faculty and staff have made to the College and wish them well in the future. I’m sure they’ll continue to make substantial contributions in a wide range of activities. Hey, gang, while you’re at it, remember to also have some fun. You deserve it!


CVM Part of University Plan For Comprehensive Cancer Center

The MU College of Veterinary Medicine is a partner in a University plan to create an umbrella organization for cancer research.

Under the plan, University resources involved in cancer treatment and research, including the College's veterinary oncology program, will coordinate on funding proposals and collaborate on research. The University's reactor, medical and nursing schools, and Ellis Fischel Cancer Center are among the other members of the team with Ellis Fischel serving as the organization's hub.

MU officials believe the cancer research consortium will attract additional research funding and more efficiently coordinate discoveries and resources.

The plan would seek designating the consortium as a Comprehensive Cancer Center from the National Cancer Institute. There are 36 such centers in the country, mostly on the west and east coasts. NCI comprehensive cancer centers conduct programs in treatment, prevention, and research.

MU is well suited for such a center as collaborative efforts have already begun between veterinary and human medicine and the research reactor. One such effort resulted in the radiopharmaceutical Quadramet that eases the pain of bone cancer.

The University hopes to achieve the NCI ranking by 2005, and believes the designation will raise new money for research, including private foundations. The cancer center is also one of the entities that MU officials hope to see funded when state lawmakers decide how to divvy up the state's $6.7 billion tobacco settlement.

Veterinary Pet Insurance First to Endow Emerging Animal Wellness Center

The emerging Center for the Study of Animal Wellness at the MU College of Veterinary Medicine got off to a sound start with a $250,000 grant from Veterinary Pet Insurance, the nation's oldest and largest provider of medical insurance for pets.

The Center is designed to facilitate collaborative scientific research on the mutual benefits of the human-animal bond and preventative medicine.

“Veterinary Pet Insurance is the first company to step up to the plate and provide funding, and it’s doing it in a very generous way,” says the Center's acting director, Dr. Richard Meadows. “Not only is this a giant step toward getting the Center up and running, but this grant will serve as an impetus for further corporate funding.”

He says University researchers such as Rebecca Johnson, PhD., RN., of MU's Sinclair School of Nursing, are starting by examining the effects of dog visitations on anxiety, depression, fatigue, and the sense of coherence among patients undergoing radiation therapy for cancer. “And this is just the beginning of the broad collaboration between our veterinary college and MU's health sciences center and law school.”

Both human and veterinary medicine are shifting more and more to preventative medicine,” he notes. “And for the veterinary profession, this signals a significant paradigm shift. Our next logical step is to move from 'fire engine' medicine to preventing problems in the first place. For veterinarians, this involves educating clients how to make a difference in the length and quality of their pets' lives. We'll be creating a model program of wellness-centered veterinary practice and integrating wellness concepts into the veterinary curriculum.”

In addition to the gift to the Wellness Center, Veterinary Pet Insurance and the Skeeter Foundation pledged $25,000 in scholarships. The scholarship recipient will be either a third- or fourth-year veterinary medical student who exemplifies the human-animal bond and the essential role veterinarians must play within it.

The bond with Skeeter, a Miniature Pinscher, inspired Stephens to found the Skeeter Foundation. “Skeeter may be small, but he's had an enormous impact on my life,” says Dr. Stephens. “As a cancer sur-
vivor, I know first-hand the powerful, positive effects of the human-animal bond and how it can truly impact the health and well being of a human. That’s why this endowed position for the Center for the Study of Animal Wellness to study and promote the human-animal bond is a personal joy for me.”

Skeeter and Stephens intend to return later in 2000 for the formal dedication of the Animal Wellness Center.

Founded in 1980 by Dr. Jack Stephens, MU DVM ’72, with the support of 750 independent veterinarians, Veterinary Pet Insurance, Anaheim, Calif., is the nation’s number-one medical insurance for dogs and cats. Veterinary Pet Insurance policies cover more than 6,400 medical treatments for accidents and illnesses, with optional coverage available for preventive and routine care. Policies are licensed in all 50 states and the District of Columbia. Exclusively endorsed by the American Humane Association, Veterinary Pet Insurance enjoys an 82 percent renewal rate and has issued more than one million policies.

Problems Introduce Veterinary Medicine to Students Who May Not Have Role Models

Last summer, the College opened its doors to disadvantaged college students from the United States to explore the field of veterinary medicine through specially-designed programs. Students from certain ethnic groups or low economic status, who are considering veterinary medicine as a career, can be at a disadvantage due to a lack of sufficient role models in the field.

The College is making a special effort to help these students feel at home, said Barbra A. B. Horrell, director of student recruitment and retention. “These are very bright kids; we’re just enriching what they already have.”

The College currently has three programs aimed at helping disadvantaged students: Gateways to Veterinary Medicine, Threshold to Veterinary Medicine, and M erck-M erial Career Assistance Program.

Gateways to Veterinary Medicine is an exploration program for college students interested in veterinary medicine. It is designed to introduce students to all areas of veterinary medicine, including diagnostics, clinical aspects, and teaching. Nine students participated this year.

Hands-on experience is the feature of the program that Gateways participant Kandis Ingram found most beneficial. “I learn best from hands-on experience and that’s what I really enjoy about this program,” she said. During the program, Ingram’s hands-on experience included everything from taking blood samples from sheep to volunteering in the hospital’s intensive care unit.

“[This exploration program is an excellent opportunity for getting volunteer hours and an edge on others who are trying to get into veterinary medical school,” said Gateways participant Shaunita Sharpe. “The program shows all of the different avenues to choose from in the veterinary medical field.”

Threshold to Veterinary Medicine is a program that helps college students get into a college of veterinary medicine. It also enables students to observe and gain experience in a current research project at MU’s College of Veterinary Medicine. The program is designed for college students who have already attended the Gateways to Veterinary Medicine program and helps students prepare for the veterinary medical college entrance exam.

The Merck-M erial Career Assistance Program is designed to enhance and enrich the future careers of veterinary medical students from one of the small and large animal clinics. In those days the entire College support staff consisted of Delores and one other person who served pathology upstairs and microbiology next door.

The College was small, relatively new at only 10 years old, and friendly. The rapidly growing College seemed to need a little organization. Delores decided to provide some organization and not enter the classroom.

Delores’s position grew with the College. The first big change came when the College could afford to provide each department with a secretary. Delores went with Microbiology and Dr. Harold McDougle who was replaced later with Dr. George Shelton as Microbiology Chair. When Dr. Shelton became associate dean, Delores came back to the Dean’s Office to stay through the associate deanship of Dr. Ken Namer. Delores was a veteran of the College when C.B. Chastain, the current associate dean, graduated from the DVM program in 1965. In fact, Delores watched James Thorne, associate professor of veterinary pathobiology, receive his DVM degree in 1961, start a career at the College, and then retire this year. Ditto for Bonnard Moseley.

More than any other person, Delores saw the College grow. She watched the Veterinary Medical Building go up across the street from the airplane hangar. She was there for the groundbreaking ceremony for the Veterinary Diagnostic Laboratory, and, of course, Clydesdale Hall. In nearly four decades of service she has assisted almost 4/5th of the entire student body.

Delores’ plans after the College consist of a little traveling and boating in the Lake of the Ozarks. Still, there will be one last chore this autumn of helping Dr. Everett (Finny) Aronson, director of student and alumni affairs.

PEOPLE

After Watching the College Grow Up, Melloway Retires After 38 Years

When the letters of congratulations and ‘thank yous’ began arriving in the wake of the announcement that Delores Melloway, Dean’s Office administrative assistant, was retiring after 38 years at the College, they came from current and former students, staff, faculty, and various administrators.

But while the letters were many, the themes were few: What will the Dean’s Office do without you? You were so patient and professional. You always could help me. You always had a smile.

One faculty member summed it up this way: “I’ve been involved with the College since 1983. I’m not sure, but I think I’ve lived through four deans and three department chairs. Each time one of them left, I wondered if things would be different with the replacement, but I knew deep down that things would go on as usual. None of those changes are as potentially traumatic to me or to the College as your pending retirement. It will be sad as well as a little scary to see you leave.”

Not a bad tribute for someone who originally saw the College as a short-term job until a teaching position opened up.

Delores was born and raised in Columbia, and came to the College of Veterinary Medicine’s Dean’s Office in 1960 just after marriage and graduation from the MU College of Education, with only some practice teaching between here and her teaching certificate.

In that year the CVM was squeezed into Conaway Hall and the Veterinary Science building—a used aircraft hangar that served as the small and large animal clinic.
the nation’s other 26 colleges of veterinary medicine. The program is a research and clinical investigation externship for students who are preparing for post-graduate internships or graduate school programs.

According to Horrell, the College’s programs certainly are working. “A large percentage of the students from previous programs are now attending vet school or a graduate program at M U or somewhere else in the US,” Horrell said.

One of the factors that makes these programs at M U unique is that nearly all College faculty members participate and none get paid for the extra work and time they contribute to their students from previous programs attending vet school or a graduate program at M U or somewhere else in the US, Horrell said.

Colleges Orthopedic Technique Makes Its Way to Human Use

A technique to regenerate torn meniscal material first tried at the M U College of Veterinary Medicine has made its way across the M U campus to help a man injured in an auto accident. The man, rear-ended by an 18-wheeler truck, suffered major trauma to both shoulders, specifically the rotator cuffs. Conventional techniques offered little pain relief.

Using a technique first used at the M U Veterinary Medical Teaching Hospital, initial results look promising for the accident victim.

In injuries that involve damage to the meniscus, a spongy material that provides a cushion where two bones meet, M U veterinary surgeons used a technique that surgically places biomedically-modified pig intestines against the damaged meniscal material. The material, named porcine small intestinal submucosa (SIS), is absorbed by the meniscus, facilitating regeneration. As the meniscus has only a small blood supply, it has little ability to repair itself. Normally, damage worsens as the injured meniscus wears away, damaging cartilage, and leaving bone to grind against bone.

The first clinical use of SIS occurred about four years ago at the M U College of Veterinary Medicine on an animal with an Achilles tendon injury. About a year ago, dogs with knee injuries were also treated and began to show signs of improvement only one week later.

The principal investigators on the project, internally funded by the College and DePuy Orthopedics, Inc., were Drs. James (Jim) Cook, small animal surgeon and orthopedics specialist; Dr. James L. Tomlinson, associate professor and orthopedics surgeon; John M. Kreigh, associate professor at the Veterinary Medical Diagnostic Laboratory; and Cristi Reeves Cook, radiology clinical instructor.

DNA “Fingerprints” Help Trace Deadly E. coli Bacteria

E. coli bacteria can be deadly. Tracking an outbreak can be as mind boggling as tracing an unknown criminal suspect in a large city.

Evidence from fingerprints can help police track down their suspect. A M U College of Veterinary Medicine researcher has found a way to use DNA “fingerprinting” to determine the source of fecal coliform microbes, such as E. coli, found in lakes, streams, and reservoirs.

The test determines the origin of microbial pollutants in water, says Dr. C. A. Carson, M U veterinary microbiologist. The test determines whether a microbial source is from human or one of a variety of non-human sources such as migratory birds, household pets, or production animals.

The test uses enzymes to cut apart strands of DNA in bacteria cultured from submitted water samples. The fragments are separated in a gel slab that is placed in an electric field. The process results in DNA patterns resembling bar codes on grocery store products. These patterns are as individual as fingerprints and can be matched with fecal coliform DNA from suspected hosts.

One of the first uses of the new test involved water samples from Long Branch Lake, near Macon, Mo. to determine if an odd taste and smell were caused by human, livestock, wildlife, or other sources.
Post-Doctoral Training Offered in Comparative Medicine Program

The MU College of Veterinary Medicine is currently accepting applications for post-doctoral training positions in Comparative Medicine, the study of diseases that affect humans and animals in the same manner. The Comparative Medicine training program combines one year of residency training in clinical, administrative, and diagnostic laboratory animal medicine with two or more years (dependant on degree program) of in-depth research training in state-of-the-art laboratories. The training is designed to prepare individuals for a variety of careers in comparative medicine research.

By erinarians as leaders in comparative medicine, have a unique potential to contribute. “Advances in comparative medicine are the cornerstone of advances in biomedical and behavioral sciences that employ complex animal models in increasingly sophisticated experimental paradigms,” said Dr. Craig Franklin, director of the comparative medicine program. “Advances in comparative medicine are essential to improvements in the quality of biomedical and behavioral animal experimentation through characterization of the complex interactions inherent in animal-based experimentation, and through development and refinement of animal models and experimental methods. It is here that veterinarians, with their broad knowledge of organismal biology, have a unique potential to contribute.”

Dr. Franklin said there is also an existing need to prepare veterinarians as leaders in comparative biomedical research. By virtue of their multidisciplinary background in the biology and medicine of numerous animal species, veterinarians possess unique capabilities to contribute in comparative medicine research, he said. In-depth research training and experience are necessary to assure that these veterinary specialists can initiate competitive independent or collaborative research careers and realize their full potential as research leaders.

The University of Missouri training program in Comparative Medicine has been in existence since 1967. Under the direction of Dr. Joseph E. Wagner, professor of veterinary pathobiology, the program became one of the elite Comparative Medicine training programs in the country. Dr. Franklin said. The program has an outstanding record of trainee productivity throughout its history as evidenced by its 70 graduates who have held important positions and made significant contributions to Comparative Medicine research.

For more information, contact Dr. Franklin, at the College of Veterinary Medicine, (573) 882-6623 or at franklinc@missouri.edu.

Vet Tech of the Year

Lisa Boland, senior veterinary technician at the MU Veterinary Medical Teaching Hospital, earlier this year was named the MU Veterinary Technician of the Year. This award, sponsored by the College student bookstore and selected by the senior class, is given to honor an outstanding VMTH technician who the senior class feels has had the most impact on their clinical experience. Boland has been employed at the College since October 1993 and was an animal surgical technician at the Animal Sciences Center from 1983 until 1993 when she took the position of senior veterinary technician in the VMTH’s ophthalmology section. She graduated from the Animal Health Technology Program at Truman State University, Kirksville, in 1981.

Accolades

Dr. Stan Casteel, associate professor of veterinary pathology, was an invited speaker at the Western Veterinary Conference in Las Vegas. He presented: New Therapies for Old Intoxication, Mycotoxin Problems in Small Animals, Six Thousand Years of Lead and Other Metals, and Case-Based Diagnostic Toxicology. He also was the invited speaker at the Solubility/Bioavailability Research Consortium sponsored by DuPont. He presented Utility of Juvenile Swine Model for Metal Bioextracts.

Dr. Harvey Gosser, professor of pathobiology and director of MUS Veterinary Medical Diagnostic Laboratory, assisted in Cornell University’s accreditation.

Dr. Allen Hahn, professor of veterinary medicine and surgery, presented at a meeting on Veterinary Medical Databases at Purdue University.

Dr. Carolyn Henry, assistant professor of veterinary oncology, moderated a forum at the annual meeting of the American College of Veterinary Internal Medicine.

Dr. Philip Johnson, associate professor of veterinary medicine and surgery, chaired the session Pathophysiology and Therapeutics Equine Gastroenterology at the annual meeting of the American College of Veterinary Internal Medicine.

Dr. Marie Kerl, visiting clinical assistant professor, received the Daniels Award from the Society of Comparative Endocrinology for “excellence in advancement of knowledge concerning small animal endocrinology.” The award was given to Dr. Kerl for her recent publication entitled: Dose Response Relationship Between Plasma Concentrations of Adrenocorticotropic Hormone and Cortisol and Incremental Doses of Coysynotropin for ACTH Stimulation Testing In Dogs.

Dr. Heide Schatten, associate professor of veterinary pathobiology, traveled to Santorini, Greece to co-chair a session at the 13th International Conference on Humans and Space. She also presented: The Effects of Altered Gravity Conditions on Cytoskeletal Organization and Mitochondria in Cultured Cells. She then traveled to Berlin to collaborate on the preparation of an international NASA grant proposal at the University of Berlin.

Dr. Richard Taita, associate professor of veterinary biomedical sciences and biochemistry, was the invited speaker at the Basic and Applied Myology Conference.

Dr. Wade Welshons, associate professor of veterinary biomedical sciences, was the featured speaker at a conference hosted by Johns Hopkins University’s Center in Urban Environmental Health. He presented: Biological Activity of Bisphenol A in Mice at Levels of Current Human Exposure.
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It hasn't arrived on ABC-TV's Wide World of Sports yet, but quilting can be a competitive international sport. Just ask Sue Turnquist, DVM, PhD, clinical assistant professor, and pathologist in the MU Veterinary Medical Diagnostic Laboratory.

Recently, she designed a quilt that took second place in the Museum of the American Quilter's Society's (AQS) Storm at Sea-themed "New Quilts From An Old Favorite" contest. Entries were to be inspired by the classic Storm at Sea traditional quilt.

Dr. Turnquist, who regularly peers into microscopes looking for microbes, didn't discover her creative side until she wandered into the commercial vendor area of the Missouri State Fair. Looking at the sewing machines, she began to think that making quilts would be a fun pastime.

Entering the competitive world of quilts only began in April with a quilt entitled "Decisions, Decisions." A fisheye look at whether to bite a hook and worm or fisherman's toes, the quilt won third place in an AQS competition—an almost unprecedented showing for a new competitor.

Competition is usually intense in these contests—best of show can win $18,000 and enters the permanent collection in the Museum of the American Quilt Society in Paducah, Kentucky.

Quilting as a hobby and competitive sport is also larger than most people realize. The Booneslick Trail Quilters' Guild, of which Dr. Turnquist is a member, has a membership of more than 200. The AQS has more than 50,000 members and is one of several organizations worldwide. In fact, Dr. Turnquist points out, quilting is the largest specialty group represented on the Internet.

Dr. Turnquist's quilt style typically incorporates thread-painted motifs. This technique is used extensively in Australia and some European countries, but is still in its infancy in the U.S. How does she design and make one? After an idea is chosen, she draws the image on a paper that is then ironed onto a piece of fabric. Using a standard sewing machine, the image is outlined and then "painted" with colored rayon, polyester, or cotton threads. The finished motif is appliquéd to the chosen design.

With a third and second place showing, there is an obvious next goal to achieve for Dr. Turnquist. That effort will be championed this fall by the quilt Guess Who's Coming for Dinner? that features a large Bengal tiger looking through a window.
Hollywood has embraced digital animation technology to create dazzling special effects. Lifelike figures falling from a sinking ocean liner are, in reality, digital images created in a powerful computer. A devilish space alien starts out as an actor being videotaped. Those images and movement are then rendered into a moveable wire-frame computer model that can be manipulated to do whatever the screenwriter can dream up.

This powerful hardware and software imaging technology is finding its way into medical uses. Researchers are videotaping a person’s movements and converting the data into the same computerized wire-frame model that the Hollywood animators use. Instead of recasting the image into a cinematic character, researchers study the image and precisely measure the movements and relationships between critical body parts such as the head, trunk, limbs, and joints. With data, researchers can precisely calculate movement limitation caused by hip dysplasia or neurological dysfunction, the effect of medicine on polio victims, or evaluate the effectiveness of prosthetic devices.

At the MU College of Veterinary Medicine, this technology is being used in the ancient art of evaluating lameness in horses. It is one of a few veterinary research programs in the world using this form of motion analysis. When these techniques pass from the research phase, prospects are good that future veterinarians will have a tool that they have wanted for centuries—a system to objectively measure lameness in horses.

Heading up this research effort is a team of MU’s equine surgeons, led by Dr. Kevin G. Keegan, associate professor of equine medicine and surgery, and Dr. David A. Wilson, associate professor and co-director of the College’s teaching hospital. Using much of the same hardware and software of Hollywood animators, they are conducting motion analysis studies of horses that are accurate to one-half of one millimeter—precision...
During those years he became interested in evaluating horses as intricate machines that can be measured and scientifically evaluated using precise and accurate mathematical and engineering laws.

Historically, equine veterinarians had only subjective visual methods to evaluate lameness. Two veterinarians watching the same lame horse may interpret differently the source of trouble. Treatment, based on subjective visual analysis, could also vary greatly. Dr. Keegan thought that there had to be a more objective, scientific way. This led not to veterinary school, but to the engineering school and a master’s degree at the University of Illinois where he studied stress analysis, instrumentation, and biomechanics. “I became interested in the idea of analyzing how horses move in the same way that mechanical engineers study how a machine works, with precise data that can be scientifically measured and repeated,” Dr. Keegan said.

That training met the high-speed equine treadmill installed in Clydesdale Hall in 1993. This device was purchased with the assistance of a Columbia, Mo. family, Bill and Nancy Laurie and daughter Paige. The family had come to know the MU equine team through treatment of some of their Crown Center Farm horses. Told about the idea of a high-tech approach to studying equine lameness, the Lauries helped purchase the camera, hardware, software, and image animation technology the College needed to develop an equine performance laboratory. With this system, Drs. Keegan and Wilson finally had a way to precisely capture and measure the movement of a running horse in a way never before available.

The process the researchers chose to use is called kinematic motion analysis—a process different from the force-plate analysis familiar to many equine researchers. In this process, the motion of the entire horse is studied. “High-speed motion analysis is relatively new even to the human field of medicine,” Dr. Keegan said. “More traditional biomechanical medical evaluations have centered around the force plate, a device that measures the impact of the body. Results of force plate evaluations on medical subjects are less intuitive and therefore less readily understandable for the average medical professional or layperson. On the other hand, high-speed motion analysis directly measures adjustments made by the body in response to pain. A lame person or horse may continue to run or walk, but may compensate by throwing the head to one side or the other to remove weight from the painful limb.

“A horse trotting at a comfortable pace is a very efficient machine where movement is repeatable and symmetrical,” he continued. “When the horse is afflicted with lameness or neurological dysfunction, it upsets this efficiency and symmetry, and this can be measured. These results can be more easily extrapolated to subjective visual evaluation and are therefore more useful for teaching and training doctors and students in the art of lameness recognition.”

The System

The College’s setup to evaluate a running horse is not unlike that used by Hollywood to gather visual images to begin an animation project. Here, however, it’s a horse that takes center stage on the equine treadmill and begins to trot or run.

A bank of strobe lights, emitting only visible red light, begin to blink at 120 times per second. This red light reflects off dozens of markers attached to easily recognized landmarks on the horse.
Dr. Keegan and other researchers can then correlate data with standard clinical techniques, such as radiographic images, to get a better idea of the possible mechanisms underlying the lameness problem.

There are three immediate objectives to this study, Dr. Keegan said. First is to establish an objective measurement of the horse's degree of lameness. With such a standard, more precise and consistent treatment can be administered.

The second objective is to establish a method to quickly diagnose the specific limb of the horse that is causing the problem. Quick diagnoses here can mean a more effective treatment sooner. These two objectives combined into a clinical process would provide equine veterinarians with a better way to evaluate and treat their patients, as well as a better ability to accurately monitor treatment progress.

Some of this work has already begun. Dr. Keegan and the equine team are using motion analysis process to see how effective a commonly used drug really treats navicular disease.

“Our last objective is to utilize our high-speed motion capture ability in combination with sophisticated data processing computer techniques, such as neural networks, expert systems, fuzzy logic, etc.” Dr. Keegan said. “These complex computation techniques have the ability to ‘learn’ and have recently been used as highly-accurate decision making rules in all sorts of practical applications—in the insurance industry to predict risk, in handwriting and voice recognition analyses, and recently in the medical industry to assist in complex diagnoses. It is our hope that this combination of the data-rich, high-speed motion analysis and computer algorithms capable of learning may be useful to routinely narrow down lameness problems even further, perhaps to be able to tell exactly where the pain is within the joint, just by analyzing motion. Only the future and continued study will tell.”
Human Uses of Motion Analysis

In the last few years human medicine has used motion analysis to study gait problems caused by orthopedic disease or neurological dysfunction. The military uses motion analysis for research to prevent muscle overuse injuries. Physical therapists use it to evaluate prosthetic devices and rehabilitation programs. Other researchers use the data to devise strength-training procedures to improve the movement of cerebral palsy victims.

Motion analysis can also be employed to track degenerative changes caused by congenital dysplasia of the hip. A similar program looked at the changes in gait of polio survivors. Here, nine healthy subjects and seventeen post-polio patients were compared. Significant increases in the knee extension and the ankle plantar flexion of post-polio patients were observed during the weight acceptance phases of their gait. Polio patients also exhibited highly noticeable excessive hip flexion during the swing phase of their ambulation. This caused the post-polio patients to walk in a significantly-less-stable way. These weaknesses in lower extremity muscles of polio patients were found to be an important factor that affected stable ambulation. By studying the unique alterations of posture and gait caused by Duchenne muscular dystrophy, an X-linked recessive disease with a fatal outcome, researchers are finding that motion analysis techniques can help them determine ways to delay the progressive muscle weakness and keep the patient mobile for a longer period of time. Coaches have used the system to determine if athletes are operating at their best efficiency.
When plans were drawn for Clydesdale Hall's intensive care unit in the late 1980s, they were made according to an older concept that ICUs were an extension of the anesthesia service.

During the 1990s, the roles and capabilities of veterinary ICUs expanded. Clydesdale's ICU changed with the times and instituted the latest forms of advanced treatment and patient monitoring. But as the caseload increased from 9 cases per night to 10 to the current average of 13, the seven-year-old facility needed more than a band-aid to keep up.

Beginning in February and ending in May this year, Clydesdale's ICU underwent its own intensive care in the form of a rehab.

Dr. Tony Mann, associate professor of veterinary medicine and surgery and director of small animal emergency and critical care, noted several goals: add new cages and runs for larger animals; reorganize cage placement so that all patients can be more easily monitored by ICU staff, closer to where it would store equipment needed in an emergency; and rearrange space so that multiple clinicians, technicians, and students can work simultaneously in the ICU.

Another new feature: glassed-in cages to isolate animals that have undergone radiation and chemotherapy. Now, these animals, whose compromised immune systems make them vulnerable to infectious diseases, can be isolated even though they are close to other animals and caregivers.

One design requirement for the new ICU was to allow teams of caregivers to treat two emergency cases simultaneously.
The market has been brutal to Missouri pork producers. Product prices have slid, and are staying, at historic lows. Worse, the rich labor market in the cities has lured away many farm workers.

The challenge of increasing production efficiency while decreasing the amount of labor to grow baby pigs to market-ready hogs was undertaken last year in a field study by the Continuing Education-Extension section of the M U College of Veterinary Medicine. In a soon-to-be-released report, the project has identified a system called “Wean to Finish” designed to streamline production while making better use of human resources. An added benefit is a more comfortable, happier pig who goes to market a few pounds heavier than his conventionally-raised sibling.

The study was funded by the National Pork Producers Council and the University of Missouri’s Animal Health Formula Fund. Heading the effort was Dr. Thomas Fangman, diplomate in swine health management and commercial agriculture swine focus team coordinator for the University’s Outreach and Extension division.

“Our goal was to establish a simple and practical way to enhance the comfort of the pigs and the people who work with them,” Dr. Fangman said. “We hope to positively impact both productivity and quality of life issues to help Missouri pork producers stay competitive in a market with low producer prices and a highly-competitive labor market.”

Less Stress, Happier Pigs

In traditional swine agriculture, baby pigs are birthed in a farrowing house and moved to a nursery. At about 10 weeks of age, they are loaded into a truck for the trip to the grow-to-finish barn where they will stay until marketed.

That movement, sometimes up to 100 miles, not only confuses and scares the animals, but upsets their established society. As social animals, baby pigs establish a pecking order that is disrupted by the move. It can take a week to become acquainted with new surroundings and pen mates, during which time the pigs are not eating as much and not gaining as much weight. Stressed, they are also more susceptible to any disease
that may be lingering in the new environment. Like people, pigs are wary of strangers and become tense until they become familiar with their new friends.

Moving the pigs also leaves a huge mess behind in the nursery. Contrary to popular thought, pigs prefer a sanitary environment. For the next generation to grow healthier and more disease free, the nursery needs a thorough cleaning that is one of the least desirable jobs on the farm. It can take almost two days of hard and dirty work to prepare the nursery room for the next batch of weaned pigs.

Under the model studied last year in northern Missouri, baby pigs skip the nursery and go to a wean-to-finish barn—a conventional grow-to-finish barn with a few modifications. Here, the pigs live and grow until they are ready for market.

Eliminating the job of cleaning the nursery not only saves the cost of two days’ labor, but prevents one very nasty job. Dr. Fangman said it is important for family farms, in particular, to do anything possible to enhance an employee or family member’s job satisfaction to help that person stay on the farm. The elimination of the truck ride also saves a few dollars, and reduces the animals’ risk of injury or stress during transport.

Skipping the nursery also creates the one financial disadvantage to the model. In the wean-to-finish barn, each baby pig enjoys a spacious 8-sq.-ft. area compared to only 2.4-sq.-ft. in the smaller nursery. While the additional space makes the pigs happier through less social tension and more exercise, and the increased airflow helps with disease prevention, the additional space costs the producer more to maintain and heat.

Eating the space is an important consideration as baby pigs like to be toasty warm while sleeping. Accommodating the pigs in a nursery is easy as one heating lamp works for each smaller pen. For the larger space of the wean-to-finish pen, zone heating is employed—two 125-watt heating lamps are placed over a soft rubber mat that the pigs naturally use as their sleeping area.

In the center of each pen is the continuous feeding and watering device. The device is automatic, so it saves a bit on labor. As the labor market becomes even tighter, Dr. Fangman said, any labor savings will become increasingly important.

**Rollins Society Inducts Three Vet Med Students**

Sean Byrd, Wanda Gordon, and Steven Root, all College of Veterinary Medicine Class of 2000, were accepted earlier this year into the Rollins Society, a Missouri organization designed to recognize outstanding professional school students who contribute to university extracurricular activities.

The three join a number of College of Veterinary Medicine students so honored. Last year, Nathan Voris and Kelly Rosenkrantz of the Class of 1999 were accepted into the society. In 1998, Mary Lynn Higginbotham and John Peacock were accepted. In 1997, Melissa Brookshire, Robert Espey, Denise Schnitker, and Erik Siebel-Spath joined the organization. The first veterinary medical school student named to the society was Melissa “Missy” Dollar, Class of 1996.

The Rollins Society, founded in 1994, was named for James Rollins. As a member of the Missouri Legislature, he helped pass legislation that established the University of Missouri and also played a role in the selection of Columbia for its location. In 1872, the Missouri Board of Curators recognized Rollins as the Father of the University of Missouri.

In accord with Rollins’ efforts, the Rollins Society is designed to foster the value he placed on community and leadership.
Computers and the Veterinary Medical Classroom

It’s impossible to avoid the computer.
Few people live a day without using an ATM, grocery store scanner, or the Internet.
The computer, with its immediate ability to access and use vast amounts of data from anywhere in the world, has also dramatically impacted education. How about the ancient art of veterinary medicine?

At the MU College of Veterinary Medicine, computers live in virtually every nook and cranny. Each office has one, as does every rounds room, lounge, and student gathering point. Everyone is connected through e-mail. Each classroom is set up for computer-generated presentations, and computer labs are available 24 hours a day. And there are central servers, with a team of people to run them, connecting everything.

But, while the machines are everywhere, the fundamentals of delivering a quality veterinary medical education haven’t changed. Students still memorize anatomy, attend lectures, view slides, ask questions, and read books and journal articles. The computer’s role is what it does best: find, access, use, and share information quickly and efficiently. This means professors can introduce more information faster, package it in a more logical way, add movies and sounds, and organize everything to do more in the limited time of an instructional period.

The challenge to put technology in the toolkit of College educators has fallen on the College’s Information Technology unit. In its first year of formal existence, the unit has already helped shape the College’s technology use.

The Machine isn’t replacing traditional education—it’s just helping through the College’s Information Technology Team.

Some of the members of the College’s Information Technology Team: John (Zarchary) March, clinical instructor; Don Connor, College artist; and Dr. Gary Allen, assistant professor of veterinary pathobiology and director of information technology at the CVM.
Changes in Vet Med Education

Probably the most noticeable change, to a graduate before the computer age, is the traditional lecture. Chalk and blackboard have been replaced by computer-generated presentations that, to the uninitiated, look like slide shows. But, in addition to illustrative still photos, the instructor can also add written key concepts, sounds, movies, graphs, and animations, said Zac M arch, clinical instructor and coordinator of educational technology. M arch heads the effort to help teachers use technology.

Each tool gives the instructor another opportunity to communicate material, M arch said. For example, a surgical or endoscopic procedure, how a horse exhibits lameness, or an epileptic seizure may best be shown with a short movie. The progress of a disease could be shown with a series of still photos.

Enhancing a lecture with appropriate visuals and sounds has several advantages. Presenting the information in several ways increases the likelihood that one will communicate to the student’s strongest learning style. M ost people are visual learners, M arch said. With visuals, you’ll communicate faster, with greater understanding, and with more accuracy by showing rather than telling.

Computer presentations also mean a lecture is not limited to a specific classroom at a specific time. Students can access lecture materials before class for clues to key points and the context of what is to be learned. Students who miss a class have a way to catch up. Students struggling with a concept can repeat the material until understanding is reached. Some instructors have gone that next step by building a course website where the entire semester’s curriculum is accessible. Here, high-quality, WWW-based course materials, join lecture notes and visuals. A course on medical ethics, for example, can be hyperlinked to the latest information at the American Veterinary M edical Association.

Last year, there were only a handful of web courses at the M U College of Veterinary Medicine. This year there are about 15. M arch estimates that number may triple in another year, a trend supported by student demand.

Humans learn at different rates, M arch pointed out. Classroom lectures paced to the majority of the class may leave quick students bored and slower students confused. Supplemental computer material can be studied at an individual pace, giving students a better chance of achieving their highest degree of understanding. Busy vet students can better tailor their schedules around course material available at any time.

The old textbook, too, has been updated. Faculty at the M U College of Veterinary Medicine has been given permission to electronically publish, within the College’s network, an immunology book that students can read online or print interesting pages. Hyperlinks, electronic pointers that move the computer to another document or program, are provided at key concepts so students can access other data or web pages. Keywords can be clicked to reveal their definitions. This technique transforms the old-fashioned textbook into a sophisticated resource where students with diverse expectations can quickly find and access information important to them.

This interactivity with immediate feedback is a powerful educational tool, M arch said. Another example is how students are taught to identify radiographic lesions. Here, the student opens a computer program showing the radiograph. When prompted, the student can click the computer’s mouse on areas of the radiograph thought to contain a lesion. Immediately, a pop up text box tells the student if the choice was right or wrong, and any additional information that the instructor thinks necessary. The program can also keep score and let the student know if his or her work is adequate.

“This is not a radically different method of education, but another tool for the instructor to make delivery of the material faster and more efficient,” M arch said.

These techniques naturally lend themselves to testing. In addition to electronically-scored multiple choice questions, students can be evaluated through their responses to movies, animations, and other graphics. This creates, M arch said, a more authentic testing environment that also reiterates important concepts and knowledge. Tests can be scored automatically, allowing the instructor to focus on teaching instead of grading. Results can also be statistically evaluated, letting the instructor know if certain questions were too easy or hard. Computer-administered tests also have the ability to provide immediate feedback through e-mail to the test taker. Online testing at the College is not coming too soon. This year the veterinary national board exams will be given online.

By exposing students to this new testing paradigm, we feed we are preparing them for success with the national boards,” M arch said.

Learners as Researchers and Teachers

Technology also enhances an ancient concept of teaching by asking learners to research a subject and deliver a presentation to the class. Before technology, this method resulted in either a written paper or student lecture.

Last year, a CVM student studied the latest data on equine lameness, specifically navicular disease. As he gathered results, he chose from a wide array of options to communicate what he found. Where text best communicated a concept, the written word or graphs were used. Visual procedures were presented with photos, movies, CT scans, or radiographs. Audio interviews with recognized practitioners could have been added. When done, all was bundled into an interactive presentation on a $2 CD-ROM where viewers could click buttons to navigate through the information.

M arch points out that this technique allows people to be creative in how they
Computers in the Veterinary Classroom...from page 16

explain difficult concepts to audiences with varying degrees of understanding.

“Veterinary medicine needs team players who know how to communicate in many different ways,” says Dr. Gary Allen, a faculty member in veterinary pathobiology and Director of the CVM Information Technology unit. “Collaborative projects help students to work with people of different backgrounds, talents, and temperaments.”

Such assignments also help teach students critical thinking skills. “Just because it is on a web page doesn’t mean that it is credible or accurate,” March said. “Students need to evaluate the content of sources for applicability and authenticity. A good-looking website doesn’t necessarily mean the information in it is relevant, unbiased, or accurate.”

Both Dr. Allen and March point out there is an explosion of data worldwide that no one can memorize. Skills to obtain information effectively, and then quickly utilize it, are more important today than the days when a small library could essentially contain all that was known about veterinary medicine.

Knowledge of this technology is good in its own right as today’s graduates will live in a world where instant, worldwide research, consultation, and client interaction will be commonplace. Also, practitioners in rural areas will have as much access to the latest information as their big-city counterparts.

“These are the tools of the new knowledge-based economy,” Dr. Allen said. “People who know how to use them efficiently will have an advantage over those who don’t.”

These tools are scattered around the College and the Veterinary Medical Teaching Hospital, and students use them routinely. “The technological tools exist today to dramatically change our concept of education,” Dr. Allen said. “Imagine a world where a lecture given by a renown expert in a university classroom in Europe is shared via the Internet with a classroom here at the College. The rounds in our Veterinary Medical Teaching Hospital can be shared through video and audio links with other institutions where anyone can watch, ask questions, and participate in the discussion.”

Help For Instructors the SWAT Team

Technological growth, and its educational implications, can stagger the minds of instructors trying to keep pace with advances in their subject area. To help get teachers started with educationally-sound technology, the College has created the SWAT team—Student Wizards Assisting Teaching. Here, six tech-savvy students help instructors augment their curriculum through technology. Funded by an USDA grant, SWAT team members are usually pre-vet students—an added bonus in exposing future DVM candidates to their career choice.

The more sophisticated work occurs in a multimedia lab next to the College library. Here, students and instructors use software/hardware to create animations and digitize images or capture, edit, and digitize VHS video. The lab also offers the ability to communicate data through web pages or CD-ROM. Across the hallway is the main computer lab with 36 computers. A help desk is close by.

Professors are involved as much as they wish in the technical parts. Some drop off scribbled pencil notes on legal pads while their more adventuresome colleagues dig into the software with guidance from the SWAT team. A College artist and multimedia specialist/photographer are also available to polish the presentation or modify an imperfect image.

All electronic courses are reviewed and approved by faculty before implementation to assure accuracy, effectiveness, and quality. Courses are then loaded onto the College’s server where they’re made available to any computer in the CVM. Testing security is tight and usage is closely monitored. The system is capable of limiting students’ access and time allocated for exams, March said. The server tracks students as they complete assignments, scores the tests, and communicates information or grades via e-mail. Security is maintained through a multi-layer system with password protection to keep the unauthorized out.

In all, there are 15 members of the College’s Information Technology unit to assist the more than 600 faculty, staff, and student users.
immune responses and, so far, hasn’t shown long-lasting benefits in animal studies in muscular dystrophy.

“... This pioneering work represents a new era of hope, a promising area of investigation that ultimately could lead to treatments for hundreds of genetic diseases...”

“...MUCH more needs to be learned about this innovative approach that’s now been used repair individual muscles in dog and mouse models for muscular dystrophy. But the idea of stimulating genetic repair without causing an immune response is provocative, indeed.”

Duchenne muscular dystrophy is the most common childhood form of muscular dystrophy. It affects males almost exclusively and results from a mutation in the gene for the muscle protein dystrophin. Approximately one in 3,500 male babies is born with mutations in this gene, which was first identified by MDA-funded scientists in 1986. The disease causes progressive loss of muscle function during childhood and adolescence, and usually results in death by the 20’s from respiratory and cardiac muscle degeneration.

The new technique, according to Dr. Joe Kornegay, dean of the MU College of Veterinary Medicine and a veterinary neurologist and pathologist, “relies upon an innate system that the body has to correct genetic lesions [mutations].”

Dr. Kornegay was part of a team that also included scientists from the University of Miami, Ohio State University in Columbus, and the North East Wales Institute (in Great Britain), where research team member Dr. Glenn M. Orris also does neuromuscular disease research.

When asked how long the genetic correction could be expected to last, Dr. Kornegay said, “Theoretically, it would be permanent.” The body, he said, doesn’t appear to mount an immune response to genes corrected this way, and, once the gene is corrected in a cell, that cell’s progeny will inherit the correction. (When a gene is added, the new gene can be diluted out when cells divide.)

Team leader Dr. Richard Bartlett, a molecular biologist affiliated with M U’s College of Veterinary Medicine and the National Institutes of Health, described the technique as “genetic surgery” to correct an existing gene mutation using a synthetic oligonucleotide [a short strand of nucleic acid].

“The oligonucleotide targets the mutation in the dystrophin gene and pairs with the chromosome, creating a hybrid molecule that is recognized by DNA repair enzymes which correct the mutation based on the sequence defined by the oligonucleotide,” Dr. Bartlett said. “No other gene therapy has lasted this long, he explained.

“...This is permanent. The other thing is that these oligonucleotides are not immunogenic. If we chronically treat, keep putting more and more in, it could have an additive effect and you could get more and more repair.”

The researchers injected the oligonucleotide “patch kit,” a paper-clip-shaped molecule called a chimeric oligonucleotide, directly into a shin muscle of a 6-week-old golden retriever with a genetic defect that leads to Duchenne muscular dystrophy in dogs. Eleven months later, the injected muscle continued to show a significant amount of normal dystrophin, the protein missing or seriously flawed in Duchenne muscular dystrophy.

“It potentially avoids some of the complications of gene therapy that have been seen recently with the adenovirus [virus used to deliver large genes like dystrophin to cells],” Dr. Kornegay said.

Dr. Kornegay also noted, “The greatest challenge is that we’re still only at the individual muscle level. It’s not correcting the genetic defect in a generalized sense.” For that, he said, “a systemic method of delivery will probably have to be found.”

Both scientists said the genetic mutation in the dog is a type called a point mutation, a genetic “typo” that doesn’t involve missing DNA. This type of defect, they say, represents a small percentage of the mutations that affect humans with the disease.

However, the strategy, once perfected, might be expanded to help in treating patients with diseases caused by genetic deletions (where a piece of DNA is missing from a gene). Bartlett underscored this point by explaining that the dogs in his study have muscular dystrophy because a portion of the normal messenger RNA for dystrophin is omitted, not unlike the omission typically found in humans affected by Duchenne muscular dystrophy caused by genetic deletions.
Sam Lane, class of 2002, had a problem. He wanted to establish a M U College of Veterinary Medicine Big Brothers Big Sisters (BBBS) program to help area single-parent kids. The need was certainly there. Like any other community, mid-Missouri has several hundred kids needing assistance and not enough adult volunteers to go around.

The problem was the crushing schedule of a veterinary medical student. With studying, classes, and clinics, it was difficult to make the commitment of a typical BBBS program—one adult working with one child for several hours, two to four times a month, for at least a year.

Lane’s solution was to slightly modify the typical program to fit into a vet student’s hectic schedule. Here, a team of M U vet students work with a group of kids. If one vet student has a class, the other students pitch in.

This new program, officially sanctioned by the national organization, took on a unique name, too: Big Dawgs, Little Dawgs. Founding members Lane; Andrea Hambach, class of 2002; Stacey Lubin, class of 2003; and Stacey Meyer, class of 2003; started the program earlier this year working with eight other volunteer vet students and a dozen kids aged 9-12.

“Our kids are not necessarily from poor backgrounds, but from single-parent homes with a working parent who may not have sufficient time to nurture and guide the kids. They are typically ‘in need’ of someone, a mentor, to help increase their self-confidence, motivation, and better their lives with a gift of time,” Lane said. All children involved in the program have expressed an interest in having a role model and voluntarily participate. A “Big,” as the volunteers are sometimes called, can be any adult over age 18 who will act as a friend and role model to a child.

Positive role models have never been more important than today, Lane pointed out. Many area streets have drug dealers who will pretend to care about a kid in exchange for a sale. Even once-safe venues such as television and movies can sometimes tout a destructive lifestyle. A positive and caring adult role model can play a pivotal role in helping young people negotiate around these hazards. “All kids benefit from having a mentor in their life,” Lane said.

Big Brothers, Big Sisters

The concept that led to BBBS started in 1904. In 1945, Big Brothers of America was formally established in Philadelphia, and was chartered by Congress in 1958. In 1970, Big Sisters International was incorporated. The two groups merged to become Big Brothers Big Sisters of America in 1977. Since 1904, BBBS has matched millions
of children through one-to-one, professionally supported relationships with caring adult volunteer mentors. Research shows that children with Big Brothers or Big Sisters are less likely to use drugs and alcohol, skip school, and exhibit violent behavior.

Currently, there are 514 BBBS chapters operated under a uniform set of standards, procedures, and training programs—seven are in Missouri. The Columbia chapter assists with the MU CVM effort. Currently in Kansas City, there are over 500 volunteers matched with area children with as many as 8,600 more children in need of services.

BBBS receives about 20 percent of its operating income from the United Way and the rest from private donations. Bigs are financially responsible for the cost of the activity—the organization urges that low-cost activities be chosen such as bicycling, soccer, or going to museums.

So far, the veterinary medical students have self-funded their program with additional financial help from the Dean’s office. The local BBBS helps with coordination assistance.

Hearing Fun

What activities do Big Dawgs, Little Dawgs become involved with? In short, fun ones.

“On a Saturday or Sunday we’ll go roller skating, visit the library or the College of Veterinary Medicine Open House, go bowling, or see the circus. Anything will do that promotes interaction. Kids need an older role model, someone in addition to parents and friends, who can share life experiences and help guide them in the right direction,” Lane said. “It is the gift of time and support that is the most valuable thing you can give any child.”

Other typical activities include playing sports, seeing movies, cooking, going over schoolwork, visiting museums, washing the car, taking walks, volunteering in their communities, or just hanging out. Each month a special event, like going to the St. Louis Zoo, is planned.

“Animals are always an exciting thing to kids,” Lane said. “It’s a great teaching tool in teaching responsibility.”

“Children working with animals is an exciting experience for anyone,” Lane said. “It means something that they had never had before—petting a cow, having a photo of them taken with a python wrapped around their neck, or feeding a goat,” Lane said. “A lot of kids, who may have trouble expressing themselves, find it easy to relate to the animals, and that’s sometimes a good start.”

Just hearing the exciting stories of challenges met and won by a veterinary medical student is enough to emphasize the importance of going to college, without ever sounding preachy.

“Volunteers enter into the life of a young person at a pivotal time when even small changes in behavior, or choices made, can change the course of that young person’s future,” said Thomas M. McCenna, Big Brothers Big Sisters Association national executive director.

This was not Lane’s first effort to help kids. Before veterinary medical school, he worked for three years at a St. Louis agency with youths at risk for drug abuse and job dropout. He later helped run summer camps for St. Louis high school students.

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The Impact of ‘Bigs’

In 1992 and 1993, 959 boys and girls in eight states, ages 10 through 16, entered into an experiment. Half the children were matched with a Big Brother or Big Sister, while the other half were assigned to a waiting list, or control group. On average, the matched children met with their Big Brothers or Big Sisters about three times a month for at least a year.

And the results? Researchers found that 18 months later, the Little Brothers and Little Sisters were:

• 46 percent less likely to begin using illegal drugs
• 27 percent less likely to begin using alcohol
• 37 percent less likely to skip school, and 37 percent less likely to skip a class
• More confident of their performance in schoolwork
• Less likely to hit someone, and get along better with their families

In 1998, the control group was broken into two groups: those who were assigned to a Big Brother or Big Sister, and those who were assigned to a waiting list. The results were similar to the earlier study:

The Impact

The MU CVM program is too new to see any dramatic results, yet. The parent organization has commissioned studies, however, that show that intervention by a caring adult—someone to confide in, relax with, and look up to—can have powerful results with children. Kids involved with a mentor do better in school and at home, and largely avoid violence and substance abuse.

But there are inklings of the future in Columbia. In the first five months of the MU CVM program, the program has proven a big hit and the kids who love being with the vet med students. There’s seldom an empty seat at a Big Dawgs, Little Dawgs event.

“The kids keep asking us if we will start a larger Big Brothers Big Sisters program so they can spend more time with us one on one,” Lane said. “With our educational time constraints, we haven’t yet found a way to make those time commitments.”

Still, Lane pointed out, the College’s program is in its infancy and the group is seeing what works and what doesn’t.

Three veterinary medical students have taken the next step by becoming involved one-on-one in a typical Big Brothers Big Sisters program.

In the meantime, the emphasis is on having fun being either a Big Dawg or Little Dawg.
That new challenge began to emerge in one of the many other projects that Dr. Vroegindewey had become involved with over the years—the U.S. Army Veterinary Corps. Veterinary Corps Reserve Units were evolving from a once-a-year-deployment and a few weekends’ drill to a critical element in a new national strategic policy of working with developing nations to strengthen their economies and develop political stability. With this, it is hoped, these countries will pose less of a potential military threat. Talk about a challenge.

After all the necessary deliberation required to leave a comfortable life and established businesses, Dr. Vroegindewey took a three-year leave of absence from his practice, with Linda selling her Columbia, Mo. firm, to go on active duty with the Veterinary Corps and the new challenge.

Today, Col. Vroegindewey is the second-in-command of the Veterinary Corps, the Assistant Chief, and has a pivotal role in making its missions successful.

The First Goals

Graduating from the M U College of Veterinary Medicine in 1978, Dr. Vroegindewey’s first job was with Columbia’s Rolling Hills Veterinary Clinic. In under two years, he was a partner, and two years after that, he purchased the practice outright. Later, a Hallsville, Mo. practice and another clinic joined the group. Another addition came quickly: an equine medical practice with Dr. Robert Foss, DVM ’81.
and Dr. Tom Rose, DVM ’88, now the managing partner. Further expansion included an outpatient clinic, and the addition of endoscopy, ultrasound, lab testing, and other services. Soon, Dr. Vroegindewey was leading a team of seven veterinarians in a highly-respected mid-Missouri practice.

Military service for Dr. Vroegindewey began when he was still a Missouri National Guard as a combat medic with the rank of private. Upon his DVM graduation, he was commissioned as a reserve officer in the Veterinary Corps.

Life was fairly predictable in the veterinary corps in those days. Military vets watched over the health of service animals of the military and various federal agencies. The service also ensured safety of food eaten on military bases. As with all reservists, Dr. Vroegindewey sandwiched in unit training and stateside veterinary medical support when he wasn’t running his practices.

In 1988, things began to change and the Veterinary Corps was given its dramatically-new international mission. While Army Engineer construction units were often the primary military operation in this regard, the Vet Corps was seldom far behind. Suddenly, Egypt, Jordan, Germany, Honduras, Bolivia, and Ecuador, became destinations for Vet Corps personnel. Dr. Vroegindewey began going on these missions and, seeing the positive impact, considered leaving his comfortable life in Missouri to tackle these new challenges. In November 1998, Dr. Vroegindewey and Linda made the decision to go on active duty where he was tapped for the second-in-command spot at the Army’s center for medicine, Fort Sam Houston in San Antonio, Texas.

From Missouri Clients to Nation Building

Nation building, the quick way of describing this new military mission, is not an easy business. It requires the culturally-sensitive skills of a diplomat rather than a sharp aim with a rifle. While not a traditional military assignment, America’s armed services are often best equipped to deploy overseas, organize logistics, put qualified people where they’re needed, and make things happen.

In these missions, American soldiers are often greeted with hostility or indifference by the people receiving the help. "Foreign" troops, no matter how helpful, can be seen as a cultural or military threat. Almost always, however, the veterinary part of this mission is welcomed for its immediately-positive impact on the population, Dr. Vroegindewey said.

Military veterinarians are viewed as a precious resource as many of these developing nations still depend heavily on animals for their livelihoods. Military veterinarians bring rare skills and services that are immediately understandable and valuable. Often, a government reluctant to accept other military aid will welcome a veterinary medical team.

"In some of these countries, losing an animal is like losing their job, savings, retirement program, cashflow, and social identity," Dr. Vroegindewey said. "The Veterinary Corps can almost automatically build goodwill through a common bond with the animals. With this trust, we can help the people to help themselves."

One example of this work occurred when Ecuador asked for help in increasing milk production. The U.S. military veterinary medical team, lead by Dr. Vroegindewey, joined with local experts and farm owners to investigate the problem and find a solution.

The country had great genetic stock but poor output. With some detective work from Dr. Dave Hardin, director of the College’s veterinary extension and continuing education team back in Missouri, it was determined the country’s cows had a diet deficient in calcium, energy, and protein caused by the banana-based feed. The US soldiers then used their educational skills to show the farmers that a $1 investment in more conventional protein feed would yield a $5 increase in milk production.

Another example: The Army Vet Corps performed emergency vaccinations in the Philippines after an outbreak of rabies that killed 14 people. After the Army’s arrival, only one additional death was counted. Dr. Vroegindewey observed that there is learning on both sides of these missions. The scrappy black and brown pigs of the Caribbean look poor in comparison to fat American pigs, until you realize that the muscular animals may have to sometimes walk 10 miles to market.

Dr. Vroegindewey and team make these visits at the request of the host government. So far, he has been overseas 15 times.

Typically, veterinary medical teams consist of three to 12 people who are deployed for about three weeks. Army teams have responded to people in devastation after hurricanes, or administered common dog and cat vaccinations in poor rural countries. "In some developing countries, our visits are the biggest event in ten years, and the people come pouring out to watch," Dr. Vroegindewey said.

Often, the veterinary teams work with their human medical colleagues and public health experts to provide a diverse range of community health assistance. At any time, the veterinary corps has about 410 officers on active duty all over the world, plus another 145 reserve officers.

Other Challenges

In addition to overseas deployments, Dr. Vroegindewey’s other duties are to develop a teaching program describing the role of the veterinarian in international disaster response.

There are more challenges, too: head a working group to evaluate, select, and test off-the-shelf food safety technology for use by field units; work with NATO veterinarians to coordinate food safety and animal care programs; and coordinate distance learning programs for the Army’s Masters degree in Public Health.

To Dr. Vroegindewey, who achieved his goals of establishing and running a successful business, this challenge was difficult to ignore and requires every people and clinical skill, and more, that he developed over the years.
Dr. Caroline Gilje, DVM '84, hosts a weekly call-in program on KMOX-AM in St. Louis. Classmates John Williams and Phil Brown, DVM '72, have weekly call-in shows on KFRU-AM in Columbia and KWTO-AM in Springfield, respectively. Dr. Bruce Whittle, DVM '94, has a bi-weekly five-minute radio program on KTTN-AM Classic Country, Trenton, Mo., where he reports on the latest news in animal care. So, what's it like to be a radio veterinarian?

**Phillip Brown**

DVM Class of '72  
KWTO, 560 AM, Springfield, Missouri  
Ask the Vet  
Friday, 8:30 – 9:30 am

Dr. Philip Brown was born in Wurzburg, Germany, and has resided aboard as well as in the U.S. After graduation, he served as a captain in the U.S. Army and spent two years in the pathology program at Fitzsimons Army Medical Center. He practiced emergency medicine and did relief veterinary medical work in Denver before relocating to Springfield.

Dr. Brown operated ANEM Pet Emergency Hospital, one of the first dedicated emergency facilities in Missouri. He later was involved with other veterinary medical facilities in southwest Missouri. After several years of mixed animal practice, he now specializes in pocket pets, reptiles, and birds at the Animal Care Center in Springfield.

Dr. Brown has been married to his wife, Gloria, for 30 years. They have three children: Kalyn, who attends Ozark Technical Community College in Springfield; Jonathan, who is a soccer, basketball, and track varsity athlete; and Jennifer, who plays club and school basketball, and is a cheerleader and concert band member.
John Williams
DVM Class of ’72
KFRU, 1400 AM, Columbia, Missouri
The Pet Place with Dr. John Williams
Saturday, 7-8 am

Dr. John Williams is a 28-year veteran of small animal practice in Columbia, Missouri. Originally from Adair County, he graduated from MU’s College of Veterinary Medicine in 1972. After graduation, he practiced for one year in Webster Groves, Missouri, before returning to Columbia to begin a private practice at Horton Animal Hospital. Since 1973, Horton Animal Hospital has expanded from a single facility to three, full-service veterinary hospitals, a boarding/grooming kennel, and a dog-training facility. Of the nine full-time veterinarians on staff, Dr. Williams is the senior partner and CEO.

Dr. Williams also serves as a veterinary consultant for a national publication, Cats Magazine, where he authors a monthly question and answer column.

Dr. Williams has been married to his wife Sally, a Stephens College graduate, for 28 years. They have three children, John, a first-year medical resident at the University of Wisconsin Medical Center; Michael, a first-year medical student at the University of Missouri; and Jessica, a sophomore business major at DePaul University in Chicago. The Williams family also has two cats, Truman and Billy.

Bruce Whittle
KTTN-FM 92.3 Classic Country, Trenton, Missouri
Four years ago, Bruce Whittle, DVM ’94, joined with three other veterinarians to host a bi-weekly five-minute radio program on KTTN-FM 92.3 Classic Country, Trenton, Missouri. Today, Dr. Whittle alone researches and writes the pre-recorded program called The Human-Animal Connection (that alternates Friday afternoons with a program from the local animal shelter). His radio script is also published as a column in Trenton’s daily newspaper, the Republican Times.

Dr. Whittle’s topics cover whatever he thinks his listeners are interested in. Favorite topics include zoonotic diseases, equine and cattle problems, and common maladies of companion animals. Probably his biggest topic was the outbreak of epizootic hemorrhagic disease (EHD) in cattle. The possibility of EHD alarmed food producers because cattle with the disease, caused by an insect bite, normally show no initial signs. Infected deer often die as a result of the virus.

“There was a lot of misinformation about hemorrhagic disease and a lot of people were scared,” Dr. Whittle said. “I hope my program educated the public on what was really happening and what to look for.”

Dr. Whittle said he stayed on with the program because he enjoys researching a topic and trying to communicate its importance in a short time. “If you want to learn something, try to teach it,” he said.

Caroline Gilje
DVM Class of ’84
KMOX, 1120 AM, St. Louis, Missouri
Ask the Vet
Weekday afternoons

Dr. Caroline Truss, class of ’84, has been associated with the Barrett Station Veterinary Clinic near St. Louis since 1990. In April 2000 she married Mark Gilje who has two daughters Brittany and Madeline.

Dr. Gilje is an active speaker on veterinary medicine and animal health issues at local elementary and high schools and dog and cat organizations. She is actively involved with St. Louis-area greyhound rescue groups and leads several volunteer programs for young people interested in pursuing a veterinary medical career.
Talking Veterinary Medicine
Williams, Gilje & Brown—“What’s It Like to Be a Radio Star?”

Veterinarians are nothing if not adaptable. When not practicing their chosen profession, they’re writing books, conducting research, helping in community projects, or starring in their own radio programs. For some College alumni, the lure of the microphone and connecting to the public has led them to a part-time career fielding questions about animal care and treatment, animal behavior, and, occasionally, how to build a birdhouse.

How and why did you get started in broadcasting?

Williams It was strictly a matter of being in the right—or wrong—place at the right—or wrong—time. I’d been asked on occasion to appear as a guest on the local talk radio station to discuss animal-related topics and take phone calls. As these appearances became more frequent, I became acquainted with the station’s programming and management personnel. They approached me with the idea of a weekly call-in show on pets and related topics. My initial reaction was to decline, but the challenge of doing something for which I was totally untrained, and unskilled, intrigued me to the point where I decided to try it for a few weeks. That was over ten years ago.

Brown A client of mine had a problem with his pet and told me how difficult it was for average owners to find good pet health care information. Through a series of conversations, we concluded people could be better caregivers with information through a regular and informal question and answer format tailored to their individual needs. An hour radio broadcast can do that.

Gilje Five years ago I was asked to appear as a guest on Doug McElwin’s KMOX radio show. We were so well received (as evidenced by the ratings, something carefully watched by radio station management) that he asked me to return often. Almost two years ago he was promoted to morning drive time radio and I was asked to step in to host a program called “Ask the Vet.”

Who comprises your audience and why do they tune in?

Brown The bulk of the KWTO “Ask the Vet” audience is made up of educated people from all age groups who want to become more knowledgeable about preventive care for their family. Many are retired while others tune in between business calls or while they are at work. Some fax in their questions so they can listen to my response.

Gilje KMOX is a clear channel station which means it can reach into 44 states—a big coverage area for any radio station. The Spring 2000 Arbitron ratings indicate that my audience is mostly comprised of adults 25-54 years old with between 15,000 and 20,000 listening at any one moment. That’s not far from the average St. Louis ratings of Rush Limbaugh and the St. Louis Cardinals.

Williams Arbitron ratings suggest that most of my listeners are middle-aged and older—so my lifelong desire to be a “teen idol” has yet to be fulfilled. Most have pets, and I think, tune in to hear questions answered that relate to their “four-legged” family member. Curiously, I’ve also met people who don’t have pets, but tune in every week. It must be for the news/sports breaks that are interspersed into the show.

What’s the most frequently asked question that you get? What was a really dumb question and how did you handle it?

Williams The most frequent questions are behavioral problems—cats not using litter boxes, destructive dogs, housebreaking questions, etc. The real challenge in answering these questions on the air is not coming up with a remedy for the problem, but to make the answer interesting and different sounding from the last time this question was posed. On one show I had the same behavioral question called in three times within an hour! (The “call screener” was out that day.) It’s almost impossible to characterize any question as being dumb—although it may sound dumb in the way the caller phrased it. A radio veteran once told me to never “beat up” or mock a caller. It lowers listeners’ respect for you and it detracts from the substance of the show. I always remind myself that the caller has a real problem, and even though it may come across the airways as silly, the caller is looking for help and advice.

Gilje The most frequent question is how can I keep my cat from peeing in the house?

Brown Over time, the same questions keep popping up. We get the most calls on behavioral issues and training; although, depending on the season, parasites are often discussed. Callers share an earnest sincerity in seeking help with their pet’s problems. It’s important to listen for the nuances of the question and give everyone individual, professional, and respectful attention when discussing their concerns.

Can you recall a situation where you really helped someone?

Gilje A blind couple had two dogs and one was stealing food from the kitchen counter. They asked me how to determine which dog was the thief and how to rectify the problem. I recommended a different sounding bell on each dog’s collar. Then, I recommended “baiting” the dog with food tied to empty soda cans. When the moved soda cans made a noise, with the individual bell, the culprit was revealed.

Williams One situation involved a call from an owner whose cat had been sick for a week. She described various symptoms, some quite graphic for morning radio. As I questioned her, it occurred to me that this cat could be suffering pyometritis. I described this condition and suggested that she seek out a veterinarian as soon as possible. As luck would have it, one of my associates was her regular doctor. He examined the cat that morning and per...
formed surgery later that day. The patient recovered and is doing well. The following week, the owner was nice enough to call the radio show and publicly thank me for helping. That was a good day.

**Brown** For someone to take the time and effort to pick up the telephone and call in with a question usually implies an interest in increasing their healthcare knowledge in order to help their pets. I consider all questions important and try to devote adequate time to each caller. Often, people call to reassure themselves that they are doing all that they can for their pets. Sometimes, they need a little nudge to do something. Often, a listener will call back and thank me and let me know that the pet had been helped.

**Gilje** The public admires veterinarians sometimes more than M Ds. They see us as more compassionate, friendly, and approachable. Of course, my program gives me an opportunity to support this image and the image of my fellow veterinarians.

**Brown** I feel the public views veterinarians as the primary source that they can talk to concerning their pets. Veterinarians are seen as a pet and patient advocates with animal welfare as our main concern. Pet owners appreciate how veterinarians understand the human-animal bond, and how we or she wants to help people help their pets with the best care.

**Williams** One misconception that the public has about the veterinary profession is that veterinarians have expertise in all animal species. I’ve received serious on-air calls about rabbits, deer, bluebirds, and how to build a “martin house.” If you think about it, it’s flattering that people would think that the profession provides care to all animals. I’ve been gratified over the years to see the respect and affection that listeners have for the profession. I think that veterinarians are seen as the most approachable of all medical professions, and a radio format expands the potential for this familiarity. Whether deserved or not, the displays of appreciation by listeners toward me and my family have been overwhelming.

**Class Notes**

**50’s**

Warren Schilb, DVM ’50, celebrated his 50th year practicing veterinary medicine. He continues to work at his practice seven days a week, he reports.

Thomas Noyes, DVM ’62, retired from his Kansas City-area Eagle Animal Hospital practice after 36 years. James Sparks, DVM ’90, and James Cupp, DVM ’84, purchased the practice from him and established a scholarship in his honor at the MU College of Veterinary Medicine.

Royal Ranney, DVM ’64, was installed as president of the Western Veterinary Conference. He was president of the Missouri Veterinary Medical Association in 1987. He moved to Rolla, Mo. in 1966 where he established a practice now owned by his son, Mark Ranney, DVM ’82, and Jenny Webster, DVM ’96. The Western Veterinary Conference is one of the largest continuing educational organizations for veterinary medicine.

Jonathan Wilson, DVM ’66, recently expanded his Animal Med Center in Kennett, Mo. to include a pet store and grooming room.

Greg Keller, DVM ’73, was named a trustee of the Morris Animal Foundation. He is currently the executive director of the Orthopedic Foundation for Animals in Columbia, Mo.

**60’s**

Randy Elkins, DVM ’74, and his wife Marisa St. Claire Elkins (M S ’95 in veterinary medicine from MU and DVM ’90 from the University of Missouri) announced the birth of a son, Sean, on May 10, 2000. The family lives in Adamstown, Maryland. Dr. Elkins was promoted to Associate Director, Division of Intramural Research, National Institute of Allergy and Infectious Diseases, and was also promoted to Captain, Commissioned Corps, US Public Health Service. In June, he received the Public Health Service Outstanding Service Medal from the National Institutes of Health.

**70’s**

Kimberl Miller, DVM ’91, and her husband Paul announced the birth of a daughter, Elena Nicole, born July 8, 1999.

Dr. Miller is a Wildlife Disease Specialist at the US Geological Survey National Wildlife Health Center in Madison, Wisconsin.


Brent Herrin, DVM ’92, was praised in a newspaper letter to the editor by a client. The letter appeared in the Barry County Advertiser, Cassville, Mo., and noted Dr. Herrin’s prompt response to a telephone call after hours, precise diagnosis, and compassionate concern for the client/animal bond. The Border collage, diagnosed with poisoning, recovered.

Scott Bormanis, DVM ’94, was promoted to the rank of major in the US Army Veterinary Medical Corps. He lives in Silver Spring, Maryland.

David Ihrke, DVM ’95, and his wife Amber (Badillo) Ihrke, DVM ’96, announced the birth of their daughter, Elizabeth, born April 21, 2000. The family lives in Lockport, Illinois.

Janet Linton, DVM ’95, and her husband David, announced the birth of their daughter, Anna Jane Linton, born November 15, 1999. The baby weighed 6 lb. 2 oz. and was 19 inches long. The family lives in Belleville, Illinois.

**80’s**

Dana Walker, DVM ’86, will receive a PhD in Immunology, with a minor in biotechnology, from North Carolina State University in December.

**90’s**

Deborah and Patrick Richards, both DVM ’90, traveled in July 1999 to China to adopt their second daughter, Alicia. The family’s first daughter, Amanda, was adopted from China in 1996. The family lives in Bliss, Idaho.

The family lives in Verona, Wisconsin.

**In Memoriam**

Walter William Bone, DVM ’56, died after an illness on March 7, 2000 in Anderson, Missouri. He was a World War II veteran who served in the Philippines and was a frequent winner of the Missouri State Fiddler’s Contest. He is survived by his wife, Berry Bachelor Bone, and four children.

Heather Smith, DVM ’84, died February 15, 2000 in Jamaica Plain, Massachusetts. She worked primarily in small animal medicine in Connecticut and held the office of treasurer of the Connecticut VMA. Dr. Smith held federal and state wildlife rehabilitation licenses and was a member of the American Association for the Advancement of Science.
dozen years after retiring from the M U College of Veterinary Medicine, Dr. Larry Morehouse is considering retiring again. Little wonder since retirement has been as busy and intense as his work establishing the College’s Veterinary Medical Diagnostic Laboratory. Consider this list of retirement activities:

And this list doesn’t mention his hobby of vintage cars.

“I’m 75 and I feel better than at any other time in my life,” he said. “It’s amazing the wonderful things that can happen when the stress of conventional ‘work’ leaves the body. Still, I always seem to be doing something. I’m about ready to retire again.”

Retirement is one major thread that runs through the work that Dr. Morehouse has pursued after leaving M U. He recognized early that the old concepts of retirement are obsolete, and has flung himself into the pursuit of reinventing this time of life for himself and others.

“Previously, many people were worn out at 65 years of age and had only a few years left,” he said. “Today, you can feel great, live, and contribute much more than any other previous generation. Look at me, I’ve been retired half as long as I’ve worked at M U, and one-third as long as I’ve worked in the veterinary medical profession.

“Today, if you retire at 65 years, you have an 80 percent chance of living until you are 80, a 45 percent chance of living to be 90, and a 10 percent chance of living to 100,” he said. “People working today need to consider this carefully in planning for retirement, especially in their financial plans.”

If his post-retirement life has been busy, it may be because of the enormous tasks that he tackles...
led and won in establishing a first-class veterinary medical diagnostic laboratory even though there were no funding opportunities in sight.

Growing VMDL

On a cold and snowy January 1, 1964, Dr. M. Morehouse assumed responsibilities of chair of the MU Department of Veterinary Pathology. He came with an impressive resume: acting director of the U.S. Agriculture Department’s Animal Health Division Diagnostic Services, National Animal Disease Laboratory, Ames, Iowa. He was also discipline leader for the department’s pathology and toxicology branch. The MU veterinary pathology department that he came to was modest at best: four faculty members and one graduate student.

While the department was small, the tasks were large. The department was responsible for teaching undergraduate courses in animal hygiene, and professional and graduate courses in pathology and clinical pathology. Continuing education and extension was another job of the department, as was inspection of carcasses of food-producing animals slaughtered in the University abattoir located adjacent to the Veterinary Clinic building. In their spare time, the small team was also providing differential diagnostic services to the teaching hospital, Missouri veterinarians, herd owners, and regulatory officials who looked to the pathology department for assistance in animal disease diagnosis. And, of course, there was the research component—faculty member Dr. H.H. Berrier worked on the differential diagnosis of animal diseases by laboratory tests, and colleague Dr. Bonnard M. Mosley studied attenuated rabies in dogs.

“Talk about all-nighters,” Dr. M. Morehouse said. “For that first spring and fall semesters, I often worked into the early morning hours every Tuesday and Thursday to prepare for my teaching duties on Wednesday and Friday. Sunday was the day you prepared for Monday.”

Slowly, however, the department began to grow and would soon train its first 10 graduate students; establish a doctoral program; and investigate the etiology, pathogenesis, epizootiology, prevention, treatment and control of salmonellosis, swine dysentery, transferrable gastroenteritis, colibacillosis, and rota viral diarrhea in swine.

As if this workload wasn’t enough, by the late 1960s, the College was exploding with new programs, research projects, and new curricula. To Dr. M. Morehouse and his team, a 40-hour workweek seemed like a vacation.

“It was apparent to everyone that the Department of Pathology couldn’t do all of these things,” Dr. M. Morehouse said. “We either had to grow the diagnostic work into its own department or close the lab. So the dean asked me, well, do you want to start a Veterinary Medical Diagnostic Laboratory?”

Many Challenges, Little Money

Dr. M. Morehouse task-ed himself and his team to develop a fully-accredited lab that served its veterinary clients as well as support a professional teaching program that would soon double (not to mention provide the support needed for the new “block” teaching program) while figuring out a way to pay for it all.

It took three years of planning that came to fruition in 1968 when the department scratched together $143,000 in start-up funding (including $14,000 from the College) for salaries and facilities. With that, Dr. M. Morehouse and team formed the Veterinary Medical Diagnostic Laboratory as its own interdisciplinary unit. The new VMDL was housed in three “temporary” trailers behind the teaching hospital—trailers that remained in use until the late 1990’s. Dr. M. Morehouse was the first director and continued as the chair of the pathology department.

In their spare time, members of the department and new VMDL established a doctoral program in pathology—a joint effort between the veterinary pathology, the human medical pathology department, and plant pathology. The effort came at a time when the University was becoming concerned about too many applications for advanced degree programs. The program survived three rigorous reviews by the University. Dr. M. Morehouse was the effort’s first chair. Within two decades, the program conferred 43 Ph.Ds with 17 more in training. The joint program also yielded research into mycoplasmology and mycotoxicology, and a three-volume book by Dr. M. Morehouse and Dr. T.D. Wyllie entitled Mycotoxic Fungi, Mycotoxins, and Mycotoxicoses in Animals, Plants, and Man.

The late seventies also saw the realization of a dream for Dr. M. Morehouse—the construction of the VMDL building. That dream began its journey to reality when the plans, after they had cleared all of the local hurdles, were included in the construction appropriation of the College in 1973.

“All of our activities or programs had one thing in common,” Dr. M. Morehouse said. “They were undertaken with insufficient facility, insufficient funds, and insufficient facilities.”

By 1977, when the new building was ready for occupancy, VMDL had grown from the original four faculty to 10 members and 15 supporting staff. The facility was building a reputation for research and service. In 1979, the lab received the thanks of Missouri when Dr. William Fales, chief of the bacteriology section of the lab, identified the causative agent of contagious equine metritis, a venereal disease of horses (only the second time so recognized in the Western Hemisphere). This prevented a federal statewide quarantine of horses. Regulatory officials said the prompt diagnosis by the VMDL saved the state’s animal industry at least $10 million. VMDL became equally important to the state’s cattle, swine, and poultry industries—an estimated $2 billion industry.

In 1982, VMDL generated more than $1 million in research grants and diagnostic contracts, and had established itself as an essential part of the College, University, and State.

In 1988, Dr. M. Morehouse retired as VMDL’s director, replaced by Dr. Harvey Gosser, recruited from the University of Georgia’s VMDL. In that year, the 20th anniversary of the lab, several thousand necropsies and some 300,000 lab tests were being performed annually. With income of more than $1.5 million, lab faculty were teaching graduate courses and four professional courses, and would publish 59 scientific articles and make 45 scientific presentations at state, national, and international meetings. Dr. M. Morehouse received the Distinguished Service Award of the College, and was recognized by the Missouri legislature.

Dr. Morehouse leads a pathology seminar in Connaway Hall in the late ’60s. In the audience was faculty member Dr. Harry Bernier, and a young graduate student Harvey Gosser (far right). Gosser would later become the second director of the MU VMDL.
In early July, a For Sale sign was pounded into the ground in front of a historic part of the MU east campus neighborhood. The Lee Street Deli, a fixture for generations of hungry vet students, is being sold by its sixth owner. The unique deli, little more than an old two-story house's basement, for decades was often the only place where east campus students could grab a quick lunch.

Largely unknown to the current generation of veterinary medical students who enjoy The Zou, the College's in-house deli since 1995, Lee Street still serves a loyal clientele from nearby fraternity houses and east campus residents who don't care to cross busy College Ave. Whether the operation remains a deli will be the choice of the new owner.

While the main and health sciences campuses have always boasted a bevy of restaurants, east campus, home of some agriculture departments and the veterinary medical college, is bereft of a single McDonalds, Burger King, or KFC. That's okay with east campus. At The Zou, the deli on the northwest part of the Veterinary Medicine Building, food is fast, hot, tasty, and served by people who quickly become friends. Its proximity has made it an essential part of the College's educational process—breakfast helps get students ready for a hard day's studying, and a fast lunch keeps students alert on clinical duty.

Things were tougher in the old days. The Zou’s predecessor, known today only to a few graybeards, is blocks away at the...
Gilbert used the basement of a two-story house to sell school supplies, candy, and homemade ice cream in the days when vet science was a department of the ag school.

Mrs. Max Shivley bought it in the 1930’s, and sold the house in the 40’s to a group of vet students. They lived on the first floor, rented the second, and operated the store when they had time—closing it when they went to class. In the 50’s, when the vet department became a college and expanded, the Owens family purchased Lee Street and began to make sandwiches. In 1964 Harvey and Millie Rathert bought what had become a neighborhood deli.

It was probably Millie who first cooked Lee Street’s signature dish, the Juicy Burger. In those days, virtually all restaurants were family owned and served something unique to attract customers. The Juicy Burger, a sloppy joe variant made of ground chuck, taco seasoning, tomato sauce, and sugar cooked in a crock pot and served on a bun with pickles, has been a Lee Street daily special for more than three decades. The Ratherts closed Lee Street each summer as the heat from the refrigerator compressors made the basement unbearably hot. In 1989, Pat Gerke, who now runs The Zou, bought Lee Street, remodeled it, and installed air conditioning—much to the delight of vet students who studied all year long.

In the early 90’s, the university food service’s vet college snack bar slowly dwindled away, and Gerke found herself delivering more sandwiches to the College. When the snack bar finally closed in 1995, Gerke was asked to open a satellite branch of Lee Street at the College. For two years, she shuttled between the two restaurants, and in 1997 sold Lee Street to its current owner, John Leigers, and made The Zou her sole operation. The Zou has been a wonderful success for her, she said, typically, serving 300 people per day.

Leigers said that the new owner could keep Lee Street open as a deli. While few vet students make the two block trek there, the deli still does a fair amount of business with the nearby fraternity houses. Still, it’s tough to justify such a small business in an age of relatively high wages and a tight labor market.

So, if you need at least one last Lee Street Juicy Burger to revive old veterinary school memories, you may want to get there soon.
The College's 2000 Commencement represented the 50th time that veterinary medical college graduates from the University of Missouri had graced the stage at historic Jesse Auditorium. What better way to celebrate than to invite the surviving members of the first class, the Class of 1950, to share the festivities with the Class of 2000. The commencement speaker was Dr. James Nave, class of '68 and president of the American Veterinary Medical Association.