

# 2021 George Sydney and Phyllis Redman Miller Trust Grant Awards

Total funding \$222,128

**MT21-001: "Impact of the secondary bile acid ursodeoxycholic acid (Ursodiol) on the feline gut microbiota and metabolome."** Principal Investigator(s): Jenessa A. Winston, DVM, PhD, DACVIM; The Ohio State University. \$26,437

An older drug, ursodiol, originally extracted from the bile of black bears, has been used in traditional Chinese medicine since the seventh century AD. It's now commonly used in synthetic form in a variety of diseases of cats with little understanding of how it works. This study investigates its effects on the intestinal bacteria, leading to better treatments for cats with liver, intestinal, or kidney diseases.

**MT21-003: "The role of microbial indole catabolites of tryptophan in host-microbiome cross-talk in cats with chronic enteropathies."** Principal Investigator(s): David Williams, University of Illinois. \$32,880

Cats with intestinal disease often have decreased bacterial metabolites, called "indoles," that leads to increased inflammation. By analyzing the intestinal bacteria and their metabolites, this investigation will attempt to identify the bacteria which produce indoles, leading to potential new treatments for intestinal disease.

**MT21-005: "Prospective evaluation of unlicensed GS-441524-like antiviral therapy for treatment of feline infectious peritonitis."** Principal Investigator(s): Samantha J.M. Evans, DVM, PhD, DACVP; The Ohio State University. \$4500 (*Bria Fund*)

Feline Infectious Peritonitis (FIP) is a serious viral disease that is no longer considered fatal with the recent discovery of an effective treatment. However, this drug is not licensed by the manufacturer for use in the U.S., resulting in owners buying the unapproved drug online. This study attempts to quantify it's use and drug purity to document treatment until FDA approved drugs become available.

**MT21-006: "The Prognostic Value of Circulating Galectin-3 in Feline Heart Failure."**

Principal Investigator(s): Ryan Fries, University of Illinois. \$22,850 (*\$17,646 Miller Trust, \$5,204 Ricky Fund*)

Heart disease is common in cats, with some succumbing quickly and others living a long time. This study will develop a simple blood test to determine which cats are likely to have rapidly progressing disease so they can be managed appropriately.

**MT21-010: "Non-genetic enhancement of feline adipose mesenchymal stromal cell immunomodulation with adenosine-loaded nanoparticles."** Principal Investigator(s):

Natalia Vapniarsky, Boaz Arzi, Gang-yu Liu; University of California-Davis. \$34,684  
Previous grants to these researchers resulted in an effective stem cell treatment for most cats with severe stomatitis, a painful chronic inflammation of the mouth. For the few that didn't respond, they propose to enhance stem cells with the addition of a potent anti-inflammatory drug (adenosine) leading to effective treatment of all cats with this debilitating disease.

**MT21-012: "Precision Medicine Genomics for Cats (using the new cat reference genome) (continuation)."** Principal Investigator(s): Leslie A. Lyons, PhD; University of Missouri. \$34,945

EveryCat has been at the forefront of feline genomic medicine since its infancy, providing funding for initial groundbreaking studies as well as support for current research. This latest grant enables a major update to the "reference genome" which forms the basis for understanding of all genetic research as well as the discovery of the genetic basis of many diseases.

**MT21-013: "Investigating Pectus Excavatum in Cats Using Rigorous Phenotyping and Population-Scale High- Throughput Sequencing."** Principal Investigator(s): Brian W Davis; Texas A&M University. \$30,926

Several cat breeds are affected with "pectus excavatum," a birth defect causing a severely flattened chest with significant mortality, but the cause is unknown. This study attempts to identify a genetic cause leading to selective breeding to reduce the incidence of this debilitating trait.

**MT21-014: "Determining the genetics underlying diabetes mellitus in the domestic cat."** Principal Investigator(s): Dr. Rory Todhunter; Cornell University. \$34,906 (*\$34,506 Miller Trust, \$400, ECHF Diabetes Fund*)

Diabetes is one of the most common endocrine diseases in cats and is difficult and expensive to treat. This study looks for a genetic cause or propensity in cats which, if identified early, will permit intervention before significant illness occurs.