

# *Veterinary* **VISION**

A Publication of the University of Tennessee College of Veterinary Medicine

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**Behind the Scenes: Unsung  
Heroes in the Laboratories of  
Veterinary Medicine**

**Worms, Bugs, Blood and Guts**

**Needs-based Population  
Health Planning in the  
Appalachian Region**

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Our veterinary hospital is more than a teaching hospital; it is a major veterinary medical center composed of experts in nearly every specialty area of veterinary medicine. This center is backed by basic and clinical scientists advancing our understanding of health and disease. As the College of Veterinary Medicine's dean, I enjoy working with the members of our college community and creating a collective vision of excellence for our college and hospital.


Two major financial storms have developed to challenge the college. We are experiencing significantly declining state financial support and are in critical need of new money for the renovation and modernization of our Large Animal Hospital to meet ongoing professional education accreditation standards. The financial need to solve the accreditation issue is a \$20.9 million expense. We have worked to capture an initial \$17.6 million and are working diligently to raise private gifts to secure the remaining \$3.3 million to complete the project within the next two years. These storms have strengthened our resolve to push forward UTCVM as the national leader in teaching and patient care, to expand our investigative research capacity, and to ensure we protect our commitment to Extension outreach and community service.

We believe that achieving the following six major goals will greatly advance our college and its programs:

- Electronic medical records access for referring veterinarians. Referring veterinarians are the lifeblood of our hospital and our educational program. Without referred patients, our hospital will lack the cases needed to educate our students, interns and residents. Creating a mechanism whereby referring veterinarians can have immediate access to all real-time diagnostic imaging and biological specimen test results will dramatically enhance our relationship with referral veterinarians. If successful, it will be the first development and use of this technology across veterinary medical colleges worldwide.
- Primary care medicine and surgery education. The veterinary teaching hospital has long been a tertiary referral hospital for complicated medical and surgical cases, best handled by specialists. Our students receive strong exposure to complicated cases that demand critical diagnostic and problem solving skills. However, our hospital and students also need exposure to primary medical care and surgical cases so that they enter their careers upon graduation ready for community practices
- Medical and surgical competency assessment. Teaching is our college's No. 1 priority. It is imperative that we develop methods to assess the effectiveness of our teaching and the resulting competencies of our professional students, interns and residents.

- Clinical year curriculum flexibility. Currently all fourth-year students must complete 50 weeks of clinical coursework, and only four weeks are elective opportunities. Additional clinical year choices will allow for the creation of new hospital clinical services and will afford students opportunities to select those clinical experiences which best fit their envisioned professional career paths.
- Veterinary technician program. Our profession needs more certified veterinary technicians in the workforce. The college will carefully consider the possibility of working directly with community colleges to educate veterinary technicians.
- Basic and clinical science translational research. More than ever before, educational and research elements of a veterinary college should not be separated from patient care. Developing tight bonds between our basic and clinical scientists, as well as initiating similar connections between our veterinary college and a major medical center, will position UTCVM to engage in essential translational science research. Doing so not only is good for us, but also for our students and our patients.

This magazine issue broadly describes the work of our clinical services laboratories and related research programs performed by the faculty and technical staff in our Comparative Medicine and Pathobiology departments. These people are often 'behind the scenes' from the perspective of our hospital patients and their owners (our clients), providing vital medical diagnostic and supporting services for animals, along with cutting-edge research for the improvement of animal, human and public health.

Finally, I extend a personal note of thanks to each of you for your generosity. We have much to do together to build a bright and strong future for animals, people, our environment and the University of Tennessee College of Veterinary Medicine. 

James P. Thompson, DVM, PhD  
Dean and Professor





# Veterinary VISION

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## On the Cover:

Alpacas, camels and llamas are just some of the animals treated in our Large Animal Hospital. The expansion and renovation of the Large Animal Hospital includes a separate ward for the camelids. Last fiscal year, camelids made up almost 6 percent of the large animal clinic caseload.  
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Left: Dr. Robert Donnell oversees the Anatomic Pathology laboratory, which includes necropsy (post-mortem) and biopsy (surgical pathologies). The lab performs post-mortem examinations and tests biopsy samples from UTCVM and referral veterinarians. Right: The endocrinology laboratory deals with the study of glands and hormones and their related disorders. Under the direction of Dr. Jack Oliver, it has gained an international reputation in adrenal abnormalities and is the college's busiest diagnostic lab.

## Labs: Unsung Heroes Behind the Scenes

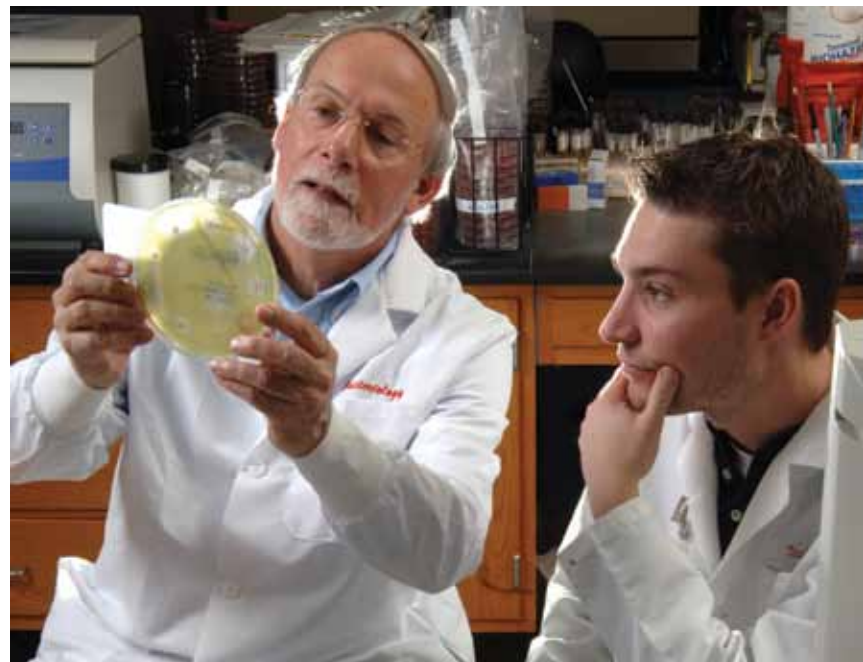
When a client visits the large or small animal hospitals at the University of Tennessee College of Veterinary Medicine, the client service representatives, students, veterinary technicians and clinicians are the ones the client interacts with. But clients rarely get a chance to meet the unsung heroes behind the scenes: the people running the diagnostic laboratories. Good medicine demands good diagnostic work.

Of the college's eight diagnostic laboratories, six are housed within the Department of Comparative Medicine: bacteriology/mycology, endocrinology, immunology, parasitology, pharmacology and virology. Clinical Pathology and Anatomic Pathology (which includes necropsy

and biopsy) are in the Department of Pathobiology. Combined, the labs run diagnostics on more than 100,000 samples submitted each year.

The labs' primary function is to support the small animal and large animal clinics. They are essential for diagnosing medical problems and helping to monitor infectious disease outbreaks. In addition to providing training sites for graduate students and direct learning experiences for veterinary student research, the labs also serve the veterinary community at large, receiving samples for diagnosis from the region, country and world. The college's diagnostic laboratories fully integrate teaching, service and research. 

Left: Dr. Sherry Cox leads the pharmacology laboratory, where the effects of drugs and other chemicals on animals' biological systems are studied. Right: Dr. David Bemis oversees the bacteriology/mycology laboratory where bacteria and fungi and their interactions with their host animals are studied.







# Sense of Common Purpose

Dr. M. M. Fry, Associate Professor, Section Chief, Clinical Pathology.

**T**here it is. The owner hadn't really noticed it before. A lump under the dog's skin. Is it an innocuous fatty tumor or something more serious? A sample sent to the Clinical Pathology Laboratory will offer the first concrete evidence whether it is benign or malignant.

Clinical pathology (clin path) and anatomical pathology are two major divisions of pathology. While anatomical pathologists use pieces of tissue, organs or whole bodies to diagnose disease, clinical pathologists make diagnoses based on fine needle aspirates. A standing joke between anatomical and clinical pathologists is "When you want to really know what's going on, come ask a \_\_\_\_ (insert either anatomic or clinical here, depending on which one is talking) pathologist."


Clinical pathologists are specialists in laboratory medicine with specific areas of expertise in hematology, (understanding both normal and diseased blood cells), clinical chemistry (understanding biologic basis and disease abnormalities associated with biochemical changes in the blood), and diagnostic cytology (studying fine needle aspirates to determine cellular changes). Sometimes they make a specific diagnosis, other times they help clinicians by narrowing the list of potential diagnoses.

Clin path section chief and pathobiology associate professor, Dr. Michael Fry, says clin path is the intersection of clinical medicine and basic science. Clin path mainly exists to support clinicians taking care of patients, and also helps to support clinical research. "I love the problem-solving aspect of clinical pathology—understanding how things work," says Fry. Pathologists need to understand

disease at a number of different levels—clinical manifestation, underlying cellular and molecular mechanisms, and how they fit together. While Fry doesn't see the actual patients, he's intimately involved in clinical cases. "It's rare for a day to go by I don't consult directly with one of the oncologists or internists on the multiple cases they are working."

None of that would happen without the expertise of the medical technologists in the clin path lab. Of the six staff members in the lab, five are licensed as human medical technologists, allowing them to work in a human hospital if they wanted. While many commonalities exist between clin path in people and animals, there are a lot of important species differences, too. Every patient at UTCVM that has blood drawn or a sample of some type of body fluid submitted will use the services of the clin path lab. Reptiles, birds, horses, llamas, cows, dogs, cats, guinea pigs, fish; the list goes on. The medical technologists' proficiency in a veterinary clin path lab has to span the clinical spectrum.

"The cumulative experience and expertise of our lab staff is incredible," says Fry. "Their knowledge and proficiency specific to veterinary clin path has developed over decades and is deep and broad, and the quality of the results generated from the lab reflects our staff's experience."

Fry says the teamwork between faculty clinical pathologists, clin path staff, students and clinicians is key and that sense of common purpose (quality patient care and quality veterinary education) is part of the culture at UTCVM. 

# A Host of Parasites: “Worms, Bugs, Blood and Guts”

**N**ematode. Ascarid. Coccidia. No, those are not names middle school students use to taunt each other. They are parasites, creatures that live off their hosts, and Dr. Sharon Patton has dedicated her entire professional career studying the likes of them.

Parasites occur in just about all animal groups, and the parasitology lab at the UT College of Veterinary Medicine receives samples from all across the country. Patton, a professor in the Department of Comparative Medicine, promises to one day write a book called “Worms, Bugs, Blood and Guts.” Until then, she verbally warns students of hookworms—those voracious bloodsuckers—and advises students to treat feces with respect, since it contains many clues to an animal’s health.

Diagnosing and monitoring parasites are important to both pet and human health. While the Companion Animal Parasite Council says gastrointestinal parasites infect almost 34 percent of the dogs in the United States, and the American Heartworm Society says heartworms

infect more than 240,000 dogs and 3,100 cats, some of the parasites are zoonotic, meaning they can pass from animal to human and vice versa.

Some of the parasites can have dire circumstances for humans. Baylisascaris, or raccoon roundworm, is found in raccoon feces, and can travel through the liver, brain or spinal cord. Yet another reason NOT to feed raccoons around your home. Toxoplasma gondii is a parasite of cats that also infects other animals including people. Only cats pass the infective stages in their feces, but other animals may have the parasite in their muscles and organs after they eat the infective stages. The Centers for Disease Control and Prevention estimates that more than 22 percent of the population 12 years and older in the United States have been infected with Toxoplasma. The disease, toxoplasmosis, is usually not a serious disease in people or cats, although both may develop muscle pain, flu-like illness and lymphadenopathy. Serious illness may occur in those with weakened immune systems, and severe consequences including birth defects, blindness and brain damage may





occur in babies born to a mother infected while pregnant. Women who are infected during pregnancy are also at risk of miscarriage. People become infected by eating the parasite in raw or undercooked meat, mussels and oysters, or by accidentally eating soil contaminated with *Toxoplasma* “eggs” on unwashed hands, fruits or vegetables.

Children may become infected with the common roundworm (called ascarids or *Toxocara* spp) of dogs and cats, although these worms cannot mature in a person’s intestine. The adult ascarids live in the small intestine of the dog or cat and pass eggs in the feces. The ascarid eggs develop in the soil and in about four weeks a larval worm is in the eggs. Dogs and cats are infected when they eat these larvated eggs. When another vertebrate animal (that includes people), eats these larvated eggs, the larvae hatch in the intestine, go into the bloodstream and migrate into the muscles, liver, lungs and other organs. Dogs and cats can also be infected by eating the mature larvae in the tissues of these animals. The worms cannot mature to adults in these animals. If children eat the larvated eggs in contaminated soil, the larvae will migrate into their muscles and eyes and produce disease. Each year more than 700 people infected with *Toxocara* spp experience permanent or partial loss of vision.

Last fall, the UTCVM hosted the national meeting of the American Society of Parasitology in Knoxville. Patton, a former president of the society, and Dr. Charles Faulkner, a clinical assistant professor, were charged with ironing out the details: program presenters, properly cooked food, and clean, parasite-free bathrooms. Patton says more than 250 people from around the world gathered to share recent scientific discoveries and remain current on parasites. “The meeting included veterinary parasitology, human parasitology, physiology, ecology and life-cycle studies of parasites, as well as diagnosis, treatment and control. Basically, it included everything you ever wanted to know about parasites ... and more!” Patton says each year the meeting brings people together who may be working on the same problem from different angles. “Who knows what you really need to know?” she says. “I might think I know a particular parasite inside and out, until I meet someone who is studying it on the molecular level. That stimulates new thought processes and moves science forward.”

Dr. Sharon Patton (at left with students) is past president of the American Society of Parasitologists and the Southeastern Society of Parasitologists (SSP), a past member of the Executive Committee of the Council of Scientific Society Presidents, the Secretary-Treasurer of SSP, a member of the board of the Companion Animal Parasite Council, and a contributor to several other scientific societies including the American Association of Veterinary Parasitologists. Patton’s research interests include diagnostic parasitology, zoonotic parasites (particularly toxoplasmosis), heartworms in dogs and cats, and parasite-induced diseases of farm, companion and exotic animals. She is author or co-author of more than 100 scientific papers and has presented more than 150 scientific and service talks.

# the Muffin Mystery

By Karl Snyder, senior medical technologist II, UTCVM Clinical Pathology Lab



It was a day like any other when the phone rang, and a lady began pleading, “I hope you can help me, sir. I’ve been calling all over the city trying to find someone who can check something to see if it has rodent droppings on it.” She had my attention.

I began to turn the problem over in my mind as she told her story. “I was eating a breakfast muffin that I’d gotten from a restaurant. I was about half finished when I put on my glasses. I was horrified to find a couple of little black things stuck to the box and sitting on top of my muffin. I called the Health Department and they are going to inspect the restaurant but they wanted me to have the material examined to see what it is.”

I had considered several things by this point and offered the following: “The only thing we might be able to do is smear it on a slide and stain it. If we see a lot of bacteria that would be about the only explanation. However, all we could say is ‘it is probably this’ or ‘possibly that.’ We couldn’t pin down anything that would hold up in court.” She assured me that she just wanted to know if she should go see a doctor.

Within an hour she was standing in the lab holding the suspect muffin in its original container. She pointed to the mysterious contaminants. Katie, our trusty lab assistant, smeared a sample on a slide while I pressed some of the brown material on the glucose pad of a urine stick and added a drop of water, getting a very strong positive.

I needed more proof before signing off on this case. Lugol’s Iodine revealed starch; Sudan IV stain lit up the fat globules and I was surprised to see cholesterol crystals in the confection. “Chocolate, ma’am. Nothing but chocolate.” She looked relieved, perhaps a little embarrassed, and was grateful for our help. “Pleased to be of assistance,” I said. “This is a full service lab.”



# Undergraduates in the Lab

In his second year of college, Stephen Kania walked into a research laboratory where a friend was working and said, “This is it. This is what I’m going to do the rest of my life. This fits.” Kania, now an associate professor in the UTCVM Department of Comparative Medicine, went on to earn a bachelor’s degree in biology, a master’s in veterinary microbiology and a PhD in veterinary infectious diseases.

Kania splits his time evenly between teaching, research and diagnostics. Outside of the classroom, he carries out these activities in the immunology laboratory. Much of the work in the lab involves molecular diagnostics, molecular genetics and molecular characterizations. “In terms of the college one of our missions is to study infectious diseases,” says Kania. The college’s Center of Excellence in Livestock Diseases and Human Health funds some of the infectious diseases research done in his lab. Kania says studying infectious diseases is important to both human and animal health. Methicillin resistance, a hot topic in human and veterinary medicine, arose in the organisms that infect humans long before being found in ones that infect animals. To Kania, that is one of the more interesting and best reasons to study methicillin-resistant *Staphylococcus pseudintermedius* in dogs. “Fifteen years ago, you couldn’t find one of these organisms resistant to methicillin; now we’re seeing about 30 percent resistance. On a graph, that’s a quick climb, and we’re very interested in learning how resistance genes are spread to susceptible organisms and conditions that favor the proliferation of resistant organisms.” Kania’s lab is studying it locally, nationally and collaborating with researchers in Europe. The research team at the UTCVM includes clinicians, microbiologists, technologists, veterinary students and graduate students. Dr. Linda Frank focuses on transmission between owners and their pets and Dr. David Bemis leads an effort to characterize resistance to multiple classes of antibiotics. Bemis works closely with Kania in teaching undergraduates the ins and outs of research.

A few years ago, Kania decided to add an undergraduate teaching component when the UT Knoxville McNair Summer Research Institute sent out a call for laboratories willing to participate in a graduate school preparatory internship. “I had no idea what it would be like to have an undergrad work in the lab,” Kania says. “When Edward Ofori came he didn’t know what to expect either. He not only worked in the lab that year, but the next summer, too, doing PCR analysis resulting in several publications. He’s a real bright

guy who helped train some of our veterinary students who were doing research projects in the lab.” When it was time for Ofori to graduate (he’s currently pursuing a PhD in biomedical engineering), Kania laughingly asked, “Well, are there any more of you?”

Kania believes taking courses where students are handed reagent A and reagent B to mix together to see what happens is vastly different than actually getting involved in a lab on a daily basis, thinking about a research project and using initiative.

In fact, initiative is usually the way he finds students. “The way I select them is I choose from the ones who find me,” he explains. “They are going out and contacting potential researcher mentors, and perhaps they are contacting 100 researchers. They are saying ‘I want to get research exposure,’ and I think that’s a good indicator of their commitment.” That’s what Edward Ofori’s younger brother Michael did. During his undergraduate studies in pre-med, he spent his summers working in the immunology lab. Three other students, Caroline Cofer, Lauren Liatt and Laura Eberlein, worked in the lab as undergraduates before being accepted to UTCVM. Each year, as the students’ skills progress beyond routine tasks, Kania produces more challenging projects. Eberlein, class of 2011, has sequenced the entire 27,000 bp cassette that contains the genes responsible for methicillin resistance in *S. pseudintermedius*.

Many undergraduates have limited opportunities to be involved in a meaningful way with research and have four years to determine if that career choice is right for them. Although it is a big investment of time, Kania enjoys encouraging people who show an interest in research. “The students bring a lot of enthusiasm into the labs. They often come in not knowing which end of a pipette to squeeze,” Kania laughs. “It takes a while before they can make a large contribution, but for the most part these are very talented individuals, quick learners. They ask lots and lots of questions and it’s a joy to answer those questions.”

Kania says teaching is the bottom line. “My greatest reward is being able to contribute to students’ education. That’s what it’s all about as far as I’m concerned.”





# Take 2 Aspirin, Buy Stock in Tissues, and Call Me in the Morning

**N**ever one to turn up her nose at a good medical mystery, Dr. Melissa Kennedy and her lab have helped identify herpes virus in Asian elephants, were the first to publish that equine herpes could affect gazelles, and were the first to diagnose influenza in giant anteaters, a species listed as near endangered; that's nothing to sneeze at.

Kennedy, a veterinarian and clinical virologist with a PhD in Comparative and Experimental Medicine and an associate professor at the college, received a call from Nashville Zoo veterinarian Dr. Sally Nofs who was concerned about a 12-member colony of giant anteaters, a near threatened species. An outbreak of respiratory disease had swept through the colony, affecting all 11 adults. They suffered severe nasal discharge and congestion, poor appetite and lethargy. Kennedy's lab needed samples for testing. Nasal samples. From the giant anteaters.

The virology lab at the veterinary college utilizes an electron microscope, a vital piece of expensive equipment usually only found in academic and research institutions used to identify unknown viruses. Since performing diagnostic work for exotic species is not a moneymaker, not many commercial laboratories are equipped to do it. Kennedy says it's part of the responsibility of a land-grant institution. "We service communities locally, regionally, nationally and internationally helping them with infectious disease problems. Otherwise, they might not have anyone else to turn to for assistance."

Once the samples from the giant anteaters reached the lab, the hunt was on and history was made. After isolating the virus from the samples, extensive testing with the electron microscope as well as genetic sequencing showed the anteaters were infected with a human influenza virus. The flu. Kennedy says the impact on civilization is minimal, but it shows how adaptable the wily virus is. "Just when you think you've got them figured out, they'll do something different."

Kennedy admits she harbors a healthy respect for viruses. "I think they are way cool, but I'm weird," she laughs and then explains they are the ultimate survivors that become intimately involved in the cells they target. "Viruses don't set out to kill their host because they are so dependent upon the cell. They're opportunistic and design ways to elude the host's defense systems and use the cell to their advantage. It's amazing." Kennedy says all they're really trying to do is survive and reproduce their own.


But in giant anteater populations, the influenza virus will have to try to survive without the help of humans. As word of the discovery spreads, management of giant anteaters is changing. "Given the contagious nature of the influenza virus, caretakers with respiratory disease should be restricted from caring for giant anteaters." And it all started with a runny nose. 



Photo courtesy of Pete Meenen



### About Dr. Agricola Odoi

Dr. Agricola Odoi is an assistant professor of epidemiology in the Department of Comparative Medicine at the University of Tennessee College of Veterinary Medicine, and an adjunct faculty member in the College of Public and Allied Health at East Tennessee State University. He is an analytical epidemiologist with research experience in Uganda, Kenya, Canada and the United States. His research interests include the application of geographic information systems and spatial epidemiology methods in the investigation of animal and human diseases, zoonotic infections of public health significance, and determinants of population health. He teaches both professional and graduate-level epidemiology courses at UTCVM.

Odoi is also involved in the National Institute for Mathematical and Biological Synthesis (NIMBioS), a new center based at University of Tennessee and aimed at fostering collaborations on cutting-edge research activities between biology and mathematics researchers from across the globe. As part of the institute's activities, Odoi and colleagues from Colorado State University and the USDA organized an investigative workshop this summer with the goal of developing new tools to better understand and help with addressing the problem of tuberculosis in cattle in the U.S. Last summer, Odoi also worked with a group of undergraduate and veterinary students from other universities across the U.S. as part of the NIMBioS' Research Experience for Undergraduate and Veterinary Students (REU/REV), a program intended to introduce veterinary as well as undergraduate math and biology majors to research while working together as a team.

Outside of work, Odoi enjoys spending time with his dear wife, Evah, their two lovely children, Faithful and Livia, and is actively involved in church activities. Odoi is originally from Uganda where he had his veterinary training at Makerere University, Kampala. He completed his graduate training in epidemiology at the University of Nairobi (Kenya) and the University of Guelph (Ontario, Canada). After completing his PhD at the University of Guelph, Odoi worked in public health in Canada before joining the UTCVM Department of Comparative Medicine. He loves the southern weather, countryside and people.

# Needs-based Population Health Planning: Identifying Barriers to Health Care Services in the Appalachian Region of East Tennessee

By Dr. Agricola Odoi, assistant professor of epidemiology, Department of Comparative Medicine

When someone suffers from a heart attack or stroke, receiving urgent care is critical. But for patients in Tennessee's rural Appalachian communities, can they get to that treatment in time? Dr. Agricola Odoi is answering that question, thanks in part to a two-year research grant from the Greater Southeast Affiliate of the American Heart Association. Odoi's study, "Identifying Neighborhoods Lacking Timely Access to Heart and Stroke Care in the East Tennessee Appalachian Region," will investigate issues related to access to emergency stroke and heart attack medical care.

"People living in neighborhoods lacking timely access to emergency treatments for these conditions may be disadvantaged," says Odoi. "Therefore, one of the aims of the study is to identify communities that, even if an ambulance responded in record time to a 911 call, the driving times to the nearest specialty hospital are too long for a stroke or heart attack patient to arrive at the hospital within the time recommended by the American Heart Association so as to avoid complications or even death."

The study is part of a larger research effort intended to perform health equity analyses in communities in Tennessee with the long-term goal of identifying barriers to access and utilization of health care services. The results will be used to guide needs-based population health planning.

Stroke and heart attack are serious problems in the United States, costing the country \$65.5 billion and \$156.4 billion annually, respectively. Stroke is the third most common cause of death and the leading cause of adult disability in the country. Heart attacks account for approximately 450,000 deaths in the U.S. every year. The burdens of these conditions in the U.S. vary by geographical location, with the highest risks being reported in the southeastern states. Compared to other states, Tennessee has the third- and fourth-highest risk of death from heart




disease and stroke, respectively. The Appalachian Region of Tennessee is part of the “stroke belt,” and has not only high risks of stroke and heart attack, but also high rates of other conditions, such as diabetes, that increase one’s risk of stroke and heart attack. Moreover, rural areas such as the Appalachian Region of Tennessee are known to utilize health care services less compared to more urban areas, probably because of lower geographical access to health services. Therefore Odoi’s study is designed to better understand these issues in the Appalachian Region of East Tennessee.

Stroke is a sudden attack of weakness affecting one side of the body, and is characterized by a sudden loss of consciousness, sensations or voluntary motions. Other clinical signs include sudden problems with vision; numbness or weakness of face or arm or both, usually on one side of the body; dizziness; loss of balance; severe headache of unknown cause; trouble speaking or understanding; and trouble walking. Stroke results from an interruption of blood flow to the brain, which may be due to either a clot (leading to ischemic stroke) or from rupture of an artery wall (leading to hemorrhagic stroke). Heart attack, on the other hand, is death of a segment of heart muscle as a result of insufficient blood supply to the heart, either due to blockage or rupture of vessels supplying blood to the heart.

Both stroke and heart attack require emergency treatments. It is recommended that patients with ischemic stroke receive treatment within three hours of the onset of symptoms, and that heart attack patients receive appropriate treatment within 1.5 hours of onset of symptoms. Not every hospital can provide appropriate medical care for these patients because treatment of such conditions requires medical specialists and specialized equipment. Additionally, the time-sensitive nature of the treatments implies that travel time to an appropriate specialty hospital is critical to avoid life-threatening complications or death. This is the reason Odoi’s research will focus on investigating issues related to timely access to these specialized medical care for communities in the Appalachian Region of East Tennessee.

“Our preliminary results show that although most of the communities in Appalachia can access these lifesaving treatments within a reasonable time, some rural communities are too far away from the nearest specialty hospital to arrive at the hospital within the recommended time,” says Odoi. “Our analysis also shows that all communities can reach a specialty hospital within a reasonable time via an air ambulance. This information is useful for guiding health planning at the local level,” he adds. Ashley Pedigo, a PhD student in the Department of Comparative Medicine, has been working with Odoi on this research for the past year. Some of the findings of their work have been submitted for publication in a scientific journal, and research is expected to continue for one more year. The

findings from this study will be helpful in guiding needs-based and targeted health planning and resources allocation to address problems of access to stroke and heart attack emergency treatments. 

Under the direction of **Dr. Agricola Odoi**, Comparative Medicine, the summer 2009 National Institute for Mathematical and Biological Synthesis (NIMBioS) Summer Program had a total of 16 participants ranging from high school students and teachers to graduate students, including **UTCVM student Paige Brown**, in a variety of disciplines. The NIMBioS Investigative Workshop on Bovine Tuberculosis was held at UTCVM July 7–9.

American Heart  
Association



*Learn and Live*

### Stroke Warning Signs

Sudden numbness or weakness of the face, arm or leg, especially on one side of the body.

Sudden confusion, trouble speaking or understanding.

Sudden trouble seeing in one or both eyes.

Sudden trouble walking, dizziness, loss of balance or coordination.

Sudden, severe headache with no known cause.

If you notice one or more of these signs, don’t wait. Stroke is a medical emergency. Call 911. Get to a hospital right away.

# Graduate Student Researchers and UTCVM Student News

The first recipient of the newly created **Dr. Michael J. Blackwell Award for Public Health Promise** was **Reid Harvey**, class of 2010, who has completed half of the required 21 semester credit hours toward the MPH degree with outstanding scholastic performance and the potential to achieve true promise in a public health career. The award was established in 2009 to honor Blackwell, the fourth dean of UTCVM.

Graduate students receiving awards at the 2009 UT Comparative and Experimental Medicine Research Symposium were **Dr. Ferenc Toth**, Award of Excellence, and **Kelly Chameroy**, Award of Achievement.

New veterinary student **Glenis Moore '13**, a recent UT graduate, received special recognition during UT's Exhibition of Undergraduate Research and Creative Achievement for her presentation titled "Biofilm production by *Streptococcus uberis* associated with intramammary infection." Moore, an honors student, was supervised by CVM's **Dr. Maria Prado**.

CVM student **Laura Eberlein** has received a Morris Animal Foundation (Veterinary Students Scholars Program) research award to work with **Dr. Steve Kania**, Comparative Medicine, to sequence the entire genome of *Staphylococcus pseudintermedius*, an important pathogen that is resistant to methicillin, the drug commonly used to treat staphylococci infections (canine pyoderma) in dogs.

**Jan York**, a PhD candidate in Veterinary Social Work, received a research grant from the Waltham Foundation, United Kingdom, for her project "The Neurobiological Impact of Equine Assisted Interventions on Therapeutic Riding Horses and Traumatized Children," to be conducted in Ontario, Canada.

**Sarah Hurst**, a second-year master's student in Comparative and Experimental Medicine, received a travel award from the American Society for Biochemistry and Molecular Biology to present her research in experimental biology at the Experimental Biology meeting in New Orleans. Her UTCVM mentor is **Dr. Madhu Dhar**.

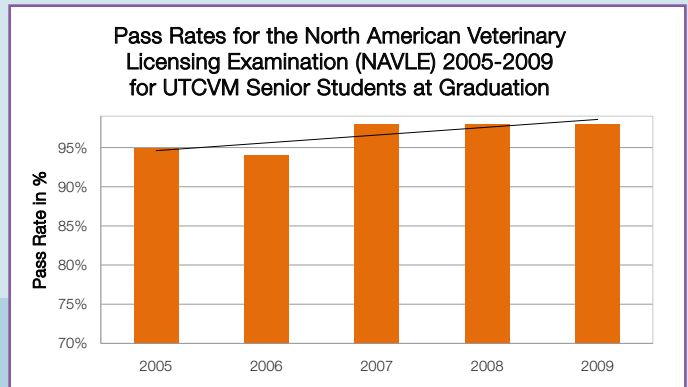
Fourth-year DVM student **Nimet Browne** received the 2009 Simmons and Associates Awards recognizing those students who have demonstrated strong business aptitude.

CVM student **Julie E. Bishop '10** was honored at the UT Knoxville Chancellor's Honors Banquet as a 2009 Top Collegiate Scholar in Veterinary Medicine.

The incoming class of 2013 has 85 students, 60 from Tennessee and 25 from out of state, an increase of 15 students from previous years.

UTCVM Class of 2013	Applicants	Enrolled
Tennessee Residents	167 (81% female)	60 (82% female)
Non-Tennessee Residents	729 (82% female)	25 (88% female)
Totals	896 (82% female)	85 (84% female)


Total number of applicants for the 2008-09 admissions cycle (class of 2013) was 896, representing an 8.5 percent increase over total applicants for the 2007-08 cycle. The number of both in-state applicants (13.6 percent) and out-of-state applicants (7.3 percent) increased.





## Thank you to Abbott Animal Health, Merial Animal Health and Pfizer Animal Health for their sponsorship of the 2009 Anesthesia Crew!

The Anesthesia Crew is an extraordinarily successful educational program at UTCVM. Launched in 2004, and initially funded in part by Pfizer Animal Health, the program provides as many as 10 of the very best preclinical veterinary students with an early experience of the clinical environment in the anesthesia service in the Small Animal Hospital. As members of the crew, these competitively selected students spend the summer between their second and third years of veterinary college enhancing their professional development while contributing to the college's clinical mission. "These students act as key members of our clinical anesthesia and pain management team working on individual clinical anesthesia patients," says Dr. Ralph Harvey, DVM, MS, DACVA, associate professor and Anesthesia Crew chief. "We insure these students are exposed to a beneficial learning environment, made richer by opportunities to participate in a range of activities, including emergency and critical care cases."

In the introductory five years of the Anesthesia Crew, the mutual support, teamwork and sharing of knowledge among crew members and fourth-year clinical students have been impressive. Harvey continues, "Although unexpected, these well may be the most widespread and beneficial outcomes of bringing these preclinical students into the hospital—we've broken down barriers in the curriculum and enriched the educational experience for all." 

## UTCVM SMALL ANIMAL ANESTHESIA CREW





Participating in the Dental Services Suite ribbon cutting are (l to r): Dr. Sharon Startup; Tammie Moyers; Dean Jim Thompson; Jamie Renner of Midmark; and Drs. Al Dorn and Claudia Kirk.

### New Dental Services Suite Opens at UTCVM

UTCVM especially thanks Midmark, AFP Imaging Corporation and Webster Veterinary for their generous corporate support. With their help, the new UTCVM Dental Suite includes custom cabinetry, a Canis Major lift table, dental digital radiography and a VetPro® 1000 Dental Delivery System.

The new suite allows our dental clinicians, staff and students to expand our dental service offerings to include surgical extractions, periodontics and endodontic therapy. The projected additional caseload will provide excellent exposure and experience for fourth-year veterinary students as they prepare for careers in community practice or specialized dental practice.

“Dental disease affects about 80 percent of our patients, but in today’s veterinary teaching hospitals, it gets less than 10 percent of the focus,” said Dr. Sharon Startup, a visiting scholar and alternative dental resident.

“Many of our patients are suffering silently with dental pain, and my hope is to keep UTCVM up to date, if not ahead of the curve, in dental education. The goal is that ultimately our patients will be pain free and have a better quality of life.”

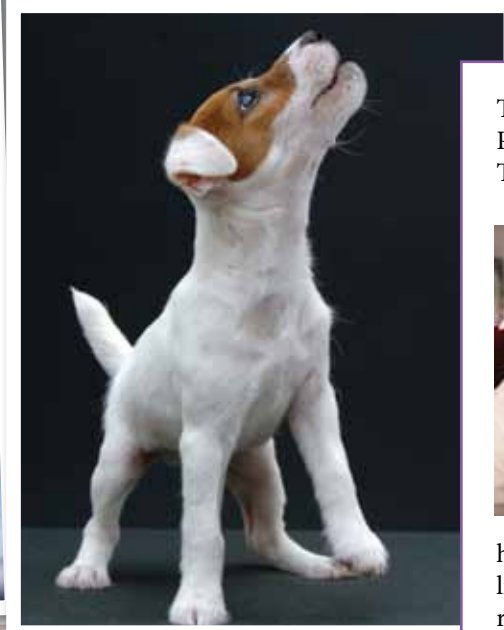






## It Takes a Community...

New veterinary service part of UTCVM's curriculum



The college has opened a Small Animal Community Practice (CP) for UT employees, retirees and students. The new service is part of the college's curriculum.



Fourth-year students, under the guidance of faculty members Drs. Amy Holford and Beth Johnson, provide primary care for dogs and cats. While veterinary students receive excellent training in treating complicated medical cases referred into the hospital, the CP is designed to provide them

hands-on experience with many of the cases they are likely to encounter in general practice. Patients that require more advanced medical care are referred to specialists either at the veterinary teaching hospital or within the veterinary community.

Since communication plays a vital role in becoming proficient veterinarians, appointments are videotaped with the client's permission. The teaching faculty members review the video with students during rounds to help enhance their communication skills.



Garbed in their standard 'pink' scrubs, Drs. Beth Johnson and Amy Holford are co-directors of the Community Practice.

## Faculty News

While **Dr. John New** has stepped down as head of the Department of Comparative Medicine after seven years, he will continue his leadership role with UTCVM's community service and public outreach programs—many of which he conceived and initiated. Those programs include Human-Animal Bond in Tennessee (HABIT), Companion Animal Initiative in Tennessee (CAIT), the joint DVM/MPA program in public health, and the college's Veterinary Social Work program. **Dr. Leon Potgieter** is serving as interim head of the department.

**Dr. Marcy Souza**, assistant professor in the Department of Comparative



Medicine, is evaluating bioaccumulation of heavy metals in wildlife species and its effect on wildlife and human health.

**Drs. Amy Holford and Beth Johnson**, Small Animal Clinical Sciences, have been appointed co-directors of **UTCVM's new Small Animal Community Practice**, which opened August 24, 2009. The practice is available to all employees of the University of Tennessee. It focuses on providing fourth-year veterinary students greater exposure to routine medical services and cases for companion animals, including vaccinations, wellness exams, behavior, nutrition, communication skills and knowing when to refer medical cases. The clinic experience will enhance the students' employability upon graduation from UTCVM.

**Dr. Hildegard M. Schuller**, DVM, PhD, Pathobiology, gave the keynote address on "Nicotine Addiction and

Cancer" at UT's 2009 Comparative and Experimental Medicine Research Symposium. Schuller recently received two National Institutes of Health R01 grants for more than \$2.5 million toward her work on pancreatic cancer. She also received a prestigious NIH Recovery grant for \$1 million.

**Dr. Seong-Ho Lee and Ms. Mugdha Sukhtankar**, Pathobiology, received Comparative and Experimental Medicine Research Symposium awards for research and travel toward their work in Dr. Seung Joon Baek's molecular biology laboratory. Baek's work focuses on identifying the subcellular mechanisms responsible for the chemo-preventive effects of specific drugs and natural compounds on cancer. Lee, a research associate professor in Pathobiology, is also the recipient of a two-year NIH R03 grant related to his work in CVM's carcinogenesis laboratory. Lee's work focuses on the study of gene expression by anti-cancer compounds, found in diet, nonsteroidal anti-inflammatory drugs (NSAIDs), PPAR ligands and antioxidants.

**Dr. Jacqueline Whittemore**, Small Animal Clinical Sciences, received an invention record notification for her Flexible and Rigid Endoscopy Training Device (FRED).



**Dr. Amy LeBlanc**, UTCVM's director of medical oncology, Small Animal Clinical Sciences, has accepted a 50 percent joint appointment as director of translational research with the UT Graduate School of Medicine's Department of Radiology and the Molecular Imaging and Translational Research Program. LeBlanc will facilitate research efforts among UT Medical Center physicians, basic researchers within the Molecular Imaging Translational Research Program (MITRP) and UTCVM clinical researchers. She will be working to implement animal models of spontaneous disease into existing research projects and bringing external funding into the MITRP to support future projects.

**Dr. April Durtschi**, Small Animal Clinical Sciences, was awarded a cardiology research grant at the American Council on Veterinary Internal Medicine (ACVIM) annual meeting in June 2009 for her proposal entitled "Pharmacokinetic and bioavailability assessment of carvedilol in healthy cats: Implications for use in systemic hypertension."



## 2008-2009 Faculty Awards



UT's Alliance of Women Philanthropists presented one of its four 2009 Giving Circle Grant Awards to **Dr. Lilith (Charmi) Mendes-Handagama**, Com-

parative Medicine, in the amount of \$18,000 for her project, "Developing Non-surgical Pet Contraceptives."

The winner of the 2009 Carl J. Norden-Pfizer Distinguished Teacher Award was **Dr. Robert Henry**, professor, Comparative Medicine.



The 2009 Student Chapter of the American Veterinary Medical Association (SCAVMA) Outstanding Educator of the Year was **Dr. Michael (Mickey) Sims**, Comparative Medicine.

**Dr. India Lane**, Small Animal Clinical Sciences and director, Educational Enhancement for UTCVM, received the Helen B. Watson Outstanding Dissertation in the UT College of Education, Health and Human Sciences. She also received UT's Outstanding Faculty Award for her work advising a student's doctoral dissertation.

**Dr. Angela Lusby**, DVM '04, CEM PhD '09, Dipl. ACVN, received the Phi Zeta Excellence in Veterinary Clinical Research Award at 2009 UT Comparative and Experimental Medicine Research



Symposium. Lusby is the first UTCVM small animal resident to complete the UT Standard Nutrition Program, and is now a diplomate of the American College of Veterinary Nutrition. She is also the recipient of a Waltham Travel Grant and presented her work at the European College of Veterinary Internal Medicine Congress, held in Portugal in September.

**Dr. Joseph (Joe) Bartges**, DVM, PhD, Dipl. ACVIM and ACVM, professor of medicine and nutrition, Small Animal Clinical Sciences, received the B. Ray Thompson Sr. Outstanding Faculty Award at the 2009 UT Institute of Agriculture Awards Day. Bartges holds the **Acree Family Endowed Chair** in Small Animal Research.



**Dr. David Hicks**, resident, Small Animal Clinical Sciences, received the first endowed Mark Bloomberg Memorial Research Award for his work on gait analysis at the 2009 Veterinary Orthopedic Society Conference. Hicks is a PhD student in the Comparative and Experimental Medicine graduate program at UTCVM.

Small Animal Medicine intern **Dr. Courtney Kleinhelter** was the 2009 recipient of the Jessie's Memorial "Top Doc" Intern Award. The award is provided annually by Mr. Jay Robinson and Ms. Brenda Perry in memory of their beloved Yorkie, Jessie.

The 2009 Brandy Memorial Award was presented to UTCVM cardiologist **Dr. Becky Gompf**, Small



Animal Clinical Sciences, at the 2009 UTCVM Honors and Awards Convocation. The annual award is made possible by Mr. Sherman "Jerry" and Mrs. Diane Garrett in memory of their beloved dog, Brandy.

Adjunct assistant professor in Comparative Medicine, **Dr. John Dunn**, DVM, PhD, was honored by the Centers for Disease Control and Prevention with the 2008 James H. Steele Veterinary Public Health Award.

**Drs. Margo Holland, Steve Kania, David Bemis** and **H. C. (Robert) Wang**, all of Comparative Medicine, received University of Tennessee Center of Excellence awards in research.

Pathobiology resident **Dr. Marcia Ilha** received the Young Investigator Poster Award for original research at the annual meeting of American College of Veterinary Pathologists. Ilha also received a student scholarship from the C. L. Davis Foundation.

**Dr. Donald McGavin's** lifetime contributions to pathology were recognized with the Farrell Lecture-ship Award, also sponsored by the C. L. Davis Foundation. McGavin is a professor emeritus in Pathobiology.

### In Memoriam

**Dr. Robert (Bob) Selcer**, former professor of neurology in the Department of Small Animal Clinical Sciences, died June 13, 2009. Selcer was board certified by the American College of Veterinary Internal Medicine (neurology) and was on the UTCVM faculty from 1977 until 2003. He completed the DVM at Texas A&M University and before joining UTCVM, he served on the faculty at the University of California. Following his retirement from UT, he remained in the Knoxville area. Selcer is survived by his wife, Peggy, and children Michael and Katie.

**Dr. Sherry Cox**, Comparative Medicine, and **Dr. Marcy Souza**, Small Animal Clinical Sciences, are recipients of \$50,500 in funding from the Morris Animal Foundation for their work in collaboration with the University of Wisconsin School of Veterinary Medicine to investigate tramadol, a pain medication, in Amazon parrots. **Dr. Cheryl Greenacre**, Small Animal Clinical Sciences, has also received funding from the Morris Animal Foundation for her work evaluating blood levels of pain-relieving drugs in reptiles (bearded dragons).

**Dr. Beth Hamper**, Small Animal Clinical Sciences, received a grant from the Winn Feline Foundation to evaluate ways of improving feline immune function through diet. She will be working with CVM's nutrition faculty members, Drs. Claudia Kirk and **Joe Bartges**.

**Dr. Melissa Kennedy**, DVM '83, PhD '91, Dipl. ACVM, Comparative Medicine, was recently elected as a member of the board of directors, Winn Feline Foundation.

**Dr. Mohammed Reza Seddighi**, who recently completed his residency in anesthesia at UTCVM, has been appointed as a clinical assistant professor in anesthesia, a position shared by both the large and small animal hospitals.

**Dr. Patricia Sura**, Small Animal Clinical Sciences, was honored at the American College of Veterinary Surgeons' last meeting with the award for best clinical publication in the journal *Veterinary Surgery*. Her article entitled "Comparison of <sup>99m</sup>TcO<sub>4</sub>-trans-splenic portal scintigraphy with per-rectal portal scintigraphy for diagnosis of portosystemic shunts in dogs," was co-authored by **Drs. Karen M. Tobias, Frederica Morandi, Greg B. Daniel** and **Rita L. Echandi**.



**Dr. Tomas Martin-Jimenez**, Comparative Medicine, launched UTCVM's new Clinical Pharmacology Consultation Service in May. He and two graduate students, **Drs. Nicolas Villarino** and **Tamara Veiga**, provide consultation to the college's clinicians, residents and interns.

### Faculty Hires, Promotions, Tenure, Transfers and Retirements

**Dr. Sherry K. Cox**, promoted to clinical associate professor, Comparative Medicine.

**Dr. Christine G. Egger**, professor with tenure, Small Animal Clinical Sciences.

**Dr. Michael M. Fry**, promoted to associate professor with tenure, Pathobiology.

**Dr. Cheryl B. Greenacre**, professor, Small Animal Clinical Sciences.

**Dr. Tomas Martin-Jimenez**, promoted to associate professor, Comparative Medicine.

**Dr. Elizabeth Strand**, promoted to clinical associate professor.

**Dr. William B. Thomas**, promoted to professor, Small Animal Clinical Sciences.

**Dr. David "Dave" Edwards**, professor emeritus and former department head, Pathobiology.

**Dr. Maria Cekanova**, transfer from Pathobiology to Small Animal Clinical Sciences.

**Dr. Donna M. Raditic**, visiting scholar, Nutrition and Integrative Medicine Service, Small Animal Clinical Sciences.



**Dr. Susannah Lillis**, clinical assistant professor, Radiology, Small Animal Clinical Sciences.

**Dr. Malanie J. Perrier**, clinical assistant professor, Surgery, Large Animal Clinical Sciences.

**Dr. Jill Narak**, assistant professor, Neurology, Small Animal Clinical Sciences.

**Dr. Angela Lusby**, clinical instructor, Nutrition, Small Animal Clinical Sciences.

**Dr. Kristie Steuer**, clinical instructor, Field Services, Large Animal Clinical Sciences.

**Dr. Beth Miller Johnson**, clinical assistant professor, Community Practice, Small Animal Clinical Sciences.

### New Diplomates

**Dr. Teresa Buchheit**, LACS, ACVIM

**Dr. Karen Kalck**, DVM, DACVIM—Large Animal, LACS

### Residents and Interns

Departing House Officers who have completed their internship or residency requirements at UTCVM are listed below.

#### Residents

**Dr. Matthew C. Allender**, Zoological

**Dr. David A. Hicks**, Surgery

**Dr. Scott A. Rizzo**, Medicine

**Dr. Mohammad Reza Seddighi**, Anesthesia, clinical assistant professor, UTCVM

**Dr. Christina M. Wolf**, Neurology



**Interns**

**Dr. Sara J. Almon**, private practice

**Dr. Menolly R. Beittenmiller**, private practice

**Dr. Glen A. Bonin Jr.**, surgical internship

**Dr. Javier Gallegos**, private practice

**Dr. Brian A. Maran**, cardiology residency

**Dr. Courtney P. Kleinhelter**, private practice

**Staff News**

**Nelle Wyatt**, LVMT, is the newly appointed referral coordinator for the veterinary teaching hospital. She handles both small and large animal referrals from community veterinarians.



Members of the college's talented Instructional Resources staff received five distinguished awards at the BioCommunications Association Conference held in July in Utah. The BCA is an international professional organization of people working in the biological communications field. Photographer **Greg Hirshoren** won a Citation of Merit in the Portrait division. Videographer **Babbet Harbison** won a Citation of Merit for Dog Bite Prevention in the Graphics Media: Specialty category; her entry also won a BCA Medical Education Award. Photographer **Phil Snow** won a Citation of Merit in the Clinical division and an Award of Excellence in the Specimen division. Graphic designer **Anik Vasington** also worked on the project. You can see their work at <http://bca.org/gallery/index.html>.

**Virginia "Ginny" Bleazey**, administrative specialist, Pathobiology, received the E. G. Chapman Outstanding Service Award at 2009 UT Institute of Agriculture Awards Day.

**New Staffers**

**Tammy Berry**, grants and contracts coordinator, Research Administration

**Pei Wang**, research specialist I/technologist, Comparative Medicine

**David Boruff**, IT specialist I/CVM webmaster

**Staff Promotions**

**Rupal Brahmhatt**, Comparative Medicine, to laboratory technologist II (senior lab assistant)

**Staff Kudos**

**Toni Conatser** and **Kim Abney**, Comparative Medicine, earned their

Environmental Health and Safety certificates for successfully completing Laboratory Hazardous Waste Management Training.

**Staff Retirements**

**Jan Grady**, LACS, Senior Budget Clerk

**Marilyn B. Cottrell**, Comparative Medicine, senior laboratory technologist I (research specialist)

**Interns Completing the Veterinary Technician Internship Program at UTCVM**

**Heather Gear**

**Jennifer Nichiporuk**

**Kayla Reger**

**Talisha Soto**

The College is proud to recognize the accomplishments and contributions of the **CVM Outstanding Employee** for Fall 2009, **Michele Wilson**. Michele's CVM career began in 2003, and she is now a Licensed Veterinary Technician Level II and works on the Oncology Service in the Department of Small Animal Clinical Sciences.

The College of Veterinary Medicines (CVM) Outstanding Employee Award recognizes exemplary performance, dedication, commitment and compassion of a college employee twice yearly. Nominations are considered by the college's Awards Committee, made up of representatives from throughout the college.

Her co-workers call Michele an irreplaceable member of the Oncology Service and describe her as knowledgeable, committed and professional. Michele is lauded for consistently putting the well-being and interests of her patients and clients before anything else, many times staying past the usual 8-5 workday to assist with sick patients. In developing an amazing rapport with clients, her caring nature becomes apparent. Students also appreciate Michele's supportive, positive and helpful attitude as she teaches them the skills considered important on their oncology rotation.

In receiving the award, Michele (in typical Michele fashion) said the Outstanding Employee Award was for all her fellow technicians who work side-by-side in the hospital.



# Pegasus Helps Pay it Forward

## Company Gives Wings to Corporate Responsibility




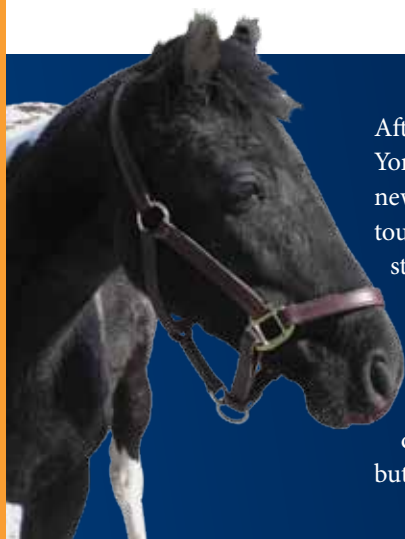
Angel was at death's door. Her gums were black and legs were cold. After her veterinarian in Middle Tennessee resuscitated Angel, owners Jeff Ray and Nancy Yonko had the 2-year-old Tennessee Walking Horse rushed to the large animal hospital at UTCVM where she was diagnosed with colitis (an infection of the large colon which erodes the organ's lining) and life-threatening endotoxemia. She was even showing signs of laminitis.

Dr. Steve Adair, associate professor of equine surgery, decided to try an aggressive form of treatment and use hyperbaric oxygen therapy (HBOT) on Angel. With HBOT, the patient is placed in a chamber that delivers pressurized oxygen, and while there wasn't any published data on HBOT use with horses, the experimental therapy had been shown to speed up the process of regenerating the lining of the colon. UTCVM is the only veterinary college in the country with an on-site HBOT chamber. The owners were ready for any option. "Not everyone is meant to own an animal," Ray says. "But if you are, then you have the responsibility and obligation to take the best care possible of that animal. In doing so, you have to be willing to allow the doctors to gain additional knowledge through trying new therapies and techniques." Ray says exploring options and learning from the experience allows the veterinarians to treat the next horse more effectively and efficiently. That is part of their passion. "That process moves the college forward in doing what it's supposed to do—educate, do research and push science to the next level."

High levels of oxygen get into the bloodstream and improve circulation, enhancing the healing process. A week and 10 HBOT treatments later, Angel was showing dramatic improvement and soon went home, but one

month later, she developed abscesses in her front hooves. It was back to Knoxville for treatment where Adair had to remove the entire front wall of her hoof. Within four months, Angel had grown a whole new hoof wall. Four years later, she's in "fashion clogs" (i.e., Steward Clogs) and a spunky member of the family.

In addition to taking animal ownership seriously, Ray, owner of Pegasus Paper Products and a UTCVM advisory board member, is passionate about corporate responsibility. Pegasus Paper Products, created in 2007, is an online company that sells high quality equestrian-themed gift wraps, bags and accessories. The company's philosophy is pay it forward. For each item sold, a portion of the proceeds benefits the UT College of Veterinary Medicine and HBOT. "People are tired of bailouts and handouts, but they don't mind spending money if they know their money is going to support a good cause." Ray believes that businesses become great through philanthropy and being active civic-minded members in the community. "Many people ahead of us helped get the college where it is today, and many more in the next generations will come along behind us. That's how good things get done." Ray believes maintaining a strong college of veterinary medicine is essential to Tennessee's agricultural industry. "We can't afford not to have a strong veterinary college from a food safety standpoint, from a large animal care standpoint, and from a small animal care standpoint. We have an obligation to make this college successful as residents of Tennessee and as animal owners." 



After Angel's illnesses and before birthing Pegasus Paper Products, Jeff Ray and Nancy Yonko worked tirelessly with the horse industry to raise funds for a new HBOT unit. The new unit has been in place since 2007 and many horses have been treated. Ray says he's touched anytime he sees a horse being treated in the HBOT unit. One horse, in particular, stands out: Pattycake. Third-degree burns covered almost 60 percent of her body, from her neck to her tail, following a barn fire. It was the worst burn case Dr. Adair had ever seen, and he wasn't sure she would survive. In addition to antibiotics and skin grafts, HBOT was part of her healing process. Ray, who doesn't know her owners, says he feels proud when he sees Pattycake or hears about her magnificent progress. "I get to see how the discoveries made with Angel and the new HBOT unit helped Pattycake. We're tiny fish, but when a whole bunch of us work together, we create a big school."



# Alumni Awards

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. Wright is a partner in the Collierville Pet Hospital.

## The 2008 UTCVM Distinguished Alumni Award Winners

### Private Practice Award

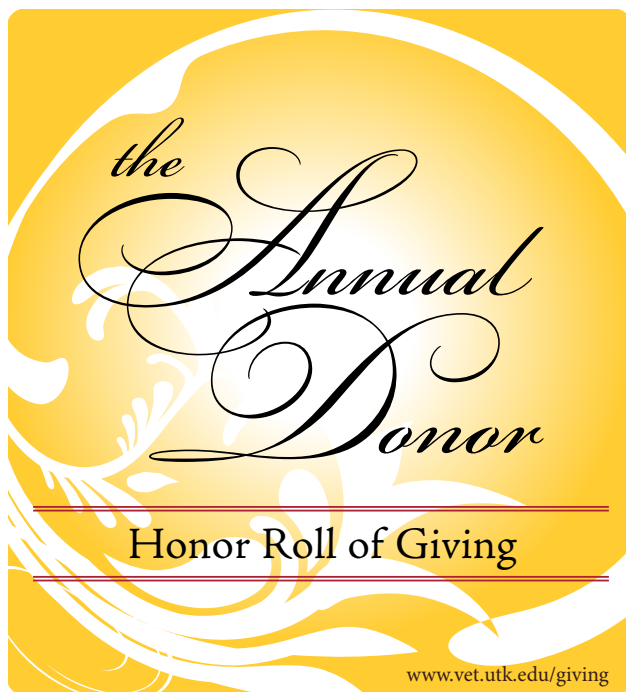
Dr. Corey Miller, '94, co-founding partner, Equine Medical Center, Ocala, Florida

### First Decade of Achievement Award

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

### Non-private Practice Award

Dr. Teri Rowles, '80, national coordinator, protected resources, Marine Mammal and Sea Turtle Division of the National Marine Fisheries Service (NOAA)



alumni and development

The Annual Donor Honor Roll of Giving for the gift period of July 1, 2008 through June 30, 2009 is now available on UTCVM's Web site at [www.vet.utk.edu/giving](http://www.vet.utk.edu/giving).

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

Thank you for your interest in Pegasus Paper Products! We'd like to offer you a **25%** savings on your entire order when you shop at our secure web site, [www.pegasuspaper.com](http://www.pegasuspaper.com)

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PRESENTATION  
MAKES THE  
PRESENT™

# Tennessee Taps UTCVM Alum for State Vet

Add state veterinarian to the many jobs Dr. Charles Hatcher has tackled. Tennessee Department of Agriculture (TDA) Commissioner Ken Givens announced Hatcher's promotion in May. In a TDA news release, Givens said, "We're excited to have Dr. Hatcher step into this new role as state veterinarian. His knowledge and experience will be a continued asset to the agency." The state veterinarian is charged with protecting and monitoring animal health.


After graduating from the UT College of Veterinary Medicine in 1984, Hatcher worked in private practice in Kentucky 10 years before returning to his family farm in College Grove, Tennessee, to establish a mixed animal practice and reopen the dairy with his family. Hatcher, whose areas of expertise include dairy and beef production medicine, reproduction and nutrition, has also served as president of the American Association of Bovine Practitioners.

Hatcher has worked for more than five years as TDA staff veterinarian and was responsible for the state's livestock premises registration program, disease monitoring activities for sheep and cattle, and also supervised the statewide team of animal health technicians.

As state veterinarian, Hatcher is responsible for certification and enforcement of animal health standards required for interstate and international commerce of livestock and livestock products. He also works with federal animal health officials in accrediting Tennessee's approximately 1,000 practicing private veterinarians.

Hatcher says animal health is closely tied to public health and vital to the state's agricultural economy. "I look forward to working with producers and our partners to continue the level of animal health service and protection that Tennessee is known for," said Hatcher. "I'm pleased to work with a dedicated team of animal health professionals, including assistant state veterinarian Philip Gordon, who tirelessly serves the citizens of Tennessee each day."

Hatcher succeeds Dr. Ron Wilson, who passed away last year. During his 25 years with TDA—more than eight of them as state veterinarian—Wilson was instrumental in helping to expand animal disease diagnostic services statewide.

Hatcher says filling Wilson's shoes will be a difficult task. "He was an exceptional veterinarian and served the state for many years, and I hope to build upon his legacy." 

*Information from the Tennessee Department of Agriculture*

Dr. Charles Hatcher (CVM '84) was recently named Tennessee State Veterinarian. He's pictured with his daughter Jennifer (CVM '05) on the Hatcher family farm.



Photo courtesy of Bovine Veterinarian Magazine



# Knox County First-Grade Students Receive New 'Rufus' DVD

UTCVM continued its program to prevent dog bites last spring with the help of new materials and an old friend.

Rufus, the lovable canine-costumed star of the college's dog bite prevention campaign, is the star of a new award-winning video, brochure and bookmark. Knox County first-graders—all 4,750 of them—received the educational materials during the 2009 Dog Bite Prevention Week (May 17-23).

In the new DVD, Rufus, the lovable, canine-costumed star, clearly teaches children not to attempt to hug a dog to show affection. The video and corresponding materials replaced annual classes for children held at the college.

A special news conference at Inskip Elementary School kicked off the DVD distribution. The event featured Rufus and a Human-Animal Bond in Tennessee (HABIT) volunteer dog to reinforce the lessons on the video. Along with the DVD, a survey was provided for parents and guardians to complete. Comments on the completed surveys were very encouraging, and parents said without exception how much they appreciated the training the DVD provided.

With this DVD distribution, the program's total number of contacts, including brochures and bookmarks, increased to more than 10,000. This figure does not include another 5,000 visits to the Dog Bite Prevention Program's Web site or teachers' packets delivered to 160 elementary school teachers in Union, Loudon and Claiborne counties. The program continues to spotlight Rufus at the college's



volunteer spirit

## Respect Understanding Friendly Unfriendly Stay away

annual spring open house, and HABIT volunteers conduct dog bite prevention classes for children in public schools and other venues in Knox and surrounding counties.

UTCVM has won several awards for the program, including a BioCommunications Association Citation of Merit in both the Medical Education Specialty Category and Graphics Media. The DVD won the college a Silver Davey in the Fifth Annual International Davey Awards for 2009. Financial support for the Knox County DVD distribution was provided by local plastic surgeon Dr. Tom Gallaher and PetSafe Village.

Knox County ranked third in the state in the number of outpatient dog bites in 2007 with a total of 497 incidents, a decrease from 541 bites in 2006. But the program aims to reduce the number more dramatically with this new

educational approach. Experts say that education can help prevent most dog bites, and UTCVM Professor Michael Sims says that "first-graders can easily absorb the messages presented in the DVD."

UTCVM's goal is to distribute DVDs to all first-grade teachers across Tennessee. The DVD contains all of the materials that teachers need to present the total program to their classes. Additionally, these teachers will be able to share their DVDs with other elementary teachers, parents and friends in their communities.


The UTCVM Dog Bite Prevention Program depends on donations to continue reaching children with this important information and training. For more information, please go to [www.vet.utk.edu/dogbiteprevention](http://www.vet.utk.edu/dogbiteprevention) and [www.vet.utk.edu/giving](http://www.vet.utk.edu/giving).

# Second- Chance Dogs

## Changing Lives: One Child, One Dog, One Bond

HALT, Humans and Animals Learning Together, is a program supported in part by the UT College of Veterinary Medicine. Through HALT classes, local shelter dogs are partnered with adolescent trainers from area residential treatment centers. These youthful trainers spend four weeks training the dogs as part of the adolescents' therapy. During that time, dogs become more adoptable by having basic obedience training. Adolescents learn more about themselves, how to stay on task, how a dog's behavior sometimes mirrors their own, and how the unconditional love of a dog can help them cope with their problems. HALT conducts classes twice a year, offering the dogs for adoption at the end of the class. A new fall 2009 canine class began on September 21, 2009.

HALT's new DVD video, "Changing Lives: One Child, One Dog, One Bond," is now available and contains additional information about the HALT program for interested groups and organizations.

For more information about HALT or to adopt a HALT dog, please go to [www.vet.utk.edu/halt](http://www.vet.utk.edu/halt). 



Susie, member of the spring 2009 HALT class, seems to smile upon her adoption at the end of her obedience training.



## Feral Fixin'

Reducing the number of unwanted and unadoptable cats entering shelters, fewer nuisance calls to animal control, and keeping feral cat populations in Knox and surrounding counties from expanding is what Companion Animal Initiative of Tennessee's (CAIT) Feral Fixin' is all about: in short, litter control. Feral Fixin' is a program CAIT coordinator Teresa Jennings began in October 2005. Jennings describes it as spay and neuter events that bring together a host of volunteers. "College faculty and students, local veterinarians and other members of the community have devoted more than 2,000 volunteer hours to the cause and treated almost 800 feral cats since we started doing this," Jennings says. Two feral cat colonies have been stabilized. "That means no new cats are coming in and no new births," she explains. This school year, CAIT has four events planned, targeting 100 ferals each time. While Feral Fixin' targets wild cats, Jennings says it's important for cat owners (or people owned by cats) to keep their felines in the house. "If you can't do that, please help keep the feral population down by having your pet spayed or neutered."

The college's shelter medicine elective for students, which is offered at Young-Williams Animal Center in Knoxville, continues to grow in popularity, doubling enrollment from the previous year. Part II of the elective, which will open the course to second- and third-year veterinary students is in development. According to Jennings, "This is an opportunity to get students more involved in their community and expose them to veterinary medicine outside the typical practice." She says even if students don't go into this growing area of veterinary medicine (the Association of Shelter Veterinarians is working to make shelter medicine a board-certified specialty) the elective will help them as they work with their traditional clients.



# It's all about Litter Control



## Remote Area Medical comes to Lincoln Memorial University

Pet overpopulation touches every community, whether or not it can afford it. This past summer, CAIT teamed with Lincoln Memorial University (LMU) and Remote Area Medical (RAM) to provide free veterinary care at a RAM expedition in Harrogate, Tennessee. Eight veterinary students, two college staff members and four CAIT members volunteered their weekend to help spay/neuter and vaccinate 268 pets at the clinic. "These students gave up a summer weekend to join volunteers from around the country to help this community and its animals. The owners were courteous and thankful for the opportunity to receive basic veterinary care for their pets. It's easy to say, 'a spay or neuter only costs X amount of dollars,' but for some people, that X amount is groceries for the week." Jennings says RAM events are eye-openers for many students.

## Tennessee Animal Care and Control Conference

For the second time in as many years, CAIT partnered with the Animal Control Association of Tennessee (ACAT) and the Tennessee Humane Association (THA) to hold the Tennessee Animal Care and Control Conference at the Embassy Suites Hotel in Franklin, Tennessee. More than 100 attendees ranging from animal control officers,

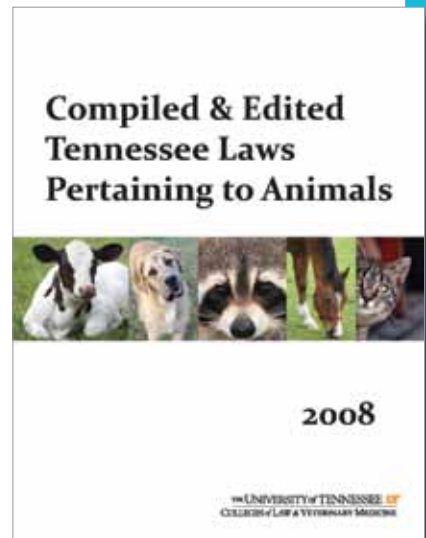


humane investigators, animal care staff, shelter managers and executive directors, to veterinarians and technicians helped to make last year's conference a huge success. Jennings says the conference helps create a strong support network among those working with animals. "These folks are important in every community across the state; many play a role in public health as well as reuniting families and their pets." The in-state conference allows agencies to participate in affordable training opportunities.

## New Laws for Animals in Tennessee

Recently, two laws were passed by the Tennessee legislature that will interest pet owners across the state. One new law authorizes municipalities having a population of at least 100,000 (Chattanooga, Clarksville, Knoxville, Memphis and Nashville) to establish an ordinance that will allow the presence of a patron's companion dog into outdoor dining areas of a restaurant, if the ordinance provides for adequate controls to ensure compliance with the Tennessee Food, Drug, and Cosmetic Act and any other applicable statutes and ordinances.

Another law, the Commercial Breeder's Law, pertains to those who sell cats and dogs in Tennessee. While the rules and regulations are still being written for this new law, it took effect in January 2009 and will aid animal control officers and state inspectors in shutting down puppy mills in the state.



## The CAIT Spay & Neuter Helpline

Call 1-866-907-SPAY (7729) to learn if there are any spay and neuter opportunities in your community. The helpline itself and the part-time worker hired to answer the phone are funded by PetSafe Village.

For more information on any projects described above, please visit the CAIT Web site at [www.vet.utk.edu/cait](http://www.vet.utk.edu/cait), or e-mail Teresa Jennings, CAIT Program Administrator, at [CAIT@utk.edu](mailto:CAIT@utk.edu).



# HABIT Volunteers Remember Our Veterans

by Karen J. Armsey, program coordinator

At the UT College of Veterinary Medicine, the War Dog Memorial stands watch outside the front entrance to remind us not only of the special services canine companions performed in combat, but also of the special connection between people and dogs. Human-Animal Bond in Tennessee (HABIT) volunteers have been using that bond to brighten the lives of veterans and other residents at the Ben Atchley State Veteran's Home since it opened in early 2007 in the Hardin Valley Road area of Knox County.

As a new HABIT program coordinator, I joined Gary Greenwald, an Air Force veteran, and his HABIT dog Lilly back in June to visit the 140-bed facility as part of my orientation process. Walking the halls with Gary and the chocolate Labrador retriever, I heard residents' stories and saw their smiles as Lilly worked her quiet magic. At each stop, Gary would tell me the resident's career accomplishments while Lilly made her visit. Gary instructed Lilly to "visit," and she would place her muzzle on the knee or bedside of the resident, making herself available to hands made frail by age and illness.

One of the first gentlemen we met played football for the University of Tennessee and went on to play professionally. He is still a big man, but he no longer speaks or moves freely. However, he does smile with recognition when Lilly enters his room. It was obvious that she was going to bless everyone she met in the facility with her gentleness and affection.

## In memory of HABIT volunteer cat, Smudge...



HABIT volunteer cat, Smudge, who belonged to CVM student Clare Scully, '11, passed away in spring 2009. A big, handsome cat, Smudge was a very laid-back feline who spent many of his HABIT volunteer hours at Knoxville's Shannondale Nursing Home where residents and staff members admired and stroked him. The friendly, stress-free visits from Smudge and Clare were always beneficial to all. Thank you, Smudge and Clare!


As we entered the day room on the Alzheimer's unit, several gentlemen turned their heads to watch Lilly, and some were able to call out to Gary and Lilly to visit them. Gary chatted with each man in turn while Lilly nuzzled hands and smiled into their faces. Lilly visited throughout the room, and even shared some of her joy with the staff. Clearly, it wasn't just the residents who looked forward to HABIT visits: several staff persons knelt to get their "furry fix" and a moment of stress relief, too.

Lilly has some lady friends at the Ben Atchley State Veteran's Home, too. We made a point to stop by Miss Reethra's room because she really loves to see Lilly. Miss Reethra is a tiny little lady whose face broke into a huge smile when Lilly came to her bedside. There was no doubt that this visit was a good thing.

Another one of Lilly's special stops was to see Loula. Loula is blind and deaf; she spends her day curled up in her bed with very limited movement and interaction with others. When Loula realized that Lilly was under her hand, she became animated, and spoke to and petted Lilly. Gary says that Loula always thanks him for bringing Lilly, and it's easy to see why.

While we were walking through the halls, a visitor asked us to be sure to visit her parents, who are both residents at the facility. Bill and Gracie share a room and are always happy to see Lilly. In this little picture of shared domesticity, all that was missing for them was a dog. So when HABIT volunteers visit their room, they are picture perfect and all smiles. A sense of normalcy is another one of the gifts a HABIT dog can bring to a residential facility that seems more hospital, sometimes, than home.

After we finished making the rounds, Gary shared with me that Lilly has a special friend who waits in his motorized chair at the front door. Though James doesn't go out anymore, he has a friend bring him treats to share with Lilly on her visits. This isn't lost on Lilly, as she now knows James by sight in his cap and chair, waiting at the front entrance. HABIT dogs don't eat on their visits, but Gary takes the treat and gives it to Lilly; this small gift between friends, at the end of her visit, is enjoyed by all parties.

So, just as dogs have worked side-by-side with our veterans, they continue to work in the Ben Atchley State Veteran's Home to share that special bond between people and animals. Wherever HABIT animals go, they bring smiles, happier memories and an opportunity to share stories and a moment's normalcy. 



# Veterinary Social Work Benefits from Generosity of Many



## Upcoming VSW Events

### Bimonthly Pet Loss Support Group

This group offers support for those grieving the loss of a beloved companion animal. It is open and free to the public. If you would like to attend or you know someone who would benefit from attending, please call the VSW Helpline at 865-755-8839 or visit [www.vet.utk.edu/socialwork](http://www.vet.utk.edu/socialwork).

### Second Annual Veterinary Social Work Summit, May 2010

In 2008 VSW hosted the first ever conference dedicated to human-animal relationships in the profession of social work. We are looking forward to facilitating this event again next year.

## News

UTCVM's Student Veterinary Social Work Award was renamed this year to honor program founder Dr. Elizabeth Strand. The 2009 recipient of the Elizabeth Strand Veterinary Social Work Award was Sarina Lyall.


Dr. Elizabeth Strand, Director, VSW

**T**hrough the caring and generosity of many, many people, the UT Veterinary Social Work program has been able to expand its facilities and provide quiet, comforting spaces for clients in need. Those of us who are a part of VSW are so thankful to be able to offer our services in such soothing facilities. Offering this type of compassion would not have been possible without these generous gifts—and for that, we thank you!

The VSW Mural—Through the generosity of Sheila and David Davis and their son, Chad, we now have a stunning mural to honor the beautiful memory of Channon Christian—a longtime friend of Chad's. The uplifting mural represents everything that is Tennessee, including streams, fishes, cardinals, raccoons and even a baby bear! The mural was presented to the Christian family and their friends, who expressed their great appreciation for the memorial. It is located just outside the VSW Family Room, contributing to an area of the college that provides comfort and support for all.

The Garden—Through the generosity and vision of long-time UTCVM supporters Julie Watts and Bob DeVault, VSW now has a “green” space for clients, faculty, students and staff to use when they need a little quiet time to take a break, enjoy nature, and be with beloved animals out in

the fresh air. The garden is located on the greenway across from the John and Ann Tickle Small Animal Hospital, just alongside the War Dog Memorial. Phase I of the garden project included preparing the site, installing the hard-scaping, and placing the key plantings that will grow up and around the space to provide privacy for those using the garden.

The VSW Family Room—Through the vision and support of Beth Needham and James Pierce, as well as the compassionate support of leadership at the UT College of Veterinary Medicine, VSW now has a Family Room. The room provides a quiet, contemplative space where clients can visit with or think through difficult medical decisions involving their companion animals. It is also a place where faculty, staff and students can discuss “matters of the heart,” as Dr. Elizabeth Strand, VSW director, says. Additional generous donors who made this room possible include the UTCVM Companion Animal Fund, Dr. and Mrs. Robert Denovo, Sandra Harbison, Dawn Hobby, Dr. Brian Maran, JoEllen Meredith, Mr. and Mrs. Barney McConkey, Isabel McCoy, Mr. and Mrs. Fred McMurray, Becky Moses, Sally Pardue, Mr. and Mrs. Bob Sinclair, Dr. Matt Stevens, Mr. and Mrs. Carl Tindell, and Dr. Prudence Walker. 





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## LARGE ANIMAL HOSPITAL EXPANSION PROJECT



### Special limited time matching gift opportunity offer by UT

The University of Tennessee will match, dollar-for-dollar, gifts and pledges of at least \$12,500 to the UT College of Veterinary Medicine for the next year. Your gift funds will be used to help renovate and expand the Large Animal Hospital to better serve you and the equine and farm/food animal industries of Tennessee. Numerous naming opportunities are available to recognize people or animals important to you.

All gifts and pledges must be paid in full by March 15, 2011, to qualify for the matching UT funds.

For more information or to make a gift or pledge, please contact Claire Eldridge, UTCVM Development Office, at 865-974-6477 or [celdridge@utk.edu](mailto:celdridge@utk.edu).

*Thank You!*