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## Osteoarthritis Pain in Cats

Study Update
A Passion for Cats

Helping Wildlife



## YOUR GIFTS IN **ACTION**

For nearly 70 years, Morris Animal Foundation has been a global leader in funding studies to advance animal health. With the help of generous donors like you, we are improving the health and well-being of dogs, cats, horses and wildlife worldwide.

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- **Double Your Impact**

Our mission is to bridge science and resources to advance the health of animals.

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#### Clinical Trial for Upper Respiratory Disease

Feline herpesvirus is highly contagious and one of the major causes of flu-like, upper-respiratory infections in cats, especially those living in high density populations such as shelters. University of California, Davis, researchers are testing a cost-effective antiviral treatment to prevent herpesvirus-related upper respiratory outbreaks in shelter cats. This new treatment may help reduce euthanasia rates due to illness and improve overall health and adoptability of cats worldwide.

#### Potential Extra Health Boost from Rabies Vaccine

Rabies is a vaccine-preventable disease, but remains a serious threat to people and animals in developing regions of the world. University of Pretoria researchers analyzed data of dogs in a rabies-endemic area of South Africa. The team discovered that dogs vaccinated with the rabies vaccine as part of vaccination campaigns were less likely to die from all other causes compared to unvaccinated dogs. This suggests the rabies vaccine may help boost the immune system against other diseases and infections. (Vaccine, July 2017)

#### **Cancer Screening Test Available**

Squamous cell carcinoma (SCC) is the second most common type of tumor in the horse and the most frequent tumor of the horse's eye. University of California, Davis, researchers identified a genetic mutation for this cancer in Haflinger horses which resulted in a DNA-based screening test for this breed. This new test will help identify horses at higher risk of developing SCC and assist in breeding decisions to help reduce the incidence of this cancer in Haflinger horses. (International Journal of Cancer, July 2017)

#### **Tuberculosis Management in Deer**

In the United States, millions of white-tailed and mule deer serve as a reservoir for bovine tuberculosis (BT), complicating BT eradication efforts in this country. University of Minnesota researchers developed a new, cost-effective diagnostic test to help rapidly assess BT prevalence in deer. This improved testing method will aid wildlife managers in early detection, monitoring and intervention strategies to help control this infection in deer. (American Journal of Veterinary Research, June 2017)

## Solving Mysteries

Study Relying on Expert Pathologists to Get Diagnoses Right

As the Golden Retriever Lifetime Study enters its fifth year, the scientific team is starting to see a small uptick in the number of participating dogs developing cancers, both benign and malignant. Accurate and consistent evaluation of the tissue samples collected from study dogs is crucial to the study's success; without the same people evaluating each sample, diagnoses can vary enough to impact study findings.

In order to maintain consistency, the study has two pathologists poised to evaluate tissue specimens and provide a base of reference for other researchers. Drs. E.J. Ehrhart and Mike Betley ensure that study biopsies and other tissue specimens are reviewed and categorized accurately, and their involvement will grow as the study population ages.

Dr. Betley is the recipient of the first Pathology Residency training grant in support of the Golden Retriever Lifetime Study and is based at Colorado State University. In addition to the normal duties expected of pathology residents, Dr. Betley works with Dr. Ehrhart, formerly at CSU, to evaluate samples from the study, providing an extra hand in what will eventually be a lot of samples.

"I truly appreciate receiving my Morris Animal Foundation training grant," said Dr. Betley. "I really wanted to come to Colorado State University for training, and this unique grant is allowing me to not only pursue my dream of becoming a boarded pathologist, but I'm getting a chance to participate in this incredible study."

Collected tissue samples add to the large body of other materials from the cohort, including questionnaire answers, genetic data and other banked biologic materials such as blood, urine and feces. Plans are underway to allow collaborative researchers to request samples, including tissue, for specific research projects. The power of this study is the vast range of material available from each dog – something that most researchers simply don't have access to under normal circumstances – which should advance our understanding of canine health.

Snickers, Hero #1899



Order uour 2018 Golden Retriever Lifetime Study Calendar today! These calendars are available for a limited time, and all proceeds support the Golden Retriever Lifetime Study.

Go to morrisanimalfoundation.org/calendar

The Mark & Bette Morris







Golden Retriever Foundation **Hadley & Marion Stuart Foundation** 

Mars Veterinary



### Arthritis in Cats

## The Challenge

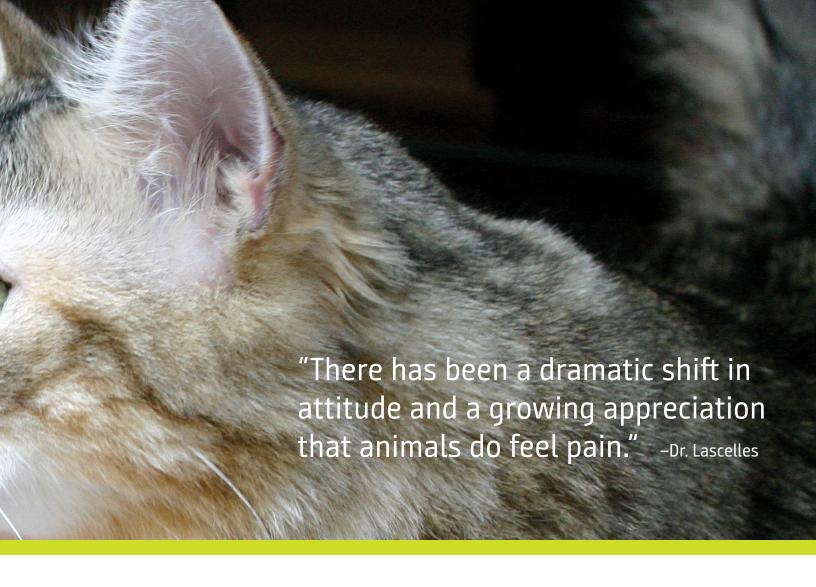
Dr. Lascelles, whose work is funded in part by Morris Animal Foundation, has conducted a broad array of pain studies, with some of his most important work focused on osteoarthritis in cats. Osteoarthritis, also known as degenerative joint disease, is a progressive disease of the joints. Aging, past trauma or other injury to the joint can lead to inflammation and damage in a joint. The end result is a chronic pain state that can have far-ranging, negative health effects beyond an affected joint.

For many years, veterinarians believed that most cats didn't develop arthritis, which seems strange in hindsight. But there were many reasons why arthritis in cats was tricky to diagnose, including a cat's tendency to hide illness and difficulty examining cats for pain.

The increase in awareness that cats do develop osteoarthritis and experience pain, led to a desire by veterinarians to alleviate this pain, but generated a whole new set of problems. Lack of understanding about how to assess pain in cats, coupled with limited treatment options, led many veterinarians to use treatments that were largely unproven in feline patients.

#### **Enter Dr. Lascelles and His Team**

Dr. Lascelles, a faculty member at North Carolina State University, recognized that veterinarians needed help diagnosing and treating cats in pain. His team developed objective pain assessment tools for use in practice to measure pain and then assess response to therapy in cats with osteoarthritis. These findings have now informed how veterinarians approach cats with pain, and have improved the quality of life for thousands of cats through the evaluation of



suggested therapies, which leads to recommendations for the treatment of arthritis pain in cats.

Today, cats with osteoarthritis typically are treated with a combination of weight reduction (when needed), non-steroidal anti-inflammatory drugs and dietary adjustment (e.g. adding omega-3 fatty acids). Many other treatments, both currently used and in development, are being evaluated. With standardized methods of evaluating pain, treatment outcomes are easier to assess and veterinarians on the practice floor are better able to modify treatments based on a cat's pain level.

"What you need is scientifically sound, clinically relevant research to understand what does work, and in order to do that you need to measure the many dimensions impacted by pain," said Dr. Lascelles.

The team's latest investigation, spearheaded by Dr. Derek Adrian, a Morris Animal Foundation fellow working with Dr. Lascelles, is focused on finding ways to measure central sensitization (CS) in cats with chronic pain. CS can lead to self-generation of pain signals and heightened pain sensitivity, but is difficult to measure. Drs. Adrian and Lascelles are looking for ways to measure this important source of pain in cats.

"Morris Animal Foundation has been incredibly important in the changes that we've seen in feline pain management over the last 15 to 20 years," said Dr. Lascelles. "The Foundation has supported not just the sexy work – 'let's see if this drug works' – but it has been willing to support the important groundwork that needs to be done to understand how to measure pain, and the impact of pain, that leads to the development of effective treatments."

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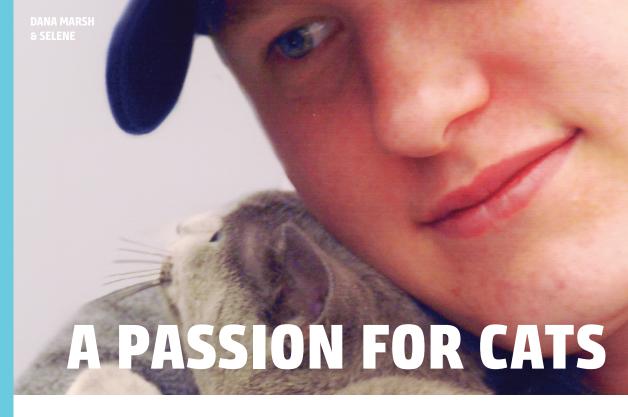
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When Dayle Marsh was growing up, she mastered the art of getting kittens using the kidtested strategy of pitting mom against dad.

"As a child, my mom was an animal person, so we always had a dog and a cat in the house," said Dayle. "But sometimes I would bring another kitten in from the barn and would begin pestering my mom, 'can I keep it, can I keep it, can I keep it?' My mom would say no, no, no. Then I'd say 'What if Dad says it's OK, can I keep it?' Her resistance at that point was pretty much gone, and the answer from my dad was always yes."

An early love of cats flourished for Dayle, and she eventually became president of the Lincoln State Cat Club, a breeder of Grand Champion Russian blues, and devoted supporter of Morris Animal Foundation. Her gifts to the Foundation, and those of the Lincoln State Cat Club, have helped to fund studies in health conditions that diminish quality and quantity of life in our feline companions. For Dayle, it's simply her way of paying back for all the love she has received from her cats over the years.

"Dan and I were married in 1965," said Dayle. "I was working full time, Dan was working and going to law school, and we knew we couldn't have a dog, so we thought a cat would be a better fit for our busy lives. I saw an ad in the newspaper for a Russian blue, the cat without a voice, and that was that. We named her Marnie, after Alfred Hitchcock's movie by that name, because Marnie had 'attitude."



DAYLE & DAN MARSH

Dan became involved with Morris Animal Foundation in the '70s by starting the legacy committee, and Dayle started to work with the Foundation's State Chairman program, designed to help animal owners learn more about the Foundation, and help the Foundation learn more about disease problems confronting pet owners.

"In those early days, not much was known about cat health," said Dayle. "It's amazing in the last few decades how far we have come."

Dayle's love of cats and other animals has continued to the next generation. Her daughter, Dr. Dana Marsh Krotz, an equine veterinarian and certified acupuncture therapist, devotes her life to helping animals. But, unlike Dayle, there was no need to beg for cats when she was growing up. Mom always said yes.



## MORE 20,000 species have benefited

from Morris Animal Foundation-funded research since 1948. New funding in 2017 is expanding on that work, as the Foundation continues to be a leader in research that helps animals in the wild.

## On the Land

#### Asian and African Elephants

Critical first steps toward vaccine development for elephant endotheliotropic herpesvirus, a lethal hemorrhagic disease in young elephants.

#### San Joaquin Kit Fox

A disease management strategy for sarcoptic mange, a fatal skin disease in this endangered species caused by burrowing mites.

#### Saiga Antelope

Epidemic control strategies for peste des petits ruminants, also known as goat plague, which is threatening the survival of wild hoofed mammals in Mongolia.

#### African Lions, Dama Gazelle and Maned Wolf

A noninvasive pregnancy test to enhance assisted-reproductive techniques for vulnerable and endangered animals, critical for wildlife welfare and conservation.

#### From Badgers to Great Apes

First steps toward developing new tuberculosis controls and prevention strategies for multiple wildlife species.

## In the Air

#### Ridgway's Hawk

Development of a sustainable solution for botfly infestations killing Ridgway's hawk chicks and other endangered island-endemic bird species.

#### **Urban Songbirds**

Impact of sub-lethal lead exposure on northern mockingbird in New Orleans to help understand the broader risk to urban wildlife and pets.

#### Sandhill Crane

Solutions for fertility issues in endangered cranes to enhance conservation breeding and reintroduction programs.

## In the Sea

#### Southern Sea Otter

Risk factors for cardiomyopathy, a chronic heart condition and an important cause of mortality in free-ranging southern sea otters.

#### Southern Stingraus

Causes for stingray reproductive disease linked to obesity and poor reproduction in aquatic species.

#### Porpoises, Whales and Dolphins

Impact of chronic stress, as it relates to health and welfare of marine wildlife.



#### PLEASE CALL YOUR VETERINARIAN TO ASK PET HEALTH QUESTIONS