

EveryCAT

HEALTH FOUNDATION

The Future of Feline Medicine Starts Here

2022 Research Update

2022 EveryCat Health Foundation Grant Awards
2022 Miller Trust Grant Awards
2022 CaP-K Grant Awards



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2022 EveryCat Health Foundation Grant Awards

Total Awarded \$294,208.00

EC22-002: "Is platelet Toll-like receptor 4 the silent partner of thrombosis in cats with hypertrophic cardiomyopathy? Investigating the immunothrombotic interactions between histones and platelets."

Principal Investigator(s): Ronald Hak Long Li, DVM, PhD, DACVECC; Wan Khoo Avalene Tan, BVSc, DACVECC; Joshua A. Stern, DVM, PhD, DACVIM (Cardiology); University of California Davis, School of Veterinary Medicine. \$32,017.00

Heart disease is common in cats, and many develop blood clots that prove fatal. This study investigates a new theory of blood clot formation in cats with heart disease. If proven, new drugs can be developed to treat or prevent this deadly complication.

EC22-003: "Thromboelastography in cats with hypertrophic cardiomyopathy."

Principal Investigator(s): Giulio Menciotti, DVM, MS, PhD; Ashley Wilkinson, DVM, MS, DACVIM (SAIM); Virginia-Maryland College of Veterinary Medicine, Virginia Tech. \$31,297.00 (*Ricky Fund*)

Many cats with heart disease develop fatal blood clots for unknown reasons. One theory is that these cats have an increased tendency to form clots. This investigation uses a new method to measure this and determines if it's more pronounced in cats with more advanced heart disease.

EC22-004: "Testing for Clopidogrel Resistance in Cats Presenting to First Opinion Practices."

Principal Investigator(s): Anthony Abrams-Ogg; Matthew Kornya; Ontario Veterinary College, University of Guelph. \$13,867.00 (*Ricky Fund*)

Many cats are prescribed Plavix (Clopidogrel) to prevent blood clot formation from various ailments, especially heart disease, but up to 20% are resistant to it. Currently this can only be diagnosed at a veterinary school. This study evaluates both in-house and reference lab tests so these cats can more readily be identified and appropriately treated.

EC22-005: "Acute phase protein and micro-RNA signatures for the diagnosis and prognosis of feline infectious peritonitis."

Principal Investigator(s): Professor Danielle Gunn-Moore (DGM), BSc (Hon), BVM&S, PhD, MANZCVS, FHEA, FRSB, FRCVS, RCVS Specialist in Feline Medicine; Royal (Dick) School of Veterinary Studies and The Roslin Institute, The University of Edinburgh. \$7,500.00 (*Bria Fund*)

Feline Infectious Peritonitis (FIP) is a serious viral disease that has no diagnostic test and was, until recently, invariably fatal. But with the recent discovery of effective treatments, diagnosing affected cats is critical. This study evaluates two new possibilities, acute phase proteins and micro-RNA, to determine if they can be used to develop an accurate diagnostic test.

EC22-007: "EIDD-2801 (Molnupiravir): establishing an oral dose and evidence for efficacy in cats with FIP."

Principal Investigator(s): Brian Murphy, DVM, PhD, Dip ACP; Krystle Reagan, DVM, PhD, Dip ACVIM (SAIM); School of Veterinary Medicine, University of California, Davis. \$33,550.00 (*Bria Fund*)

EC22-007 continued

With the recent discovery of effective treatments, Feline Infectious Peritonitis (FIP) is no longer considered a fatal disease in cats. But these treatments are not yet legally available, so this study evaluates the efficacy of a similar FDA approved antiviral drug, molnupiravir, which can be legally prescribed by veterinarians.

EC22-015: "Effect of EPA and DHA supplementation on renal function biomarkers and systolic blood pressure of proteinuric and borderline proteinuric cats diagnosed with chronic kidney disease." Principal Investigator(s): Ana Luisa Guimarães Dias Lourenço, DVM, PhD, Dipl. ECVCN; Tomás Rodrigues Magalhães, DVM, PhD Student; Department of Zootechnics, University of Trás-os-Montes and Alto Douro, Portugal. \$33,942.00 [*Feline Kidney Disease Fund in honor of Vicki Thayer, DVM, DABVP (Feline) – Board Designated Match*] (Sponsored by Zoetis)

While many animals, including people and dogs, are commonly given essential fatty acids (EFAs) as part of their treatment for kidney disease, this has never been investigated in cats. These researchers in Portugal will evaluate the effect of EFAs to determine if this therapy will benefit cats with kidney disease.

EC22-018: "Characterization and causative investigation of Feline Gastrointestinal Eosinophilic Sclerosing Fibroplasia." Principal Investigator(s): Victoria Watson, DVM, PhD, Diplomate ACVP; Michigan State University: Jared Jaffey, DVM, MS, Diplomate ACVIM; Midwestern University. \$9,026.00 Although rare, feline gastrointestinal eosinophilic sclerosing fibroplasia (FGESF) is a debilitating gastrointestinal disease of cats with an unknown cause. By collecting samples from across the world, these researchers will investigate possible causes, including parasites and cancer, leading to potential treatments.

EC22-021: "Comprehensive mutational profiling of the oncogenomic landscape of commonly-occurring cancers in domestic cats to pave the way for precision veterinary medicine and understanding cancer biology." Principal Investigator(s): Dr. Louise van der Weyden; Dr. David Adams; Wellcome Sanger Institute, Cambridge, United Kingdom. \$31,426.00 (*\$28,296.00 EveryCat Health Foundation, \$3,130.00 Cancer/Oncology Fund*) (Sponsored by IDEXX)

Targeted cancer treatments are successfully used in humans to treat a variety of neoplasia with few side effects. To do this in cats, these researchers in the UK will evaluate the genetic makeup of three common feline neoplasias (lymphoma, mammary cancer, and oral cancer) to pave the way to develop targeted feline cancer therapies.

EC22-023: "The obesity-microbiome connection - determine gut flora signatures of obese cat." Principal Investigator(s): Xu Wang; Auburn University College of Veterinary Medicine. \$34,583.00 Prior investigations of these researchers identified markedly different bacteria present in the intestinal tract of obese versus normal weight cats. This study will attempt to develop a diagnostic test to identify these bacteria, leading to potential novel treatments for obesity in cats as well as people.

EC22-028: "Unravelling the blood bacterial microbiome in healthy and febrile domestic cats via 16S rRNA metagenomics."

Principal Investigator(s): Ananda Muller, Ross University School of Veterinary Medicine; Katrin Hartmann, Ludwig-Maximilians-Universität München. \$32,000.00

The bacterial population of the blood of cats is poorly understood. This study, a collaboration of Caribbean and German researchers, will investigate this in both healthy and sick cats, leading to greater understanding of many diseases and potential groundbreaking treatments.

EC22-038: "Dexmedetomidine-vatinoxan-ketamine for anesthesia in cats."

Principal Investigator(s): Bruno Pypendop, Linda Barter; University of California-Davis. \$35,000.00

Anesthesia in cats commonly involves combinations of drugs to provide both sedation and pain relief, but the most common combination negatively affects heart function. This study adds an additional drug to counteract this effect. If successful, it will result in a new combination safer with fewer side effects.

2022 George Sydney and Phyllis Redman Miller Trust Grant Awards

Total Awarded \$199,546.00

MT22-000000019: "Curbing FIP by targeting and blocking the viral ion channels."

Principal Investigator(s): Gary Whittaker; Isiah Arkin, Cornell University. \$34,962.00

FIP and COVID are closely related coronaviruses, and many drugs can be used to treat both diseases. This study leverages the strengths of a well-known human lab studying COVID with a premier veterinary lab at the forefront of FIP research to discover novel drugs that inhibit the virus' ion channels, which regulate infectivity, to develop new therapeutic drug combinations.

MT22-000000020: "Establishment of feline keratinocyte organoids and use as a model to study feline dermatophytosis."

Principal Investigator(s): Dominique Wiener, Texas A&M University. \$35,000.00

Ringworm is a common fungal skin infection of cats that is not well understood. But infecting cats to study this disease is not ideal. This study will develop skin "organoids" from feline skin stem cells to enable researchers to study this disease without the use of research cats.

MT22-000000021: "Immediate Intervention Following Tooth Extraction Using Allogeneic Adipose-Derived Mesenchymal Stem Cell Therapy for Cats with Chronic Gingivostomatitis: A Randomized, Controlled and Blinded Study."

Principal Investigator(s): Boaz Arzi, Maria Soltero-Rivera; University of California-Davis School of Veterinary Medicine. \$27,392.00

This study is a continuation of previous research funded by EveryCat that developed a highly effective stem cell treatment for Stomatitis, a painful inflammation of the mouth in cats. By giving stem cells immediately after tooth extractions, it is expected to hasten the response to this treatment and improve their quality of life.

MT22-000000025: "Continuous rate infusion thrombolysis with tissue plasminogen activator, pentoxifylline and cyproheptadine in acute feline aortic thromboembolism – the ALPEXC trial."

Principal Investigator(s): Julien Guillaumin, Colorado State University. \$34,427.00. Adjusted Budget: \$32,336.00
Blood clots sometimes occur in cats, especially those with heart disease, and is usually fatal. This study investigates a new protocol for continuous infusion of clot-busting drugs in children with blood clots to determine if it is effective in cats.

MT22-000000028: "Development of a new whole exome capture array for cat disease and cancer studies."

Principal Investigator(s): Leslie A. Lyons, PhD, University of Missouri. \$35,000.00
As genome sequencing (the identification of DNA gene sequences) has matured, new technologies have been developed to improve the accuracy and decrease the cost. This proposal takes it a step further by concentrating on the most important part of the genes, the exons, which code for proteins, and standardizing its use for the entire veterinary community.

MT22-000000033: "Re-evaluation of the current, and development of an updated, histopathologic set of criteria for the diagnosis and differentiation of gastrointestinal small-cell lymphoma from other forms of chronic enteropathies in cats."

Principal Investigator(s): Panagiotis G. Xenoulis, Jörg M. Steiner; Texas A&M AgriLife Research. \$34,856.00
Chronic intestinal diseases are common in cats and often caused by inflammation or cancer. But differentiating between the two is difficult, even with biopsies, and the treatments are very different. This study will develop a new method of analyzing intestinal biopsies to improve the accuracy of diagnosis and lead to more successful treatment.

2022 CaP-K Grant Awards

Total Awarded \$209,925.00

CaP-K22-002: "A longitudinal multi-matrix metabolomics approach for the identification of biomarkers of early feline renal disease."

Principal Investigator(s): Sylvie Daminet, Department of Small Animals, Faculty of Veterinary Medicine, University of Ghent. \$41,601.00
Current tests for kidney disease in cats are typically diagnostic only after 70% of the kidney is damaged. This study uses metabolomics to identify and characterize small molecules in the blood and urine to design novel tests that diagnose kidney disease in earlier stages, before irreversible damage occurs.

CaP-K22-008: "Identification of urinary extracellular vesicles-derived microRNAs as sensitive and specific biomarkers for early-stage feline chronic kidney disease."

Principal Investigator(s): Candice P. Chu, Lillian Aronson; University of Pennsylvania. \$23,000.00
In cats, elevations of current diagnostic tests occur only once severe kidney disease exists. In humans, alterations in the micro-RNA of kidney cells occurs in patients with early renal disease. This study investigates and characterizes micro-RNA in cats with various stages of kidney disease to see if it can be used as an accurate diagnostic test for early kidney disease, before irreversible damage occurs.

CaP-K22-011: "Effect of caloric content on phosphorus balance and kidney function in healthy cats."

Principal Investigator(s): Carmen Pineda, Ignacio Lopez, University of Cordoba (Spain). \$44,099.00
The levels of phosphorus and calcium are closely related to the progression of kidney disease, where phosphorus increases as the disease progresses. This study investigates whether reduced caloric intake decreases phosphorus levels in cats.

CaP-K22-012: "Phosphoric acid implications to renal health and urine supersaturation for struvite and calcium oxalate in cats."

Principal Investigator(s): Aulus Cavalieri Carciofi, Maria Eduarda Gonçalves Tozato. Universidade Estadual Paulista (UNESP)(São Paulo State University) \$49,000.00
Phosphorus metabolism is intimately related to the progression of kidney disease and the formation of kidney stones in cats, yet many cat foods contain a phosphoric acid additive to decrease the formation of kidney stones. This study investigates the effect of phosphoric acid on the occurrence of kidney disease and kidney stones in cats.

CaP-K22-013: "Screening for early feline chronic kidney disease: Unraveling the mystery of nonazotemic disease."

Principal Investigator(s): Marleen Brans, DVM; Dominique Paepe, DVM, PhD, DECVIM; Emmelie Stock, DVM, PhD, DECVDI. Faculty of Veterinary Medicine, Ghent University. \$52,225.00
Cats develop kidney disease long before elevations in current diagnostic tests which indicate irreversible damage. This proposal uses a simplified "gold standard" test to characterize early kidney disease and update the international criteria. It also investigates two novel methods to identify cats with early kidney disease, before severe damage occurs.

Since 1968, EveryCat Health Foundation has awarded OVER \$9 million in grants for groundbreaking research that benefits every cat, every day. From disease prevention and veterinary treatment to healthy home habits, we advance the science of better medicine for millions of cats. Every cat, everywhere, every day.



You can be a part of a brighter future in feline medicine by donating to EveryCat Health Foundation. Money raised allows for more research to be funded.

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