

Veterinary **VISION**

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Rehabilitation Makes a
Big Splash at UTCVM

Using the Latest Technologies to
Pinpoint and Relieve the Aches and
Pains of Small Animals

UT Veterinary MRI Outpatient Services
for Community Veterinarians

THE UNIVERSITY of
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On April 24, we enthusiastically celebrated the completion of the new John and Ann Tickle Small Animal Hospital. More than one hundred supporters came to mark this special occasion and tour our new 32,000 square foot facility dedicated to medical and radiation oncology, canine physical rehabilitation and therapy, avian and zoological medicine, isolation wards for infectious diseases, and veterinary social work.

We now turn our attention to the remodeling and expansion of our Intensive Care Unit, funded by private donations, which will begin in late 2008. Though we still have to complete the second-floor, shelled-in portion of the new small animal hospital—which will house the urology service, medical records, clinical research space, a classroom, and faculty office space—we are moving toward a truly first-class, contemporary veterinary teaching hospital. Next up on the strategic plan for the college is Phase II, the construction of a new large animal hospital to provide the latest in medical and surgical facilities, adequate isolation space, an improved reception area, and additional classroom and computer lab space to accommodate classes of 85 students. We will keep you advised of our progress.

In this issue, we seek to provide you information about our physical rehabilitation and therapy services and programs benefiting both small and large animals. UT's College of Veterinary Medicine has an international reputation for its work in canine physical and rehabilitation therapy. In the new small animal hospital, 3,000 square feet of space have been dedicated to this work. The space allows clinicians to meet the needs and expectations of our clients and visitors from around the world who come to UTCVM for clinical training in canine physical rehabilitation therapy.

A new service under the leadership of Dr. Darryl Millis is CARES (Canine Arthritis Rehabilitation Exercise and Sports Medicine Service). CARES is designed to meet the growing needs of patients with chronic or acute orthopedic conditions. In addition, CARES provides owners of performance dogs or household pets with additional needs the opportunity to receive a comprehensive health care program. Services include surgical intervention, medical management, and rehabilitation management of common and complex orthopedic conditions. Working dogs, such

as police and search-and-rescue dogs, are particularly well-suited for CARES; it can help them return to the job sooner. The goal of CARES is to find the optimal combination of patient care techniques to reduce pain, enhance function, and improve the quality of life of your pet or service dogs.

Rehabilitation of the equine athlete continues as a priority teaching and treatment program at UTCVM. Rehabilitation services include hyperbaric oxygen therapy, underwater treadmill, therapeutic ultrasound, pulsed electromagnetic therapy, electrical muscle/nerve stimulation, and therapeutic laser therapy. These services are used for rehabilitation after trauma, surgery, or disease, as well as conditioning of the performance horse. This year, with private support, we brought a new model hyperbaric chamber on line. The new chamber is similar to a stall in which the patient can move around comfortably during treatment, allowing a wider variety of patients to be treated. Other priority areas include performance evaluation, lameness diagnostics, and metabolic disease research. Our large animal hospital also offers equine patients chiropractic, arthroscopy, and other minimally invasive surgical techniques, pain management, and expanded on-site farrier care and services.

And, as the search for the new UTCVM Dean comes to a close, I'd like to take this opportunity to thank all of the college's supporters for your generosity – thank you for your time, talents, gifts, and 'volunteer' spirit. We are deeply grateful for your commitment to building our future together.

Leon N. D. Potgieter, BVSc, MS, PhD, Interim Dean



Photo by Sarah Kiewel, UF Health Science Center

Welcome to new UTCVM Dean, Dr. Jim Thompson

Dr. Jim Thompson will become Dean of the UT College of Veterinary Medicine on October 1, 2008. Dr. Thompson comes to UTCVM from the University of Florida College of Veterinary Medicine where, most recently, he served as Executive Associate Dean and Professor. Thompson received the DVM and the PhD from the University of Florida.

Veterinary vision

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ON THE COVER:
Following neurosurgery, Dalmatian 'Tanker' couldn't lift his head or move his legs. With the help of UTCVM's rehabilitation program, Tanker is on the road to recovery. For story see page 5.



Doctors swim Bach in the therapy pool to help regain muscle extension in one of his hind legs.

Use It or Lose It:

Dogs Need a Good Workout Too!

Bach splashes in the therapy pool—trying to get to the people.... He doesn't know or care that UT's College of Veterinary Medicine is an international leader in canine physical rehabilitation and therapy.... Bach just knows he's playing in the water, drenching as many people as possible along the way.

With the expansion of the John and Ann Tickle Small Animal Hospital, the canine physical rehabilitation and therapy program at UTCVM has moved from a small office and hallway to a suite that occupies more than 3,000 square feet. The facility houses a heated therapy pool; three underwater treadmills; a room for acupuncture, laser and ultrasound therapies; and an exercise room with a special rubberized core floor. Physical rehabilitation allows clinicians to give therapy and treatment to animals after surgery to help them recover quicker and more completely. In addition, when surgery isn't the best option for patients, rehabilitation offers hope. Physical rehabilitation can help improve muscle strength, range of motion, and overall cardiovascular stamina and fitness for chronic arthritic or geriatric patients. It can also help

chronic neurological patients improve the functional use of their legs and ease their daily activities.

Dr. Darryl Millis, professor of orthopedic surgery in the Depart-

ment of Small Animal Clinical Sciences, has always had an interest in lameness and bones. During his surgical residency at Michigan State University, he realized cage rest, the most prescribed post-operative recommendation for dogs, left much to be desired. Later, when he taught at Mississippi State University, he noticed that dachshund patients that were put in the pool to swim following back surgery recovered a lot quicker than those that did not. "I realized there was a lot of room for improvement in the post-operative period," says Millis. The amount of joint stiffness and muscle atrophy could be lessened or even prevented altogether. "If we could prevent that and do it in a safe environment where we wouldn't run into complications of breakdowns in repairs, then we could potentially get the animals back to more complete function much sooner."

Since then, Millis has been the co-editor of two animal-rehabilitation textbooks and teaches people from around the world about physical rehabilitation. He says it was a matter of being in the right place at the right time. "People had talked about rehab before, and it had gotten some attention from both physical therapists and veterinarians," Millis explains. Scientific research and study, however, were lacking, and UTCVM was the first to start filling in the gaps. People who were reaping the benefits of high-tech surgical and post surgical care started expecting it for their animals. UTCVM began combining dog behavior with dog training and rehab. "It's not like you can tell a dog to do 30 reps of an exercise. We devised different exercises so our patients can get on the road to recovery."

When Millis came to UT in 1993, he was introduced to Dr. David Levine, a professor in the physical therapy program at UT-Chattanooga. Over the course of the next year, they learned each other's lingo and began to



Dr. Darryl Millis is the co-editor of two animal-rehabilitation textbooks and teaches people from around the world about physical rehabilitation.



FERNO
Veterinary Systems

Ferno Veterinary Systems donated the therapy pool and two underwater treadmills to the college.

In an effort to promote the use of one of his hind legs, Magnus walks through cavalletti rails which are used to improve coordination and increase joint flexion and extension.



collaborate on small research projects. When they felt they had enough information to pass along to others, they offered the occasional weekend short course. "Like most things, if there's a possibility of economic impact, people may use the information inappropriately," Millis says. "We were finding that people with no training at all were starting to do animal rehabilitation and charge for those services." For the discipline to have scientific validity and become a reputable area of veterinary medicine, Millis and Levine knew they would have to provide some basic, entry level training to professionals. Those weekend short courses grew into the only university-based certificate program of its kind, the University of Tennessee Certificate Program in Canine Rehabilitation, a partnership with the medical seminar organization, Northeast Seminars. Almost two thousand veterinarians,

veterinary technicians, and human physical therapists from around the world have participated in the rigorous one-year program, and nearly 350 have successfully completed the certification exam. Part of the program was taught in

Europe for the first time in 2006, and Millis will travel to Japan to teach part of the program in the near future.

Veterinary physical rehabilitation is one of the most rapidly growing areas of veterinary medicine, gaining widespread acceptance in a short period of time. It's a trend Millis believes will continue. Millis serves on a committee proposing that the American Veterinary Medical Association (AVMA) give the discipline its stamp of approval by accepting a College of Veterinary Sports Medicine and Rehabilitation. "I think the field will increase in popularity, in part because of aging pets, [Use It or Lose It, continued page 6...]

Tanker Is Learning to Walk Again!

Tanker likes to carry on a conversation. Head to the physical rehabilitation area of the veterinary hospital where Tanker spends his weekdays, and the Dalmatian doesn't hesitate to tell you how his day has been with a series of barks.

Owner Jewell Bratcher, who rescued Tanker as a puppy nine years ago, is the first to admit he's spoiled rotten and said he expects even more attention from "his people" now that he's been at UT's College of Veterinary Medicine for surgery and rehabilitation.

"Over the years, Tanker has had problems. He's pulled the hamstring in both of his legs, he has arthritis," explains Bratcher. Then things got worse. "He started having trouble getting up and once he stood, he'd fall down. We would put a towel under his belly to help him go to the bathroom."

Tanker was referred to UT where he was one of the first dogs to undergo Magnetic Resonance Imaging at the hospital. Dr. Marti Drum explains that Tanker suffered malformations in his neck, and some of the discs were impinging on his spinal cord. Occasionally, dogs with Tanker's type of chronic disc rupture get worse

after surgery, and that held true in Tanker's case.

Surgery relieved the pressure, but Tanker was still unable to hold his head up, and he was paralyzed in all four limbs following the procedure. "We started doing basic things like moving his head, giving range of motion exercises, and positioning him in a standing position one week after surgery," explains Drum. Five weeks out Tanker is walking and placing his feet with the assistance of a cart. Tanker spends Monday through Friday at the hospital and goes home on weekends. Drum says every week she notices little improvements.

Bratcher, who has gone through knee and back surgery herself, relates to Tanker and appreciates the care he has received at UTCVM. She realizes that getting the dog back on his paws is a team effort. At the beginning of the journey, Drum warned the Bratchers it wouldn't be easy. "Over time, I've realized what she was talking about," Bratcher says. "It hasn't been easy. It's like having an invalid child and we're teaching him to walk again." But Bratcher explains she's never encountered someone who cares as much about her patients as

Drum. "She explains the things she does and why she does them. She respects me being so tuned in to what's happening with Tanker. I feel like any day now he will get up and forget he's wounded and be carefree."



Veterinary Assistant Carol Tuft helps Tanker as he exercises in the therapy pool.



Beating the Drum for Physical Rehabilitation

Dr. Marti Drum helps retrain Wishbone's gait after he was hit by a car. Originally, Wishbone could only walk on his two front legs. Today he races around on all fours without the wheelchair.

Marti Drum was about 12 when she realized she wanted to practice equine sports medicine. "I was watching the U.S. equestrian vet perform some kind of unusual therapy on horses, it was probably shockwave therapy, and I thought 'Ooh, I want to do that,'" explains Drum. Drum sports 17 years competing in equine hunter/jumper competition. She earned her Ph.D. in equine orthopedics at Colorado State University and was in her third year of veterinary school when she realized she didn't want to pursue orthopedic surgery. "I found I would rather figure out what was going on, refer the patient to the surgeon, and then do all the aftercare and follow-up. I love fixing problems." While she still has a strong interest in horses, Drum primarily works with dogs at UT.

Drum joined UTCVM in 2006 as the service chief in small animal physical rehabilitation. Dr. Darryl Millis, associate professor of orthopedic surgery in the department, calls it a great addition. "She's enthusiastic about trying different things, and she's not afraid to think outside the box," says Millis. "Her ability to make a keen observation and put it through a scientific process allows us to gain additional information that would be lost otherwise."


Drum uses her observational skills to determine what modalities work best for various patients. Among the choices at UT: therapeutic exercise, aquatic therapy, three underwater treadmills, land treadmill, swimming therapy, extracorporeal shockwave therapy, low level laser therapy, ultrasound, acupuncture, deep tissue massage, and electrical stimulation. But even with these tools at her disposal,

Use It or Lose It, continued...

pets with obesity, and pets with a myriad of orthopedic conditions such as arthritis. I think we'll see more rehabilitation facilities and an increase in the general conditioning of pets. In our busy society, owners often don't have adequate time to exercise their dogs."

Though many practices have a higher volume of patients, UTCVM is dedicated to advancing the science of rehabilitation. "Our mission is that of a teaching and research institution," Millis says. "We've chosen to concentrate on those aspects rather than high volume so we can add to the body of knowledge." Millis expects graduates of the certificate program to engage in collaborative clinical studies to validate some of the protocols in place. That information will be key in improving results in the future. "We are learning more about how muscles move and joints flex, and about weight bearing. Our next step is to prove on a large scale, in common and less common conditions, that rehab provides specific benefits." Millis cites recent progress in the field. For example, dogs suffering degener-

ative myelopathy, a slow degenerative disease of the spinal cord, can undergo a vigorous rehabilitation program and live much longer than those with less rehab and certainly longer than those with no rehab.

With the recently completed, top-notch facility, Millis says the program at UT will continue to grow. The rehabilitation team includes Dr. Marti Drum, a clinical instructor; Carol Tuft, a veterinary assistant who works with the dogs; and Bobbi Werbe, a licensed veterinary technician who has completed the certificate program and is part of the orthopedic team that provides transition from surgery to rehab. Clinicians throughout the hospital consult regularly with the rehab service. "There are a lot of animals we could help if only their owners knew about us," says Millis, who believes some owners may be intimidated about rehab. "I think a lot of people whose pets have a chronic disease just attribute it to old age. If only they would give some of these things a try, they would find out how much better their pet can do and how much happier it would be with overall increased function and decreased pain. They would be shocked." 

“They can’t tell us how something feels—how much they hurt on a scale of 1-10 or even where they hurt,” Drum explains. “When we have knee surgery, we know not to jump and run and try to participate in normal activity, but dogs don’t care most of the time and will overuse it. They can fracture implants, bones, and undo all their expensive surgery.”

Encouraging animals to participate in rehabilitation is the flip side problem of restricting activity. Try asking a Labrador Retriever to contract his quadriceps muscle, stand on one leg, or touch his head. No matter how much the lab wants to please, there’s a bit of a language barrier. That’s where problem-solving and creativity come into play. “You go through many iterations of designs and approaches,” says Drum. “What works for one animal may not work for another.” As a way to approach the problem, Drum teaches her students to start with a goal in mind, how they want a leg to look, for instance. “When you figure out what you need to achieve, then you need to just try stuff.” So many times, says Drum, the success stems from thinking “Wow, that looks off. Why is that not right?” Drum looks for the subtle nuances and uses all kinds of unusual devices and methods to achieve a good outcome. There is a method to her madness. “You have a whole dog to treat, but realistically you can’t spend eight hours a day doing therapy with one animal. Knowing how to recognize the piece of the puzzle that will get everything moving is key.”

While Drum can make it look so easy, becoming a successful rehabilitator is more than buying a piece of equipment and going to work. Anyone can put a dog on a treadmill, but is that the best treatment modality? “There is an overall fear out there of people jumping on the rehab boat with the idea they can figure it out on their own. Our certificate program was developed so there is a well defined standard in the field,” says Drum. When looking for someone to perform physical rehabilitation, look for a

reputable program. “Have they had any formal training? Do they have a certificate in rehab? Is there a veterinarian involved?” Drum says people should look for professionals who are trained to push the boundaries in a safe manner.

And that’s what Drum does to get the best results. Challenging cases allow her to show her stuff. “I think there are a lot of animals out there who are maybe being euthanized or dealing with a lower quality of life because they haven’t had the opportunity to have rehab. When a dog comes here, not using a leg for months, maybe not walking for weeks, or living in pain and we return him to normal or close to normal, it’s a good feeling.

That’s the reason I got into this discipline.”



Dr. Drum helps Coalby work on his balance and proprioception following a groin injury.

Dr. Steve Adair has been doing equine chiropractic adjustments about eight years. How does a horse surgeon get into cracking backs? The associate professor of equine surgery at UTCVM says because he was a doubting Thomas. “I didn’t believe in it, but we had clients requesting it and students interested in complimentary therapies, so I went through the training and became certified.”

Adair never had an “aha” moment when he became an instant chiropractic convert. He chalked up the first few clients’ claims of success to a placebo effect. But he was adjusting a lot of backs, and when three quarters of the clients claimed positive results he started believing in it. “I’ll trot a horse during an examination and not see anything, but the rider will say the horse isn’t picking up its right lead or is approaching the jump bad. After an adjustment, the rider comes back and says it made all the difference.” Adair is quick to note chiropractic is not a panacea. “I’ve done horses it hasn’t helped. In those cases, we back up and look elsewhere. Is it a lameness issue? A tack issue? Rider issue? Behavior?” Adair sees the most benefit in horses that aren’t lame. “It’s either more of a performance issue or a case where the horse was lame and we corrected the problem but the horse is still not quite right.” Adair says it’s important to identify other issues such as lameness, feet or shoeing and address them properly before proceeding with chiropractic.

Adair has always been around veterinary medicine. His father was a veterinarian. However, it was the challenge that lured him to the field. Adair turns to a Will Rogers quote to explain: “The best doctor in the world is the veterinarian. He can’t ask his patients what is the matter—he’s got to just know.” That certainly holds true for equine physical rehabilitation and therapy where the horse can’t tell the doc what feels good and what hurts.

While equine physical rehabilitation and therapy has always fit in with traditional medicine (with more trainers and owners practicing it than veterinarians) veterinary medicine has recently recognized the extent of its value. “There’s more to helping a horse than telling the owner to confine the horse to a stall for 30 days, then 30 days of paddock turnout, followed by 30 days of pasture turnout before getting back on him,” says Adair. Rehabilitation plays a major role in trying to improve a horse’s chances of recovering and being a useful individual or returning him as close possible to his pre-injury state. Adair says veterinarians have paid attention to what physical therapists are able to do for the human athlete. “We’re evaluating which therapeutic modalities benefit which conditions. By doing controlled studies, veterinary medicine is learning what is bunk and what’s real.”

At UT, physical rehabilitation has played an increasingly larger role in post-surgical care. A lot of horses that have undergone surgery also receive ice and cold therapy



“Restoring Horsepower”

to control swelling and reduce the amount of drugs that have to be given because non-steroidal anti-inflammatory drugs can cause stomach and kidney problems. The therapeutic lasers and pulse electromagnetic therapy also have anti-inflammatory components. Therapeutic ultrasound helps break down scar tissue and keeps the targeted area more pliable, helping reduce scar formation. While hyperbaric oxygen therapy (HBOT) can be considered part of the rehabilitation program it is also a therapy in itself. According to Adair, oxygen is a drug. “So you are actually doing a treatment with the oxygen, and it has applications in a large number of places: infections, severe compromised wounds, non-healing wounds, fractures and severe tendonitis.” UT is the only academic institute in the country that has HBOT. It is the headquarters for the Veterinary HBOT Medical Society, a group practicing both large and small animal medicine that do HBOT. The goal is to maintain a case-based registry. “UTCVM was the first to conduct controlled studies with HBOT. There was antidotal evidence but nothing concrete. That’s why we have this unit here to see where HBOT is applicable.”

Neurologic muscle atrophy, tendon and ligament injuries, joint surgeries and some wounds are prime conditions for rehabilitation. The equine rehabilitation program at UTCVM continues to grow. “In the past three months I’ve had three long-term horses here for 60 days

or better undergoing rehab—from stem cell to HBOT, to ultrasound to underwater treadmill—the full gamut.” More and more horse owners are asking for the increased services even though they are not cheap. “Humans go to p.t. daily or every other day. While many of the rehab services in equine medicine are not really that expensive themselves, it does get inconvenient and expensive if you talk about having to haul a horse here daily or every other day or even boarding a horse.”

In addition to rehabilitating horses, UT also helps condition them. Adair says the underwater treadmill is a wonderful tool. “The underwater treadmill provides some buoyancy so the horse isn’t pounding its legs as much and reduces the weight being born on the legs. Additionally, it changes their way of moving and works a different set of muscles.” Currently Adair is evaluating the degree of joint flexion in the underwater treadmill, trying to determine how water levels affect the degree of joint flexion so specific joints can be targeted by simply adjusting how high the water is.

The studies and rehabilitation work are being done in less than desirable surroundings. The large animal hospital has not undergone any major upgrades since it was built in the mid-70’s. Adair says veterinary medicine has progressed and the college’s physical face needs to as well. “Our clients expect us to do more. Our students expect us to do more. We need to be able to offer more sophisticated equipment and diagnostics because these are things they will be exposed to when they graduate, and they need to know what’s available for their clients.”

Currently, the underwater treadmill is housed in the room where horses and cows that can’t get up are housed, limiting the machine’s availability. The water tank takes up about a third of the college’s outpatient receiving room, limiting the ability to evaluate several patients at one time. Not having a dedicated unit for rehabilitation

Stem cell therapy available at UTCVM

Stem cell transplants are available for both horses and dogs at UTCVM. According to Vet-Stem, the transplants are used to treat traumatic and degenerative diseases such as bowed tendons, ligament injuries, osteoarthritis, and osteochondral defects. In most cases at UTCVM, the veterinarians harvest fat from the patient, ship it to a lab in California where the stem cells are separated from the fat and then shipped back. The cells are then injected directly into the patient. Both Drs. Steve Adair and Darryl Millis have seen positive results with the procedure.

means the horses are housed with the general population in the large animal hospital. Without an arena to do proper lameness exams, Adair says the ability to evaluate how different modalities help an individual is limited. “We don’t have the ability to watch a horse being ridden. We can’t look at gait analysis or videotape a case to determine if our treatment is actually improving the range of motion in a joint. We are pretty limited as far as space and facilities.”

Even so, Adair expects to see equine rehabilitation grow at the college and would like to see UT become a center of animal rehabilitation that encompasses all species. He says new facilities would help put the college in the forefront of equine rehabilitation. “While there are private facilities capable of doing all the different modalities, they are in it for the client and not the scientific aspect of it. We are in it for both. We want to document what works and what doesn’t in an effort to enable horses to return to their greatest level of exercise or performance and ultimately improve their lives.”



The UT Certificate Program in Equine Rehabilitation is a companion to the canine certificate program. The two week intensive course trains veterinarians, veterinary technicians and human physical therapists in the use of therapeutic modalities that have some scientific basis of efficacy. About 35 students have become certified equine rehabilitation practitioners.



If the Shoe Fits...

If you ask Dudley Hurst why he got into shoeing horses, he'll tell you he was young and dumb, and it was a great way to meet girls. Ruthie, who would later become his wife, started talking to him only after learning he was a farrier. Hurst continued to charge her for years.

"I've been under a horse since I was 14," Hurst says. "But you can't ask me how long that's been, because I can't even tell you how old I am!"

After graduating from the Eastern School of Farriery in Martinsville, Virginia, Hurst was the youngest student accepted to one of the nation's oldest and most respected farrier programs at Pennsylvania's New Bolton Center. In the mid-90's, the college contracted with Hurst, now a certified journeyman farrier with dual certification in journeyman farrier status with the American Farrier's Association and with the International Union of Journeymen Horseshoers, to provide farrier service.

Hurst used to say horse shoeing was not an art but rather a teachable trait. But in the time the industry has moved from coal to gas forges, Hurst has begun to believe otherwise. "You can teach the mechanics, but horses are made up of little things. It's the small details that make a difference in training, riding or anything. There is a bit of an art to it. I'm still kind of reluctant to say we're artists. It just doesn't sound manly." Hurst would rather be called a blacksmith than an artist.

Whether he's called a blacksmith or an artist, Hurst works closely with the equine orthopedic veterinarians at UTCVM. Farrier service is an innate part of equine rehabilitation. According to Hurst, it really doesn't matter what is done if the feet aren't set right. "Farrier service is the most frequently used health care service in the equine industry. A client will see her vet maybe once a year but her farrier several times in that same time frame."

Hurst talks while working on Annie, a nine-year-old cutting horse from Cleveland, Tennessee. Annie's owner Keri Davis noticed she was "off" a bit and thought she had a stone bruise. The slight gimpiness wouldn't subside. Dr. Steve Adair diagnosed navicular disease, a degeneration of


“There is a bit of an art to it. I’m still kind of reluctant to say we’re artists. It just doesn’t sound manly”

the navicular bone. “It’s not curable but it’s manageable,” says Davis. “She’s not lame anymore.” Hurst adds if the feet improve, his life gets simpler. “We can talk about the weather, fishing, what’s happening at shows, but never gossip you understands,” he says with a grin.

Over the last several years, veterinary medicine has begun to recognize the value of farriers and their technical assistance. More veterinary colleges and private clinics are hiring farriers. In addition to keeping up with the latest products and techniques, farriers also think outside the box and innovate in many cases. “It’s really important in dealing with any lameness that the relationship between the veterinarian and farrier is there. It’s a two-way street,” says Hurst. It’s not unusual to listen to a give and take conversation between him and the college’s equine clinicians.

“Two heads are better than one,” agrees Dr. Steve Adair, a UT equine surgeon. “I may have my idea and want it done this way and Dudley will say, ‘Well, I’ve done it this way. It’s easier and you accomplish the same thing.’ The whole goal is to do what’s best for the patient.”

Adair says it’s wonderful having a knowledgeable farrier at UT working very closely with the veterinarians. “You can get the horses x-rayed, look at what the actual issue is, and address that with shoeing and make adjustments on the spot working together. That allows us to do some pretty sophisticated shoeing techniques, using a lot of acrylics, hospital plates, and tendon support shoes.” Adair takes digital x-rays of the feet and uses a software program to take measurements and establish baselines. The horses can be re-evaluated as often as necessary so changes can be identified and addressed with different shoeing before they become problems.

Hurst teaches the students to look at the horse’s conformation and ensure they treat the problem rather than the symptom. “When we’re talking about different therapeutic devices going on a foot, it’s not going to do any good if that device doesn’t compliment the horse’s conformation regardless of what the lameness or issue might be.” Hurst always pushes students to look at the whole horse and not just the foot. “That’s part of being a good horse-man, and you’ve got to be a good horseman before you can be a good farrier or veterinarian.” 



Shining STAR

One has a hip that’s a little bit out of joint. One has a stiff neck. One has a sore back. Not humans with these ailments, but horses at the Shangri-la Therapeutic Academy of Riding (STAR) in Lenior City. Every 3-4 months, Dr. Steve Adair visits STAR to do chiropractic adjustments to the horses. For 21 years, STAR has been offering therapeutic riding to neurologically, physically and mentally challenged individuals as well as at risk individuals. The program grew out of Lynn Petr’s master’s thesis project. Petr, now STAR’s executive director, says the primary benefit is self esteem for people who have limitations. “They see limitations everywhere. You give them something like a horse, and they actually take control of this huge animal, it empowers them to do other things, and then they build on that.” Petr says there have been instances of first words spoken and first steps taken at STAR.

STAR serves both children and adults. Each program is designed to meet the specific needs of the participant. Some riders are positioned so the movement of the horse can relax tight muscles and help improve balance. Ensuring the horses at STAR maintain a proper gait is essential. “We are so keyed in to the movement pattern of our horses and the quality movement they provide our riders that we tend to notice when they aren’t moving correctly,” says Petr. And a properly moving horse is a critical component at STAR.

Petr says she is totally sold on chiropractic. “I’ve seen a horse that is very crooked and atrophied get adjusted and no longer be in pain. It improves their flexibility and makes them happier campers to work with you.” Petr adds, “If your partner’s not happy....well, they’re a lot bigger than we are!”

Petr says Adair doesn’t just walk up and do one spot; he treats the whole horse. “You can tell it doesn’t hurt the horse,” says Petr, noting the horses wouldn’t stand still if it did. She says the preventative maintenance is worth it. “When they have issues and it takes a little time, energy, and effort on our part, it’s worth it.”



Using the Latest Technologies to Pinpoint and Relieve Aches and Pains of Small Animals

by Dr. Darryl Millis

Veterinary medicine has made great strides in recent years toward improving the lives of small animal patients. Progress in the field of veterinary orthopedics has given the practitioner diagnostic and clinical tools that rival those used in human orthopedics.

Small animal orthopedic research at UT's College of Veterinary Medicine emphasizes research with direct application to orthopedic conditions primarily of dogs, but also of cats, human beings, and other species. The program pursues research in several focus areas, including motion analysis, physical rehabilitation, and assessment of pain relieving drugs.

We have, for example, conducted studies directly related to the nonsteroidal anti-inflammatory drug (NSAID) deracoxib the first drug approved by the U.S. Food and Drug Administration for the treatment of postoperative pain in dogs. Additional research led to the subsequent approval of this drug for chronic osteoarthritis. In addition to the pivotal clinical trials for drug approval, we have conducted research model studies to evaluate appropriate doses. Studies of other drugs have also undergone testing.

The response of dogs with osteoarthritis of the stifle to various NSAIDs has indicated that dogs respond differently to various NSAIDs. The typical response is a 1.5 to 9 percent increase in the maximum force placed on the lame limb. Similar responses have been documented with application of nontraditional modalities such as transcutaneous electrical nerve stimulation and extracorporeal shock wave therapy.

Our program also has a strong focus on research in small animal physical rehabilitation. These efforts dovetail with the burgeoning interest in this area and with the

training program offered through the Certificate Program in Small Animal Rehabilitation based in the college. Studies have evaluated a number of physical modalities, including therapeutic ultrasound, cryotherapy, transcutaneous electrical nerve stimulation, and extracorporeal shock wave therapy.

Following surgery for cranial cruciate ligament rupture, for example, conventional therapy results in loss of up to one third of muscle mass in the operated leg and permanent loss of stifle extension in some patients. Our initial study of physical rehabilitation in clinical patients following this procedure indicated that rehabilitation can greatly slow muscle atrophy following surgery and maintain normal range of motion of the stifle joint.

Another strong suit of the program is research on limb motion and function with therapeutic and aquatic exercises. One study evaluated the buoyancy that dogs experience while standing in different heights of water. For example, when the water is at the level of the hip joint, the dog weighs only 40 percent of what it would if standing on dry ground. Joint motion while the dog is walking in an underwater treadmill at different water levels has also been characterized. This information allows the development of specific protocols to increase or decrease motion of individual joints in a buoyant environment. Other exercises, such as walking on a level or inclined treadmill, ascending stairs, wheelbarrowing on the forelimbs, dancing on the rear limbs, and stepping over raised obstacles have also been studied, sometimes with results that are not intuitive. For example, dogs step over raised obstacles by flexing the elbow more; shoulder and carpal motion are not affected while stepping over obstacles.



We also have some of the latest tools to help in our research, including force platform, motion analysis equipment, Dual Energy X-Ray Absorptiometry (DEXA)—which helps us analyze body composition, bone density, lean tissue mass, and static weight bearing forces. The force platform allows the determination of ground reaction forces, or how much force or weight is placed on each limb as it strikes the ground. Because the results can be objectively compared over time without relying on subjective analysis of gait, this equipment has become the standard for evaluating weight bearing and lameness. The sensitivity of the equipment can allow identification of subtle lameness that may not be visible to the eye. In comparing conventional clinical subjective lameness evaluation with measurement of ground reaction forces using a force platform, we found that forelimb lameness may not become visually apparent until there is a 20 to 30 percent difference in weight bearing between the affected and non-affected sides as measured by the force platform. DEXA is also valuable in determining and quantifying the effects of various medical and surgical treatments for orthopedic conditions.

Another use of DEXA is to determine bone density and body composition. Studies performed here have evaluated bone healing in dogs with fractures treated with growth factors. We have also conducted studies to quantify changes in muscle and bone mass in dogs following cranial cruciate ligament rupture. Significant muscle mass is lost for the first 4 to 6 weeks with no rehabilitation, and muscle atrophy begins almost immediately. Bone mass is also lost, but the loss is delayed following surgery, lagging behind muscle loss, and bone loss continues for at least 8 to 10 weeks after surgery. This information is valuable in understanding atrophy of tissues following injury and disuse and can be helpful in designing rehabilitation programs to attenuate the loss of bone and muscle tissue.

The orthopedic research laboratory was among the first to incorporate motion analysis technology into gait analysis. The technology is similar to that used to make


animated films, in which actors perform a scene while wearing suits with reflective spheres placed on the body. Cameras record the action, and computer software allows manipulation of the points so that a character is formed in digital format. Although the equipment is relatively expensive (\$150,000), it has become an integral part of evaluating gait in ways that were previously not possible. In addition to evaluation of joint motion during various therapeutic exercises, joint motion and stride length have been characterized with conditions such as hip dysplasia and cranial cruciate ligament rupture.

We have also conducted studies evaluating joint motion and forces placed on the limbs during jumping. This research may result in improved training techniques and equipment during competitions, such as agility trials, to reduce injuries, such as soft tissue damage to the shoulder joint, which are increasing in prevalence.

Other studies have been directed toward evaluation of body motion during gait in dogs with lameness. Because the back typically flexes laterally more toward the lame limb, careful evaluation of back motion in dogs with rear limb lameness can be helpful in the visual analysis of gait. This characteristic appears to be a more sensitive indicator of rear limb lameness than a head nod or hip hike. Further studies may elucidate other compensatory movements of the body, potentially identifying secondary problems such as back pain or spinal arthritis as a result of chronic lameness. In addition, we are currently conducting studies centering on a technique known as inverse dynamics to further characterize the strength of joint motion during gait.

Measurement of forces placed on the limbs while the animal is standing in a static, symmetrical position appears to be a cost-effective method of determining a lame limb, with relatively good correlation to force platform analysis of gait. This can be a significant advantage to veterinarians in clinical practice with limited space and personnel to assist with gait analysis, yet allow an objective measure of weight bearing.

Another goal of our clinical group is to evaluate joint and body motion to aid the practitioner in determining lameness and to provide information regarding the sensitivity and specificity of these movements. This helps improve identification and early management of patients with musculoskeletal conditions.

While significant progress has been made in providing valuable information regarding orthopedic and rehabilitation patients in an evidence-based fashion, small animal orthopedic research will continue to evaluate treatments for various conditions with the goal of improving the lives of companion animals. 

Dr. Darryl Millis says the orthopedic research laboratory was among the first to incorporate motion analysis technology into gait analysis.



The 2008 UT Knoxville Chancellor's Honors Banquet recognized **Dr. Linden Craig**, Associate Professor of Anatomy, for Excellence in Teaching. Dr. Craig also received the 2007-08 Charles and Julie Wharton Professorship Award in the College of Veterinary Medicine.



Congratulations to **Dr. Patricia Sura** who received the 2008 Phi Zeta Research Award for the most outstanding manuscript in the Clinical Sciences Category. Her manuscript titled "Comparison of the 99mTcO4-Trans-Splenic Portal Scintigraphy to Per-Rectal Portal Scintigraphy for the Diagnosis of Portosystemic Shunts in Dogs," was written with co-authors Drs. Karen Tobias, Federica Morandi, Gregory Daniel, and Rita Echandi. Dr. Sura is the first UTCVM recipient of this national award.



The 2008 award for Best Oral Nutrition Abstract presented by a graduate student or resident by the American Academy of Veterinary Nutrition was presented to CVM's **Dr. Angela Lusby** '04, at the ACVIM Forum in San Antonio, Texas. Dr. Lusby's abstract was titled, "Influence of Gender and Sexual Alteration Status on Feline Adiponectin."

Dr. Michael (Mickey) Sims has been appointed Associate Department Head of Comparative Medicine.

Dr. Marcy Souza joined the Department of Comparative Medicine as a tenure-track Assistant Professor, as of July, 2008. Among her duties, she will serve as a member of the core faculty in the Master of Public Health (MPH) program.



Congratulations to CVM alumnus **Dr. Becky Penrose-Wilkes** who was recently elected to the Board of Governors of the American College of Veterinary

Microbiologists. Dr. Penrose-Wilkes, DVM '01, PhD '07, is certified in the Virology subspecialty of the ACVM and is a research scientist in the college.

Ruth Sapp has joined the UTCVM staff as a Program Coordinator for East Tennessee with the Human Animal Bond in Tennessee (HABIT) program. Formerly, Ruth was the Family Services Coordinator for the Children's Center of Knoxville.



Dr. Bente Flatland, DVM, MS, Dipl. ACVIM, who has just completed a three-year clinical pathology residency at UTCVM, has

joined the faculty as Assistant Professor, Clinical Pathology.

Shanna Hillsman, veterinary technician in Small Animal Clinical Sciences, received the college's Outstanding Employee citation for Spring 2008 in recognition of her characteristic of "putting her patients and co-workers first."



Emily Dyke, bookkeeper in Pathobiology, was the Fall 2007 recipient of the CVM Outstanding Employee Award for her

exemplary performance, dedication, commitment and compassion.

Dr. Brian Whitlock, DVM, DACT, has joined the Large Animal Sciences faculty as Assistant Professor of Farm Animal Field Services. Dr. Whitlock comes to UTCVM from Auburn.

Dr. Katherine Haifley, DVM, has joined UTCVM as Clinical Instructor and Director, Veterinary Imaging Services.



Dr. Andrea Matthews, DVM, DACVR, has joined the Small Animal Clinical Sciences faculty as Assistant Clinical Professor of Radiology.



The UTCVM Distinguished Dr. Dennis Coughlin Professor for 2008 is **Dr. Melissa Kennedy**, '83, Comparative Medicine.



Congratulations to the following Small Animal Clinical Sciences faculty who have been promoted to Full Professor: **Drs. Claudia Kirk**, Interim Department Head; **Diane Hendrix**; and **Juergen Schumacher**.

Congratulations to **Dr. Katherine Stenske** who has also completed her PhD in Comparative and Experimental Medicine. Dr. Stenske is a member of the faculty in Small Animal Clinical Sciences.

UTCVM faculty/clinicians completing board certifications in specialty areas: **Dr. Amy Holford**, Diplomate, American College of Veterinary Internal Medicine (Small Animal Clinical Sciences)

Dr. Amy Plummer, Diplomate, American College of Veterinary Surgeons (Large Animal Clinical Sciences)

The following UTCVM employees were recognized for their years of service:

30 years

Vanessa J. Byrge, CVM Administration
Dr. Leon N. D. Potgieter, Interim Dean and Professor, Comparative Medicine
Dr. John New, Comparative Medicine
Dr. David Bemis, Comparative Medicine

25 years

Dr. James Blackford, Large Animal Clinical Sciences
Dr. Jim Brace, Associate Dean Academic Affairs
Dr. Terry Schultz, Comparative Medicine
Jeanne Chambers, Comparative Medicine

20 years

Dr. Frank Andrews, Large Animal Clinical Sciences

Laboratory Career Path: Promotions
Rupal Brahmhatt, Immunology
Brian Johnson, Bacteriology
Jason Yarbrough, Pharmacology

New Staffers:

Small Animal Hospital:
Cassandra Ovaska, ICU veterinary technician
Becky Smith, ICU veterinary technician
Rachel Bauer, ICU technician
Scott Pellegrino, Teaching technician
Jessica Konzer, Anesthesia technician
Debra Spurgeon, MRI unit technician
Erin Wood, Anesthesia technician

Medical Records:
Nicholas (Nick) LeTellier, Sr. Medical Records Clerk
Amanda Dennis, Sr. Medical Records Clerk
Catalina (Catie) Hoffman Cliff, Sr. Medical Records Clerk
Patricia (Pat) Moore, Sr. Medical Records Clerk

Intructional Resources:
Craige Thomas, Webmaster

Hospital Operations:
Kelly Sinsigalli, Sterilization

Veterinary Social Work:
Dr. Danielle Groeling, Assistant Director



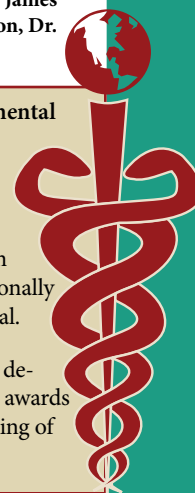
From top to bottom, left to right:

Dr. Leon N.D. Potgieter, Dr. David Bemis, Dr. Jim Brace, Dr. John New, Jeanne Chambers, Dr. James Blackford, Rupal Brahmhatt, Brian Johnson, Dr. Danielle Groeling, Jason Yarbrough

Second Annual Comparative and Experimental Medicine Research Symposium Held on the UT Institute for Agriculture Campus

This year, the UTK Office of Research, Agricultural Experiment Station, and the Graduate School of Medicine joined with host college UTCVM to offer a full day of presentations on human and animal health research. This year's keynote address was delivered by internationally known influenza virus expert, Dr. Robert G. Webster of St. Jude Children's Research Hospital.

Presentations were made by post-docs, interns, residents, and graduate students in related departments. Students judged to have the best presentations by a faculty jury received travel awards to help further their work in research. Please go to www.vet.utk.edu/research for a full listing of UTCVM award recipients.



UTCVM's International Multitask Alliance Program (IMAP)

Taking UTCVM to the intercultural and international world by advancing our academic resources for worldwide health benefits

UT's College of Veterinary Medicine is a major force in the development of veterinary medicine and its role in public health in the People's Republic of China. An educational exchange program with China Agricultural University College of Veterinary Medicine (CAUCVM) features faculty technology exchanges, visiting faculty programs, and post-DVM graduate student training.

Chinese officials, recognizing the need to strengthen the country's public health infrastructure, have asked UTCVM to provide an initial public health course. Dr. John New, professor of Public Health and Epidemiology and head of the Department of Comparative Medicine, developed a one-week course that has been submitted to the Chinese Center for Disease Control for approval and delivery in the spring of 2009.

As part of the collaborative training program to produce a new generation of cooperative, international veterinary scientists, a post-DVM, Ph.D. student candidate, sponsored by the China Scholarship Agency, is taking 18 months of laboratory training in UTCVM's Anticancer Molecular Oncology Laboratory with Dr. H. C. Robert Wang, associate professor of Molecular Oncology and program administrator for the International Multi-

task Alliance Program (IMAP). The candidate student will publish a dissertation and research reports based on the experimental results.



In May 2008, a junior faculty member in surgery at CAUCVM undertook a four-week externship in dentistry, surgery, and exotic animal care at UTCVM with CVM host professor, Dr. Ed Ramsay. In fall 2008, another junior faculty member will do a four-week externship at UTCVM in internal medicine and laboratory diagnosis.

In May 2008, UTCVM's Dr. James Brace, associate dean for Academic Affairs, and Dr. Wang attended the Sixth Annual Meeting for Deans of Chinese Veterinary Medical Colleges in Nanning City. As keynote speaker for the meeting, Dr. Brace described the outlook for American veterinary education, current licensing policy, and the significance of continuing education to representatives from 35 Chinese veterinary institutes.

As part of the visiting faculty program, UTCVM's Dr. Ed Ramsay, professor of Exotic Animal Care, gave one week of lectures to faculty and students from CAUCVM following his attendance at the November 2007 Red Panda conference in Chengdu City, Sichuan.

In December, 2007, UTCVM's Dr. Chris Egger, associate professor of Anesthesia and Acupuncture, completed a two-week externship with three acupuncture specialists at the CAUCVM teaching hospital. Dr. Egger provided short courses and workshops in pain management and gas anesthesia to CAUCVM faculty members and clinical veterinarians from the Beijing area.



Above and top left: Drs. HC Robert Wang and Jim Brace with officials from CAUCVM.

Current funding for these exchange programs is based on cost-sharing principles through which the visiting institute supports international travel expenses and the host institute covers local expenses. Additional funding is provided through competitively awarded 2007 American Association of Veterinary Medical Colleges (AAVMC) Global Initiatives in Veterinary Education (GIVE) program (\$27,000). Future funding plans include seeking funds from U.S. animal nutrition industries through joint efforts to promote animal diets in China, competing for funding from governmental and private agencies, and raising funds from regional and globally interested private donors.

For more information, please contact Dr. H.C. Robert Wang at hcrwang@utk.edu.



(left) Dr. Chris Egger traveled to CAUCVM to learn about traditional Chinese medicine and shared knowledge about modern anesthesia and pain management. (right) Nancy Zagaya, LVT, watches as Dr. Yipeng Jin, assistant professor of surgery at CAUCVM, works on a tiger at UTCVM.

MRI Outpatient Services for Community Veterinarians

The magnetic resonance imaging (MRI) outpatient service of the UT College of Veterinary Medicine allows regional veterinarians to maintain primary care over their patients yet provides easy access to a specialized diagnostic technology. MRI represents the imaging standard for evaluating a variety of neurological, musculoskeletal, and oncologic disorders.

MRI outpatient services offered community veterinarians include:

- Access to state-of-the-art technology
- Prompt review of scans by board-certified radiologists followed by a written report sent to veterinarians within 24 hours of the procedure
- Expert anesthesia monitoring
- Streamlined consultation, appointment, and follow-up services
- On-site intensive care available in the event of an emergency
- Controlled client billing through the veterinarian's hospital or clinic
- Full patient evaluation available through our referral specialty services



For the Rest of Your Life

For the rest of your life, the University of Tennessee Foundation will send you a check every quarter, or annually if you wish. Regardless of economic conditions, the amount of your check will remain the same. You can count on it because we back our commitment to you with the full assets of the University of Tennessee Foundation.


The total amount you receive every year is determined in advance and depends on several things, including your age and the amount you give to establish the arrangement. For example, if you're 75 years old, you'll receive more than someone younger who gives the same amount.

Furthermore, for the rest of your life, you will enjoy the satisfaction that your arrangement with the University of Tennessee Foundation will someday provide the College of Veterinary Medicine with needed financial resources. By letting us be a part of your financial planning, you enable us to serve future generations.

The IRS favors these arrangements and provides the donor with a charitable income tax deduction. It's one way the government encourages the private sector to support the charitable community.

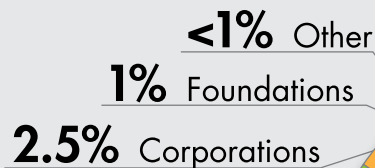
The arrangement we are talking about is the charitable gift annuity. Year in and year out, it is the most popular life-income planned giving vehicle available.

Would you like to learn more about charitable gift annuities and how they can benefit you . . . and the College of Veterinary Medicine? To receive our free literature, or a sample illustration, please contact Dennis Jones at (865) 974-7423 or at djones@utk.edu. As our director of planned giving, he will be able to answer your questions and provide a tailor-made illustration for your consideration.

We hope to hear from you, and we trust that someday soon we will be able to send you an annuity check on a regular schedule . . . for the rest of your life. 



Example: The payout for a seventy year-old annuitant would be 6.1%.



Total monies raised to date
(Jan. 1, 2005 through June 30, 2008 by source)

\$31,389,173

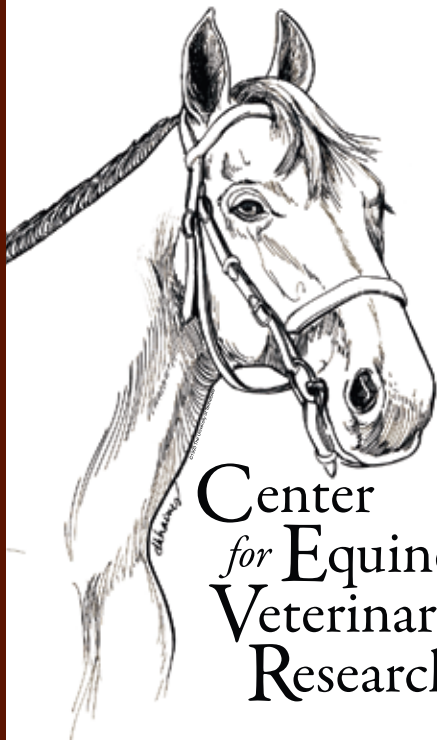
That's 73% of our goal of \$43 million.

Campaign for Tennessee, College of Veterinary Medicine

Within the Campaign for UT (2005-2011), the College of Veterinary Medicine is seeking to raise \$43 million to expand and upgrade our small and large animal hospitals, improve the quality of services provided to clients and their animals, and insure a top-quality education to our veterinary students.

THE UNIVERSITY of TENNESSEE 
INSTITUTE of AGRICULTURE
COLLEGE of VETERINARY MEDICINE

Announcing the Center for Equine Veterinary Research



UTCVM announces its Center for Equine Veterinary Research to help focus energy and efforts on areas of importance to clients, referring veterinarians, and the equine industry.

Recognizing Tennessee has the second highest equine population in the country, the college, as part of a land grant university, is devoted to generating new knowledge and understanding of veterinary medicine. The CEVR will:

- Emphasize graduate student training with the goal of increasing the number of future equine clinical researchers
- Increase veterinary student awareness of the dynamic research that will enhance their knowledge in private practice
- Foster a climate that produces a focus for funding from grants, corporations, and private individuals
- Increase collaborative research opportunities
- Engage more faculty from different disciplines in equine research
- Address issues of importance to equine practitioners

To support the center, please visit www.vet.utk.edu/giving or contact Claire Eldridge at (865) 974-6477 or celdridge@utk.edu

alumni and development



Save the date.
Friday, November 7th, 2008

Petstock

An evening of music by Allen Levi to benefit animals in need. For more information regarding this concert and auction visit www.vet.utk.edu/petstock



Dr. David 'Hank' Wright, '88, of Collierville, Tennessee, received the 2008 Tennessee Veterinary Medical Association's Outstanding Practitioner Award for his commitment to providing exceptional treatment, unselfishly giving of his time and service to his clients and the community, and elevating the standards of veterinary practice. Dr. Wright is a partner in the Collierville Pet Hospital.

The 2008 UTCVM Distinguished Alumni Awards were presented to:

Private Practice Award:

Dr. Corey Miller, '94, co-founding partner, Equine Medical Center, Ocala, FL

First Decade of Achievement Award:

Dr. Kristi Lively, '99, co-owner, Village Veterinary Clinic and Laser Center, Farragut, TN

Non-private Practice Award:

Dr. Teri Rowles, '80, National Coordinator, Protected Resources, Marine Mammal and Sea Turtle Division of the National Marine Fisheries Services (NOAA)

The Classes of 1979 and 1985 Veterinary Medicine Scholarships have each achieved the \$25,000 mark endowing these scholarship funds. These class endowments will provide veterinary scholarships in perpetuity.



CONGRATULATIONS & THANK YOU for your support of UTCVM!

The Annual Donor Honor Roll of Giving

for the gift period of July 1, 2007 through June 30, 2008 will be available on UTCVM's web site www.vet.utk.edu/giving as of August 15, 2008

Thank you for your continued support for the College of Veterinary Medicine



THE UNIVERSITY of TENNESSEE **UT**
INSTITUTE of AGRICULTURE
COLLEGE of VETERINARY MEDICINE



Improving the lives of companion animals in Tennessee

Do you know what the number one killer of companion animals in the United States? It isn't cancer or kidney disease, it is overpopulation. Every year MILLIONS are euthanized due to over crowding and owner relinquishment in animal shelters across the country. Exact numbers of euthanized puppies, kittens, cats and dogs are unknown, but what is known is that this can be stopped. That is the vision of the CAIT program. With the exception of one paid employee, CAIT is an all volunteer program of more than 100 volunteers across the state, working together on various programs and projects related to companion animals and to put an end to overpopulation.

In fall 2007, CAIT held the first Shelter Medicine Elective offered at UTCVM. Students from the third year class participated, and guest speakers from across the United States spoke on topics such as disease prevention, abuse and cruelty investigation, behavior problems, community pet dynamics, and animal housing and husbandry for better herd health. Teresa Jennings, CAIT program coordinator, says the course was an opportunity to expose the students to shelter medicine. "Whether the students go into the field or not," Jennings says, "the communities they will serve will still benefit from their broadened knowledge in this emerging field."

In what can be a heart-wrenching project, CAIT is in its third year of helping with Project Homeless Connect in Knox County. This project assists homeless citizens in getting back on their feet and into housing. Many of these homeless citizens have pets that also need care and CAIT provides that. "They have no money. The animals are all they have," explains Jennings. However, the animals could be multiplying and/or carrying diseases. Along with volunteer veterinary students, local veterinarian Dr. Bea Moody treated 25 cats and dogs of these homeless citizens. The pets received a physical exam and were vaccinated and later spayed or neutered FREE of charge. CAIT schedules spays and neuters, picking up and bringing back the animals after the procedure. "We are offering this service, but still the people are hesitant, afraid they might lose the animal. All they have is that pet that loves them. That pet doesn't know the difference between living in a castle or under a bridge," says Jennings. The pets don't judge their caretakers and love them no matter what. In the three years CAIT has participated, Jennings says she has never left with dry eyes.



October 9-11, 2008, CAIT will partner with ACAT (Animal Control Association of TN) and THA (Tennessee Humane Association) to hold the second annual state conference, the **TN Animal Care & Control Conference at the Marriott Hotel in Knoxville TN**. This educational conference brings together animal control officers, humane investigators, animal care staff, shelter managers and executive directors, veterinarians, veterinary technicians, rescue workers, and animal advocates from throughout the Southeast. Attendees are able to learn, network, and discover new methods, tools and services for improving their ability to help animals.

Conference Highlights:

- Two concurrent tracks with 16 workshops and five joint sessions
- Nationally recognized speakers
- Two special Saturday sessions:
 - Pediatric spay/neuter wet lab for veterinarians and veterinarian technicians
 - Equine handling for Animal Control Officers and humane investigators
- More than a dozen exhibitors

NEUTER

Jennings doesn't hesitate to tap into national resources to help fund the mission. Every year, the United States celebrates Spay Day on the fourth Tuesday of February. This year CAIT teamed up with the Humane Society of the United States (HSUS) to organize spay/neuter services in Tennessee. HSUS donated \$5,000 to CAIT to distribute for spay/neuter services. Jennings says the donation is an acknowledgement that Tennessee really needs help controlling its overpopulation of animals.

Since CAIT's creation three years ago, Jennings has seen cooperation grow between various animal organizations across the state. When tornados hit Tennessee in February 2008, the natural disaster highlighted that cooperative spirit. Jennings says so many

organizations pulled together to help the animals when the tornados left people and their pets homeless. After the tornados hit, CAIT sent out a call for donations and

“If you look beyond the public nuisance and public health issues associated with feral cat colonies, the economic impact is tremendous”

volunteers to assist people and their pets. Before the end of the day, veterinary student Caroline Smith had contacted the retail chain PetSmart and convinced them to donate dog houses and other supplies to the hard hit area in Macon County. Not to be out volunteered, other veterinary students donated cat/dog food, water/food bowls, leashes/collars, and other pet products. The food and supplies were delivered for months after the devastation.

In addition to being ready to help during natural disasters, CAIT continues holding Feral Fixin' events to spay or neuter feral cats in hopes that fewer homeless cats will enter our local shelters. “If you look beyond the public nuisance and public health issues associated with feral cat colonies, the economic impact is tremendous,” says Jennings. Each feral cat costs Knox County

\$175: animal control picks up the feral cat, the shelter houses the cat for three days and then, since feral cats cannot be adopted, the shelter must euthanize the cat. There are thousands of feral cats in Knox County. As of April 2008, 635 feral cats have come through the Feral Fixin'.



In Wilson County, UTCVM students travel to volunteer with Snip & Tip, a feral program developed by Humane Association of Wilson County

New Laws for Animals in Tennessee



Each month, the CAIT Legislative Committee meets via conference call, thanks to the ASPCA. This call brings together volunteers across the state to discuss current bills that have been introduced in the state legislature and other ordinances or laws being passed in other parts of the country. By continuing the partnership with the UT College of Law, yearly updates to The Compiled and Edited Tennessee Laws Pertaining to Animals notebook are produced. The notebook, which contains all the laws in Tennessee pertaining to animals, will have several new additions for 2008 including:

- **Euthanasia of non-livestock animals.**

Requires non-livestock animals to be held three business days before euthanasia except in emergency situations where an animal is injured, dangerous, or severely diseased. Applies the non-livestock animal humane death act to all persons euthanizing non-livestock animals as agents of animal shelters. Specifies that the animal must be heavily sedated if the intra-cardial injection method of euthanasia is used.

- **Chemical capture of companion animals.**

Authorizes chemical capture of companion animals by certified animal control agencies. Defines “chemical capture” as the capture of companion animals by means of sedation using approved drugs and drug administering equipment.

- **Antifreeze with ethylene glycol to contain bittering agent.**

Requires all antifreeze containing at least ten percent ethylene glycol to contain, and be labeled with, a bittering agent. Creates a Class C misdemeanor punishable only by a \$50.00 fine per occurrence.

For more information on any projects described above, please visit the CAIT website at www.vet.utk.edu/cait, or email us at CAIT@utk.edu, Teresa Jennings, CAIT Program Administrator.

2 Colleges, 1 Mission: People & Animals Unite!

A new discipline weaves social work and veterinary medicine into one fabric.

Veterinary social work is a relatively new concept. It arose from a partnership between UT's College of Veterinary Medicine and the College of Social Work. Since 2002, the two colleges have built a strong foundation for educating practicing veterinarians and staff, and the general public, about the intersection between veterinary medicine and social work.

The first ever conference dedicated to veterinary social work recently put the program on the map. The Veterinary Social Work Summit, held in April at UTCVM, hosted 42 participants from 15 states and five countries, representing 10 veterinary colleges and six colleges or schools of social work. "The Veterinary Social Work Summit is the first of its kind to provide an opportunity for veterinary social workers from across the world to come together to educate and be educated, to network and be connected, and to strengthen and solidify this new sub-specialty of social work practice," says Dr. Elizabeth B. Strand, LCSW, the founding director of the program.

One participant commented after the conference, "I wanted to let you know that the Summit was the finest coming together of professionals I have ever attended." We were happy to hear that!

The Summit highlighted four practice areas of veterinary social work: the link between human and animal violence, grief and bereavement, animal assisted interactions, and compassion fatigue. Other presentations covered topics such as mediation skills in animal-related environments; spirituality, social work, and the human animal bond; and an international panel discussion about cross-cultural experiences of animals. UTCVM will host the next Veterinary Social Work Summit again in mid-May 2009. We anticipate the Summit will become an annual conference and will be hosted by other veterinary social work programs in the future.

Although UTCVM was the first to formally give the name "veterinary social work" to this sub-specialty of social work practice, many other colleges and organizations are following suit. We hoped that this would happen and are delighted to be leaders in the field. Because of this success, however, we must rename the UTCVM program. The overall program is called "UT VSW," but the clinical program will be termed PAUSE (People and Animals United through Service and Education).

In October 2007 we were fortunate to have Danielle Groeling, LCSW, join the UT VSW team as full time assistant director. Not only has her presence strengthened the overall veterinary teaching hospital VSW program, but we will also be able to host master's and bachelor's level social work students in field training for the 2008-2009 academic year. This will be VSW's seventh year of providing field training for social work students. In addition, one more Ph.D. student will join VSW next year, raising our number of Ph.D. fellows to four. Currently our Ph.D. fellows are researching animal assisted interactions with children, horses, parakeets and the elderly, and are studying the link between human and animal violence.

Look for the first Journal of Veterinary Social Work, to hit the digital library stands in 2009. Through the support of UTCVM, the College of Social Work, and the consultation services of the UT Libraries, we are developing an open-access, on-line journal accepting peer-reviewed articles on veterinary social work topics. This format means that anyone anywhere who has access to the Internet will be able to read the journal articles. We will also be able to add video content on the site. If you would like to view recent videos about the history and current functioning of UT VSW, go to the College of Social Work Stimulus on-line magazine at http://www.csw.utk.edu/about/stimulus/enhanced/2008_spring/interview/strand.html.



Dr. Elizabeth Strand sports giraffe ears at the first Veterinary Social Work Summit.

volunteer spirit

PAUSE
PEOPLE & ANIMALS UNITED
THROUGH SERVICE & EDUCATION

Taking the dog bite prevention show on the road

When Tom Gallaher was five, he took the family pet, a German Shepherd, outside on a leash. The leash caught on something, prompting the dog to turn and bite him. Gallaher suffered injuries to his nose, across an eye and his forehead. It was his first exposure to dog bites and plastic surgery.

Now a plastic surgeon and father of three, Gallaher says the incident made him more sensitive to the issue. The American Society of Plastic Surgeons takes the issue very seriously, too. "With dog bites, many times the face is involved which can lead to serious functional and aesthetic issues," Gallaher explains. Hands and other visible areas also tend to be damaged. "It's not a surgical wound or a simple cut. There's tearing and crushing of tissues, pulling them away from their attachments. Things that define the anatomy are disrupted with a dog bite injury, and there's also a risk of infection."

Every year in the United States, approximately 4.5 million people are bitten by a dog: 800,000 of those bites are serious enough to require medicine attention. Injury rates are highest among children 5-9 years of age. Two separate articles in the Journal of the American Veterinary Medical Association point out that the dog bite problem is largely a preventable epidemic, and one of the most important steps in attempting to reduce the incidence of dog bites is education of the public. "Of the things that injure children, water accidents and athletic injuries, dog

bites are way up on the list," explains UTCVM professor Dr. Mickey Sims who helped create the college's dog bite prevention program. Dog bites can also carry a tremendous price tag. A State Farm Insurance spokesperson has indicated the total claims cost of dog bites is about \$2 billion annually. "But that pales in comparison to what happens to that child who has to live the rest of his life not only with the emotional trauma of having been attacked or mauled, but also the physical

problems that can come out of that, whether it's unsightly, the loss of function of a limb, or facial paralysis."

Three years ago, the college began offering a dog bite prevention class each May. Gallaher's kids attended the class and that's one of the reasons he and his wife, former trauma surgeon Dr. Caren Gallaher, help financially support the initiative. Caren also serves on the Dog Bite Prevention steering committee. This year, however, the college is taking the class on the road. The lessons are built around RUFUS, a rather slow, approachable spokesdog who has never met a bowl of dog food he didn't like. Even the letters in his name represent lessons for kids: Respect, Understanding dogs, Friendly dogs, Unfriendly dogs, and Staying away from some dogs. The key is to keep the message simple, non-threatening and fun to learn. Kids are naturally drawn to RUFUS.

This spring, volunteers with the college's Human Animal Bond in Tennessee took the program into the classrooms they visit with their dogs. "In one visit, they can educate more kids than we could with a class held at the college at very little expense."

Kids are taught how to behave around dogs in various situations. Sims says the lessons empower children to know how to avoid dog bites.

The college is creating a complete package to approach the problem on several levels. Initially, the goal is to put a DVD in the hands of every first grader in Knox County, one of the counties in Tennessee with a high incidence of dog bites. The college is also creating a teacher's packet. The program is scalable and geographically independent. "A teacher in Spokane, Washington can order the packet and have everything needed for a dog bite prevention class. Teachers don't have to reinvent the wheel, only familiarize themselves with the content." Sims says veterinarians and pediatricians can also use the information in their waiting rooms or for public presentations.

"Nothing is more seemingly innocent than a child and a dog," Sims says. "Yet before you can blink, that can go from something cute and inspiring to tragedy and change a child's life forever. It happens every single day, and so much of it is preventable."

For more information about the college's dog bite prevention program, visit www.vet.utk.edu/dogbiteprevention, email dogbiteprevention@utk.edu or call (865) 974-8387 and ask to speak to Sims.



Gallaher children Eliza, Aidyn, and Peyton with Lucy, the Gallaher's Blue Tick Coonhound named after B.B. King's guitar

Give Me Shelter:

HALT Helps Dogs & Youngsters

As HALT celebrates its 21st year, the impact of the program continues to be strong. HALT—Humans and Animals Learning Together—is based on a simple concept: match local shelter dogs with adolescent trainers from area residential treatment centers and have them spend four weeks training the dogs. In the process, the trainers learn more about themselves.


From this simple concept, hundreds of dogs have received obedience training and been adopted by people in the community. In return, the dogs have offered their young trainers more understanding of themselves, how to stay with a task, how a dog's behavior sometimes mirrors their own, and how the unconditional love of a dog can help these troubled youngsters cope with their problems.

The four-week HALT classes are held twice a year. To conduct a HALT class, volunteers contribute their time and their love, working with troubled youth. A board of

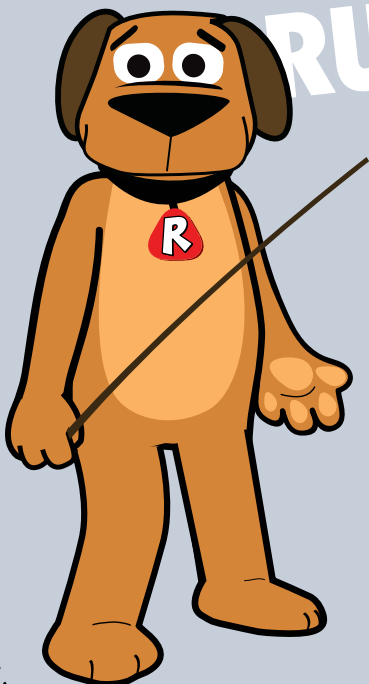
directors meets regularly to coordinate the program, providing leadership and fundraising efforts. Dr. John Shaw (UTCVM '87) provides veterinary care for the selected dogs in each class.

Typically, five dogs are selected from the Young-Williams Animal Center and the Oak Ridge Animal Shelter. Catatoga Kennel, a Farragut-based facility where classes are conducted, provides the housing of the HALT dogs.

How does HALT help the community? Shelter dogs that have received basic obedience training, have been medically and behaviorally screened, and are spayed or neutered are highly adoptable for a small fee. Volunteer obedience trainers give back to their community by helping young trainers work with their dogs. And the young trainers and their counselors have opportunities to learn patience, responsibility, and empathy. The community outreach provided by HALT affects not only those in the program; the effort also creates a connection with the public who help support HALT through donations, volunteering, and just general admiration of the role animals play in our lives each day.

For more information about HALT or to view photos of available dogs for adoption in the Fall 2008 class, visit the web site: www.vet.utk.edu/halt or call 974.5869. 

RUFUS' RULES



1. Stay away from dogs that are not accompanied by an adult.
2. Never try to pet a dog unless you first ask the owner for permission.
3. If you get permission to pet a dog, pet the dog slowly on the side of the neck and do not reach above the head in an attempt to pet the dog on the top of the head.
4. Stay away from dogs that are sad, mad or just unfriendly.
5. Do not stare at a strange/stray dog. Some dogs are threatened by staring.
6. Do not tease a dog or be unkind to a dog. This includes yelling at a dog or throwing things at it.
7. Never go near a dog that is behind a fence or in a car.
8. If a stray dog approaches you and there are no adults around, then stand very still like a tree. Never run from a dog.
9. If you are on the ground and a stray dog comes near you, lay very still like a log. Never run from a dog.
10. Stay away from a dog that is eating, chewing a bone, playing with a toy, sleeping, one that has been injured, or a mother dog that is feeding her pups.
11. Respect dogs and realize that they do not communicate the same way that human beings do.
12. Never attempt to hug a dog around the neck.
13. Do not play rough or pretend to fight with a dog.
14. Do not run around a dog and especially if you have something to eat in your hand.
15. Never feed a dog without the owner's permission and never tease a dog with food.
16. Always tell an adult that a stray dog came near you.
17. Never go near a working dog. Stay away.

How Safe is the Food on Our Table?

Free Satellite and Webcast Program Offers Agriculture and Food Vulnerability Assessment Course

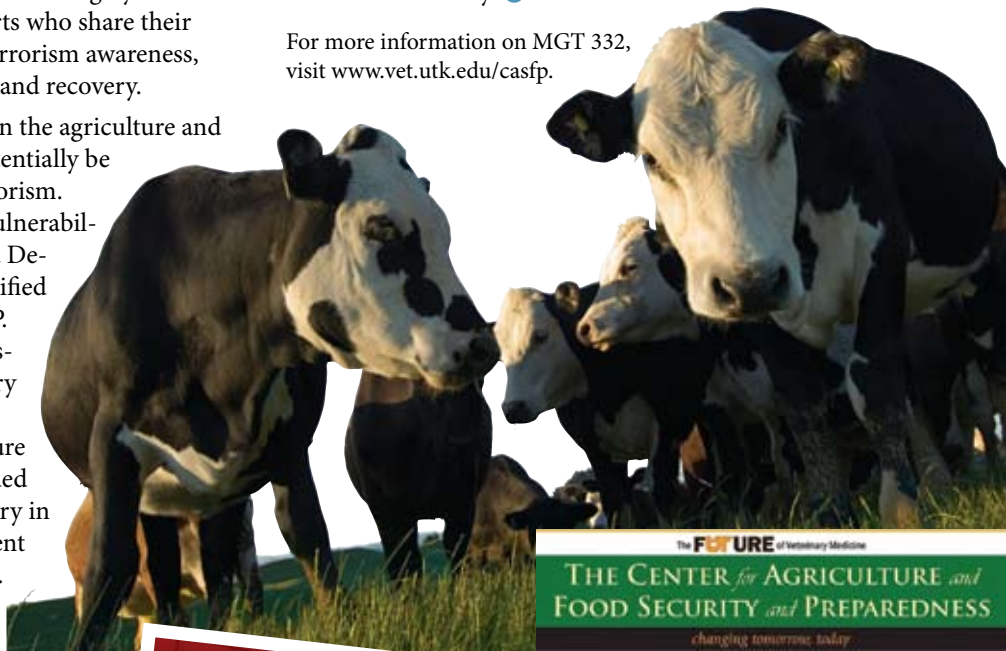
Agricultural and food security issues were the subject of a recent episode of “Live Response,” an award-winning educational program produced by the National Terrorism Preparedness Institute (NTPI). Dr. Sharon Thompson, director of the College of Veterinary Medicine’s Center for Agricultural and Food Security and Preparedness (CAFSP), and Ray Burden, UT Extension County Agent and director for Hamilton County, were among the featured panelists. “Live Response” is a 60-minute satellite television broadcast and webcast featuring dynamic panel discussions with leading experts who share their knowledge and experiences about terrorism awareness, prevention, preparedness, response, and recovery.

The featured segment focused on the agriculture and food sectors and how they could potentially be affected by criminal attacks and terrorism. “MGT 332: Agriculture and Food Vulnerability Assessment Training Course” is a Department of Homeland Security certified training course developed by CAFSP. The overall goal of the course is to assist communities and private industry to prevent and deter criminal and terrorist acts that target the agriculture and food sectors. The episode included segments taped at a MGT 332 delivery in New Mexico and an in-studio segment filmed at the NTPI studio in Florida. To date, CAFSP has delivered MGT 332 to 1,050 participants residing

in 41 states. The target audience for course and “Live Response” includes: federal, state, county, and local officials; law enforcement; public health veterinarians; emergency management; extension and crop specialists; agriculture and food industry; military; and others involved with food and agriculture security planning.

The program is archived for viewing on the NTPI website at <http://terrorism.spcollege.edu>. This episode of “Live Response” was funded by the Department of Homeland Security.

For more information on MGT 332, visit www.vet.utk.edu/casfp.



Want to know about birthing babies?

For the second year, UTCVM will present a live birthing center for dairy cows at the Tennessee Valley Fair, September 5-14, 2008. Two or three pregnant cows will be featured at the animal barns each day. Dr. Jerry Roberson, associate professor of Food Animal Medicine at the college says it’s a great way to educate the public. “The public will learn about the calving process and the students learn more about interacting with the public as they answer questions.” Students will be on hand at the fair 24/7 and will check on the cows hourly.



Students caring for calves at the inaugural live birthing center in 2007.



Jack's love As a Program Counselor on the Child and Adolescent Unit at Peninsula Behavioral Health, it is my responsibility to provide appropriate discipline to my patients as necessary. On one particular shift, the male teenage patients with whom I was working had been misbehaving all morning and afternoon, and to no avail, I had tried every technique I could think of to calm them. I was at my wit's end with how to rein in their behavior. I was pondering aloud to Camilla Fore, a nurse on the unit and H.A.B.I.T.'s facility contact at Peninsula, an idea I had about using my dog Jack's HABIT visit as an incentive for my patients to change their behavior. The children always looked forward to seeing Jack, and they knew he was scheduled to visit that evening.

I considered telling the children that Jack would visit only those who turned their behavior around and behaved the rest of the shift, but Camilla just shook her head. "No," she said, "You need to bring Jack. It's the children who behave the worst that need to see a dog." As I thought about her comment, I remembered the purpose behind Jack's service at Peninsula. The HABIT dogs are there to help patients heal, and by taking away Jack's visit from those who misbehaved, I would be removing this very powerful healing tool from the children who needed it the most. I quickly changed my perspective.

When I arrived with Jack that evening, the kids were incredibly excited. *Trevor, an especially difficult 15-year-old young man, had visited with Jack the previous week and was extremely excited to see him again. Although he was incredibly bright and could be quite pleasant at times, he was noticeably depressed and continually showed defiance, self-injurious behavior and aggression towards staff to the point where his treatment required "constant observation" in order to prevent Trevor from hurting himself. Trevor's face lit up when he saw Jack, and he jumped out of his desk to kneel down and give Jack a hug. The two of them lay on the hospital floor as Trevor talked to Jack, rubbed his belly, and scratched his ears.

I didn't work with Trevor anymore after Jack's visit that night, but a few days later, I was sitting in the hallway filling out paperwork when I heard Trevor calling me from his room at the other end of the hall. When I looked up, I saw him standing outside his door, excitedly waving a sheet of paper in the air. "I made something for Jack, Miss Becky. Can I show you?" He beamed with pride as he handed me a drawing and explained how he drew the picture of Jack. It was all I could do to keep from crying. When I asked his permission to include his picture in the HABIT newsletter, he couldn't believe that something he had created was going to be published for hundreds of strangers to see! I asked him to write down his thoughts about the HABIT dogs (Jack, Amber and Petey) to accompany his drawing:



"I really like it when the animals come down to see us. I like it because, sometimes when I'm upset or stressed out, the dog comes up to me and I just have this feeling the dog is saying it will be okay. The dogs really make me feel better. I don't know what I would do without them."

Trevor left Peninsula to return to the long-term treatment residential facility from which he came (we handle patients in the acute stage of behavior) about a week later. In the few

days before he left, I noticed something different about Trevor's behavior. I had often wondered if, even though he truly was depressed and had previously tried to kill himself before coming to Peninsula, his acts and threats of self-harm at our facility might have been motivated by a need for attention from staff. After that last visit with Jack, though, he seemed quieter and more introspective. He didn't seem to seek attention from staff as much, and his attempts at self-harm decreased. Instead of acting-out when it was time to leave, he maturely accepted his situation and willingly left to continue the treatment he had previously admitted he knew he needed but did not want to endure.

I believe there are many more stories out there like Trevor's. Animals have a way of communicating with people that we humans just cannot match. It is an amazing (and quite humbling) sight to witness the hurt, confusion and anger melt away from a child in the presence of a HABIT dog. The dog provides unconditional love and allows children to forget their pain, feel understood and possess a sense of hope for the future. 🐾

Edited version of story originally written by Becky Tucker *The child's name has been changed.

Tennessee residents, looking for spay or neuter services in your area?



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Also visit us at www.vet.utk.edu/cait

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