



For the Health and Well-being of All Cats

# Research Update

## \$361,962 in Feline Health Study Grants Awarded in 2016/2017

Each year, Winn Feline Foundation receives proposals from veterinary researchers around the world who are interested in improving feline health. By May 2017, Winn's cumulative total in feline health research funding was almost \$6 million at more than 30 partner institutions worldwide.



### Winn Feline Foundation funded the following feline health studies in October 2016:

Winn Feline Foundation announced the award of five feline medical research grants funded in partnership with the George Sydney and Phyllis Redman Miller Trust.

#### **MT16-004: Characterization of mineralization and expression of osteogenic proteins in feline kidneys with and without calcium oxalate uroliths**

*Principal Investigators: Jody Lulich, DVM, PhD, DACVIM, Eva Furrow, VMD, PhD, DACVIM; University of Minnesota; \$12,000*

Many cats with kidney disease also have kidney stones, which cannot be treated and may make the disease worse. This study investigates whether diseased kidney cells develop traits similar to bone-forming cells and produce substances that cause mineralization leading to stone formation. If this hypothesis is correct, new treatments preventing or minimizing mineralization should improve survival.

#### **MT16-007: The effects of oral anti-inflammatory glucocorticoids on glucose homeostasis and fluid balance in clinically healthy cats**

*Principal Investigator: Jessica Ward, DVM, DACVIM, Iowa State University; \$24,975*

Steroids are used in medicine to treat many different diseases but may cause side effects, including heart failure due to increases in blood glucose. This study investigates whether oral prednisolone, a commonly used medication, can cause these side effects. If no effect is found, this will lead to more confident use of the medication in cats.

#### **MT16-010: Carboplatin-impregnated calcium sulfate hemihydrate beads: A cost-effective, local treatment for feline injection site-associated sarcoma**

*Principal Investigators: Heidi Phillips, DVM, DACVS, Elizabeth Maxwell, DVM, University of Illinois; \$29,169*

These highly aggressive tumors have limited treatment options in cats. This study investigates whether a very effective chemotherapy drug, known to be toxic to cats, can be administered by a new method with minimal side effects. This method has been used in other species with good results.

#### **MT16-014: Structure-based design of a novel subunit immunogen for development as a feline infectious peritonitis (FIP) vaccine**

*Principal Investigator: Gary Whittaker, PhD; Cornell University; \$30,273*

FIP is a very lethal infection in cats without effective treatment options. While vaccination is the best method to control this disease, past attempts have been unsuccessful. This study investigates a different approach to vaccine development which has proven effective with other diseases.

**MT16-015: Susceptibility to dermatophytosis and asymptomatic carrier state in Persian cats**

*Principal Investigators: Aline Rodriguez Hoffman, DVM, PhD, William Murphy, PhD; Texas A&M University; \$28,078*

Persian cats develop a fungal skin infection, called “ringworm”, more often than other breeds of cats. This study investigates whether Persians are more likely to become infected without symptoms, which makes the disease difficult to control. It also investigates whether Persians have a genetic defect that predisposes them to this disease. If so, they could be identified before reproducing, to decrease the incidence in this breed.

The following feline health study was funded in October 2016 by the Speckles Abdominal Cancer Fund:

**MTW16-018: Fecal microbiome and metabolome in cats with IBD and low-grade alimentary lymphoma**

*Principal Investigator: Jan Suchodolski, DVM, PhD, AGAF, DACVM; Texas A&M Gastrointestinal Laboratory; \$23,450*

This study evaluates the composition of the stool of normal cats as well as cats with two common intestinal diseases, inflammatory bowel disease (IBD) and intestinal cancer (low grade alimentary lymphoma). Currently, these two diseases can only be diagnosed by biopsy. If a significant difference is found, as is the case in other species, this may lead to a simpler and more accurate diagnostic test for these diseases.

**Winn Feline Foundation funded the following feline health studies in March 2017:**

Winn Feline Foundation awarded eleven feline medical research grants funded through the generous support of private and corporate donations from around the world. Winn awarded \$214,017 in grants for studies on a diverse group of cat health issues examining the use of stem cells to treat feline diabetes, hepatic lipidosis, hypertrophic cardiomyopathy (HCM) and the potential role of stem cells in regulating T-cell activation and proliferation. In addition, Winn awarded grants investigating shelter cat adoption in families of children with autism, foraging behavior in confined cats, prolonged use of an antacid in cats, probiotic therapy for *Tritrichomonas foetus*, cryopreservation of feline red blood cells, biomarkers for FIP diagnosis, and potentially vaccinating against a virus causing lymphoma.

**GENERAL STUDIES****W17-004: Generating and using adult stem cells to treat feline diabetes**

*Principal Investigator: Mandi Lopez, DVM, MS, PhD, DACVS; Louisiana State University; \$23,825*

This study attempts to show that stem cells can become pancreatic cells and function like insulin-producing natural cells. If so, it may be possible to cure diabetes in cats.

**W17-015: Evaluating new treatments for feline hepatic lipidosis**

*Principal Investigators: Hedwig Kruitwagen, DVM, Bart Spee, PhD; Utrecht University, The Netherlands; \$12,987*

This study uses a previously developed functional liver cell culture (called a “liver organoid”) to evaluate new treatments for feline hepatic lipidosis (FHL), a common and often fatal liver disease of cats, without the need for live animal testing.

**W17-017: Evaluating the prolonged use of an antacid, famotidine, in cats**

*Principal Investigators: M. Katherine Tolbert, DVM, PhD, DACVIM, Adesola Odunayo, DVM, MS, DACVECC; The University of Tennessee; \$19,668*

Famotidine (Pepcid®), an antacid, is a commonly used medication in cats for various stomach ailments, but studies in other species show it may become ineffective if given daily over long periods of time. This study evaluates that possibility in cats and whether changing the dosage can prolong its effectiveness.



#### **W17-018: Evaluating the effect of probiotic therapy on feline *Tritrichomonas foetus* infection**

*Principal Investigators: M. Katherine Tolbert, DVM, PhD, DACVIM, Rachel Dickson, DVM Candidate; University of Tennessee; Jody Gookin, DVM, PhD, DACVIM; North Carolina State University; \$17,864*

This study evaluates the role feline intestinal bacteria (probiotics) play in preventing infection with a protozoan (*T. foetus*) that causes chronic diarrhea in cats and is very difficult to treat. If successful, it may be possible to treat this disease with probiotics.

#### **W17-026: Mechanisms by which feline mesenchymal stem cells regulate T-cell activation and proliferation**

*Principal Investigator: Dori Borjesson, DVM, PhD, DACVP; University of California-Davis; \$13,000*

Stem cells derived from fat seem to have potent anti-inflammatory effects that have been successfully used to treat otherwise untreatable diseases in cats, but no one knows why. This study investigates how this occurs, which may identify other diseases that could benefit from this intriguing therapy.

#### **W17-030: Cryopreservation of feline red blood cells for transfusions using different solutions**

*Principal Investigators: Marcell Hon, MS, DVM, Elizabeth Thomovsky, DVM, MS, DACVECC; Purdue University; \$11,666*

Currently, feline blood can only be stored refrigerated for one month, making it difficult to stock for transfusions. This study evaluates the effect of freezing with the use of glycerol and hydroxyethyl starch solutions on red blood cells of cats, as commonly done in human blood banks, which could extend its shelf life for several years.

#### **W17-031: Shelter cat adoption in families of children with autism**

*Principal Investigators: Gretchen Carlisle, PhD, Rebecca Johnson, PhD, University of Missouri; \$24,996*

It is widely thought that companion animals, such as cats, benefit children with autism, but definite studies are lacking. This study quantifies the effects and benefits of cat ownership on autistic children as well as evaluates the degree of stress on these cats.



#### **W17-033: Foraging behavior under threat and enrichment in confined cats**

*Principal Investigators: Melissa Bain, DVM, DACVM, DACAW, Tony Buffington, DVM, PhD, DACVN; University of California-Davis; \$24,780*

Cats who live indoors lack opportunity to hunt and eat naturally. This study evaluates these effects on indoor cats and whether enriching their environment and using food puzzles to stimulate hunting behavior are of benefit to their behavioral and physical health.

### **BRIA FUND STUDY**

#### **W17-021: Analysis of plasma to identify biomarkers for the diagnosis and prognosis of FIP**

*Principal Investigators: Gregg Dean, DVM, PhD, DACVP, Kelly Santangelo, DVM, PhD, DACVP; Colorado State University; \$25,000*

Feline infectious peritonitis (FIP) is a fatal disease of cats that causes vague symptoms and currently defies diagnosis. This study uses a novel approach to develop a simple test using plasma biomarkers for diagnosing this devastating disease.

## RICKY FUND STUDY (SPONSORED BY HOLLY AGLIALORO IN MEMORY OF AUGUSTUS)

### W17-008: Growing heart muscle cells in a dish in the lab to test HCM treatments

Principal Investigators: David Connolly; The Royal Veterinary College; Debbie Guest; The Animal Health Trust; Cesare Terracciano; Imperial College London; \$17,158

Feline hypertrophic cardiomyopathy (HCM) is the most common heart disease of cats. This study is one of the first attempts to grow heart muscle cells in the lab. This will enable testing of many new drugs to stop progression of this disease without using live animals.

## SPECKLES ABDOMINAL CANCER STUDY (SPONSORED BY KITTY KOLLAR™ IN MEMORY OF QUASIMODO)

### W17-011: A viral gene expression analysis towards preventing feline lymphoma

Principal Investigators: Julia Beatty, PhD, Mahdis Aghazadeh, PhD, Vanessa Barrs, PhD; University of Sydney; \$23,073

A virus (*Felis catus* gammaherpesvirus1 or FcaGHV1) that can cause cancer (lymphoma) in other species has been recently discovered in cats. This study looks for the presence of this virus in feline lymphoma cells. If found, it may be possible to prevent lymphoma by vaccination.

**Sponsorship is easy!** Simply pick one of the projects below seeking sponsors (\$250 minimum donation). Go to our website <http://www.winnfelinefoundation.org> for more information on the project and to make your sponsorship donation online or download a donation form to mail to:  
637 Wyckoff Ave., Suite 336, Wyckoff, NJ 07481.

### W17-011: Preventing gammaherpesvirus1 and lymphoma in cats

### W17-021: Plasma analysis to identify biomarkers for the diagnosis and prognosis of FIP

### W17-031: Shelter cat adoption in families of children with autism

**Winn Feline Foundation** is a non-profit public charity established in 1968 that supports studies to improve cat health and welfare. Since 1968, the Winn Feline Foundation has funded almost \$6 million in health research for cats at more than 30 partner institutions world-wide. For further information, go to [www.winnfelinefoundation.org](http://www.winnfelinefoundation.org).

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Winn Feline Foundation is a non-profit organization [501(c)(3)] established in 1968 that supports studies to improve cat health.

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