



WINN...ING WAYS

FOR THE HEALTH & WELL-BEING OF ALL CATS

Spring 2007

PRESIDENT'S COLUMN

Winn benefits from the skills and experience of many talented people. This year, two distinguished individuals join us in our goal to improve the health and well-being of all cats. Well-known radio personality, syndicated columnist, and certified dog and cat behavior consultant Steve Dale has joined our board. Acting on his love and compassion for all cats, Steve established Winn's Ricky Fund in 2002 in memory of his beloved Devon Rex cat, Ricky, who died of hypertrophic cardiomyopathy (HCM). Among his many honors, Steve earned the prestigious AVMA Humane Award in 2002. Steve is a valuable addition to Winn's board and will focus on education and media relations.

Winn has had the volunteer services of many distinguished researchers for our grant review panel. This fall, Dr. Alfred Legendre finishes 6 years of service as a Veterinary Consultant. In October, Dr. Julie Levy, an associate professor in Small Animal Medicine at the University of Florida, joins us. Dr. Levy has a distinguished research career in feline infectious diseases, neonatal kitten health, and humane alternatives for cat population control. She is the founder of two university-based feral cat spay/neuter programs (Operation Catnip), that have sterilized more than 20,000 since 1997. In 2005, the Association for Women Veterinarians named Dr. Levy, "Outstanding Woman Veterinarian of the Year". Her expertise in clinical medicine as well as immunology will be a great asset to our grant review panel.

Susan Little DVM, DABVP (Feline)
President, Winn Feline Foundation

WINN FUNDS 8 FELINE HEALTH STUDIES FOR \$127,544

The Winn Feline Foundation is pleased to receive proposal from veterinary researchers around the world who are interested in improving feline health. Out of 40 proposals for 2007, our team of outstanding veterinary consultants helped the Foundation select the best studies for funding. We look forward to seeing the results of these studies and being able to share them with the veterinary community as well as cat owners and pedigreed cat breeders.



CONTINUATION OF PREVIOUSLY FUNDED STUDIES

Targeted gene mapping in gaps of the feline-human comparative map.
William J. Murphy, PhD; Texas A&M University; \$14,585

The male-specific region of the mammalian Y chromosome is particularly unique, and is perhaps the single most divergent region in mammalian genomes among species. Studies of the human Y chromosome have shown that it contains many testis-specific Y-linked genes that are candidates for infertility. Though much is known about feline reproductive physiology

and spermatogenic defects, nothing is known about the genes involved in these processes. This study will exhaustively characterize the gene content of the Y chromosome in the domestic cat. This project will isolate cat Y chromosome genes, and determine which may be good candidates for abnormal sperm function. The information may help assisted reproduction techniques used to conserve endangered wild cat species. This study will be critical for filling the final major 'gap' in the cat genome project.

BREED-FUNDED STUDIES

Molecular characterization of feline COX-2 and expression in mammary cancer. Monique Doré, DVM, MSc, PhD, DACVP; University of Montreal; \$15,000

Tumors originating from the mammary gland represent one of the most frequent forms of cancer in cats. However, very little information is known on the mechanisms involved in the development of this cancer. The growth of mammary tumors is age-related, affecting mostly 10- to 11-year-old cats. Malignant mammary tumors can recur following surgical removal or can send cancerous cells to distant organs. The enzyme cyclooxygenase-2 (COX-2) has been implicated in various forms of cancer in humans, including breast cancer, and in mammary tumors in dogs. The objective of this proposal is to determine the molecular structure of feline COX-2 and to study it in feline mammary tumors. A better understanding of the role of COX-2 in feline mammary cancer will help design new strategies for cancer therapy and prevention in cats.

[This study was partially funded by the efforts of the Siamese Breed Council and many other interested breeders.]

Molecular evaluation of the feline myosin heavy chain gene in Ragdolls, Norwegian Forest cats and Sphynx with familial hypertrophic cardiomyopathy. Kathryn M. Meurs, DVM, PhD, DACVIM; Washington State University; \$31,550

Feline hypertrophic cardiomyopathy (HCM) is the most common cause of heart disease in the adult cat. Affected cats are at risk of sudden death, breathing difficulties or development of a blood clot. Increasingly, feline HCM is inherited, with examples noted in the Maine Coon, Ragdoll, Norwegian Forest Cat and Sphynx breeds, among others. The researcher has demonstrated that HCM is associated with a mutation in the myosin binding protein C gene in the Maine Coon cat. In human beings, the disease is commonly associated with a mutation in one of several genes for heart muscle proteins, most commonly the myosin binding protein C and myosin heavy chain genes. The research team has collected pedigrees, medical information and DNA samples from Ragdolls, Norwegian Forest cats and Sphynx with familial HCM. They performed an initial study of affected cats, and determined that the Maine Coon mutation is not present in these breeds. The researchers now hypothesize that a mutation in the myosin heavy chain gene is associated with the development of HCM in one or all of these breeds. The objective of this study is to evaluate this gene in both affected and unaffected cats for a causative mutation.

[This study was largely funded by the efforts of Ragdoll, Norwegian Forest Cat and Sphynx breeders. This study was also supported by the Ricky Fund, a fund for the study of feline hypertrophic cardiomyopathy established by Steve Dale in memory of his cat, Ricky.]

"I was at the U/PA [University of Pennsylvania] . . . and met Dr. Sleeper who is doing the HCM study with carvedilol that Winn is sponsoring . . . I am delighted that Winn is able to fund these studies and grateful that you are ready, willing, and able to keep us all informed of these studies and their progress. . . . it is nice to know that some of one's money goes to a good cause." Nancy Sullivan, Black Cat Farm, PA. 2006

NEW STUDIES

Prevalence and risk factors for venereal Tritrichomonas foetus infection. Jody L. Gookin, DVM, PhD; North Carolina State University; \$12,465

Tritrichomonas foetus (TF) is a protozoan pathogen that infects the feline colon resulting in chronic, foul-smelling diarrhea. The infection is very common, especially in multi-cat environments. Treatment is difficult as only one drug has been shown to be effective. However, the drug is expensive, sometimes toxic, and fails to clear the infection in some cats making eradication from a cattery extremely difficult. The same organism responsible for feline diarrhea is also found in cattle where it infects the reproductive tract. Bulls cannot be cleared of the infection, because antibiotics do not effectively reach the infected genitalia. The researcher has noted that male cats are often the ones failing treatment for TF infection, leading them to surmise that TF may also reside in the reproductive tract of cats. They have identified DNA from TF in genitalia from a male cat with TF diarrhea. In this study the research team will examine the reproductive tract of 100 cats undergoing spay or neuter by offering cattery owners free testing for intestinal TF if the researchers receive both a fecal and reproductive tract specimen. Molecular techniques able to detect

minute amounts of DNA from TF will be used to look for its presence in reproductive organs and feces. Reproductive tissue will be directly examined for TF organisms. Venereal involvement in feline TF may explain cases of treatment failure and the high prevalence of disease in some breeding programs. It has significant implications for the design of effective treatment and prevention strategies.

Evidence of effective drug delivery using transdermal gel delivery systems in cats. Dawn Boothe, DVM, PhD, DACVIM, DACVCP; Auburn University, \$14,990

The administration of drugs using a transdermal gel applied to the ear is popular among cat owners because of ease of administration. These products are not commercially available, but must be compounded. As such, they do not undergo an approval process or scientific evaluation. Several studies have demonstrated that drugs applied as transdermal gels in cats do not reach the blood stream on the first dose. Yet, topically applied gels remain a popular route of drug administration. This study will examine the ability of gels to deliver drugs into the bloodstream of cats following several days to weeks of therapy. Feline patients receiving drugs prepared as a transdermal gel for treatment of an illness will be compared to cats receiving the same drug orally. Drugs to be studied will be among those most commonly administered as a gel (prednisolone/prednisone, methimazole and metronidazole). Blood samples will be collected from the treated cats. Samples will be collected when the drug treatment is started and throughout therapy for up to three months. A small sample of the drug itself will also be studied at each time point to assure accuracy and potency of the compounded product.

From this information, the appropriateness of administering drugs as transdermal gels will be assessed. Proper dosing regimens will be determined and the time to therapeutic concentrations and response will be described. Further, an expiration date will be offered for each preparation.

Characterization of feline immune responses to recombinant DNA vaccines against avian H5N1 influenza virus. Elizabeth W. Uhl, DVM, PhD, DACVP; University of Georgia; \$15,000

The discovery that cats can be infected with bird (H5N1) flu, and can transmit the disease to other cats has increased concerns about their risk of infection and role in transmission. In addition, the responses to new outbreaks of bird flu are increasingly devastating. Hundreds of cats were reported abandoned following discovery of an infected cat in Germany. Vaccine manufacturers do not have the resources to produce enough of the traditional types of flu vaccines for both humans and cats, therefore other types of vaccines must be developed to protect pets. A vaccination strategy would help avoid actions such as in Korea where the government announced that all cats and dogs in a vicinity of an outbreak will be killed. Recombinant DNA vaccines are safer, easier, and less expensive to make. The goal of this project is to develop a recombinant DNA vaccine that induces protective immune responses in cats. To achieve this goal, the researchers have assembled a collaborative team with the expertise to make the vaccines, assess feline immune responses, and insure the proper and humane handling of cats. The vaccination and experimental protocols are safe and are not expected to have any negative impact on the health of the cats.

Detection of anti-erythrocyte antibodies in cats with anemia. Kristy L. Dowers, DVM, MS, DACVIM; Colorado State University; \$8,954

Red blood cell destruction due to autoantibodies can lead to a life-threatening anemia known as immune-mediated hemolytic anemia (IMHA) in many species, including cats. In cats, however, it was thought that the disease is primarily caused by infectious agents or cancer, leading to the use of drugs like antibiotics rather than immunosuppressive drugs, as the mainstay of therapy. Regardless of cause, few reliable tests exist to determine whether autoantibodies are part of the disease process. Recent studies suggest that true autoimmune IMHA is more common in cats than previously suspected. This study analyzes blood samples from cats that



develop IMHA to assess the role of infectious agents in this life-threatening disease and to develop cutting edge techniques for identifying the autoantibodies on feline red blood cells that cause the destruction. With a better understanding of how cats develop the disease and more precise diagnostic tools for recognizing the underlying process, veterinarians can more effectively and successfully treat the disease.

Mesenchymal stem cell transfer for treatment of chronic renal disease in cats. Steven Dow, DVM, PhD; Colorado State University; \$15,000

Chronic kidney disease remains a leading cause of death in cats. The only effective treatment option at this time is kidney transplantation, which is expensive, technically complicated, and not widely available. Recent studies using rodent models suggest that stem cell therapy has the potential to actually improve kidney function in animals in kidney failure. However, such an approach has never been attempted in cats with naturally-occurring kidney disease. Therefore, in this study the researcher will investigate the safety and potential effectiveness of injections of stem cells as a treatment for improving kidney function for cats with kidney failure. The stem cells will be grown from bone marrow samples obtained from each cat enrolled in the study and will then be injected directly into the kidney using ultrasound to guide the injections. The study will enroll a total of 9 cats, which will be divided into 3 groups of 3 animals each. The 3 treatment groups will each receive increasing numbers of stem to determine whether injection of more cells leads to greater benefit. Kidney function will be assessed before the injection and at one and three months after the stem cell injection to determine whether the injections improve kidney function. If these studies show that the approach is safe and stimulates improved renal function, then stem cell transfer may represent a powerful new method for managing chronic kidney disease in cats.

Thank you for your continuing support of the Winn Feline Foundation. Your donations allow us to continue our important efforts to improve the health and well-being of all cats.

The Winn Feline Foundation is a 501(c)(3) nonprofit organization.

Donations to Winn may be tax deductible.

Participant in the National CFC #10321

NEW WEBSITE LAUNCHED

The Winn Feline Foundation is pleased to announce the launch of its new website, <http://www.winnfelinehealth.org>. The site is designed to provide more information about feline health in a highly accessible format. President Susan Little, DVM, DABVP, states that among the new features to be found at <http://www.winnfelinehealth.org> are:

An expanded section for cat lovers

- an up-to-date library containing online articles about the most important diseases, problems, and treatment in feline medicine.
- featuring advice about the proper care and housing of all cats.
- links to key websites for feline health information.
- opportunities to memorialize pets.

A special section for veterinarians and veterinarian researchers

- spotlighting the latest in cutting-edge feline health information, both recently published and pending articles.
- progress reports of ongoing feline research.
- opportunities to participate in client-based health studies.
- special memorial programs for clients (Pet Memorial Program for Veterinarians)
- grant opportunities for feline health studies.

A special section for the media

- offering increased content concerning important feline health events and individuals in the feline health field
- up-to-date information about Foundation activities
- latest information on Winn's feline health grants

The Winn Feline Foundation is pleased to continue to be a reliable source of information for pet owners, veterinary professionals, and journalists.

The new Winn Feline Foundation website is a tool to help improve and prolong the lives of all cats everywhere.

<http://www.winnfelinehealth.org>.

FELINE HEALTH NEWS BLOG

The Winn Feline Foundation has established a blog to publicize the latest in feline health research published by Winn-supported researchers:

<http://www.winnfelinehealth.blogspot.com/>

The blog is searchable by key word to find articles of particular interest. Links to published abstracts are included, as well as any pertinent links for further information about a given subject. In some cases, free full-text journal articles are available.

Follow the link at the bottom of the blog page to subscribe to the blog's RSS feed. You can read an RSS feed in most browsers or by using widely available RSS reader software.

THE WINN FELINE FOUNDATION BOARD OF DIRECTORS

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www.WinnFelineHealth.org

I want to help!!

The Winn Feline Foundation funds health studies benefiting cats.

Enclosed is \$_____ for:

Endowment Fund _____ or

General Donation _____

In honor of* _____

A Memorial to* _____

A stipulated donation for (circle one):

Cancer Musculoskeletal Diseases

Feline Genetics Reproductive Issues

Gastrointestinal Ricky Fund for Hypertrophic
Diseases Cardiomyopathy

Respiratory & other Infectious Diseases,
Heart Diseases other than FIP

Behavioral Issues Bria Fund for Feline
 Infectious Peritonitis (FIP)

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(Diabetes, Hyper- Urinary tract Diseases
thyroidism, etc.) other than PKD

* Please inform the following individual(s) of my memorial/in honor donation:

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City State Zip

Please provide us with your name & address:

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City State Zip

Please mail this coupon with your donation to:

The Winn Feline Foundation
1805 Atlantic Avenue
PO Box 1005
Manasquan, NJ 08736-0805

Thank you!!

5/07