

AnimalNEWS

18.1

TUBERCULOSIS *Ancient Disease, Present Threat to Wildlife*

Golden Retriever Lifetime Study

Mousie's Legacy - Hope in the
Fight Against Hemangiosarcoma

2018 Feline and Canine Health Studies

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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OUR MISSION

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

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Potency of Compounded Drugs

Doxycycline, a commonly used antimicrobial, is prescribed to treat a wide array of bacterial infections. But availability, pill size and administration difficulties lead some veterinarians to prescribe compounded doxycycline. Kansas State University researchers found compounded chewable or liquid formulations of this drug varied in potency and did not meet United States Pharmacopeia (USP) standards at three weeks post-compounding. Compounded whole tablets yielded the most consistent potency, important new information when prescribing doxycycline for pets. (*Journal of the American Veterinary Medical Association*, October 2017)

Promising Chemotherapy for Mammary Cancer

Mammary tumors are common cancers in non-spayed female dogs. Although surgery can be curative, for many dogs the cancer has spread by the time of surgery. Few targeted and effective chemotherapy options are available for these patients. University of Montreal researchers validated the use of a new drug that reduced cancer cell migration and growth in canine tumor cell culture, opening the door for a promising new treatment for dogs with mammary cancer. (*Journal of Mammary Gland Biology and Neoplasia*, August 2017)

Treating Inflammation in Horses

When the immune system goes into overdrive, it can damage tissue and trigger chronic inflammation in the body. North Carolina State University researchers identified a key regulator of the horse immune system as well as several effective drugs that target this regulator and may reduce inflammation. These drugs also address concerns about using conventional nonsteroidal anti-inflammatory drugs (NSAIDs) in horses. (*Veterinary Immunology and Immunopathology*, October 2017)

New Hope for Amphibians Facing Deadly Fungus

Batrachochytrium dendrobatidis (Bd), is a fungus linked to worldwide declines and extinctions of several amphibian species. The good news is that some individual animals and even whole species seem to be resistant to Bd infection or carry the fungus but never develop the disease. Virginia Polytechnic Institute and State University researchers identified promising dominant bacteria on amphibian skin important in Bd-resistance, providing hope for finding new treatments to fight this global and deadly fungal disease in amphibians. (*Environmental Microbiology*, August 2017)

Why the Golden Retriever Lifetime Study Matters

Morris Animal Foundation's Golden Retriever Lifetime Study, now in its sixth year, is the most extensive prospective study ever undertaken in veterinary medicine, gathering information on more than 3,000 golden retrievers throughout their lives. This is the first Morris Animal Foundation-funded study conceived, designed and run by the Foundation and its partners.

"The original goal of the study was 500 cancer diagnoses, based on our understanding of the prevalence of cancer in golden retrievers," said Dr. Rod Page, Principal Investigator on the Golden Retriever Lifetime Study, and Director of the Flint Animal Cancer Center at Colorado State University. "What we quickly realized is that the study represents a huge step forward in general veterinary health care."

Animal health clinical scientists lack the population-based studies that have been so instrumental in moving human medicine forward, slowing the progress needed to solve major pet health issues. This study changes the animal health research landscape and may establish associations between dog health and multiple factors, including diet, exercise, genetics and environmental dynamics, such as pesticides and water sources.

"This study provides an important base for establishing new paradigms in treatment..."

"Right now, we don't have robust evidence-based veterinary care," said Dr. Page. "This study provides an important base for establishing new paradigms in treatment, helping us to support or deny long-held casual assumptions in such areas as early spay/neuter, obesity, exercise and dental hygiene on cancer development as well as other non-cancer health outcomes."

The Golden Retriever Lifetime Study will provide unique insights into the onset of naturally occurring health conditions in real time and on a large scale.

The data collected will help us learn more about:

- **CANCER**
- **AGING**
- **HEART DISEASE**
- **INFECTIOUS DISEASES**
- **JOINT DISEASE AND INJURIES**
- **GASTROINTESTINAL DISEASES**
- **NEUROLOGIC DISORDERS**
- **KIDNEY AND BLADDER DISEASES**
- **SKIN CONDITIONS AND ALLERGIES**
- **TRANSLATIONAL MEDICINE**
- **HYPERTHYROID AND OTHER ENDOCRINE DISEASES**

Dr. Page noted that as the years roll by, the study team is looking forward.

"We are asking ourselves, where do we want to look next?" said Dr. Page. "Can we identify a constellation of risk factors around a particular or a specific subpopulation of study participants that might represent a significant advance we can make quickly? The opportunity to obtain genetic information on this cohort of dogs is particularly exciting as veterinary medicine moves toward individualized medicine."

Clancy, Hero #2882

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TUBERCU

Ancient Disease, Present Threat to Wildlife

Galloping consumption, the White Plague, Pott's disease, phthisis and scrofula – the names we've given tuberculosis since ancient times speak to the nature of this deadly disease. First described in people more than 6,000 years ago, TB continues to cause chronic illness and is one of the top 10 causes of death in humans worldwide.

But tuberculosis isn't just a threat to human health; it's deadly in animals, too, impacting species as diverse as cattle, dogs, hyenas, possums, wild boars, badgers, white-tailed deer, elephants and numerous endangered animals. The toll it takes on animals is incalculable.

"Tuberculosis is certainly one of the most devastating infectious diseases of wild animals and human beings," said Dr. Ana Marcia Guimarães, a Morris Animal Foundation-funded wildlife tuberculosis researcher from the University of Sao Paulo, Brazil. "The disease is hard to diagnose and treat. And, once present in certain animal populations, it is very difficult to eliminate."

Loss of habitat combined with increasing contact between humans and cattle with wildlife are potential sources of disease spread, but the true incidence of tuberculosis in wildlife is unknown.

Morris Animal Foundation has funded 20 studies in the last decade focused on the growing danger tuberculosis poses to wildlife. Dr. Guimarães currently is analyzing the genetic makeup of the *Mycobacteria* species that causes tuberculosis.

"Our research is focused on trying to understand how the different pathogen species of tuberculosis are able to adapt to the various affected hosts, and use this knowledge to rationally build therapeutic and preventive interventions," said Dr. Guimarães.

On the other side of the Atlantic, Dr. Jorge Gutierrez-Merino at the University of Surrey, England, is tackling the problem of tuberculosis transmission from badgers to cattle in the United Kingdom in a very unique way – using probiotics to decrease disease-causing *Mycobacterium bovis* in the stomach and intestines of badgers.



ADDITIONAL TB STUDIES

- Researchers developed a new rapid screening test that provides earlier and more confident TB diagnosis in elephants.
- Research fellow validated a non-invasive test to detect tuberculosis in the feces of great apes, making it easier to study the disease in free-roaming great apes.
- Researchers discovered a novel route of transmission for new *Mycobacteria* species in banded mongooses.

LO S I S

Probiotics can increase the number of beneficial bacteria in the gut, providing an inhospitable environment for unwanted bacteria. *M. bovis* is shed in the stool of infected badgers, where it can contaminate pastures and other foodstuffs eaten by cows.

Morris Animal Foundation looks at disease from a multi-species, global perspective. Bovine tuberculosis has been implicated in driving population declines in a number of endangered species such as elephants and African lions. A better understanding of the disease in susceptible animals in diverse habitats will arm researchers with the information they need to improve detection methods and disease management plans, creating a more sustainable and healthy planet for all animals.

- Researchers are studying how to manage tuberculosis in wild African buffalo.



A BADGER- FRIENDLY

APPROACH TO TUBERCULOSIS

Eurasian badgers are the primary wildlife host species for bovine TB in the United Kingdom and the Republic of Ireland.

- *Infected fecal material is one of the principal routes of transmission.*
- *Culling, mass vaccination and relocation strategies have been unsuccessful and can be harmful or cruel.*
- *Probiotics show promise in controlling transmission of the disease and are safe for animals as well as environmentally friendly.*



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Danielle Walraven happily describes her pack of Italian greyhounds as Velcro dogs – they love to be on her lap, on the couch, snuggling in bed, getting under her feet, and basically being as close to her as possible. Her love of these miniature versions of greyhounds, and the health problems they can face, is what brought her to Morris Animal Foundation.

She got her first Italian greyhound in 2002, Cricket, then Mousie, then Bunny; then she got involved in fostering and fundraising for an “Iggie” (short for Italian greyhound) rescue. Capi was her first foster dog who she wound up adopting (also called a foster fail). Zoey was her second foster, who she also adopted after Danielle’s husband, Kurt, decided they couldn’t let her go.

It was through Mousie that Danielle became a donor to Morris Animal Foundation. He was diagnosed with a deadly cancer on a Tuesday and gone six days later at the age of 11. Danielle was stunned. She didn’t know that much about hemangiosarcoma, but that was the devastating cancer that took Mousie from his family so quickly.

Danielle wanted to do something with her grief. She had started Capi’s Jammies (a pajama company for small dogs) a few years earlier to make well-fitting jammies for dogs that needed a little extra warmth in cold weather. After Mousie’s death, she created a special memorial jammie, the LOVE U Mouse Jammie, with all profits benefiting Morris Animal Foundation to help fund hemangiosarcoma research. And the need for research is great, not only for hemangiosarcoma, but for all cancers affecting animals.

“I was baffled as to how something like this cancer could come out of nowhere,” said Danielle. “In my Facebook group, I mentioned that I wanted to donate money to a group doing research on this disease, and someone mentioned Morris Animal Foundation. I went to the site, did a little research, and out of that came the LOVE U Mouse Jammie.

“I couldn’t save Mousie from this terrible disease, but I could help stop it from taking the lives of other dogs.”



Like Danielle, you can help in the fight against animal cancer. Make a gift during our Unite to Fight Animal Cancer campaign and your gift will be matched up to \$75,000 by the Blue Buffalo Foundation, until May 31.

MAKE YOUR GIFT TODAY AT MORRISANIMALFOUNDATION.ORG/ANIMALNEWS

DOGS

CANCER

Novel Therapies

Common heart medications as an effective adjunct therapy for dogs with hemangiosarcoma, an aggressive and deadly cancer.

Hemangiosarcoma

Study of biological substances in the body that fuel tumor growth and ways to interrupt their impact.

New Cancer Drug

Potential of a promising new drug used to treat hemangiosarcoma and how it would benefit dogs with other incurable cancers.

Osteosarcoma

Understanding cancer growth to look for new therapy targets for this bone tumor in dogs.

Environmental Chemicals & Cancer

Understanding how specific enzymes in dogs break down and neutralize common environmental chemicals linked to cancers.

Lymphocytic Leukemia

Exploring new diagnostic tests for B-cell chronic lymphocytic leukemia in dogs, a type of blood and bone marrow cancer.

BLOOD DISORDERS

Platelet Storage

Effects of additive solutions to improve blood platelet storage and availability for life-saving transfusions in dogs.

Severe Bleeding Disorders

Measurement of canine thrombopoietin, to improve the diagnosis and treatment of a severe bleeding disorder.

INFLAMMATION

Inflammatory Bowel Disease (IBD)

Mapping changes in gut bacteria populations in dogs with IBD to identify novel ways to diagnose and treat.

Stem Cell-Based Therapies

Potential of a novel type of stem cell to treat inflammatory and immune-mediated diseases in dogs, including IBD and atopic dermatitis.

SPINAL CORD DISEASE

Degenerative Myelopathy

Advanced imaging to improve diagnosis and monitoring of spinal cord lesions associated with canine degenerative myelopathy.

2018

CAT & DOG HEALTH STUDIES

CATS

HEART HEALTH

Drug Response

Linking genetic mutations in cats with heart disease to variable therapeutic response to clopidogrel, a drug used to prevent life-threatening blood clot complications.

KIDNEY DISEASE

Disease Management

The effectiveness of omeprazole, a gastric acid suppressant commonly prescribed to treat GI symptoms in cats with chronic kidney disease.

INFECTIOUS DISEASE

Gastrointestinal Disease

Contribution of multiple parvovirus strains or other viruses to the re-emergence of panleukopenia.

Feline Infectious Peritonitis (FIP)

Novel ways to diagnose feline infectious peritonitis, a fatal viral disease in cats with no available cures.

Herpesvirus

Genetics behind ineffective immune responses to feline herpesvirus, a major cause of upper respiratory infections in cats, to develop a more effective vaccine.



UNITE TO FIGHT

**Imagine a
world where
all cancers
are treatable
and more
cures are
possible.**



HELP FIGHT ANIMAL CANCER. Now through May 31, your gift will be matched up to \$75,000 by the Blue Buffalo Foundation. Give online at morrisanimalfoundation.org/animalnews or by calling 1-800-243-2345.

PLEASE CALL YOUR VETERINARIAN TO ASK PET HEALTH QUESTIONS

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