Taking a Technological Leap

Imaging technology has made great strides in the past decade, allowing clinicians and scientists to use medical techniques that are less invasive. The MU College of Veterinary Medicine is undertaking an effort to become the Midwest’s, if not the country’s, premiere veterinary imaging center.

A Greyhound’s Story

As Daffy grew, he not only couldn’t run, but could hardly walk because of a bone deformity. Animal lovers from across the country pitched in to help the brown-eyed dog, resulting in a groundbreaking surgical procedure.

On to Greener Pastures

The MU College of Veterinary Medicine’s mule mascots are successful public relations professionals. This spring, they hung up their horseshoes and retired to greener pastures.

Pets, Not Pills

Why study the human-animal bond? Because it promises to open new avenues of healthcare that are a pleasure to experience.

Jane Ebben remembers Jigsaw. Born prematurely, the paint colt had most everything going against him. He was dehydrated, had low blood sugar and oxygen, and did not receive immunoglobulins from his mother, increasing the risk of infection. His intestinal tract was a tangled mess, leaving his bladder near the bursting point. Consequently, he couldn’t be fed, even with a stomach tube. He had a range of infections, the worst in his leg joints. Unable to breathe or stand, he required constant nasal oxygen. Only hours old, he celebrated life with an emergency surgery to counter the infections.

Jigsaw may have been unlucky physically, but the location of his birth was inspired. He was born near the Equine Neonatal Unit of the College of Veterinary Medicine, University of Missouri-Columbia. Here, specialized care, and veteran veterinary technicians like Ms. Ebben, are available to provide the specialized form of veterinary medicine that the foal needed.

A Place For Foals in Trouble

The sight of the newborn foal warms everyone’s heart. With big eyes, an inquisitive expression, fuzzy ears, and soft nose, they’re all legs and curiosity. Their first attempts to stand and nurse are awkward—their legs get in the way and their noses end up on everything before they find the source of milk. Soon, these gangly, uncoordinated newborns turn into graceful foals with an abundance of energy; frolicking and playful.

Foals can be the most fragile of babies. Their vital organs develop only just before birth. Born premature, nothing works. They have very little energy reserves and poorly-developed immunity against infectious agents in the environment. They are prone to infections, low body temperature, low blood sugar, and low blood oxygen. Sometimes, their rapidly developing nervous system makes it difficult for them to keep their body systems in balance—any slight deviation can set them up for serious problems. Unlike adult horses, that have large physiological...
COMMENTARY: DR. JOE N. KORNEGAY

Animals Are Special
The World Over

This issue of *Arkeology* contains stories recounting the special place that animals have in our lives. Our animals provide us with companionship and so much more. Who could help but be moved by the irrepressible spirit of Jigsaw, the foal born with two strikes against him, or Daffy, the greyhound who simply wouldn’t quit? These stories offer encouragement to all of us as we face daily challenges.

Dr. Meadows’ column reminds us of the remarkable powers of the human-animal bond, and through his reference to the work of Dr. Johannes Odendaal of South Africa, the global reach of this relationship.

We live in an increasingly smaller world. I have been reminded of this over the past few months through two separate trips to Japan and Malaysia. During the trip to Japan, I presented a series of lectures to veterinarians. These veterinarians, through a translator or with English that far surpasses my primitive Japanese, often described challenging cases requiring advanced medical care and an emotional and financial commitment by the owner.

I was particularly impressed by one case in which the required care and emotional commitment merged...a case in which the veterinarian was also the owner. The dog, a miniature Dachshund named “Vier,” developed hydrocephalus (water on the brain) that required surgical intervention. Surgery was done and Vier’s neurological function improved. But, he ultimately succumbed to complications arising from an unrelated condition. I was touched as the veterinarian/owner described the dog’s plight and the obvious bond that existed between them. A bond that extended beyond Vier’s life here on earth.

My trip to Malaysia completed a three-year term as the External Examiner for their veterinary school. Malaysian veterinary graduates have traditionally entered government service or worked with companies tied to their swine and poultry industries. However, while interacting with their students over the past three years, I was struck by their increasing interest in companion animals.

This year, fully half of their students related to me that they planned to enter small animal practice upon graduation. A similar trend has been seen in other countries, where people have turned to animals for support, as the challenges faced in everyday life have become more complicated.

I recall, in particular, a conversation with a bright Malaysian student, Venita. Flashing an infectious smile, she told me of her family, including two dogs named Scott and Heidi. Venita went on to say that she’d always had animals and hoped to enter either small animal or equine practice. Regardless of where life takes her, I’m convinced that Venita will be a credit to the veterinary profession.

Yes, our love for animals and a desire to serve them are universal emotions that remind us of how much we have in common with our fellow citizens of the world. *Ark*
Looking To Take a Leap Into Imaging Technology

MU CVM Is Seeking Funding For New Technology To Aid in Teaching, Research, and Clinical Missions

When Clydesdale Hall opened a decade ago, its imaging equipment was state-of-the-art. Ten years, however, is a technological eternity. Today, that same equipment is nearing obsolescence with parts hard to obtain. Moreover, new modalities, like magnetic resonance imaging (MRI), have revolutionized medicine. Life-threatening diseases can often be diagnosed and treated using non-invasive imaging, in many cases eliminating the need for more risky surgical procedures.

Given the University of Missouri College of Veterinary Medicine’s missions of providing the best education to the next generation of veterinarians, the highest quality referral clinical service, and latest technical support to scientists who call the university home, updating the imaging capability has become a high priority. Over the past ten years, the college has gradually upgraded equipment as priorities were identified. Rather than continuing this approach, the college is seeking to create a modern Imaging Center in the heart of the Veterinary Medical Teaching Hospital. This center will have equipment and procedures rivaling that of a modern human hospital.

The Imaging Center will be unique in veterinary medicine. “This comprehensive Imaging Center would be the only one of its kind in the Midwest,” says Dr. Jim Lattimer, associate professor at the MU Veterinary Medical Teaching Hospital and head of its imaging section. “This would make MU a premiere institution in the area and provide immense benefits in our three missions of teaching, service, and research.”

New Ways To Teach, Discover, and Heal

Advancements in non-invasive imaging have led to dramatic changes in both clinical service and research, Dr. Lattimer says. “Virtually all major medical cases, as well as many minor ones, require imaging as part of the diagnostic work-up. Moreover, new imaging procedures have spurred improved treatments in internal medicine, neurology, and surgery that often have eliminated the need for invasive diagnostic procedures such as exploratory surgery, minimizing patient stress and discomfort.”

One such procedure is called interventional imaging. Here, imaging helps eliminate the need for surgery by using fluoroscopy to guide a catheter inserted through a vein or artery to a point where medicines or medical devices can be delivered directly to the disease process. Another new imaging procedure uses ultrasound or CT (computed tomography) scanning to guide biopsy of deeply rooted tumors or to evacuate cysts in difficult to approach areas such as the brain.

The key device in the Imaging Center would be an MRI. Magnetic resonance imaging uses a magnetic field and radio waves that are pulsed into tissues. The resulting images provide detail of a millimeter or less, giving doctors a clear view of soft tissue. As diseased tissue reacts differently from normal tissue, the radiologist can more quickly ascertain potential problems.

“Modern MRIs are so sensitive that we can detect changes earlier than with a CT in some cases,” Dr. Lattimer explains. “So if tissues are abnormal, we can often detect it—even if it’s not large enough to create a noticeable change on radiographs. Magnetic resonance spectroscopy can also be used to evaluate the biochemical composition of tissue. For example, it can measure neurotransmitter levels and chemical shifts in the brain, detecting things as sensitive as myelin damage. This biochemical analysis is particularly effective in cancer cases but is perhaps even more important in evaluating seizure disorders.”

Exposing each veterinary medical student to the most accurate methods of seeing and measuring disease is critical to developing their very best diagnostic and treatment skills, Dr. Lattimer says. “As fast as technology is developing, many of today’s high-tech devices could become commonplace in community veterinary practices of the future. Certainly, the digital generation which allows images to be recorded, stored, and displayed is rapidly coming and we need to be ready for it.”

These new tools will also help equine and food animal medicine specialists even better serve Missouri’s animal agriculture industry. Scientists studying cancer, orthopedic, and eye problems will have better ways to gauge the effectiveness of new treatments. This would advance new treatment procedures while at the same time conserving animal resources, time, and money. The center will serve not only the college’s research efforts, but those of the entire university and beyond.

Funding The Imaging Center

The college is seeking to establish a perpetual endowment for the Imaging Center, and this is going to be a challenge. Once the endowment is in place, Dr. Lattimer says, client and service fees would pay for operation expenses, technician salaries, and maintenance.

Funding for this project will probably come from one or a few major donors, says Park Bay, director of development at the college. Mr. Bay is looking for individuals or organizations who could fund an endowment to support the center.

“Private giving has traditionally ensured the margin of excellence required to keep our teaching hospital at the forefront of clinical care,” Mr. Bay points out. “Private giving helped build the teaching hospital and supports many of the nationally-renowned programs housed within it. We have an opportunity here for the MU College of Veterinary Medicine to ‘leapfrog’ into a new area of teaching, service to the community, and research capability that will make our college among the best on the globe.”

Using the interest from the endowment as collateral, the college could seek loans to accelerate the purchase of new equipment.

“This college, throughout its history, has been blessed with friends and partners who have appeared at critical moments to help the college take its next step,” Mr. Bay remarks. “Clydesdale Hall itself is a testament to that. Someone, perhaps a person seeking a legacy in making a difference in animal health care, may be waiting to join with us on this project. I would love to see this center named for such a friend. That, for me, would make this a win-win situation for everyone.”

Ark
When Daffy arrived at the MU Veterinary Medical Teaching Hospital, he was in pain, arthritic, and could barely walk due to the severe curvature of his front legs.

Greyhounds love to run. Their long powerful legs and lithe, streamlined bodies make them natural athletes. Even as puppies, they practice bursts of speed for the sheer joy of it.

Daffy, born on a farm near Kansas City, loved to run like his littermates. But while his brothers and sisters zoomed faster, Daffy seemed to become more clumsy. As he grew into adolescence, the problem became worse. He could only walk, and then only in pain, while his fellow greyhounds exercised their need for velocity.

Something bad had happened to Daffy's front legs early in his life. As he grew, the front legs became more deformed. His legs became so misshapen and angled that he walked as if he had “duck feet.”

Nearing his first birthday, Daffy was virtually crippled. His legs became so misshapen and angled that he walked as if he had “duck feet.”

Daffy’s condition is called Angular Limb Deformity. Here, one of two bones in each of his forelegs grew at an abnormally slow rate. As one bone grew and the other didn’t, Daffy’s affected legs took on a strange, bent appearance.

Bone deformation was Daffy’s first problem. As his forelegs curved into the bow shape, the altered geometry forced him to walk on the sides of his front paws. This caused unusual stresses on his “wrists” and elbow joints that soon pulled out of alignment. This left Daffy lame and arthritic with painful stresses on his bones, joints, and soft tissues every time he walked.

Angular Limb Deformity is rare. Daffy’s condition was very severe—and one of the worst that veterinarians who had examined him had seen—and potentially inoperable.

A Dog With Internet Friends

Under other circumstances, Daffy could have been euthanized. Born on a farm near Kansas City that raises greyhounds, Daffy’s story could have ended there with no thought of surgery. But early in his life, Daffy experienced a chance to run. The greyhound a chance to do what he was never able to do naturally: run like his littermates. But while his brothers and sisters zoomed faster, Daffy seemed to become more clumsy. As he grew into adolescence, the problem became worse. He could only walk, and then only in pain, while his fellow greyhounds exercised their need for velocity.

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In Daffy’s case, the problem was a failure in the growth plate in the ulna bone, one of the two foreleg bones. Growth plates are responsible for bone growth and are located near the ends of the bones in young animals. The growth plates are softer than other regions of the bones and are in a dynamic state of activity, and therefore are more prone to injury. For greyhounds, most of the limb growth occurs from four to eight months of age. By approximately one year of age, the growth plates are functionally closed.

An injury to the plate during development can cause problems. Two things typically occur: a traumatic fall damages the growth plate or something interferes with nutrition to a section of the growth plate and its cartilaginous core that causes the bone growth to slow down or stop.

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that both limbs and all the joints were correctly aligned. Dr. Cook and the team had to change the direction of the ulna bone in three separate planes so that Daffy’s legs would operate properly. This would remedy Daffy’s pain when walking and reduce the possibility of arthritis developing later.

To accomplish this, Dr. Cook and colleague Dr. Derek Fox developed a new technique using a combination of a unique rotational osteotomy, temporary circular external fixators, and bone plates. In a two-and-one-half-hour operation, the surgical team initially placed an external circular fixator that was parallel to the abnormally aligned elbow and wrist joints on each foreleg. The two then carefully cut the radial and ulnar bones to correct the unwanted bowing, angulation, and rotation. Once these cuts were made, the rings of the fixator were aligned with one another using connecting bars, which aligned the joints and the limb in all three planes. Finally, a metal bone plate was placed on the radial bone to provide strength to the repair while Daffy healed, without impairing the function of the muscles and tendons.

Daffy spent almost three weeks in the MU teaching hospital recuperating. When he left to go home to Kansas City, he walked, in thick leg bandages, as he had never done before, like a normal greyhound.

Dr. Cook is director of MU’s Comparative Orthopaedic Laboratory (COL), a special organization that features both human and veterinary medicine clinicians and researchers who collaborate to conduct orthopedic research, investigate joint diseases, and apply basic research to the clinical setting. It was initiated about three years ago by a pair of scientists and has grown to more than 25 active participants. Within the last year, the COL has collaborated with more than 20 scientists from eleven different laboratories.

This collaboration at MU shouldn’t be surprising, given that the campus is one of the few that features colleges of veterinary medicine, nursing, human medicine, and engineering.

Dr. Cook, and colleague Dr. Keith Kenter, then at the MU School of Medicine, formed COL when both noticed that researchers in human and veterinary medicine had something in common: they strive to solve some of the most puzzling mysteries of the ways bodies cope with disease and injury, and how they respond to treatments. Historically, veterinarians and physicians have worked independently to solve similar medical problems. However, in the last decade, there has been a growing trend toward comparative medicine, in which researchers from both camps combine their efforts. As a result, they are healing both people and animals more quickly and efficiently.

COL was the first such formal collaboration in Missouri and only the third of its kind in the nation. The laboratory already has made impressive strides. In its short history, the doctors made quick progress toward something that has never been done before: regenerating connective tissue, the menisci, in the knee. They performed the first surgery of this kind on a dog, and are now working on Food and Drug Administration approval to restore human knee menisci.

“We are looking at the big picture,” says Dr. Cook. “The more comprehensive, multispecies and multidisciplinary we can be, the better the chances are that we can come up with clinically applicable results. The dog is a great model for human applications, and we should take advantage of it.”

Daffy Finds a Permanent Home And More

Jim Martin’s original plan of finding a permanent home for Daffy was soon forgotten. Daffy had become too much a part of Mr. Martin’s 10-acre farm, and an assortment of other critters, to go anywhere else. Besides, Daffy had achieved a sort of fame, a success story of how committed animal lovers can overcome almost any obstacle.

Today, Daffy happily zooms around the farm, usually in formation with one or two other animals. He’s become the unofficial mascot at the Woodlands Race Track in Kansas City, Kan., a place where greyhound athletes get to exercise their desire for speed. Racing fans come to meet the Internet dog who successfully overcame his problems. Not bad for a greyhound who came so late to running.

Today, Daffy enjoys running with his friends on a Kansas farm.
A public relations professionals go, they are a bit tall—and hairy. Their four legs, hooves, and insatiable appetite for carrots also set them somewhat apart from traditional PR types.

Nonetheless, the mascot mules of the College of Veterinary Medicine, University of Missouri-Columbia, have represented the college, MU, and the state of Missouri to thousands of people at numerous events since 1982. Pulling a dozen-passenger wagon, they’ve participated in MU’s homecoming and the governor’s inauguration parade. They were prominent in the St. Louis Charity Horse Show and American Royal Parade in Kansas City. The college’s mules have also brought the governor to the Missouri State Fair’s opening ceremonies, as well as performing yeoman duty at numerous city parades, picnics, weddings, and other events. Tens of thousands of Missouri kids have either ridden in the mule wagon or tempted the animals with peppermint or carrot treats. Often, the MU mules were the first farm animals that many city kids had ever seen in person.

The college’s current pair of ambassadors, Jill and Shirley, have entered middle age and, in March, were retired to greener pastures. Both mules are developing an early form of arthritis that will make it difficult to regularly pull the large wooden wagon. The college is seeking a replacement pair.

An old friend of the mules, Dr. Justin Berger, MU DVM ’98 and a past president of the MU Mule Club, agreed to let the mules enjoy their retirement days on his farm near Springfield, Mo.

The new mules will have large horseshoes to fill. The college’s mules have been living Missouri history lessons, allowing people to learn about the mule’s contributions to the state. In Missouri’s first century, they were the backbone of the state’s agriculture and economy. Once, Missouri exported more mules than any country.

Two Generations of MU Mules

The retiring mules are the college’s second pair. The first mascots, Hillda and Louise, began work at the college in 1982, a generation after these animals passed from the state’s everyday life. Hillda and Louise are a matched pair of sorrel draft mules, purchased as yearlings, trained, and raised by Howard Sartain of New Franklin, Mo. Hill’s Pet Nutrition of Topeka, Kan. and Mrs. Virginia Etheridge of Columbia, Mo. funded the purchase of Töpka, Kan. and Mrs. Virginia Etheridge of Columbia, Mo. funded the purchase of the team, harness, and wagon. After a decade and a half of service, they retired to the green pastures behind the college and a new generation of mules, Jill and Shirley, took their places.

Jill and Shirley were raised in Perry County by John Roy Chipman, a 1968 MU graduate. Bayer Pharmaceutical in Kansas City, under the direction of MU College of Veterinary Medicine alum Dr. Tom Lenz, DVM ’75, purchased these mules for the college. Mrs. Etheridge helped in this project, too.

Both mules were show winners before coming to MU. “These are the most two vain mules,” said Dr. Tanya Balaam, a MU veterinary medical graduate. “They know they are beautiful, as mules go.” Both mules loved to stretch their honey-colored necks to “They know they are beautiful, as mules go.” Both mules loved to stretch their honey-colored necks to

The MU mascot mules are well known at events across the state, including many MU graduation ceremonies where the mules show up to give rides and greet visitors. Here, Mule Club advisor John Dodam, DVM, drives the mules outside MU’s Memorial Union.

The students have the opportunity to learn many things from being in the Mule Club. “Of course they learn about equine husbandry, and they learn how to hitch and drive a team of mules,” says Dr. John Dodam, associate professor of veterinary medicine and surgery at MU Veterinary Medical Teaching Hospital and Mule Club advisor. “More importantly, they learn to work with one another to get a complicated task done. And they get the chance to interact with the public, teach them a little about history, mules, and the College of Veterinary Medicine. They also get to see much of Missouri, and to meet the pet and livestock owners that they will be working for in a few short years.”

Missouri and the Mule

The humble mule, a hybrid offspring of a horse and jackass, occupies a noble part of the Missouri’s heritage. The state’s first century relied heavily on the animals’ ability to work hard and long and eat less than a horse. They were uniquely qualified to help early farmers pull stumps and plow the rocky and compacted Missouri soil. Mining companies alone used 12,000 of the animals.

Mules helped grow the young state by helping to produce enough cotton and tobacco to trade overseas. They were an important part, too, of America’s westward expansion. Mules were sold to the pioneers, toiled freight, and even pulled trains and riverboats.

Mule breeding became an important part of Missouri’s early economy. In the late 1800s, when the
An ICU for Foals At Risk

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At a retirement party held for Jill and Shirley by the Mule Club, old and new friends got together. Mrs. Virginia Etheridge of Columbia, Mo., who was instrumental in helping the college obtain the mules along with Bayer Pharmaceutical of Kansas City, joined Dr. Justin Berger, MU DVM ’98. Jill and Shirley will spend their retirement days on Dr. Berger’s farm near Springfield, Mo.

Missouri has the third largest horse population, after Texas and California.

Looking For a Few Good Mules

Some problems may occur even before birth in cases of difficult deliveries. Mares may simply require the reposisioning of the foal prior to delivery. In more difficult births, clinicians may anesthetize the mare for an assisted delivery, or perform a caesarean section.

Additional treatment may be required for retained fetal membranes, uterine infections, and laminitis. Mares with foals that are too weak to nurse must be milked by hand to provide nutrition for the foals.

The MU NICU is adjacent to the equine nurses’ station. A window and television cameras help the professionals maintain close watch over their at-risk patients. The NICU is fastidiously clean for a horse stall—important in keeping infections at bay.

It isn’t uncommon to see a baby horse draped in oxygen lines, nasogastric or intravenous feeding tubes, IV fluid support, and blood pressure probes. The NICU is steps away from the equine surgery suite if further intervention becomes necessary.

Other available equipment would be familiar to human neonatal medicine specialists, including pulse oximeters, automated fluid pumps, ECG monitoring equipment, and ultrasound devices.

Many private practice equine veterinarians refer their worst cases to the neonatal unit. It’s the one place that can boast teams of specialists including board certified equine internists, surgeons, theriogenologists (reproductive specialists) and anesthesiologists, numerous graduate interns and residents in advanced training programs, outstanding veterinary medical students, and a highly skilled and trained technical staff.

High-Touch With High-Tech

Unlike critically ill adult horses who can be left to recuperate in a stall, neonatal patients must be watched constantly. “One good kick can knock off all oxygen lines,” says Dr. Eblen, who has been providing neonatal medical care for 20 years. “You can’t walk away even to go to the sink as a foal can fall down and break a leg. A fall can also cause scratches on the delicate cornea of the eye.” Because medications, fluids, intranasal oxygen, and nutritional support are administered continuously, foals must be monitored constantly and kept upright to guarantee adequate lung inflation.

With a severe case, faculty, staff, and students may not leave the teaching hospital until the foal is out of danger, with at least one, if not two or three, people with the foal at all times. Those involved mobilize to set up schedules to ensure all foals can be constantly monitored. For many, this means hours in the stall.

There’s a lot to look for on a foal watch—some major medical conditions, and other subtle changes that often can only be seen by someone who has watched the foal for a long period. Petechial hemorrhages that slowly show up as little red dots on the foal’s skin or eyes could indicate an emerging infection. Changes in skin color, mannerisms, alertness, and breathing rates may suggest improvement or that the foal is failing to respond to a treatment plan.

This hands-on care can be critical to the foal’s survival. Sometimes, the subtle changes noticed by a student or other caregiver will provide important medical clues not revealed by the last laboratory test or examination.

“It’s difficult not to bond with an animal with whom you have spent so much time and overcome so many difficulties,” Ms. Eblen says. “Students will rally around these foals to help them make it. They will hug and kiss it to provide encouragement. The students take the foal to heart and will dedicate themselves to helping the foal.”

Jigsaw Finds a Home

Jigsaw’s recuperation was long and tortuous even after his surgery. Each medical problem was met and overcome with the appropriate high-tech or high-touch solution. Today, he is a healthy and happy horse with no indication of his early problems.

Ark
Like many of my colleagues, I knew at an early age that I wanted to be a veterinarian. I’ve been practicing the profession for more than 20 years and I’m still like a kid in a candy store when I come to work at the University of Missouri Veterinary Medical Teaching Hospital. There are simply more opportunities to help than I can possibly take advantage of in addition to the important task of educating the next generation of veterinarians. It gives me “warm fuzzies” on a regular basis.

The opportunity with the most potential is the Human-Animal Interaction (HAI) studies conducted with my friend and research partner, Rebecca Johnson, PhD, RN. Dr. Johnson is the Associate Director for Research in our Center For the Study of Animal Wellness (CSAW) as well as MU’s Millipad Professor of Gerontological Nursing at the Sinclair School of Nursing.

One important quality that Dr. Johnson brings to our HAI research is her irrepressible zeal. As an RN and a gerontologist, she has seen the need for medical, psychological, and social interventions that go beyond dealing with immediate illnesses and injury. She and I have both long felt that the unconditional love and acceptance from a companion animal can help prevent and/or treat a wide array of chronic, poorly responsive conditions. The evidence to support this belief is widespread and growing rapidly.

Why Study the Bond?

Some who are reading this may ask, “Why study the human-animal bond?” Isn’t it obvious that the bond between animals and humans is often deep, strong, emotional, and more often beneficial than detrimental? They, like me, have witnessed that this bond goes beyond the affection shared between a child and a dog or to a senior citizen and a cat that sit together contentedly for hours at a time. They also know this bond can be seen in all sectors of society—the homeless person and his/her faithful dog, the autistic child who “opens up” and beams with happiness while riding a horse, the distraught owners who are told by their physician to “get rid” of their companion animals to avoid zoonotic (spread from animals to people) disease (despite little or no evidence of risk from that animal), the look of pride and accomplishment in the eyes of prisoners who learn to train horses, the worried face of a hard working dairy farmer when one of his cows (all of whom are named) is paralyzed by milk fever, and even in the mutual respect and nonverbal communi cation between a tough and leathered rancher and his favorite “cutting” horse.

It is apparent that there is much to learn and document and I’ve witnessed from a range of research projects that the “obvious” is not always true. If we are to utilize the interaction between humans and animals as “therapy,” we need to better address many questions such as which animal(s), for what condition(s), how long to interact, how often, and when not to utilize animals.

Until we address these basic questions with well-designed, hypothesis-driven, replicated research we cannot expect full acceptance of animal-assisted therapy in the scientific community. Additionally, the studies addressing HAI must, and are beginning to, move from an entirely human centered view to a more comprehensive view that considers the effects of interaction on the animals.

Help From Around the World

Dr. Johnson and I could not conduct this research without the pioneering works of Dr. Johannes Odendaal and Dr. Jack Stephens. Dr. Odendaal, a veterinary pathologist (behavior-ist) and researcher in South Africa, is the first person to provide substantive scientific evidence regarding the physiological basis of positive (friendly) affiliation between dogs and people. What his unique study showed was that it is physiologically beneficial to both the animal and the person. He did this by examining several neurochemicals (chemicals active in the brain) that are positively changed by even brief, quiet, friendly interactions between dogs and people. He says, “Use the ‘pharmacy’ between your ears. It’s free, legal, and natural.” He has even created an information sheet that lists the dosages, side effects, and indications of using animals as a form of therapy similar to those found for any prescription drug.

Dr. Stephens is an invaluable MU CVM alumnus, as well as founder and CEO of Veterinary Pet Insurance and its VPI Skeeter Foundation in California. One of the main aims of the Skeeter Foundation is to help bring about the day when pets are prescribed as a part of “main stream” medicine. Some studies have already shown that people who have pets have decreased medical expenses and survive better/hunger after a heart attack. More evidence such as this will hasten acceptance of animal assisted therapies by insurance providers as a safe, effective, and valued treatment modality. This, truly, will be an opportunity seized.

One of our human-animal interaction research projects looks at the beneficial changes occurring in the blood of both a human and a dog when the two happily and quietly interact. We are investigating a large panel of parameters in this study and we are also evaluating if the chemical changes are the same for a person visiting their own dog, another friendly dog, or a robot (artificial intelligence) dog. The signal we use to know when these changes have occurred is a drop in blood pressure in both participants. In another study, we utilize trained visitation dogs to encourage disadvantaged senior people to start a walking program. In this study we’ll evaluate the effects of this walking program on a number of indicators of these people’s physical and psychological health.

The implications of these types of research projects are many. Will the elderly living in nursing homes require less medication because of the presence of a few puppies? Will cancer patients be routinely prescribed a cat to enhance the effectiveness of other treatments?