Boren Veterinary Medical Hospital upgrades CT unit

We are very proud and excited to report that we have been able to upgrade a major piece of equipment in the hospital recently.

Our old CT unit was at the end of its useful life, and maintenance costs were escalating, as was the amount of down-time for repairs. In addition, the unit was slow (compared to more modern machines), reducing the number of patients we could put through the hospital. An upgrade was well overdue!

Using a combination of hospital revenue, and with strong support by donations, we were able to move forward with this important acquisition. Computed tomography is an essential tool used in veterinary medicine for diagnosing and monitoring diseases in animals.

Introducing VetConnect Newsletter

There have been substantial challenges to veterinary medicine and the OSU Center for Veterinary Health Sciences over the past few years. These include a downturn in the regional economy, recurring reductions to the higher education budget, a shrinking faculty, and an aging facility.

The budgetary reductions have had the most negative effects, as expected, and have totaled a whopping 32% reduction in our budget since 2010. These types of budgetary restrictions are difficult to overcome but we have been working hard to maintain our services to the citizens of the state of Oklahoma, and the veterinarians of the region.

Notwithstanding the challenges that we have faced, there are many positive things happening at the OSU Boren VMH and I hope that by means of this newsletter, we can keep you better informed of what is going on at the state’s Veterinary Hospital. We are in the process of adding faculty, improving facilities, and developing and expanding services to better serve our stakeholders. I hope that you find this information useful and interesting.

– Dr. Martin Furr, Interim Director

Meet our new faculty members

The OSU VMH has welcomed many new clinical faculty in the last year, and there are more new faculty on the way! In this installment of our newsletter, we will highlight our new surgical faculty in both small and large animal surgery.

These individuals bring a wealth of expertise and experience in a number of aspects of their discipline that will be a great addition to the OSUVMH. At the OSUVMH we are focusing on developing a program of minimally invasive medicine, and all three of our new surgeons have expertise in this field and are seeking ways to develop medical and surgical treatment techniques that minimize patient pain and distress, reduce healing times, reduce complication rates, and improve treatment outcomes. Read on to meet our new surgical faculty.
OSU VMH’s Animal Relief Fund helps animals injured in OK wildfires

The OSU veterinary community is dedicated to service of the people and animals of the state, and one way that we do that is to provide care to animals that have suffered illness or injury associated with natural disasters, like tornadoes or other widespread calamitous events.

These events affect not only people, but animals as well. In some cases the animals become separated from their owners, or the devastation to the owners may be such that they are incapable to providing the care that their pet needs. This medical care is often costly and occurs at a time when animal owners may be least able to support it.

The OSU VMH has created a fund, referred to as the Animal Relief Fund (ARF), which is supported by donation, to pay for the care of these animals. The recent wildfires in western Oklahoma over the recent weeks have had a devastating effect upon communities and animals. At the OSU VMH we are currently caring for some horses, as well as one dog, that were injured during these fires. As you know, burn care is extremely time-consuming, and recovery is slow, but our patients are making progress – there is however still a long way to go, and the animal relief funds are significantly depleted.

If you would like to make a contribution to the care of these animals, or those that will inevitably occur in the future, please contact Chris Sitz at the OSU Foundation (800-622-4678).

CT unit (continued from page 1)

advanced imaging modality that allows for rapid cross-sectional imaging using X-rays and a high-power computer. CT is extremely useful in imaging complex bony structures such as the skull, spine, and joints like elbows. CT can also be used with intravenous contrast, which allows vessels throughout the body to be accurately visualized. This is critical for surgeons to be able to plan for complex vascular surgeries, such as portosystemic shunts, as well as resection of masses in the liver, adrenal or thyroid glands, to name just a few specific applications. CT is also superior to plain radiographs in detecting small pulmonary nodules such as metastatic cancer, especially in large breed dogs.

OSU averages around 250 CT cases per year at the present time. The majority of these cases are dogs, followed by cats, exotic species, equine, and other farm animals. Over the past year, studies have included: the skull of an alpaca with severe middle ear disease, a Sulcata tortoise with a non-healing shell wound, horses with nasal masses and dental disease, and wild raptors with complex fractures, among many others. The exotics CT caseload, which includes pet rabbits, parrots and other birds, turtles and tortoises, bearded dragons and other lizards, has doubled in the past three years and the use of CT has been critical in supporting the care of these unique and challenging patients.

The new CT machine at OSU is a 64-slice Toshiba Aquilion. This machine is the same unit that is used in human hospitals all over the world. Sixty-four “slices” refers to the number of “channels” of information that can be acquired and sent to the computer at the same time. Another major benefit of having 64 “slices” is that it allows for extremely rapid imaging, minimizing anesthesia time in critical patients, and allowing examination of some animals with just sedation. Each slice is 0.5 mm in thickness, creating extremely high-detailed images. This data can be “reconstructed” into images of various planes and orientations, allowing the user to easily view the area of interest. We can also create 3D images and information can even be sent to a 3D printer to create models that can be used for teaching, surgical planning and practice, and to create custom implants or prosthetics for a patient.

This CT unit also allows for cardiac gating, meaning the machine is able to track the patient’s heart rate and acquire data in between the heart beats. This allows for visualization of extremely small structures such as coronary arteries and even heart valves. This modality has recently been used in a case of congenital cardiac disease, and the CT was able to accurately map the course of the coronary arteries in a puppy, making a femoral artery catheterization and angiogram study unnecessary.

The 64-slice CT unit at OSU allows our clinicians to offer their clients and patients a state-of-the-art imaging option that improves the patient’s care by shortening or eliminating anesthesia time, providing surgeons with a clear road map of the body, and giving cancer patients better information on treatment options and prognosis.

We are very excited to be able to offer this advanced, upgraded imaging modality to our patients and the veterinary community. Please feel free to contact us to discuss the imaging options for one of your patients.

Dr. Mackenzie Hallman, Diplomate American College of Veterinary Radiology
Regenerative medicine in equine practice

Regenerative medicine refers to a group of biological medical treatments aimed at repairing or replacing damaged tissue by manipulating and/or stimulating the body’s own repair mechanisms. It involves harvesting blood or tissue from the patient which then undergoes a specific type of processing to concentrate desired cells or proteins, which are then introduced to the injured area to enhance the body’s healing process. Although scientific data is limited, adult stem cell (ASC), platelet rich plasma (PRP) and autologous conditioned serum (IRAP) therapies have shown promising results and are becoming common treatment modalities in equine practice. In most cases, the required sample can be collected from a horse, processed and then applied to the injured area within 48 hours.

PRP and IRAP are obtained from whole blood whereas ASCs are usually obtained from processing adipose tissue (fat) or bone marrow. ASCs have the potential to mature into many different tissue types depending on their environment. They also contribute to tissue healing by attracting certain growth factors to further improve the healing process. As described in the name, PRP contains a higher concentration of platelets as compared to whole blood. Activated platelets secrete important proteins and growth factors, which are vital in repair of soft tissue and bone. Thus, PRP can be injected into damaged tissues or applied topically to wounds to enhance the healing process. IRAP contains a high concentration of anti-inflammatory proteins the most important of which is interleukin receptor antagonist protein. Although not truly regenerative in nature, the anti-inflammatory properties of IRAP can have significant positive results in injured joints and tissues.

Regenerative medicine treatment modalities have been used successfully to treat a number of equine ailments including osteoarthritis, tendonitis, and laminitis as well as non-healing fractures and wounds. However, the information currently known about regenerative medicine is only the “tip of the iceberg” and research is ongoing to better define how these therapies work and the best ways to apply them to our clinical cases. The OSU CVHS currently provides regenerative medicine treatment modalities to our equine patients. For more information or to schedule an appointment, call (405) 744-6656.

– Mike J. Schoonover, DVM, MS, DACVS, DACVSMR (Assistant Professor, Equine Surgery)
Meet our new large animal surgeon: Dr. Megan Williams

Dr. Megan Williams grew up in Leawood, Kansas and attended Kansas State University for both her undergraduate education and DVM degrees. After veterinary college, she completed a one year rotating equine internship at Ocala Equine Hospital in Ocala, Fla. Following her internship, Dr. Williams moved on to a three-year large animal surgical residency at Michigan State University. After completing her residency training, she practiced as an equine surgeon and lameness veterinarian at Saginaw Valley Equine Clinic, a private practice in Saginaw, Mich. While the caseload at Michigan State University varied widely across many breeds and disciplines, the caseload at Saginaw Valley Equine focused primarily on western performance horses, specifically pleasure horses, barrel horses, reining horses, and halter horses.

Dr. Williams’ primary research focus to date has been in the area of the equine suspensory ligament. Specifically, she examined the microvascular anatomy and its potential relationship to regions predisposed to injury and poor healing response, as well as regional differences in strain within the suspensory ligament. While her training has prepared her for treatment of a wide variety of surgical conditions, Dr. Williams has a particularly strong interest in arthroscopic and laparoscopic surgery. Due to her experience working with western performance horses, she has also spent considerable time evaluating and treating horses for heel pain, including endoscopic examination and treatment of the navicular bursa for treatment of tendon injuries within the hoof capsule.

Moving to Oklahoma was a welcome change for Dr. Williams and her family. Her husband, Kent, is from Liberal, Kan., and is a small animal veterinarian. They are the proud parents of two-year-old twins, Harvey and Hailey. The move to OSU meant not only returning to an environment where teaching veterinary students was an integral part of Dr. Williams’ career, but also allowed the Williams family to be much closer to home! As a member of the OSU team, Dr. Williams hopes to expand and continue her research in the areas of equine lameness pathogenesis and treatments. Additionally, she hopes to be an integral part of the Equine Medicine and Surgery team’s continued efforts to grow clinical caseload, provide positive and efficient client and patient experiences, provide effective and timely communication with referring veterinarians, and maximize student learning opportunities.

Meet our new small animal surgeon: Dr. Cara Blake

Dr. Cara Blake earned her DVM degree at Ross University School of Veterinary Medicine in 2007. She completed a rotating internship in small animal medicine and surgery at Angell Animal Medical Center in 2008. She then completed a small animal surgery residency in a joint program with Tufts University Cummings School of Veterinary Medicine and the Angell Animal Medical Center.

She became a Diplomate of the American College of Veterinary Surgeons in 2012. Dr. Blake has completed coursework in Veterinary Acupuncture and in 2014 became certified in Canine Rehabilitation.

She is currently a practice pathway (non-traditional) resident in the American College of Sports Medicine and Rehabilitation. She previously worked as an Assistant Professor of Orthopedic Surgery at the University of Pennsylvania School of Veterinary Medicine and staff surgeon at Massachusetts Veterinary Referral Hospital. Prior to veterinary school, she worked for Genetics Institute/Wyeth on the development of rhBMP-2 for the acceleration of fracture healing and osteoporosis therapies.

Her areas of clinical and research interest include minimally invasive orthopedic surgery, use of regenerative therapies for the treatment of musculoskeletal injuries, osteoarthritis, clinical outcome assessments for orthopedic patients and pain management.

A deciding factor in joining the OSU CVHS faculty was the opportunity to work with a fantastic team of collegial and engaging faculty, staff and students. Having a strong interest in minimally invasive orthopedic surgery and rehabilitative therapies, a primary goal is to expand the services currently being offered to provide additional treatment options for small animal patients.
Meet our new small animal surgeon: Dr. Erik Clary

Dr. Erik Clary joined the clinical faculty at OSU’s Veterinary Medical Hospital in February 2018.

He hails from the Imperial Valley, Calif., where agriculture is king. Growing up, he spent many a weekend and school vacation working on his uncle’s cattle ranch, an experience that provided the seed for a career in veterinary medicine.

For college, he first attended California State Polytechnic University where he received a Bachelor’s degree in Animal Science. From there, he headed to Kansas State University where he earned the DVM degree and a Master’s degree in ruminant nutrition.

While in veterinary school, he developed a great interest in small animal surgery that led first to a clinical internship at the University of Georgia and then to North Carolina State University for a residency in small animal surgery.

Post-residency, Dr. Clary was recruited to Duke University Medical Center to help build the laboratory teaching and research components of what soon came to be one of the nation’s premier programs in minimally-invasive surgery. In that work, he worked side by side with pioneers in the field to help develop and assess in the laboratory a wide range of minimally-invasive approaches and technologies that are now commonplace in hospital operating rooms across the globe. From those labors, his publication credits include entries in upper tier human surgery journals including *Surgical Endoscopy, Journal of Surgical Research*, and the *American Journal of Surgery*.

Here in the Veterinary Medical Hospital at OSU, the effort is underway to develop and deliver a wide range of minimally-invasive treatment options for our patients—large and small.

The opportunity to make a significant contribution to that effort is part of what drew Dr. Clary away from North Carolina where he had also engaged in private surgical practice for more than 20 years. No less significant to the decision, he says, are the opportunities at OSU to teach surgery to the next generation of veterinarians and to further develop a recently acquired expertise in bioethics.

A PhD-trained ethicist, Dr. Clary has published, lectured, and provided private and public consultation on a range of challenging issues in medical ethics. His dissertational work addressed the issue of withdrawing artificial life support from fellow human beings rendered “persistently vegetative” from trauma or disease. At OSU, however, he intends to focus his work in ethics on questions and issues attaching to animal usage and treatment. These include veterinary medical ethics, the debate over animal rights/welfare, and ethical parameters for animate research.

Asked about his most interesting cases over 20 years of clinical practice, Dr. Clary finds it hard to commit. Clearly out of the ordinary, he says, are procedures performed on unusual species that have included lemurs, a hedgehog, a gerenuk, and, most recently, a wallaby. Even the more routine surgeries, he comments, do more than keep his interest as they tap into his deep and abiding desire to improve the lot of God’s lesser creatures and to minister to the people who care for them.