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NEWS & EVENTS

MU CVM Residents' Research Honored During Forum

University of Missouri College of Veterinary Medicine residents captured two of 10 awards presented during the recent American College of Veterinary Internal Medicine Forum. Rob Daniel, DVM, and Meredith Sherrill, DVM, received the awards for the research projects they presented during the annual conference held this year in Nashville.

Daniel is completing a three-year residency in neurology and neurosurgery. He presented the results of a study titled "Feline Myotonia Congenita: Clinical, Electrophysiologic and Histopathologic Characteristics with a Novel Mutation in CLCN-1."

The study looked at five cats collected from a feral colony in Winnipeg, Canada. A veterinarian in Winnipeg who had adopted one of the cats noticed that it had an unusual gait and would periodically collapse. She brought the cat, along with four other cats with the same odd gait and collapse issues, to the Veterinary Medical Teaching Hospital at MU in the hope that the cause of the cats' condition could be determined.

Daniel said the neurology service suspected that a disease of the muscle membrane was at fault. The cats were given an electrodiagnostic test that assessed the electrical activity of the muscle membrane. He said the needle test elicited a sound that the MU researchers had never heard during previous electrodiagnostic exams on other animals.

"It sounded like a swarm of bees," he said.

The unique sound became part of the clinical description the neurology team used for the cats' signs as it sought to diagnose the disease responsible. As the neurology team developed the clinical



Rob Daniel

Dr.

description of the cats' illness, Leslie Lyons, PhD, the Gilbreath-McLorn Professor for Comparative Medicine at the MU College of Veterinary Medicine and director of the Lyons' Feline Genetics Laboratory, analyzed the cats' DNA looking for a genetic mutation to explain their disease.

Lyons was able to determine that a unique mutation was present within the cats' DNA.

"The Lyons laboratory found the mutation in one of the same genes found in people with the disease myotonia congenita" Daniel said. "This was the first time we were able to identify the mutation in a group of cats with feline myotonia congenita. We now have a test available to screen for carriers of this disease."

While myotonia congenita can be mildly to severely debilitating in people, this feline version of the disease does not appear to affect the longevity of cats, Daniel explained. The cats may appear well-muscled and have enlarged tongues, but other than walking oddly and occasionally falling down, they can live normal lives. The enlarged tongues predispose the cats to dental problems, Daniel said. Therefore during the Winnipeg cats' visit to the VMTH, Curators Teaching Professor Richard Meadows, DVM, performed cleanings and extracted a few decayed teeth before sending them back home to their families in Canada.

Daniel earned an honor's bachelor of science degree in genetics from the University of Western, Ontario. He received a doctor of veterinary medicine degree from the Ontario Veterinary College. Before beginning his residency at MU, Daniel completed a rotating internship at the Veterinary Emergency Clinic and Referral Center in Toronto, Ontario.

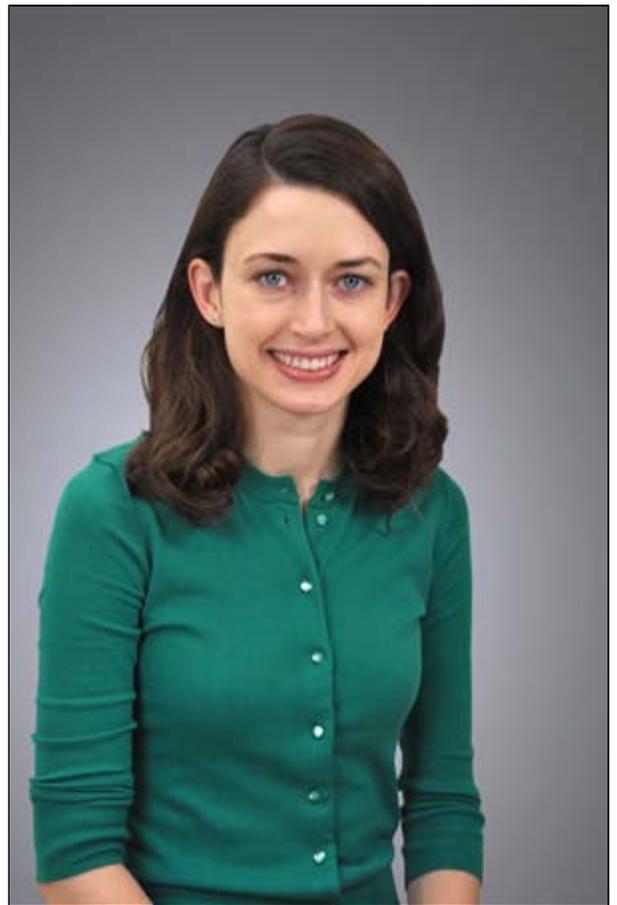
He will begin work at MSPCA Angell Animal Medical Center in Boston, Massachusetts in September.

Sherrill is in the second year of a three-year residency in small animal internal medicine at Mizzou. Her focus is immunology. The project she presented is a collaborative effort with CVM Professor Leah Cohn, DVM, PhD, ACVIM diplomate; Associate Professor Amy DeClue, DVM, MS, ACVIM diplomate; and researchers at Oklahoma State and North Carolina State universities. The investigation, "Infestation by *Amblyomma americanum* on Cats Leads to Increased Leukocyte Phagocytosis," looked at the effects tick bites have on cats.

"The purpose is to understand the immune response to ticks and pathogens," Sherrill said. The project focused on lone star ticks, which carry a number of diseases including *Cytauxzoon felis*, also known as bobcat fever, and tularemia. Both illnesses can be deadly to cats.

Because ticks inject saliva into the hosts they bite, the research team hypothesized that the bites themselves could trigger an immune response even when the tick is not carrying a pathogen to transmit.

"We looked at whether white blood cells can swallow or engulf bacteria as a measure of whether



Dr. Meredith Sherrill

they're functioning. We did find increased function of the white blood cells," Sherrill said.

Sherrill described the study as a work in progress that will continue through her residency at MU. Sherrill graduated from Washington University with a bachelor of arts degree in biology. She went on to earn her DVM at Iowa State University. Before coming to MU, she undertook a rotating small animal medicine and surgery internship at Purdue University.

Research reports are presented during the ACVIM Forum by active researchers in any of the ACVIM specialties, cardiology, large animal internal medicine, neurology, oncology and small animal internal medicine.

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