Every day, clinical investigators at The Ohio State University Veterinary Medical Center are working to bring the science of what they do to the forefront of veterinary medicine. Their research studies and clinical trials are advancing veterinary science to benefit animals and humans.

Their collaborations — including research with scientists in human medicine — are paving the way to help us improve diagnosis, evaluation and care in a multitude of areas, from colic in horses and chronic kidney disease in cats, to cancer and gastrointestinal and heart disorders in dogs. Their work is significant, and is what sets us apart from non-academic veterinary hospitals and other institutions.

See inside for more information on what we’re learning about their research, and for contact information if you would like to refer a patient to participate in a trial.

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In this issue of Update for Veterinarians, we are proud to share the additional research role that many of our clinicians play in ensuring that your current and future patients receive the most advanced level of care available. Learn more about key research and clinical trials our Veterinary Medical Center (VMC) specialists are conducting to improve our knowledge about diagnosis, evaluation and treatment of various diseases and conditions.

Also in this issue, we fondly salute a member of our faculty, Dr. Meghan Herron, associate professor-clinical, in the Behavioral Medicine service, who will soon depart to launch an innovative behavioral program that will transform care for shelter dogs nationwide. We recognize her many contributions as she passes the behavior service leadership role to Dr. Leanne Lilly.

Karin Zuckerman, MHSA, MBA
VMC Director
How Ursodiol modifies the canine gut microbiota and bile acid metabolome

**Goal:** Determine how oral administration of Ursodiol, a naturally occurring bile acid used to treat liver and gastrointestinal diseases, impacts the canine intestinal system, specifically the gut microbes and their metabolites.

“There is mounting evidence that bile acids, such as Ursodiol, can alter the gut microbial composition and host physiologic response during health and disease,” says Dr. Winston.

**Recruiting:** YES - Seeking 25 healthy dogs that will be administered Ursodiol.

Launching Animal Fecal Bank research platform

**Goal:** Decade-long collection of healthy fecal samples — and creation of fecal research repository — to explore how fecal microbiota transplantation (FMT) can restore microbial health to patients suffering from gut dysbiosis caused by a variety of diseases.

“FMT is growing in diverse fields such as infectious disease, gastroenterology, endocrinology, immunology, and oncology,” says Dr. Winston, “but short- and long-term ramifications of FMT remain unknown.”

**Recruiting:** YES - Healthy blood donor dogs.

Gabapentin to decrease stress with vet visits for cats with CKD

**Goal:** Explores how a low dose of gabapentin can be successfully processed by CKD cats in order to avoid oversedation.

“This is a very easy study for cats to participate in, as it’s only one visit,” says Dr. Quimby. “We also have a study that will provide free lab work and diet for CKD cats for 1 to 2 years. That study will start enrolling around the end of the year.”

**Recruiting:** YES - Cats with stable IRIS Stage 2, 3 or 4 CKD (creatinine 2.0-8 mg/dL). Visit, medication costs are covered. $100 Veterinary Medical Center client credit incentive.

Evaluation of the effect of omeprazole on clinical signs in CKD cats with GI issues

**Goal:** Evaluate if omeprazole is effective in alleviating GI signs (picky appetite) in cats with CKD.

**Recruiting:** YES - Cats with stable IRIS Stage 3 CKD (creatinine 2.9-5 mg/dL). Visit, medication costs are covered. $500 Veterinary Medical Center client credit incentive upon study completion.

Transdermal mirtazapine study to stimulate appetite in CKD kittens (completed)

**Goal:** Test whether mirtazapine, when formulated as a transdermal gel applied to the inside of the ear would stimulate appetite in young cats with CKD.

**Results:** The study successfully demonstrated an increase in appetite and weight in these patients after three weeks on the appetite stimulant.

“Although compounded transdermal mirtazapine cannot now be used in the United States due to the FDA approval of a similar product, this information will be valuable to kitties in other countries that do not have access to such a product,” says Dr. Quimby.
Clinical Trials and Research at the Veterinary Medical Center

Neurology

Dr. Carolyn Nye, Third-year Resident; contact: nye.157@osu.edu

Characterization of lumbosacral disease in Labrador retrievers

Goal: Explore the use of a novel kinematic MRI technique in combination with electrodiagnostic tests to better understand and characterize degenerative lumbosacral stenosis (DLSS) in Labradors.

“In order to fully comprehend the disease, we need to perform thorough advanced imaging and functional tests of the lumbar spine of healthy and affected Labrador retrievers,” says Dr. Nye. “This study will be the foundation for future therapeutic and genetic studies of DLSS in dogs.”

Recruiting: YES - Both healthy Labrador retrievers and those with clinical signs compatible with DLSS (lower back pain, reluctance to rise and not willing to jump). Cost of the MRI, electrodiagnostics, CT and anesthesia will be covered for affected dogs.

Dr. Sarah Moore, Associate Professor; contact: moore.2204@osu.edu

An NIH-funded platform trial to accelerate treatment development in canine Degenerative Myelopathy (DM)

Goal: Explore promising new treatments for canine DM — for which there are no current effective treatments — and to gather information that may help improve health outcomes for people with ALS, a genetically similar disease.

“Platform trials are a new design type that can be more efficient than a classically designed clinical trial in comparing treatments, because a master study protocol is used and involves a shared, smaller control group across studies,” says Dr. Moore. “Platform trial designs are novel even in human medicine. A recent and well-known example in human medicine is the I-SPY2 breast cancer trial.” Platform trial development collaborators: University of Missouri, North Carolina State University and Tufts University.

Recruiting: Enrollment expected to begin mid-winter 2020.

Dr. Ashley Hechler, Assistant Professor

See vet.osu.edu/vmc/cto/clinical-trials

Pain management in Cavalier King Charles Spaniels with “Syringomyelia”

Research on a sensory testing technique to determine its utility as a measure of neuropathic pain in Cavalier King Charles Spaniels with syringomyelia (SM), a painful neurological problem that results in scratching and face rubbing behaviors, and intermittent vocalizations. The study will also evaluate the efficacy of amitriptyline, a novel medication used for treatment of neuropathic pain in humans, and will compare its efficacy to that of the standard therapy (gabapentin).

Goal: To improve diagnosis and management of neuropathic pain in dogs.

Recruiting: YES
Clinical Trials and Research at the Veterinary Medical Center

Equine

Pilot study to measure intraoperative macroperfusion and microperfusion in horses undergoing colic surgery

**Funding:** Ohio State Equine Research Funds

“We aim to determine whether there is a correlation between macrovascular perfusion (blood pressure, cardiac output) and microvascular perfusion, the evaluation of microvascular blood flow in the oral mucosa using a non-invasive instrument called the MicroScan,” says Dr. Mudge.

**Recruiting:** YES - Currently enrolling. The study covers the increased monitoring under anesthesia as well as three intraoperative blood gas samples.

**Study to explore antimicrobial duration and association with incidence of surgical site infection and inflammatory markers**

**Funding:** The Morris Animal Foundation, Ohio State Equine Research Funds

**Recruiting:** YES - Currently enrolling horses that have surgical colic (those needing intestinal resection or with pre-existing infection will be excluded). Horses are randomized to receive either 24 hours or 72 hours of antimicrobial medications. The study covers measurement of inflammatory markers, including postoperative CBCs.

**Study of acupuncture’s use to prevent postoperative ileus**

**Funding:** The American Holistic Veterinary Medical Foundation

**Recruiting:** YES - Currently enrolling. Horses that have surgical treatment of small intestinal strangulation will be randomized to receive acupuncture (or no treatment). The study covers acupuncture treatments for the treatment group and postoperative ultrasound (for three days) for both groups.

Cardiology and Interventional Medicine

**Dr. Randolph L. Winter**, Assistant Professor

Contact: winter.159@osu.edu

**Use of cardiac MRI in dogs with mitral valve disease**

**Goal:** To better understand the pattern and extent of heart muscle damage in order to tailor medications to each patient, thus providing better care and improved quality of life.

“Cardiac MRI is a state-of-the-art way to learn as much information as possible about myocardial health without requiring any invasive samples,” says Dr. Winter. “We can now easily perform these exams in dogs to learn how to best treat their heart disease.”

**Recruiting:** YES - Dogs with mitral valve disease for evaluation.
Internal Medicine and Pathology

Dr. Rachel E. Cianciolo, Assistant Professor
Contact: OSUVET.RenalPath@osu.edu
Research on the characterization of kidney disease in American Dalmatians to explore the possibility of a breed-associated, hereditary kidney disease
Sponsor: The American Kennel Club – Canine Health Foundation.
Goal: Determine whether related American Dalmatians have lesions similar to one another, and if so, what part(s) of the kidney are primarily affected.
“We have also been collecting DNA samples from study participants,” says Dr. Cianciolo. “If a group of related Dalmatians have a similar type of kidney disease, we can use these DNA samples to attempt to identify a genetic basis.”

Recruiting: YES — Purebred Dalmatians.
If the dog has kidney disease, two tests are offered: biofluids analysis (urine and blood) and kidney tissue evaluation. If there is no clinical evidence of kidney disease, but the dog is related to a Dalmatian that does, urine and blood can be assessed. Evaluation fees covered for enrolled Dalmatian patients.

Oncology

Dr. Joelle Fenger, Assistant Professor
Dr. Ryan Roberts, Assistant Professor, Nationwide Children’s Hospital
See vet.osu.edu/vmc/cto, cvm-clinicaltrials@osu.edu or 614-247-8706
Multi-year study to identify circulating tumor cells and inflammatory markers in dogs with bone cancer (osteosarcoma)
Goal: Osteosarcoma affects more than 10,000 dogs each year. The current standard therapy involves limb amputation and chemotherapy; however >90 percent of dogs still die due to the development of chemotherapy-resistant metastatic disease. A better understanding of the genetic events that enable cancer cells to spread (metastasize) will help develop new, more effective therapies for this cancer. This study’s goals: 1) To isolate circulating tumor cells and understand genetically what enables them to spread from the primary tumor; and 2) to look at inflammatory markers that help the cells spread and understand the clinical utility of these markers to assess a patient’s response to therapy or enable the detection of early metastatic disease.

“We with this trial, dogs will undergo blood collections that coincide with their usual chemotherapy visits,” says Dr. Fenger. “We will collect blood samples throughout the course of therapy, allowing us to isolate circulating tumor cells and evaluate levels of inflammatory markers to understand their role in promoting tumor metastasis. The data generated may not impact current patients, but we hope this data will help us understand the genetic events that enable circulating tumor cells to spread to the lungs. Ultimately, these data will provide a critical platform for the development of new, more effective therapies that improve survival for dogs affected by osteosarcoma.”

Recruiting: YES - Seeking up to 30 dogs newly diagnosed with osteosarcoma that intend to undergo standard therapy (limb amputation and chemotherapy). Trial covers the cost of the blood collections and complete blood count during each visit.
Dr. Meghan Herron to Depart for Gigi’s to Develop Behavior Treatment Center for Dogs

Dr. Leanne Lilly (L) and Dr. Meghan Herron (R)

Dr. Meghan Herron, associate professor-clinical and head of the Veterinary Medical Center’s (VMC) Behavioral Medicine Service, will be leaving in January to oversee the design and implementation of a new and innovative Behavior Treatment Center at Gigi’s in Canal Winchester, Ohio. Gigi’s leads a collaborative resource network within the dog sheltering community to improve the health and well-being of shelter dogs and increase efficiencies within the network — all to help dogs and organizations in more communities.

Dr. Herron’s departure is bittersweet for all who have worked with and alongside her. Dr. Herron’s contributions have been immeasurable: She created a robust behavioral medicine program — in science and practice — at the VMC, where none existed before. Under her leadership, the program has become a productive clinical and academic teaching service that includes a full-time, boarded faculty member, two residents, two veterinary technicians, a two-hour core Introduction to Animal Behavior course, an elective in Shelter Dog Behavior, and clinical rotation and behavior lectures as an integral part of the curriculum.

She says her most proud accomplishments include helping aggressive animals get wellness care and advanced diagnostics and surgery; educating graduating veterinarians to help them feel confident treating behavioral problems; and being a resource for referring veterinarians.

At Gigi’s, Dr. Herron will work to develop a model to care for homeless dogs, who are on the fringe of being adoptable due to mild-to-moderate behavior problems, by funneling them through a program that assesses and addresses their needs, thus preparing them for adoption in select source shelters. The goal, she says, is to create a model for shelters nationwide.

“Gigi’s is a state-of-the-art center focused on not just sheltering animals, but on maximizing its impact on the lives of shelter animals throughout the state of Ohio,” she says.

Dr. Herron will be transitioning her service leadership to Dr. Leanne Lilly, who has worked with Dr. Herron for more than three and a half years. She says clients are in good hands with Dr. Lilly, who Dr. Herron says, “came to us as an expert”, with four years of her own practice plus a year of specialized behavioral medicine before she even started her residency here at the VMC. “Dr. Lilly has really fine-tuned this program by integrating with our other services, including internal medicine, neurology and orthopedic medicine. She is a remarkable clinician.”

Says Dr. Lilly: “Following wonderful opportunities under Dr. Herron’s mentorship, I’m aiming for a seamless transition in which the amazing team members of our service continue to provide the exceptional behavioral care and compassion that allowed Dr. Herron to grow this service, both in clientele and in service members.”

Vet-to-vet consultations are one of her favorite aspects of her work, Dr. Lilly adds. “I am ever grateful to be part of such an amazing, personable veterinary network in our Small Animal Behavioral Medicine Service.”

To refer patients, call 614-292-4655 or email OSUVET.BehaviorMedicine@osu.edu.

Upcoming CE Events

College of Veterinary Medicine Continuing Education

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For more details, please visit: vet.osu.edu/alumni/continuing-education

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