

Veterinary Medical Center Wish List

Orthopedic Surgery (Updated August 2019)

\$1,000 - \$5,000 - Updated Arthroscopic Equipment

Arthroscopy is minimally invasive surgery of joints. Using small cameras and equipment we are able to address many joint diseases minimally invasively with just a few incisions the size of a pencil head. Cameras, hand-held and powered instruments are routinely needed to perform these types of surgery.

\$1,000 - \$10,000+ – Research Support

Research funds for small clinical studies by faculty, residents or students. Often money is needed to do a small research project to gather enough information to apply for larger funding opportunities.

\$1,500+ – Continuing Education for Our Technicians

Continuing education for faculty and veterinary technicians is essential to maintain a high-quality service and provide excellent patient care. This allows our residents, faculty, and technicians the opportunity to learn the latest information about (service) and to present the results of their research.

\$2,000 - \$3,000 – Sponsor a Resident to Attend a Surgical Workshop or Conference

The Small Animal Surgery Service at the Veterinary Medical Center is one of the largest and most comprehensive training programs for surgical residents. Currently, we have eight surgical residents on staff, preparing to become ACVS board-certified surgeons. There are additional excellent opportunities for extramural clinical education e.g. AOVet fracture repair workshops, Arthrex arthroscopy and joint repair workshops, Imex external fixation workshops, BioMedtrix total joint replacement and interlocking nail workshops. Importantly, we actively encourage the residents to present their clinical research (they also complete a master's project during the residency) at national/international symposia e.g. ACVS, Veterinary Orthopedic Society. Sponsorship for residents to attend, learn and contribute is essential to the quality of their program.

\$3,000 - Cold Compression Units

The cold compression unit is a therapeutic pressurized cooling sleeve that is applied to a front or hind limb after bone or joint surgery. The unit will help reduce swelling and pain and promote earlier return to weight bearing comfort and function. Research has shown dogs that receive cold compression therapy experience less pain and have a greater range of motion and comfort than those that do not. The primary indication for the cold compression unit would be in physical rehabilitation after cranial cruciate ligament rupture, but there are many other postoperative recoveries that would benefit from this treatment modality.

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Orthopedic Surgery Continued

\$8,300 - Mini Locking Plate and Screw Set (Synthes 1.5mm locking compression plate)

By far the most common fracture sustained by toy breed dogs affects the radius and ulna just above the wrist: often caused by an innocuous tumble or jump. Complications of repair of toy breed radius /ulna fractures are common. Orthopedic implants need to be strong enough to support the bone to healing but not so massive that they prevent remodeling of the fracture. This new mini-plate system is size appropriate for toy and teacup breeds and offers more consistently routine recovery.

\$15,000 – Fluoroscopic Imaging Surgery Table

Fluoroscopic image intensification uses X-ray technology to see fractured bones and dislocated joints without surgical dissection. As an aid to orthopedic repair, fluoroscopy is used to guide precise insertion of surgical implants through minimally invasive portals. These smaller incisions reduce tissue injury and accelerate recovery. Standard metal surgical tables block the X-ray beam, and this currently restricts the application of fluoroscopy to surgery on more accessible extremities (forearm and hind limb below the knee). A carbon fiber table that does not block X-radiation will allow us to perform minimally invasive surgery on the upper limb pelvis and spine.

~\$40,000 - Synthes Small Battery Drive

Orthopedic power tools are in continuous use in the orthopedic surgical suites and are used in fracture repair, corrective osteotomy (e.g. tibial plateau leveling osteotomy), joint fusion, and joint replacement surgery. This Synthes tool is a modular saw, drill and pin driver widely recognized as the best in the field, and commonly used in academic and specialty referral practice.

\$50,000 - Force Plate/Pressure Sensitive Walkway

Objective gait analysis enables us to study the effects of treatment over time for orthopedic disease as well as neurologic diseases. It can also enable us to identify subtle changes in clinical patients.

\$60,000 Annually, 3-Year Appointment (\$180,000 Total) – Small Animal Surgical Resident

This includes salary and benefits for one resident – a person we will train to become an ACVS board-certified surgeon. The Small Animal Surgery Service at the Veterinary Medical Center is one of the largest and most comprehensive training programs for surgical residents. The residents receive instruction in minimally invasive surgery, neurosurgery, oncological surgery, orthopedics and soft tissue surgery. The majority of the residency involves primary patient care responsibilities under the mentorship of experienced attending surgeons. In addition, residents also help to teach students and conduct a research project.

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Orthopedic Surgery Continued

\$1,000,000 – Kinematic Gait Analysis Laboratory (Biplanar Fluoroscopy)

Kinematics is the science of joint motion. In clinical practice, we assess joint motion by direct observation, palpation and manipulation but this does not generate accurate, quantifiable and consistent data on joint function. Biplanar fluoroscopy (using low intensity X-ray beams that build a three-dimensional animated image of the joint) is considered the gold standard for measuring joint motion in people but is not available for dogs in the Mid-West.

Cranial cruciate ligament (CCL) rupture is the single most common cause of hind limb disability in dogs. However, the exact cause of and best treatment options for the torn CCL are still not known. We know that CCL rupture results in abnormal knee motion, which causes pain and progressive osteoarthritis. Treatments for CCL rupture aim to eliminate this abnormal motion, thereby minimizing pain and progression of osteoarthritis, but at this time, no treatment is 100% successful. Given how common the condition is, we are interested in perfecting the surgical procedures. Kinematics will allow us to understand the derangement of joint function caused by CCL rupture and the effect of surgical reconstruction. Biplanar fluoroscopy allows the tracking of knee motion with incredible accuracy, while the animal is awake and moving through daily activities.

In addition to studying CCL rupture, there are many other applications for kinematics as an investigational tool, such as hip dysplasia, elbow dysplasia, shoulder laxity, and orthopedic spinal disorders.

\$5,000,000 – Endowed Faculty Position

Endowments help ensure that funding is available in perpetuity for faculty. Endowed positions are a proven recruitment tool to attract proficient, dedicated, and talented mid-career surgeons or retain current faculty.