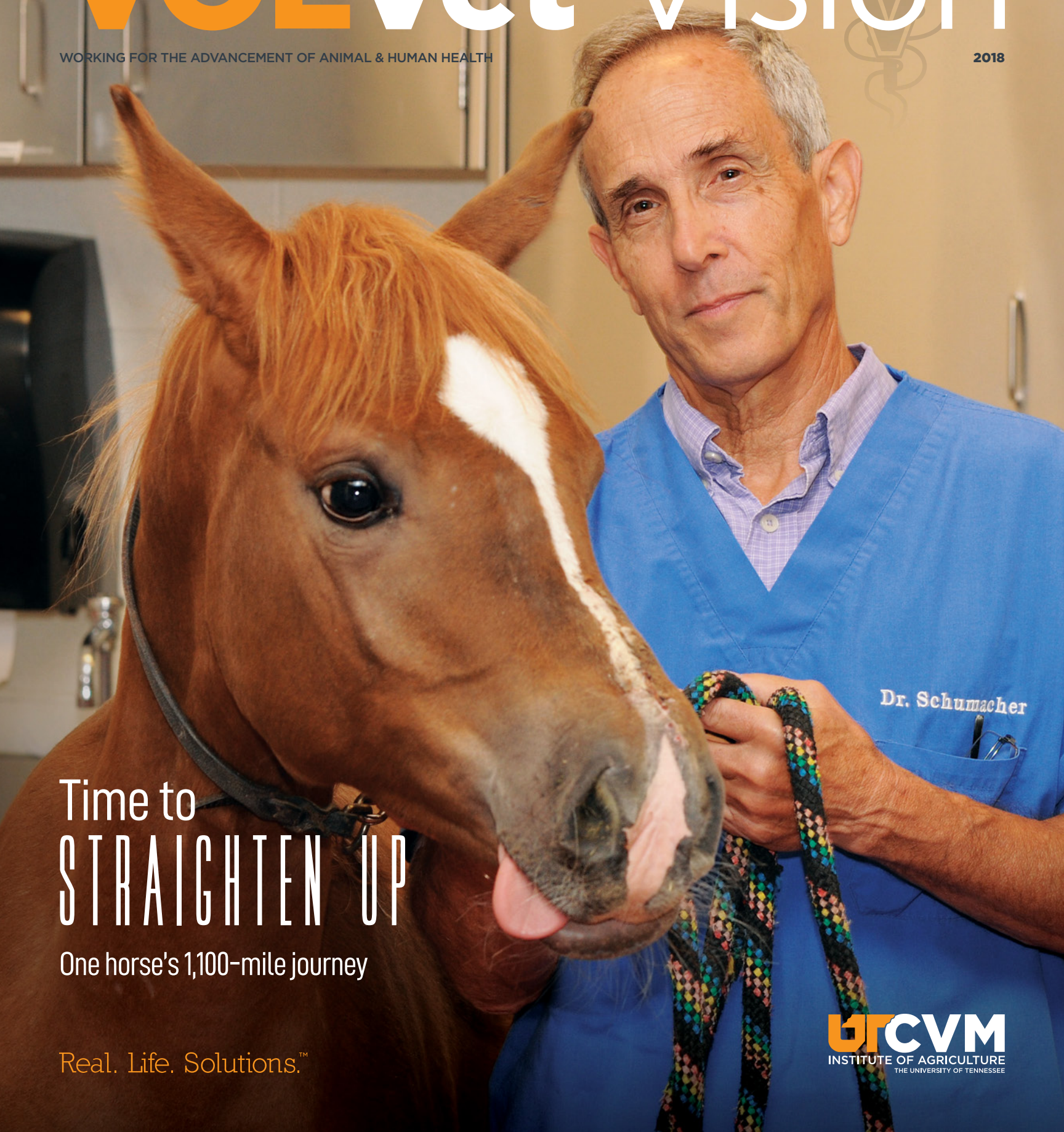


ANNUAL MAGAZINE OF THE UNIVERSITY OF TENNESSEE COLLEGE OF VETERINARY MEDICINE

VOLVet Vision

WORKING FOR THE ADVANCEMENT OF ANIMAL & HUMAN HEALTH

2018



Dr. Schumacher

Time to STRAIGHTEN UP

One horse's 1,100-mile journey

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THE UNIVERSITY OF TENNESSEE

A good year

I have had the privilege to serve as Dean of this College since October 2008. Over the last decade, we have continued to build upon the vision of our founders, and I have come to cherish our faculty, staff, and students as family. As you read their stories, you will learn that our family embraces the challenges that face us; we strive to raise the bar when it comes to teaching our students, serving referral veterinarians, providing compassionate care, and advancing discoveries that affect animal and human health.

This magazine highlights just a few examples of the breadth of our College’s impacts. Whether it’s using 3D technology to create surgical solutions, performing the first balloon valvuloplasty in an alpaca, or expanding an outreach program into middle Tennessee to help victims of crime, the UT College of Veterinary Medicine is committed to making a difference.

As the UT Institute of Agriculture begins the public phase of “Together We Grow,” its most ambitious capital campaign ever, I want to thank you for your support of the work we do day in and day out. Continuously raising the bar of excellence is a challenge, but it is a challenge we embrace.

Sincerely,

James P. Thompson
UTCVM Dean



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SPECIAL THANKS to the faculty, staff, students, and clients of the UT College of Veterinary Medicine for letting us share their stories.

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What's up doc?

A Check-up with Dr. Al Legendre

As one of the original UTCVM faculty members, what were the early challenges facing a new veterinary college?

The main challenges were building the facilities, developing a curriculum, admitting students to the first class and developing a referral service. No one in the founding faculty had designed or built a teaching hospital but each person knew what they wanted in their specialty area. Selecting a class was a challenge because there was a backlog of capable students who had not been admitted under the regional program with Auburn. Building a referral program was interesting because we did not have a clinic initially. The clients were seen in our offices and the patients were examined on our desks.

Every Little Bit Helps

Renowned animal health researcher and professor emeritus at UT College of Veterinary Medicine, Dr. Al Legendre, visited Garden Montessori School to thank them for their generous gift toward research at UTCVM. Amelia Griffith, a student at Garden Montessori School, wanted to do her part to find a cure for the often fatal feline infectious peritonitis (FIP) after losing her adopted kitten Garfunkel to the disease. Griffith and her fellow classmates raised nearly \$500 through a bake sale. The students donated the money to the UT College of Veterinary Medicine for the purpose of FIP research.

“It was hard to say good bye to our sweet family member but getting the word out and raising money at the bake sale gives us hope for future cats with FIP,” Griffith said.

What makes UTCVM special?

Teaching has been from the start considered the main mission of the veterinary college. While all veterinary colleges give “lip service” to teaching, at UTCVM you can get tenured and promoted with excellence in teaching as your principle expertise. An emphasis in teaching fits in well with a family-like environment that is part of the UTCVM culture. In the early days, I knew all the students well. It was very busy but the work was fun.

How has it changed?

The priorities are the same but growth creates new challenges. In the early days, I knew almost everyone in the building; at the time of my retirement, I probably knew about 20% of the people. It has become more difficult to maintain comradery. With growth we have a broader base of specialists providing more expertise. The referral cases are now more complex than they were at the start because the referring veterinarians have an ever-increasing degree of diagnostic and therapeutic expertise. I am very pleased that our graduates are doing so well.

Of what are you most proud?

I am proud of having had a role in the development of a new college of veterinary medicine. I am proud of the excellent veterinary students that we have graduated. They are not only good veterinarians but also respected members of their communities. I am proud that UTCVM attracts high-quality veterinarians into the internship and residency programs which speaks well about the quality of our specialty training program and about our continuing emphasis on teaching. I have thoroughly enjoyed my time at UT and couldn't imagine having had a more enjoyable career. 🐾

KNOWLEDGE

We believe that education is never complete.

That's why our people strive for continual improvement of professional knowledge and competence.



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The ART *of* *Veterinary Medicine*

*W*hen it comes to finding solutions, veterinarians are accustomed to thinking outside the box. To get outside the box, two UTCVM faculty members turn to the inside of a box: a box that holds 3D printers.

Radiographs provide an opportunity to get a two-dimensional look inside the body, and various angles can be viewed with CT, but 3D printing allows the doctor to hold and get a feel for the model. While 3D printing has been around for decades experimentally, recent breakthroughs in the technology have made it far more accessible.

A CT scan or MRI of the patient is loaded into a software program that renders the area of interest such as a bone, tumor, or artery, into a 3D model like something seen in a Pixar animated film. Then it is converted into a format that the printer recognizes and a 3D model made up of thousands of micro-thin layers is built.

Dr. Adrien-Maxence Hespel, an assistant professor of radiology, and Dr. Kyle Snowdon, an assistant professor of surgery, have partnered to create a 3D printing lab at UTCVM where pieces can be custom-made for a patient. “Kyle needs to have the model for surgery without worrying about having to deal with the CT,” explains Hespel. “We discuss the plan for the case so I know

how I need to take the images so they will meet his needs for the patient.” The quality of the images determines the accuracy of the final model.

“3D gives us another tool to find solutions and fix problems that before we just kind of accepted,” says Snowdon who started learning the technology as a hobby, converting his medical cases into models and playing around with them on his own time while a surgical resident. “It allows us to branch out and be creative.”

THE MANY FACES OF 3D MODELS

No one knows for certain how Patches, an endangered Black-breasted leaf turtle at Zoo Knoxville, acquired a hole in her face, but everyone knew it needed to be treated. The injury on the top of her nose went through the roof of her mouth, making it difficult to eat and creating a constant risk of infection. UTCVM doctors came up with a novel solution to seal the hole

long-term. Detailed images of Patches’ face were taken on a non-human research micro-scanner at the Preclinical and Diagnostic Molecular Imaging Laboratory, a part of the Molecular Imaging & Translational Research Program at the UT Graduate School of Medicine. Snowdon transformed the images into a 3D printed mask that would allow the turtle to pull her head back in her shell, and be able to see, smell, and eat. Though not the first UTCVM patient to benefit from 3D printing, Patches was the first animal at Zoo Knoxville to benefit from this technology.

IMAGINE AND RECONSTRUCT

Repairing a traumatic injury that involves multiple fractures can be very challenging; not only are there many bony fragments, but surrounding nerves must be protected, too. 3D models enable surgeons to visualize the procedure before entering the operating room. Each individual fragment can be separated and manipulated until it fits together like a jigsaw puzzle. If a metal plate will be needed to stabilize the bone while it heals, the fragments are printed, and Snowdon can pre-shape the plate following the contour of the model, knowing exactly how it is supposed to fit. “Printing patient-specific models prior to surgery for practice and refinement allows us to perfect techniques prior to the real thing, almost like a cheat code. It produces optimal results.”



Photo courtesy of Zoo Knoxville.

There is no “one size fits all” approach when it comes to correcting angular limb deformities. Angular limb deformities where the bones are bowed, twisted, or rotated are common orthopedic conditions in dogs and affect both large and small breeds. Left untreated, it can lead to joint pain and affect a dog’s ability to walk. 3D models can be particularly useful when correcting them. Following a CT scan, a virtual surgery is performed to straighten the limb. “In a 3D modeling environment we plan it out; I can remove various sizes of a bone wedge until it is the correct size and the bone is straight,” explains Snowdon. The tricky part is mimicking that in surgery. Rather than having to rely on just taking measurements for the procedure, a custom cutting guide based on the 3D bone model that fits that specific patient is designed, printed, and sterilized for use in surgery.

Doctors at UTCVM transform images into 3D models that can be used as a “cheat code” in surgery.



Images courtesy of Dr. Kyle Snowdon.

Patient-specific surgical and drill guides can also be used as patterns during delicate surgeries such as neurosurgery. Atlantoaxial instability or abnormal movement in the neck can affect any breed or age of a dog, but it is most often seen in small breed dogs. The instability between the first two vertebrae of the neck causes the bones to compress the spinal cord and leads to varying degrees of symptoms ranging from neck pain to paralysis. In severe cases, it can be fatal. When surgery is recommended, neurosurgeons place screws to stabilize the vertebrae less than a millimeter away from the spinal cord and large arteries. Drill guides placed on the bone during surgery direct the drill bits, giving the surgery team a pattern to follow that is unique to that patient, allowing them to replicate the virtual surgery.

3D printing and modeling can help our surgeons create new solutions, like cutting and drilling guides.

TEACHING TOOL

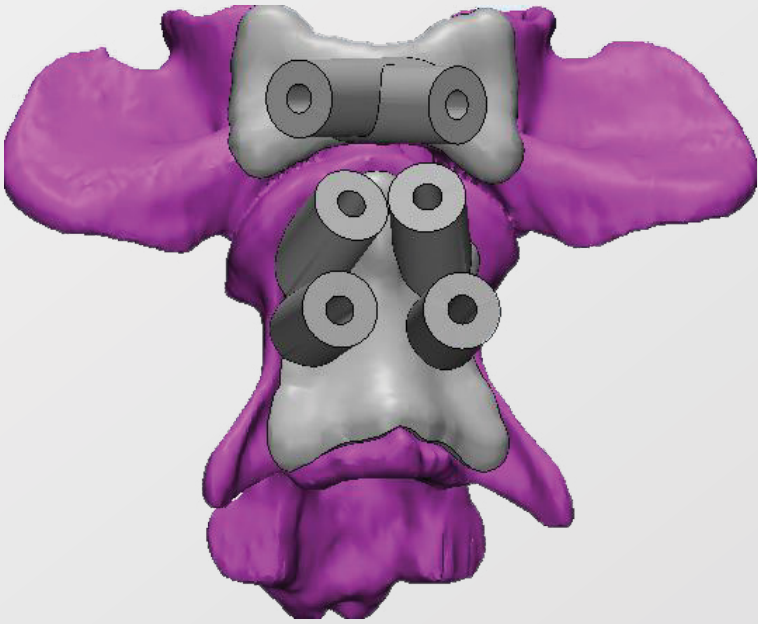
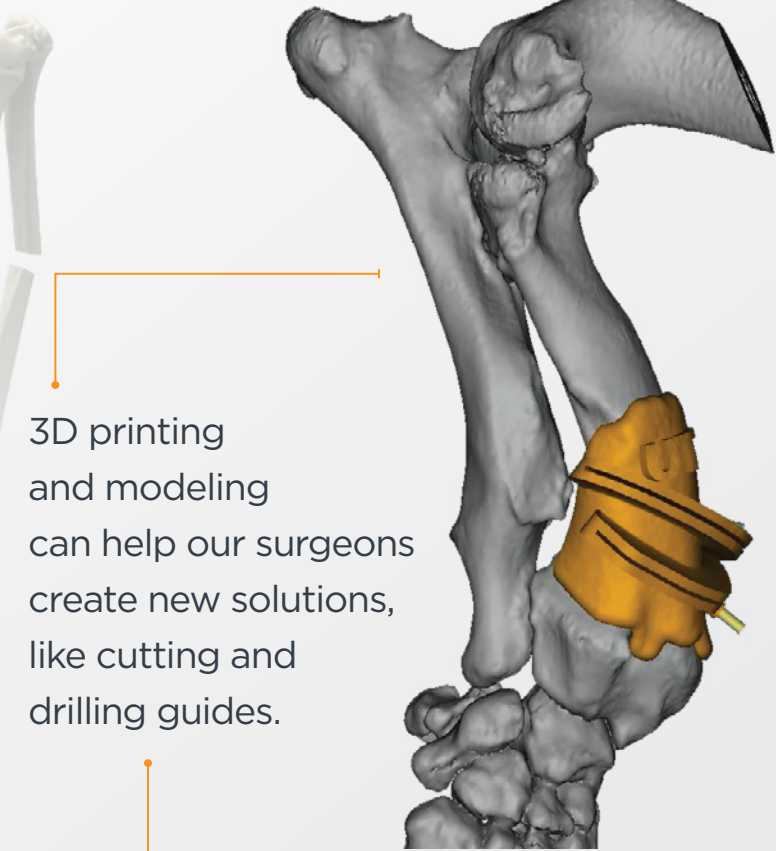
The models enable surgeons to improve their own surgical techniques, time, and accuracy. That can also translate into improvement in the classroom. Hespel and Snowdon have developed teaching models of dogs, cats, horses, cows, llamas, and other animals. The models help students visualize concepts that are difficult to grasp. The tactile learning is also useful as faculty train the next generation of surgeons in UTCVM’s residency program using models ranging from a severely arthritic hip joint of a large breed dog to a penny-sized vertebra of a toy breed.

Often times in veterinary medicine, surgeons use devices that were developed for use in humans. “They may not be optimal for our purposes,” explains Snowdon. “With 3D printing we can create things that fit our needs a bit better. If we have an idea that we think may help one of our patients, the turn-around time is very rapid since we can do it in-house.”

HELPING THE PATIENT

Allowing surgeons to accurately reproduce a simulated surgery offers many benefits for the patient. “When you are in surgery and the patient is under anesthesia, you can actually decrease the surgery time because of the preplanning done with a 3D model,” explains Hespel. “The longer a patient is under anesthesia, the more complications you could potentially have. If we are able to do a fair amount of pre-planning while the patient is not under anesthesia, then we can reduce the cost and the complication rate for the patient, and that’s very gratifying.”

The models are also helpful while communicating complicated surgeries or disease processes with owners. Hespel says they can help owners appreciate how small a vertebra is and its close proximity to the spinal cord. Snowdon agrees. “It’s one thing to draw something on the whiteboard, but to actually have a replica of what we are dealing with or mimicking a certain procedure the owners can see, feel, and touch with their own hands, really helps the owners ask better questions and understand not only what they’re signing up for but also the prognosis associated with it.” Hespel adds it also helps owners understand the rationale behind treatments and can help them be more compliant with post-surgery instructions.



Images courtesy of Dr. Kyle Snowdon.

Often times, 3D planning and models are used in cases that are extremely challenging, and patients may still experience pain and discomfort even with a successful surgery. “I think 3D printing has definitely shifted the scale (for the better), in terms of what injuries and conditions can be successfully treated, but sometimes a perfect outcome isn’t possible,” says Snowdon. “Discussing the pros and cons of the surgery will always be an essential part of being a doctor.”

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Photo courtesy of Zoo Knoxville.

Dog with a Snake Bite?

UTCVM studying effects of HBOT on snake bites

Snake bites are a common problem for dogs, especially in the summer and fall months. UTCVM is conducting a study involving the effect of hyperbaric oxygen therapy (HBOT) on dogs bitten by snakes.

HBOT, the use of pressurized 100% oxygen, is used as an adjunctive treatment in many conditions to improve blood and tissue oxygenation, enhance the body’s natural antibacterial activity, and reduce inflammation. UTCVM has HBOT units for both small and large animals.

While many clinicians believe HBOT reduces swelling, pain, and necrosis associated with snake bites, there are no studies offering proof. The purpose of the study is to assess the effect of HBOT on local wound swelling, severity, and pain. All dogs receive the standard of care for treating a snake bite wound, including fluids and pain medications. Dogs are eligible for the study if a snake bite is confirmed or suspected, and treatment can begin within 24 hours.

If your dog is bitten by a snake, you should take it to a veterinarian immediately for evaluation and treatment. Standard treatment includes fluid therapy, pain management, topical wound management, sometimes

antivenin, and rarely antibiotics. Do not attempt to handle the snake because it can still bite you. Call 865-974-8387 for more information about the study.



sivethealth.com



Sechrist Veterinary Health installed a Model SV500 Veterinary Hyperbaric Chamber to support the study.

Time to STRAIGHTEN UP

One horse's 1,100-mile journey to a better quality of life.

Barbara was born with campylorhinus lateralis, a congenital nasal deviation commonly called wry nose. Breathing and eating were difficult for the foal, and she aspirated milk and suffered bouts of pneumonia.

“There's more things right about her than there is wrong.” That's how 11-year-old Shane Bookbinder described Barbara, a straight Egyptian Arabian foal, to a reporter with KXAN TV in Dripping Springs, Texas.

Rather than opt for euthanasia, owner Martha Carroll-Talley wanted Barbara to have a second chance at life, but that would require around-the-clock attention and expensive surgery. She sent the foal to Imagine A Horse, a training and boarding facility, where Allen Pouge hand-reared her and helped her accept people touching her face and looking in her mouth. He knew Barbara's medical team would need to be able to handle her in a stress-free manner during her weeks of recovery following surgery. Shane met Barbara at Imagine A Horse and joined the team; he mixed her milk and helped teach her basic handling skills.

Barbara's veterinarian in Texas knew the foal needed a special surgery and recommended Dr. Jim Schumacher, who had published a peer-reviewed paper about a technique using a four-stage surgery to straighten the wry nose. Schumacher, a professor and board-certified specialist in equine surgery at UTCVM, has used the technique less than two dozen times — still, probably more than anyone else in the world.

“We do everything in one session which is uncommon. It saves the client money, and our technique results in a fairly cosmetic appearance,” explains Schumacher. The technique includes removing the nasal septum, straightening the nasal bones, straightening the premaxilla, and removing a piece of a rib to use as a graft when repositioning the premaxilla. “With wry nose, the upper jaw is short on one side, and when we move it to the normal position, there is a large gap in the bone that we fill with the rib graft.”

Dr. Schumacher poses with Barbara during her recovery.

Wry nose can dramatically affect a horse's quality of life; the nasal obstruction makes breathing difficult and can worsen with age. “These horses can have respiratory trouble walking around or even standing at a rest,” explains Schumacher.

Shane, Carroll-Talley, and friend Sarah Barlow set out on a mission to raise the funds necessary to send the foal more than a thousand miles from southwest of Austin, TX, to Knoxville, TN. The equine community in Central Texas and beyond responded to their call for help.

“The trainers did a superb job with Barbara,” said Schumacher. “She was very easy to work with which was very important since she would require a lot of care and treatment following surgery.”



Photos courtesy of Sarah Barlow.



The morning after Barbara arrived from Texas, her medical team began preparing her for surgery, placing a tracheostomy tube in her trachea that would allow her to breathe during the procedure and during the initial healing phase. Because a horse's head is very vascular, there was a risk of severe hemorrhage; a blood donor from the UTCVM teaching herd was nearby just in case a blood transfusion was needed. Dr. Neal Valk, clinical assistant professor of Equine Field Services, scrubbed in on the surgery, as did equine surgery residents Drs. Elizabeth Cypher and Tanner Snowden.

"It was quite humbling to know she traveled all the way from Texas to come here. As a young surgeon in training, it was a great experience to scrub in on a fairly rare surgery with Dr. Schumacher," said Snowden. "I saw her before surgery with her nose twisted. In the middle of surgery, I couldn't get a good perspective on how much we helped her, and it wasn't until she stood up that I could see the finished product."

The bones in Barbara's nose deviated about fifty degrees, and it took her medical team over four hours to straighten and stabilize them.

Because of the extensive swelling, Barbara's tracheostomy tube remained in place for more than a week, and she remained in the equine ICU with round-the-clock treatment. Eight days following surgery, the tube was pulled and Barbara breathed through her nostrils without difficulty for the first time in her life as her medical team breathed a sigh of relief.

Through the eight-week recovery at UTCVM, she was treated for infection, and a month after the procedure she had a second surgery to remove the plates holding the bones in place. As Barbara continued to heal, her appetite and energy continued to grow. It wasn't uncommon for senior veterinary students' notes for the next shift rotation to include such phrases as "Barbara is a sweet horse." "Barbara is very alert and playful this morning." "Great appetite and being pushy for food." "She is a sweet foal but may try to kick when you take her temperature; exercise caution."

Schumacher says he gets two or three calls about wry nose each spring during foaling season. "Most of these foals get euthanized, but with surgery and restoration of respiratory capacity, they can become performance animals. We've had them race or become jumping horses. I look forward to seeing what's in store for Barbara."

Barbara left UTCVM after more than eight weeks at the veterinary medical center. For a little foal that couldn't chew on her way to the volunteer state, Carroll-Talley said Barbara basically ate her way from Tennessee back home to Texas. 🐾



Photo courtesy of Sarah Barlow.

Alpaca with Heart

Interventional Cardiology for a Young Alpaca

Dr. Savanna Parsons (UTCVM 2018) was on her farm animal rotation when she met a young alpaca in need of intensive medical treatment and a new owner. The then-senior veterinary student adopted him. His formal name is King Charles I, but to family he's just Charlie.

Charlie's future changed the day he was brought to the Large Animal Hospital at the UT College of Veterinary Medicine. The one-year old alpaca wasn't as big, alert or active as others his age. In short, he was a "poor doer." During his exam, internal medicine specialist Dr. Ricardo Videla detected a heart murmur and consulted with the cardiology service. Third-year cardiology resident, Dr. Kiira Rodriguez, performed an echocardiogram (a cardiac ultrasound) and discovered Charlie had been born with severe pulmonic stenosis.

"The pulmonic valve separates the right heart from the lungs," explained Dr. Rodriguez. "Charlie's valve is too narrow, and that makes it harder for his heart to pump blood into his lungs."

Animals that have pulmonic stenosis are, in general, "poor doers." The condition results in an extraordinarily poor quality of life. Less blood flow in their lungs causes them to suffer exercise intolerance, fatigue, lethargy and depression. Eventually the disease can progress into right-sided heart failure. It manifests a little differently depending on the species as either fluid in the abdomen or subcutaneous edema (fluid gathering under the skin).

"If we didn't do anything, he would have either gone into right-sided heart failure or would have died suddenly from an arrhythmia. Either of those



Photo courtesy of Dr. Savanna Parsons.

Charlie and his new friend, Baaarbara, at their new home.

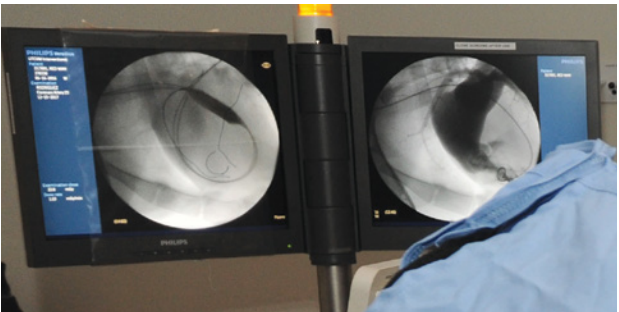
would have happened typically between two to three years.” Time was ticking for Charlie. The decision was made to perform a balloon valvuloplasty in the veterinary medical center’s Interventional Cardiology Suite to widen the narrowed heart valve. While the procedure is relatively common in dogs, this is the first time it had been done on an alpaca.

“There have been cases of alpacas diagnosed with various cardiac congenital defects, but most are either euthanized or die at a young age. There is nothing in veterinary literature indicating this procedure had been done in this breed before.”

Dr. Pierre-Yves Mulon, a board-certified large animal surgeon at the college, said, “Doing this procedure for the first time at a veterinary medical center allows us to learn and gain skills that will help other animals in the future.”

Dr. Rodriguez performed the procedure with the assistance of Dr. Sophy Jesty, a board-certified veterinary cardiologist who traveled to Knoxville from Charleston, South Carolina. Doctors inserted a long catheter with an inflatable balloon at its tip through the jugular vein and into the right heart. Once it reached the pulmonary valve, the balloon was inflated, stretching the valve. Because of Charlie’s size, the medical team had to place two balloons side-by-side.

Due to the defect, Charlie was at increased risk under anesthesia. “The anesthesia team did a great job monitoring him and keeping him safely anesthetized while we performed the procedure.”



Doctors are able to visualize the balloon valvuloplasty in real-time.

Prior to the procedure, the pressure difference, or gradient, between Charlie’s lungs and right ventricle was 108 millimeters of mercury. “Anything over 80 is considered severe, and anything below 30 is normal,” said Dr. Rodriguez. “Our goal was to decrease Charlie’s gradient by 50%.” But doctors did better than that! The day after surgery, the difference was measured at 39. Charlie’s pulmonic stenosis is now diagnosed as mild. “That’s as good as we could expect.” At his cardiology check-up after three months, Charlie’s pulmonic velocities were normal, and he is expected to have a fairly normal life and lifespan.

Dr. Parsons says Charlie is rather reserved but has become more outgoing since settling into his new home. He enjoys strolling around the pasture with his goat-friend Baaarbara.

Small and large animal specialists in the Interventional Cardiology Suite during Charlie’s procedure.



COMPASSION

We navigate difficult times together.

We advocate for the wellbeing of the animals we care for as we also strive to comfort the people who are bonded with them.

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“Please do not fall in love...”

In the summer of 2015, when Neva was just six months old, her original owners suspected she had congenital disease and surrendered her to a rescue organization. The rescue took the Standard Poodle to multiple veterinarians, and while it was not definitively diagnosed, it was concluded she most likely had a liver shunt. Almost 1½ years later, Cindy Van Wyk was surfing the internet when she saw Neva’s eyes peering from a picture on a rescue site with the caption, “Please do not fall in love with this beautiful girl without reading her story.” Cindy shares Neva’s story.

Photo courtesy of Cindy Van Wyk.

“

Neva was owner-surrendered at 6 months old. She was born with an intra-hepatic shunt. The veterinarians who had examined her had given her no hope for treatment, and she was being offered for free to a loving home to live out what little time she had left. This was October 2016, and she was going to be 2 in December. It broke my heart! I had to have her! I told my husband that we could not let her die in rescue. She had already been in rescue for a year and a half of her life.

I called the rescue and was worried that we would not get her due to the fact that we already had 6 dogs. I explained that we had plenty of room and love for another. All our references, including our veterinarian, checked out. Neva, the dog that no one wanted, now was ours!

You have no idea how much love she has to give! The first night we got her a huge doggy bed and put it right beside our bed. Neva had always been in a kennel at bed time. She stayed on the doggy bed for about two minutes and then jumped up on our bed and snuggled between us and has been there ever since! It was as if she said, “I have my family now, and I’m not sleeping alone ever again!” Neva means the world to my husband and myself, and she loves all her siblings!

The more I researched her condition the more I felt it could be repaired.

When we had her first visit with our veterinarian, Dr. Kevin Matthews in Saluda, NC, he told us we had to take her to UT if we wanted to save her. So off we went. This was not our first time at the University of Tennessee College of Veterinary Medicine (UTCVM): Dr. Matthews had referred us before with our other dogs.

Neva had been given 3 years to live. While she suffered a few symptoms they were not severe, however, her liver was extremely small due to the severity of her shunt.

This is where we met Dr. Cassie Lux who would save Neva’s life!

Neva was diagnosed with a large right intrahepatic liver shunt, and medical management was started for a few months awaiting her procedure. In January of 2017, Dr. Lux and the surgical team performed percutaneous transvenous coil embolization of Neva’s intrahepatic liver shunt in the interventional radiology suite at UTCVM. They placed a large number of coils into Neva’s shunt, and the procedure went very well.

Neva is the perfect dog! Her personality is so laid back, and she is almost human! She will talk to you and even tell you when it’s bed time, which by the way for her is 8:30-9:00. The rest of her siblings like to stay up later. She also enjoys sleeping in late. While Neva enjoys being outside, she believes she is a lap dog at 60 pounds. Watching her learn how to catch a ball at her age and size is amusing, because she is very awkward. Occasionally she can catch it and that makes her so happy. We get excited and that makes her even happier!

We could not image life without having her in it. All your animals hold a special place in your heart, but Neva holds an extra special place; I think it’s because no one wanted her, and it was such a sad story.”

”



Photo courtesy of Cindy Van Wyk.

Neva’s blood values continue to show improvement in her liver function, and she is doing very well at home. The Van Wyk’s think her recovery at this point is remarkable, and say Neva brings so much joy to their lives. 🐾



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Beyond the Fluff

HABIT Expands into Middle Tennessee

More research is being published that indicates animal-assisted interventions (AAI) can provide potential mental and physical benefits; any of the 500 volunteer human-animal teams with Human Animal Bond in Tennessee (HABIT) will agree.

HABIT is one of the country's oldest animal-assisted intervention (AAI) programs. When the late Dr. John New co-founded the UTCVM outreach program in 1986, the name was originally intended to reflect the program's reach across the entire state. In addition to the Knoxville area, HABIT volunteer human-animal teams serve about 150 facilities from Chattanooga to the Tri-Cities, and the program recently expanded into the Nashville area.

Earlier this year, HABIT received a three-year, \$380,000 grant from the Tennessee Office of Criminal Justice Programs to expand to middle Tennessee. While the premise of the program remains the same, HABIT in middle Tennessee will be a little different. The funding originates from the federal Victims of Crime Act (VOCA) and is to be used to help crime victims who have experienced trauma, abuse, and neglect. The goal is to bring HABIT volunteer teams into places like child advocacy centers, domestic violence shelters, rape crisis centers, and courts.

Dr. Marcy Souza, Director of UTCVM's Veterinary Public Health and Outreach, says branching into middle Tennessee, and hopefully, the rest of the state helps fulfill the mission of the college and the university.

“We are supposed to serve all the people of Tennessee, period. This is the epitome of outreach. HABIT can make a difference in the lives of victims of crime as well as everyone else in our state.”

For Dr. Bethanie Poe, being the first Middle Tennessee HABIT coordinator is an ideal job. She worked with Veterinary Social Work in various capacities for almost a decade, studied the link between human and animal violence, as well as human and animal relationships. Before this position, Dr. Poe spent over two years working at the Tennessee Coalition to End Domestic and Sexual Violence. “The Office of Criminal Justice Programs

has identified a need for animal-assisted interventions at various facilities throughout the state. Our short-term goal is to provide agencies with another tool to work with victims and help make things better through a Trauma Informed Care framework.” Trauma Informed Care emphasizes physical, psychological, and emotional safety and helps survivors rebuild a sense of control and empowerment.

Long-term goals include bringing other HABIT services such as Ruff Reading to schools, as well as visitation at assisted-living facilities and hospitals to middle Tennessee and the rest of the state. But Souza says that can't happen without donor support. “As much as we hate to say it, without funded personnel, we can't provide a quality program statewide.”

Ripple Effect

In addition to organizing HABIT volunteer teams in middle Tennessee, the grant allows for money to be used to educate mental health professionals about the benefits of the human-animal relationship. Each year, a limited number of mental health professionals can receive money to take the Veterinary Social Work Certificate program at no cost to them. Many social workers and therapists want to bring animals into their practice, but Poe says they need to do it correctly. “It's not take your dog to work day. People need to understand not only what benefits there could be in animal-assisted interventions, but also when it might be detrimental in a situation. We also want them to recognize the impact on the animal so the whole system works well.” Interested social workers can apply for online continuing education only or the full Veterinary Social Work Certificate Program which consists of online learning, in-person workshops, supervision, and a service learning project. Contact Dr. Bethanie Poe at bpoe2@utk.edu for information about the scholarships; contact vswcp@utk.edu regarding the VSW Certificate Program.



But the fluff is pretty nice, too

Charlie Spaulding was four years old when she was diagnosed with acute lymphoblastic leukemia (ALL). For the next two and a half years she underwent chemotherapy, spinal taps, bone marrow aspirations, and lots of hospital stays at East Tennessee Children's Hospital in Knoxville. Early on she met several of the college's HABIT volunteer teams. The dogs would help calm her and provide the comfort she was missing from her own dogs at home. As time passed and Charlie's pain increased, snuggling with the dogs would relax her and make her smile when nothing else could. They even helped her exercise as she walked them around the clinic.

Lisa, Charlie's mother, said the joy the HABIT dogs brought to Charlie and her sisters was indescribable. Caitlin was seven when her sister was diagnosed with cancer and had a hard time understanding what Charlie was going through. “Caitlin was her big sister and protector, but she couldn't protect Charlie from all this,” Lisa explained. The dogs also gave Caitlin the undivided attention she was missing. “Caitlin would join the HABIT volunteers on visits around the hospital. She plans to be a HABIT volunteer when she's old enough.”

Lisa was pregnant with Emma Rose when Charlie was diagnosed in 2015. The first few months of her life she spent more time at the hospital than at home. “Emma Rose's first word was ‘dog’ because of the HABIT dogs.”



Photo courtesy of Lisa Spaulding.



At HABIT's Barbeque and Bidding fundraiser held at the Knoxville Museum of Art earlier this year, both girls shared with the audience what the HABIT dogs meant to them.

Charlie's
HABIT Speech

Hi my name is Charlie. I am a patient in the oncology department at ^{East Tennessee} Children's Hospital. I just finished treatment for T-cell ALL leukemia on March 7th. I want to say thank you to the dogs for all of the struggles. Thank you for the walks. Thank you for loving me, and all of the patients, and letting us be a part of your lives. You always made me smile when I was impatient. Your struggles when I was sad made me feel better when I had procedures like LPs, you helped me to be calm and not scared. The times when I would wake up and one of you would be there made me happy. Seeing the wagging tails, and knowing that the dogs were just as happy to see me as I was to see them. I love the puppy kisses and cuddles! They always make me smile! I know I would have had a harder time with treatment without the visits from all of the HABIT family. Thank you for loving all of the patients and their families. To me the dogs are super heroes! Without them I would not have been so brave.

Charlie finished treatment in March 2018 but still has to go to the hospital at least once a month; the HABIT dogs are there for her. And Charlie and Caitlin want to be there for the HABIT dogs.



CAIT
Companion Animal Initiative of Tennessee

On a Mission

Top photo courtesy of Shawn Poynter.

Every day in Tennessee, hundreds of cats and dogs are euthanized because there are not enough loving homes to accommodate the seemingly endless supply of kittens and puppies in the state. The Companion Animal Initiative of Tennessee (CAIT), an outreach program of the University of Tennessee College of Veterinary Medicine, works to improve the lives of companion animals and reduce the surplus of cats and dogs across the state. CAIT educates the public on humane practices and promotes spay and neuter initiatives and brings communities together to find solutions to pet issues that impact them directly, such as animal hoarding, dog fighting, puppy mills, and other forms of animal abuse.

The Can-Do Team

Jennifer Weisent, DVM, PhD is an Epidemiologist with expertise in high volume spay/neuter, shelter medicine, and special interest in spatial and temporal disease modeling. She offers students nuanced techniques in surgery while infusing animal welfare and public health into the learning environment.

Rebekah DeBolt, DVM found her passion in shelter medicine where veterinarians work within a complex system of passionate shelter professionals to achieve disease prevention, disease treatment and overall animal welfare. She enjoys teaching the simplicity of high quality high volume spay neuter techniques and the complexity of shelter medicine.

Ashley Cogovan, LVMT couples a diverse array of clinical and technical skills with a passion for shelter medicine, animal health, and well-being. She assists in student learning and serves as a primary outreach link between our spay-neuter service and partnering agencies.

Jaime Norris has been Program Coordinator for CAIT since 2010. She also serves as the Eastern Regional Director of the Animal Care and Control Association of Tennessee and has trained in Disaster Animal Response. Her enthusiasm for animal welfare, fundraising, and event planning, coupled with her team approach and organizational wizardry, keep CAIT running smoothly.



Dr. Weisent, Dr. DeBolt, Ashley, T', and Jaime stand together with the CAIT Mobile Spay Neuter Clinic.

In November 2018, **Teresa (T') Fisher**, founder of CAIT, became vice-president of Animal Welfare with the Houston SPCA in Texas. CAIT grew from the Nine Counties-One Vision initiative in East Tennessee in 2000. In addition to starting many CAIT programs that helped reduce the surplus of dogs and cats in the state, Fisher, a tireless animal advocate, also procured a grant to fund the college's mobile spay/neuter clinic (pictured above).

"I will miss my job, our students, and the incredible people I have had the pleasure of working with throughout the years. I will forever be grateful for all of the opportunities and experiences UTCVM has provided me during my time with the university. We have hired two great veterinarians who will help ensure the CAIT program continues to serve the needs of our students, the college, and our shelters. I look forward to all the great things to come for the program and the college." 🐾

A Compassionate Lesson, Under the Bridge

Once a month, March through December, people who are homeless gather under a bridge in downtown Knoxville with a common interest: love for their pets. Veterinarians for Pets of Homeless Owners (VPHO) partners with Young-Williams Animal Center, the Knoxville Veterinary Medical Association, veterinary students, and members of the community to provide basic veterinary services for those pets free of charge: physical exams, vaccinations, parasite prevention, personalized pet ID tags and, as donations allow, food, collars, leashes, bowls, and bedding. In order to participate, owners must agree to have their pets spayed at the local shelter. "They have no money; all they have is that pet that loves them," explains CAIT program founder Teresa Fisher. "That pet doesn't know the difference between living in a castle or under a bridge, doesn't judge its caretakers and loves them no matter what."

In addition to keeping companions together, fewer animals entering the shelter, and a healthier animal population, VPHO gives veterinary students a broader perspective of what it means to be a responsible pet owner, and that doesn't always mean having money. "Some of our students may believe you have to have money to have a pet," Fisher says. Under the bridge, the students learn firsthand that a home address doesn't dictate love. They meet people who sleep on the street to protect their dog from going to the shelter, and they will sleep in the snow because there's no

human shelter for the animal to go. "It's not uncommon for our students to hear a VPHO client say, 'I can't get back on drugs because I'll go to jail. What would happen to my dog? I can't drink again or I can lose my pet.'"

VPHO has held 85 clinics since 2005. Veterinary students and community veterinarians have volunteered more than 2,100 hours of their time providing basic medical care for more than 1,800 dogs and cats.

Fisher says VPHO spreads the virus: a good virus. "Jaime (Jaime Norris, CAIT program coordinator) and I can go help animals every Monday of the month, but VPHO trains vet students and when they graduate, they will do it in their communities. VPHO spreads the virus way more than what we could do." Two veterinary graduates have started similar programs in their communities. 🐾

Veterinary students provide vaccines, leashes, collars, and food during a VPHO event under a bridge in downtown Knoxville.





RAIRE TRANSFUSION

FOR A BLACK BEAR NAMED SUMMITT

Clinicians at the UTCVM Veterinary Medical Center performed the facility’s first bear blood transfusion in March 2017. The Appalachian Bear Rescue (ABR) transported a black bear yearling that had been rescued by the Tennessee Wildlife Resources Agency to UTCVM on the UT agricultural campus.

While a healthy yearling would have spent the winter in a den with its mother, this bear was found at a farm near Bristol, Tennessee. This was bear number 258 for ABR and was their first one in 2017. The rescue nicknamed the yearling Summitt to honor legendary UT women’s basketball coach, Pat Summit.

After sedating the yearling, veterinarians performed a physical exam and drew a blood sample to examine his blood cells, electrolytes and organ

function. The yearling, which weighed 23 pounds, was extremely thin and profoundly anemic with a red blood cell concentration of just six percent compared to a normal 35-45 percent. Without a transfusion, the cub would likely die.

Working with the curators of the bear habitat at Zoo Knoxville, Dr. Ed Ramsay, UTCVM Professor of Zoological Medicine, and Dr. Julie Sheldon, then a Zoological Medicine intern, collected blood from Finn, a black bear

at the zoo. Named for the town of Fincastle, Virginia, in the county where he was found, Finn came to Zoo Knoxville from the Wildlife Center of Virginia (WCV) in 2014, where he became a perfect companion for another young orphaned male, Monty. Finn had recently undergone his annual physical exam, and his bloodwork was normal, which made him an ideal donor candidate.

Summitt was given almost 300mL of blood. “Anytime we do a blood transfusion with any animal, there’s always the potential for a reaction where the body attacks the new cells,” explained Dr. Sheldon. “During the transfusion, we monitor the recipient’s temperature, heart rate, and respiratory rate.”

Following the transfusion, Summitt’s red blood cell concentration was at 16 percent. While the level isn’t ideal, the yearling should feel better. Coy Blair, ABR Lead Curator, took the cub back to the rescue. “We will put him in our cub nursery,” says Blair. “It’s a smaller pen near the office with controlled temperature and a webcam, so we can keep a close eye on him.” Since the yearling was so underweight, Blair slowly introduced food back into Summitt’s diet to prevent refeeding syndrome, which can be fatal.

While the blood transfusion was successful, Summitt wasn’t out of the woods. “The problem is we don’t know the underlying cause of his current condition. In other words, we don’t have a diagnosis so it’s hard to give a prognosis,” says Dr. Ramsay. “We are hopeful he will begin eating, gaining weight and progressively act more normal. We hope to know more over the next week or so.”

**WITHOUT A TRANSFUSION,
THE CUB WOULD LIKELY DIE.**

ABR cares for orphaned and injured black bear cubs for return to their natural wild habitat; increases public awareness about coexisting with black bears; and studies all aspects of returning cubs to the wild.

When UTCVM called for an update on Summitt, ABR was happy to report that healthy, young Summitt was released into the Cherokee National Forest in August of 2017.



Dealing with Grief

by Sarina Manifold, UT Veterinary Social Work

“It is better to have loved and lost / Than never to have loved at all.” This famous quote by Alfred Lord Tennyson captures the sentiment of many who have faced a loss. Yet for many, that loss can produce intense feelings and be so painful that one might question loving another animal again for fear of going through additional heartache. If the loss is fresh, it may be unimaginable that there will be a time when you feel better.

Grief is the normal and natural experience one has when there has been a loss of someone or something important. We often associate the experience of grief when there has been a death; however, death is not the only kind of loss one might go through. While grief is a universal human experience, it is also something that is very individual. Every relationship is unique, therefore, the grief we have with those losses is unique. This is true no matter the relationship, including those who form relationships with animals. The loss of a beloved animal falls into the category of disenfranchised grief, which means that it is often not understood or supported by most of society, and this can be an additional component to the grief experience.

Many have heard of Elizabeth Kubler Ross’s Stages of Grief (denial, anger, bargaining, depression, and acceptance). While this model might help us understand some of the responses to a loss, there is no “normal” with grief nor does it follow any predictable pattern. It is often helpful to understand what grief can look like. Grief can impact almost every aspect of our lives: emotionally, physically, intellectually, spiritually, and socially. Some of the more common responses that we might have after a loss include sleep disturbances, changes in appetite, difficulty concentrating or focusing, intense sadness and sometimes irritability, or tearfulness. With the loss of a beloved animal, it is also not uncommon to experience feelings of guilt. Other aspects of the loss can play a part in what one’s grief looks like; so as was mentioned, while there are common experiences, there are also individual differences.

There is also no timeline for grief. There may be a point at which the initial responses to the loss do not feel as intense or overwhelming; however, we never “get over” our losses. A metaphor often used for understanding grief is that it comes and goes in waves; some moments it may be barely noticeable, while other moments feel like we are being hit by a tsunami. I believe that we can learn to incorporate the loss as a part of our being and “ride the waves” of our grief, acknowledging that there will be moments, even years after the loss, where our grief may be triggered.

Be gentle and honest with yourself. Grief takes a lot of energy and sometimes the best thing we can do for ourselves immediately after a loss is be honest that we may not be able to function the same way we did before the loss. If you broke a bone in your body, you would not be expected to function in the same way you did before the break. You are not “crazy” or weak for feeling the way you do; you have a broken heart.

Create a “new normal”. Part of our grief experience, particularly with our animals, includes the loss of the routines and rituals we shared. It can sometimes be helpful to create a new routine or ritual that might also include your animal in a new and different way. For example, if you used to go on a walk with your animal, your “new normal” might include going on that walk and carrying your animal’s leash or collar with you. Your animal may not be physically present; however, you can still maintain that connection with them, which may be healing.

Share your story. Grief Recovery Specialists believe that griever do not need to be fixed, they need to be heard. It can be very healing to share the story of the relationship. Sharing with supportive friends and family, attending a local support group if one is offered in your community, or writing down memories in a journal may provide outlets for telling the story and recalling memories. In addition, many individuals often express a fear of forgetting their beloved animal so sharing the story can be a way to address this fear.

Create a memorial. Grief is about a broken heart, not a broken head. It is normal for us to analyze not only the loss, but also sometimes the whole relationship. Memorializing our animals provides a way to connect with our hearts. This might include doing something creative or artistic like writing a poem, drawing or painting a picture, scrapbooking, or creating a video tribute. This may also include doing something like planting a memorial tree or bush or donating items in memory of your animal.

Because grief is a normal and natural experience, many do not need to seek the help of a professional after a loss. There are instances though that would be beneficial to reach out to a mental health professional. Some of these instances might include if there was a traumatic component to the loss, if there is limited support, if the loss significantly impacts the ability to do daily activities for a prolonged time period, or if there are thoughts of harming yourself.

Grief can be messy and uncomfortable, and there is no “right” way to grieve. Our animals teach us so much, and one of the greatest tributes to our animals can be trying to live out the rest of our lives practicing those lessons. I believe that once we go through our grief, we have the opportunity to grow and be even better versions of ourselves. ✨

Do you need help?

UT Veterinary Social Work offers grief support at no cost. To speak to a Veterinary Social Worker, please call the **VSW Helpline at 865-755-8839 Monday-Friday 10am – 5pm**. If you or someone you know is experiencing suicidal thoughts, please call the **National Suicide Prevention Lifeline 800-273-8255** or text **HELP to Crisis Text Line 741741**.

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The Large Animal Regenerative Medicine Team and Tissue Regeneration Laboratory at UTCVM work to develop innovative solutions to complex medical problems such as restoring tissues, organs, and the body to normal form and function quickly and efficiently. Increasingly, veterinarians are using adult mesenchymal stem cells for a variety of equine diseases including tendon and ligament injuries.

However, not all mesenchymal stem cells from individual horses are created equal; there is a donor-to-donor variation in the rate at which they multiply or undergo differentiation.

Our scientists have developed methods to screen horses and identify those whose mesenchymal stem cells are optimal and could be used in clinical cases without adverse reactions. These characterized cells can be cryopreserved and made available to the clinic in a matter of hours. The team recently published a review of a clinical trial regarding the safety of allogenic stem cells. The study, "Retrospective analysis of local injection site adverse reactions associated with 230 allogenic administrations of marrow-derived mesenchymal stem cells in 164 horses," was published in the Equine Veterinary Journal. Dr. Tena Ursini, Clinical Instructor in the UTCVM Equine Performance and Rehabilitation Center, received the first place award from the American College of Veterinary Sports Medicine and Rehabilitation for her abstract and presentation on stem cells at the annual American College of Veterinary Surgeons Summit in Pheonix, Arizona. This study is the largest clinical trial ever done using equine allogenic mesenchymal stem cells used in the management of soft tissue and joint injuries. Adverse reactions following injection of stem cells was only 4%. This study provides information regarding the safety of using allogenic stem cells in horses. Future clinical trials will include recruitment of clinical cases with pre-selected criteria to study the efficacy of allogenic cells as part of the management of these injuries. UTCVM now has a cryobank of allogenic mesenchymal stem cells that can be used in horses meeting the criteria for enrollment in clinical trials. Enrollment in clinical trials is strictly limited to patients under the direct care of veterinarians and can only be nominated for enrollment by those veterinarians.

Clinical trials using allogenic stem cells at UTCVM are performed under an FDA research investigational use permit. The hypothesis driving the research is that allogenic cells may alleviate the challenges associated with autologous cells due to the animal-to-animal variation in cell quality and function. In order to use the allogenic mesenchymal stem cells, each case has to be enrolled in their database and reported to the FDA for safety and efficacy. Contact Dr. Madhu Dhar at 865-974-5703 for more information. 

UTIA's Gamma Sigma Delta Team Award goes to UTCVM Regenerative Medicine Team

The Regenerative Medicine Team is a team of 15 scientists and scientists-in-training in the UTCVM Department of Large Animal Clinical Sciences. The team's strengths include cell-based therapy, tissue regeneration, and biomedical biomaterials science. The team conducts research in the use of stem cells, biomaterials, and other forms of regenerative therapy that will translate to the clinical setting in both veterinary and human medicine. The ultimate goal is to develop innovative solutions to complex medical problems such as restoring tissues, organs, and the body to normal form and function quickly and efficiently.

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Diving into Discovery

UTCVM Veterinary Summer Research Experience Program


The veterinary summer research experience at the University of Tennessee College of Veterinary Medicine provides an opportunity for veterinary students to explore careers in research through participation in a hypothesis driven project, group training activities, and attendance at research symposia. The program is designed to stimulate the interests of veterinary students considering a career in biomedical research through hands-on exposure to the research environment.

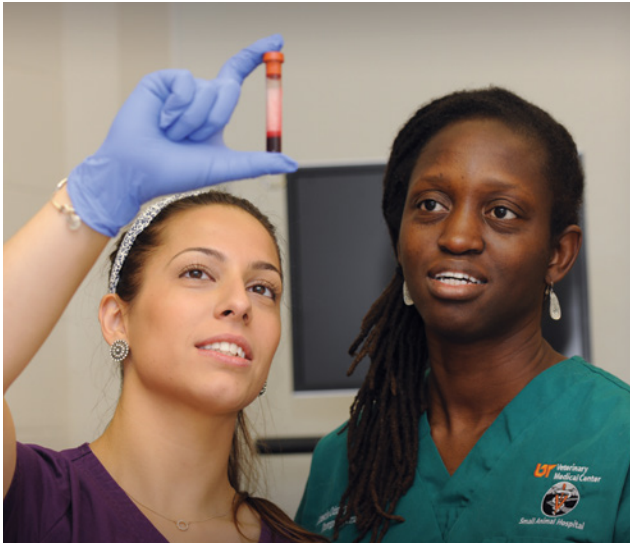
The specific objectives of the program are for students to:

- learn about study design,
- identify specific objectives for their project,
- receive meaningful research experience,
- develop an understanding of research careers and opportunities,
- develop a basic understanding of the scientific method,
- develop skills in one or more research techniques,
- learn about data interpretation,
- obtain experience creating and delivering a research presentation,
- learn about ethical issues involved in research,
- receive an introduction to responsible conduct of research, and
- develop camaraderie with other student researchers.

Most of the students are funded by the Centers of Excellence in Livestock Diseases and Human Health. Additional students are supported by the Comparative and Experimental Medicine DVM/PhD program and (depending upon available funding) Morris Animal Foundation Scholars, AVMF, and Boehringer Ingelheim programs. Each year the program ranges between 22 and 28 student participants. Mentors include faculty with research projects at the veterinary college.

During the first six weeks, students attend twice weekly training sessions. Participants receive biological safety level 2 training and information about

the history of animal use regulations, as well as details about the approval process and researcher responsibility, careers in research, best practices for laboratory record keeping, experiment planning and design, effective use of library resources, statistical analysis, manuscript preparation, development of PowerPoint presentations, grant writing, preparation of curriculum vitae, strategies for career development and employment, poster preparation, and techniques for effective public speaking. Students take a trip to the Knoxville Zoo for a behind the scenes tour and have an opportunity to attend the National Veterinary Student Symposium. The student experience culminates with a presentation of their research to their peers, staff, and faculty. 



Keepin' It Rural

USDA grant supports early-career rural veterinarians in TN

Long work days, high emergency caseloads, and extensive educational debt coupled with low pay are often cited as reasons veterinarians leave rural practice. Other determining factors include lack of support and mentorship.

The USDA's Veterinary Medicine Loan Repayment Program (VMLRP) helps qualified veterinarians offset a significant portion of educational debt in return for service in high-priority shortage areas. A UTCVM field services veterinarian, Dr. Marc Caldwell, heads a UTIA initiative that is designed to complement the loan repayment program with a goal of reducing rural practice attrition. Co-directors on the \$249,966 grant include Drs. Elizabeth Strand, Lew Strickland, and Christopher Stripling.

Mentorship and additional training can help prepare early career veterinarians for the challenges inherent in rural practice. Dr. Caldwell says identifying key roadblocks in the recruitment and retention of veterinarians in Tennessee's underserved communities is critical.



Qualifications for recent veterinary graduates

- 1. Graduated from an AVMA accredited veterinary school within the last 5 years
- 2. Currently employed/enrolled in at least one of the following within the state of Tennessee
 - a. Veterinary Medicine Loan Repayment Program (USDA VMLRP)
 - b. Practicing a minimum of 80% effort in food animal/food supply medicine
 - c. Practicing a minimum of 30% effort in food animal/food supply medicine in population areas of less than 50,000 inhabitants
 - d. Practicing a minimum of 49% effort in public practice such as USDA regulatory/meat inspection

Supporting early-career rural veterinarians will help develop a robust veterinary workforce in the state.

In addition, over each of the next four years they will match four early career veterinarians with established rural and food supply veterinarians. "We will also deliver new continuing educational material targeting rural practice sustainability and quality of life in rural communities as well as create an online open-access resource center with additional educational content on food animal clinical training," explains Dr. Caldwell. Third- and fourth-year veterinary students will also be encouraged to participate in food supply/rural externships through merit-based travel grants.

Together with the loan repayment incentive program, the goal is to create a well-rounded, integrated approach for developing a robust rural veterinary workforce in Tennessee and strengthen agricultural communities throughout the state.

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Always a **VOL**Vet

UTCVM Distinguished Alumni

The UTCVM Distinguished Alumni Awards have been a part of the college's recognition of alumni since 1994. A call for nominations is made in the fall of each year for a February selection. Nominations, including documented accomplishments and any supporting material, are considered by the college's alumni council, executive committee, and the dean. The awards are presented at the graduation and hooding ceremony each spring.

Nominees must be graduates of UTCVM with a DVM degree and shall have excelled in at least one of the five areas of veterinary medicine: private practice, teaching, research, public service, or organized veterinary medicine.

In addition to these two awards, an award for First Decade Achievement is also given. It is presented to a graduate of UTCVM with a DVM degree within the last ten years.

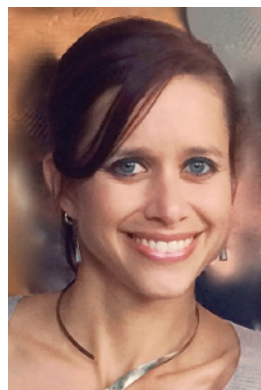
2017 FIRST DECADE ACHIEVEMENT AWARD

DR. MARISA SHULMAN

Dr. Marisa Shulman (UTCVM '09) was born and raised in Tennessee, and claims Bell Buckle as her hometown. After graduation, she completed a yearlong internship at Auburn University's College of Veterinary Medicine before joining the Riverview Animal Hospital in Chattanooga.

She is a current member of the American Veterinary Medical Association, the Tennessee Veterinary Medical Association, and the Hamilton County

Veterinary Medical Association where she has served as Vice President, President, and Treasurer. In addition, she has served on the board of the TVMA for 2 years and was awarded the 2017 Young Veterinarian of the Year.



2018 FIRST DECADE ACHIEVEMENT AWARD

DR. RUSSELL REEL

Dr. Russell Reel (UTCVM '07) grew up working on his family's farms in Hamblen County, Tennessee. After graduation, he began working for Blue Ridge Veterinary Services in Bybee, Tennessee, and later Morristown Animal Hospital in Morristown. After ten years in practice, he and Dr. Ian O'Connor (UTCVM '11) opened Southern Care Veterinary Hospital Morristown in the summer of 2017. Dr. Reel is as a board member of

the Hamblen County Health Department, a member of the American Veterinary Medical Association, and serves as president of the Tennessee Veterinary Medical Association.



2017 PRIVATE PRACTICE AWARD

DR. PENELOPE ANN "PENNY" IANNAcone

Dr. Penelope "Penny" Iannacone (UTCVM '05) or "Dr. Penny," as everyone knew her, did not have an opportunity to pursue a career in veterinary medicine until a job relocation in 1999 brought her family from Kansas to Knoxville. She started vet school at age 42 while working as a veterinary technician at Admiral Veterinary Hospital in Farragut, TN. After graduation, she continued at Admiral until 2008, when she became a co-owner of Central Veterinary Hospital in the Fort Sanders neighborhood. She served for a time on the board of the Knoxville Veterinary Medical Association.

Dr. Iannacone passed away in September 2016. She is the first alumna to be recognized for her work posthumously.

Husband Al, sons Michael and Matthew, and numerous friends and family have established the Dr. Penny Iannacone Memorial Scholarship Endowment to benefit students in the College of Veterinary Medicine.

Dr. Penny not only leaves a legacy of compassion to her pet patients, but also an example to all to pursue one's passion.



2018 PRIVATE PRACTICE AWARD

DR. DENNY LILLARD & DR. BECKY LILLARD

Drs. Becky (UTCVM '80) and Denny Lillard (UTCVM '80) are the founding veterinarians of Countryside Veterinary Services in Louisville, Tennessee, and have been establishing and growing practices and providing exceptional veterinary care for 38 years. They started Countryside as an ambulatory, large animal-focused practice and later added a mixed-animal hospital to complement the established mobile practice. Later they completed a large animal ICU and surgery suite.

Dr. Becky Lillard is a member of the American Association of Equine Practitioners and Society for Theriogenology. Dr. Denny Lillard is a



member of the American Animal Hospital Association and American Association of Bovine Practitioners.

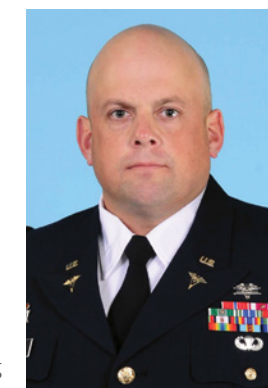
2017 NON-PRIVATE PRACTICE AWARD

LIEUTENANT COLONEL CHAD C. BLACK, DVM, PHD

Dr. Chad Black (UTCVM '04, CEM '10) serves at the front lines of medical research as both a veterinarian and a microbiologist. Dr. Black has worked at Walter Reed Army Institute of Research, developing new antibiotics and diagnostic tests for drug-resistant wound pathogens. In 2013, he accepted a leadership position in Europe and was deployed to Afghanistan to assist with animal medicine, public health, and food and water safety.

While he was based in Germany in 2014, the Ebola virus outbreak in West Africa was gaining momentum. Dr. Black volunteered his services as a microbiologist with an infectious disease background.

Dr. Black is currently assigned as Chief in the Department of Drug Discovery and Deputy Director of the Experimental Therapeutics Branch at Walter Reed Army Institute of Research in Silver Spring, Maryland. He and a staff of 31 are tasked with developing the next generations of malaria treatments and combating antibiotic-resistant bacteria, among other research projects.



2018 NON-PRIVATE PRACTICE AWARD

DR. TIMOTHY D. MANDRELL

Dr. Timothy D. Mandrell (UTCVM '84) went from private practice to the USDA Public Veterinary Practice Career Program (PVPC) and was assigned as a USDA veterinary field officer ensuring animal dealers and research facilities were in compliance.

Following a postdoctoral fellowship at the Johns Hopkins University School of Medicine in Baltimore, Dr. Mandrell spent an additional year of training at the NIH National Cancer Institute and then returned to the USDA Animal Care Staff where he served as Senior Staff Veterinarian for Laboratory Animals and Research Facilities. He became known as the USDA's primary subject matter expert and speaker on newly published animal welfare regulations and animal research.

In 1991, Dr. Mandrell was recruited to the University of Tennessee Health Science Center as a Staff Veterinarian in the Department of Comparative

Medicine becoming Department Chair in 2001. He was promoted to full professor with tenure in the College of Medicine where he served until his retirement in 2016. Among his many achievements, Dr. Mandrell has mentored numerous students and received the American College of Laboratory Animal Medicine Mentor Award in 2014. A Diplomate of the American College of Laboratory Animal Medicine, Dr. Mandrell has served in leadership and specialist roles within several national and international organizations. 🐾



No Horsing Around

National Scholarship Makes a Difference

Dr. Leanne Fowler's (UTCVM '18) love of medicine and the human-animal bond was the driving force behind her pursuit of veterinary medicine as a career. Throughout her time at UTCVM, Leanne worked with Quarter Horses in Texas, Thoroughbreds in Kentucky, endurance horses in Tennessee, working horses abroad, and acquired experience in holistic medicine in Florida and China. In November 2017, she formally accepted the Coyote Rock Ranch Scholarship at the American Association of Equine Practitioners (AAEP) meeting in San Antonio, Texas. The \$75,000 scholarship, presented by the American Quarter Horse Association, awards four top third-year veterinary students who have a dedication to equine medicine, excel academically, and are leaders in their school.

Leanne, who is currently interning at Rood & Riddle Equine Hospital in Florida and plans to pursue a residency focused on equine sports medicine, says the financial freedom associated with the scholarship gave her the ability to pursue her dreams with no restraints. "I am especially passionate about the musculoskeletal system and hope to bring an integrative, team approach working with clients, trainers, and riders to ensure that equine athletes perform to their greatest potential."

Leanne is grateful for the opportunities at UTCVM. "Veterinary school was everything I thought it would be and so much more. The opportunities I had to learn, travel the world, publish research, and make lifelong friends were incredibly rewarding and made the long days and hard work more than worth it."



Among other responsibilities, Leanne was president of the UT AAEP student chapter and the UTCVM Large Animal Emergency Team which she founded. 🐾

The Importance of Scholarships

Scholarships have become the backbone of high-quality educational institutions and programs. Beyond the direct financial benefit to individual recipients, scholarships contribute to overall academic success, student retention, academic recognition, organizational prestige, and philanthropic satisfaction.

How can one scholarship do so much?

For the student, the financial support of a scholarship helps to reduce the burden of educational costs, lowers loan debt, helps avoid loan interest, and allows the students' focus to remain squarely on their educational goals. Scholarships that recognize academic achievement

help students stand out in future job applications or in competitive educational programs. Such support can open the doors to advanced training opportunities, prestigious internships, and unique career options in addition to providing a valuable morale lift to hard working students recognized for academic excellence.

For a donor, scholarships provide a personally meaningful way to engage in philanthropy. From recognition of those people and passions that have enriched our lives to the satisfaction of helping others succeed; scholarship giving creates a lasting impact on the lives, interests, and memories that we cherish.

For our college, scholarship awards are an important tool in assuring that we continue to train and graduate exceptional veterinarians and scientists. Supporting the students with financial resources, reduced debt, and freed time is a gift that allows them to contribute their talents to improving animal health, scientific discoveries, and the bond between animals and people, thereby enriching our communities and the world. 🐾



High on the Hog

Horizon Award Recipient, Wesley Lyons (UTCVM '14)

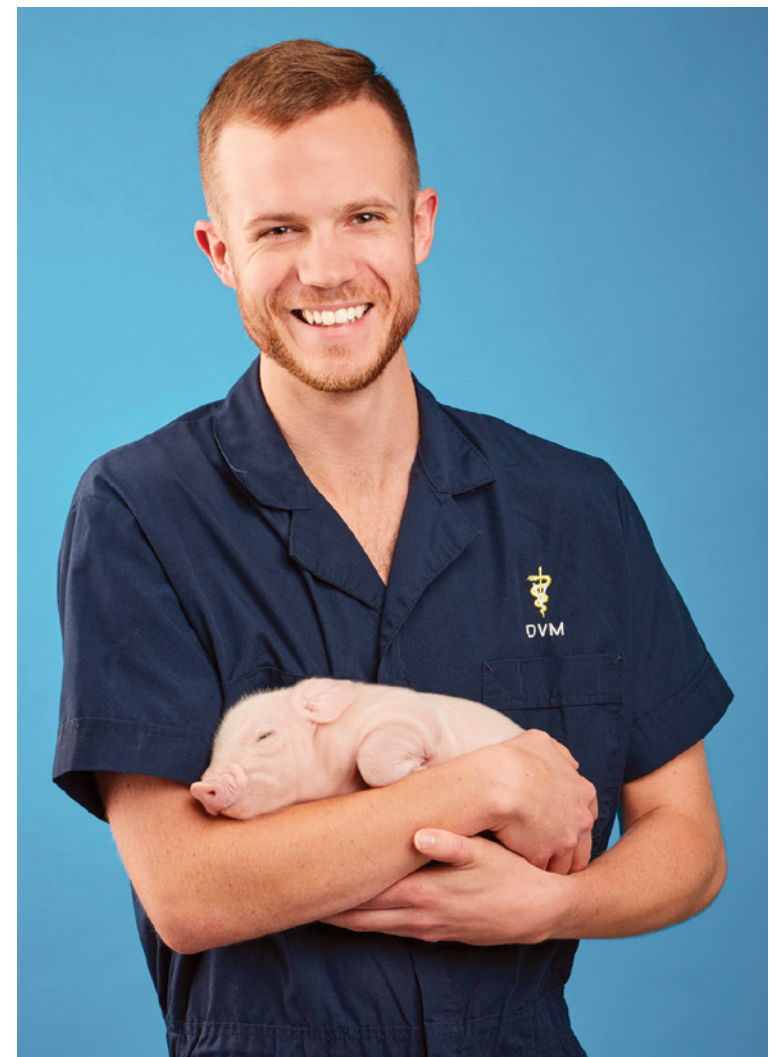
For Dr. Wesley Lyons (UTCVM '14), swine medicine unites so many aspects of veterinary medicine he loves: epidemiology, population medicine, and public health. Those aspects intertwine to allow him to help provide a safe and economically sound food supply for the world, while promoting awareness about diseases such as influenza. In the four years since graduating from UTCVM, Lyons is making a far-reaching, positive impact in the swine industry.

At Ag Day in the fall of 2017, Lyons received the UTIA Horizon Award that recognizes young professionals for their early-career accomplishments and their potential as a leader in agriculture, natural resources, and related professions. Dr. David Anderson, large animal department head, nominated Lyons and says he exemplifies all of the qualities we could hope for in our students and alumni at such an early stage of their career. "I am not surprised by Dr. Lyons's early career accomplishments but that does not diminish the truly amazing extent and speed at which he has become nationally recognized for his dedication, work ethic, leadership, and expertise. If there were ever an alumnus to be proud of, Wesley embodies those qualities."

Even as a veterinary student Lyons worked to make an impact on the college and the community. He served as class co-president and helped the UTCVM Food Animal Club raise \$500 for a Future Farmers of America high school chapter to purchase a video monitoring system for a barn following a devastating loss of sheep. Dr. Lyons continues to serve the veterinary profession and swine industry in leadership positions with a focus on family-owned farms and animal welfare.

Lyons is a veterinarian with Pipestone Veterinary Services in Sycamore, Illinois. The company specializes in health management and consulting service for pig farmers throughout the region who raise approximately six million market hogs annually. "I have a passion for farrow-to-finish farms," says Lyons. "I personally work with farms of five to 5,000 sows, as well as with wean-to-finish farms of 100 to over 26,000. I enjoy the challenge of working through disease and biosecurity risks."

In addition to a hands-on approach with farms, Lyons represents the swine industry on a national level via his involvement with several organizations, helping craft policies and develop plans to enhance the industry and help family-owned farms become more competitive in the process. He holds several leadership positions with the National Pork Board (NPB) and the American Association of Swine Veterinarians and was appointed as one of two swine specialists to review national veterinary board examination questions for the North American Veterinary Licensing Examination (NAVLE). Successful completion of the NAVLE is a requirement for licensure to practice veterinary medicine in North America. Lyons was recently appointed to a veterinary pharmaceutical board to help sculpt the scope of research and technology development related to vaccinations and antibiotics.



A commissioned speaker with NPB's Operation Main Street program, Lyons provides continuing education to dietetic and nutrition associations and veterinarians and also contributes to a blog (Illinois Farm Families) that promotes public awareness of agriculture. In addition to producing several research publications, Lyons is involved in improving safe and effective euthanasia techniques for compromised pigs.

His passion for helping family farmers remains competitive and his commitment to animal welfare create a spark for Lyons as he continues to make a difference.

Lyons is a Vol for Life—the company truck he drives is smoky grey, and he is currently trying to convince his employer to allow a UT-orange, spray-on bed liner (the jury is still out on that decision). 🐾

EXPANDING A Legacy

FROM THE
FOOTBALL
FIELD TO THE
FIELD OF
VETERINARY
MEDICINE

Decades ago a shaggy dog walked into Rosalea Cafego's life, and that dog continues to change lives today thanks to a fund that she has established. Rosalea has a heart for animals and wants to make sure as many pets as possible receiving care at the UTCVM Veterinary Medical Center can obtain the procedures they need.

Photo courtesy of Tennessee Athletics

HIS NAME WAS MAX. ROSALEA MET THE SHAGGY WHITE CANINE ON HER WAY INTO WORK.

"I stopped at the service station on my way into work," she said. "There was someone at every station and this big white dog stood behind my jeep. That dog could have gone up to any of the others. I just looked up, and he was there."

She has many stories just like the destined first meeting of Max. Over the years, Rosalea says she has rescued over thirty strays. At least, they were strays before they joined Rosalea's family. At one point, her house was home to thirteen dogs and six cats. Well, a few of those were outdoor dogs...well, outdoor in the sense that they lived in a separate air-conditioned unit on Rosalea's property.

In the main house, the cats had dominion over one half, and the dogs the other. Whenever a train would rumble along the railroad tracks behind the house, the dogs would look up at the sky and howl.

"That was the best time of my life," remembered Rosalea.

ROSALEA IS THE DAUGHTER OF TENNESSEE FOOTBALL LEGEND GEORGE CAFEGO AND HIS WIFE AUDRY LOUISE.



Photo courtesy of Rosalea Cafego

George "Bad News" Cafego played football for UT and later coached both football and baseball. He was inducted into the College Football Hall of Fame in 1969.

Photo courtesy of Tennessee Athletics



Photo courtesy of Rosalea Cafego

She is the daughter of the UT Football legend George Cafego and his wife Audry Louise. Her father's legacy belongs to the gridiron, but Rosalea is determined that hers and her father's will also live through the pets that receive lifesaving care through the George Cafego Assisted Care Endowment Fund. The earnings from the endowment will help clients of the John and Ann Tickle Small Animal Hospital at UTCVM afford the care their pets need.

Rosalea was inspired by an article she read in the paper about a fund created by the Petco Foundation & Blue Buffalo Cancer Assistance Care Fund to cover cancer treatment costs for clients in financial need at the veterinary medical center. That grant is for three years, but Rosalea knew the need wouldn't end the day the grant runs out.

"It would be heart breaking to know that a cat or dog needed help, and it couldn't receive that care because its owner didn't have the money," she said.

Rosalea hopes her gift will extend the financial assistance of the Petco/Blue Buffalo grant beyond the three years and beyond oncology. The George Cafego Assisted Care Endowment Fund will honor her father's name and provide a future for countless pets. George Cafego helped the Vols earn a berth in the 1940 Rose Bowl. After graduation, he had a short stint in professional football before transitioning to coaching. He spent thirty years as an assistant coach at his alma mater. However, it was while he was coaching in Wyoming and living in the dorms that his own brush with a stray puppy saved the lives of everyone living in the building. He took in a stray schnauzer named Piedmont. That same dog alerted the sleeping residents that the building was on fire, giving everyone the time to get out safely. The fire department even awarded the dog a gold medal for his heroic barking.

When her last dog died in 2009, she devoted her time to care for her mother who passed away about a year and a half ago. Rosalea no longer has any pets to call her own, but her love of animals hasn't diminished.

The George Cafego Assisted Care Endowment Fund will carry that legacy of love forward for decades to come.

**Want to help pets and clients in need?
Call 865-974-4379 or visit vetmed.tennessee.edu/give**

Congratulations!

Charles Wharton and his late wife, **Julie**, received the **UTIA's Meritorious Service Award**, the highest decoration awarded to its ambassadors.

The Whartons always believed in making a difference and paying it forward. Generous donors to the UT College of Veterinary Medicine, UTIA, and the system, the Whartons also affected true change by being involved. Julie served on the UTCVM advisory board from its inception until her death in 2008 and was a founding member of the UT Alliance of Women in Philanthropy. Charles' volunteer leadership provides influential assistance on educational issues at the institutional and state levels, with a focus on access and opportunity for Tennesseans to higher education. Charles' involvement includes over 30 years of service in many capacities:

- UTCVM Advisory Board
- UTIA Development Board (*member and chair*)
- Chair, UTIA Executive Steering Committee, Campaign for Tennessee
- Chair, UT Development Council (*Recipient, 2009 UT Development Council Service Award*)
- Co-Chair, UT Development Council's Campaign Leadership Team, Campaign for Tennessee
- Trustee (2006+), UT Board of Trustees
- UT Foundation, Inc., Board of Directors (*since inception*)
- UT President's Council

Join us in congratulating **Dr. Darryl Millis** on being the recipient of the **2017 AVMA Career Achievement Award in Canine Research**. The national award honors an AVMA member's long-term contribution to the field of canine research.

Dr. Millis's research career has focused on osteoarthritis, physical rehabilitation, and modulation of fracture healing with growth factors, mainly in dogs. He has evaluated gait analysis techniques and evaluated treatments for osteoarthritis, including pharmaceuticals, nutraceuticals, and physical modalities. Dr. Millis was also instrumental in designing the first underwater treadmill for dogs, and he is a founding charter Diplomate of the American College of Veterinary Sports Medicine and Physical Rehabilitation.

The award was presented to Dr. Millis at the 2017 Merial NIH National Veterinary Scholars Symposium in Bethesda, Maryland. 🐾



CHARLES WHARTON

Photo courtesy of Lauren Voth

Their generosity helps recognize and retain outstanding faculty, and their financial assistance made the Charles and Julie Wharton Equine Intensive Care Unit in the UTCVM Equine Hospital possible.

We are grateful to these true friends who have given time, counsel, leadership, and substantial resources to ensure opportunities for students, the success of UTIA, and all of Tennessee. 🐾



DR. DARRYL MILLIS

Want to support UTCVM?



Establish a Pledge

To make a pledge, a donor determines the total pledge amount, the designation of the gift, the period of time over which the pledge will be paid, and the frequency of payments. Pledge reminders will be sent each time a payment is due.



Plan a Future Gift

Planned gifts provide future support for the University and may be made without any immediate financial impact to the donor.



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Get Your Gift Matched

Many companies will match your charitable gift to The University of Tennessee. Please talk to the benefits office at your place of employment to learn more.

TOGETHER WE GROW

The University of Tennessee Institute of Agriculture publicly launched its most ambitious capital campaign ever. "Together We Grow" has a goal of raising \$175 million to extend **Real. Life. Solutions.** to new generations. The ten-year campaign that began its silent phase in 2012 will conclude December 31, 2022.

JOHN AND ANN TICKLE SMALL ANIMAL HOSPITAL



For more information about these giving options, or to discuss donating to UTCVM in a different way, please get in touch with us!

Kippy Todd

*Assistant Director of Advancement
& Alumni Relations*

(865) 974-4340 | ktodd@utfi.org

Reanee Boozer

*Special thanks to Reanee for 32 years of service to the
University of Tennessee and best of luck in retirement!*

Amy Byrd

Advancement Assistant

(865) 974-4379 | abyrd15@utk.edu

Blake Hudson

Director of Advancement

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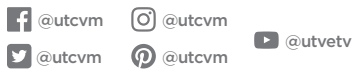


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Making Waffles Well

Earlier this year, this miniature donkey foal was diagnosed with a condition called failure of passive transfer (FPT). Unable to nurse, he didn't receive any antibodies from his mother's "first milk." Dr. Karen McCormick and the UTCVM equine medical team gave him a plasma transfusion and helped nurse him back to health. This sugary-sweet foal was adopted by a loving family and now answers to the name Waffles.