

CAHF *Wish* LIST

When CAHF donors help to purchase new equipment at the Western College of Veterinary Medicine, everybody benefits. WCVM clinicians and researchers gain access to vital pieces of equipment that help to improve the quality of health care for their patients. Plus, veterinary students gain experience and training on the latest technologies.

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Questions? Please contact **Lisa Green**, WCVM's development officer (306-966-7450; lisa.green@usask.ca).

COST CATEGORY: \$10,000 AND OVER

NAME OF ITEM: Vicon Motion Capture system including kinematic cameras and force plates for gait analysis

ESTIMATED COST: \$133,214.70

SERVICE: Small animal surgery

FACULTY MEMBER: Drs. Peter Gilbert, Cindy Shmon and Kathleen Linn, Dept. of Small Animal Clinical Sciences, WCVM

USE OF EQUIPMENT: This equipment allows us to analyze a dog's gait in great detail. The motion capture cameras allow us to place markers on the limbs and record how the dog moves its entire limb throughout its entire range of motion. This allows us to determine how much the dog flexes and extends each joint and how much force is being generated at each joint. Essentially, we can determine what is going on at any point in the gait cycle. This information can be used in many ways: it can be used to evaluate the success of orthopedic surgery or rehabilitation in returning the dog to normal function. We can compare values before and after treatment to determine how much improvement has occurred. The real beauty of motion capture is that it tells us how the dog is using the limb at all times, not just how much weight it is bearing. As the system generates real numbers for analysis, we can then obtain a truly objective picture of how our patients are doing.

Incorporating force plates into the system allows us to determine how much weight the dog is bearing on each limb during the gait cycle, combining this with the motion capture system gives us the most complete way to evaluate how a dog is moving.

A system like this has many uses. As mentioned, it can be used to evaluate clinical treatments, it can also be used to collect data on the normal gait of different breeds. As different breeds move differently this may allow us to determine why certain breeds are prone to some orthopedic conditions. It may be that certain breeds load their joints abnormally leading to problems. If we can show this, we may be able to make breeding recommendations to alter conformation to minimize these problems.

This system would also allow us to perform clinical trials to evaluate the effectiveness of arthritis drugs, this could be used to evaluate treatments destined for the human and veterinary market.

This is currently the gold standard for the evaluation of gait and is available at very few veterinary facilities in North America, it would really place the WCVM to the forefront if we were able to obtain this system.

ESTIMATED ONGOING COST FOR UPKEEP: We would require use of a room to store and use the equipment in. As well, we have to build a platform to house the force plates. I would anticipate a rough estimate for building the platform to be \$5,000.