

Discoveries



Sharing Canine Health Information for 25 years

By Sharon Albright, DVM, CCRT

Manager of Communications & Veterinary Outreach, AKC Canine Health Foundation



The AKC Canine Health Foundation (CHF) celebrates its 25th anniversary this year. Since its founding in 1995, one of the Foundation's main goals has been to communicate to pet owners, veterinarians, and researchers the funded discoveries that help prevent, treat and cure canine diseases. One of the most engaging

ways that the Foundation shares information is the AKC Canine Health Foundation National Parent Club Canine Health Conference. This biennial conference has been sponsored by Purina and held near their headquarters in St. Louis, MO, since 1997. It provides a unique opportunity for researchers, veterinarians, veterinary students, AKC Parent Club representatives, and dog breeders and owners to interact and discuss the latest findings in canine health research.

"I was invited to speak at the inaugural National Parent Club Canine Health Conference about our work on the canine genome," says CHF-funded researcher, the Oscar J. Fletcher Distinguished Professor of Comparative Oncology Genetics at North Carolina State University College of Veterinary Medicine, and frequent presenter at the conference, Dr. Matthew Breen. "It was the first 'dogs only' conference I had ever attended. The number of attendees was astonishing, and I really felt welcomed by the dog community."



Representatives from AKC Parent Clubs, who provide critical support for CHF-funded research in areas of concern for individual breeds and all dogs, appreciate the opportunity to interact directly with the experts working to find solutions to the health challenges faced by their respective breeds. "I have attended every conference since 1999," states June Guido, CHF Heritage Society member and Bouvier des Flandres breeder. "It's a wonderful opportunity to make connections and get health information directly from the experts. As Chair of the Bouvier Health Foundation, I answer a lot of calls from concerned dog owners and breeders. The knowledge gained at each conference helps me share factual information to assist these people and their dogs."

Over the past 25 years, CHF-funded investigators have presented their research findings directly to members of the dog clubs that help fund their work, as well as the veterinary professionals that can utilize the information to improve the care of their canine patients. Key topics have included the canine genome map, individualized vaccination protocols, advances in cancer genetics and treatment, reproductive medicine for individuals and breed populations, and more. Panel discussions and break-out sessions for veterinary students provide additional opportunities to ask questions and discuss practical application of the presented material.

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CALENDAR OF EVENTS

UPCOMING WEBINARS

Register at akcchf.org/vetvine

October 7, 2020

Addressing the Spay/Neuter Conundrum in Dogs
Presented by Ben Hart, DVM, PhD, DACVB

November 9, 2020

Upper Airway Syndrome - Results of a Cross-Sectional Study in Norwich Terriers
Presented by Bryden Stanley, BVMS, MSc, MANZCVSc, MRCVS, DACVS

December 17, 2020

PU - What's That? Golden Retriever Pigmentary Uveitis
Presented by Wendy M. Townsend, DVM, MS, DACVO



The 2020 Canines & Cocktails Gala has been cancelled due to health and travel concerns related to the COVID-19 pandemic.

Sharing Canine Health Information for 25 years

continued

“Purina is proud of our successful partnership with the AKC Canine Health Foundation for the National Parent Club Canine Health Conference,” states Ann Viklund, Purina Director of Conformation and CHF Board member. “Purina is dedicated to cutting edge nutrition research which complements the canine health research funded by CHF and presented at the conference. It’s a unique opportunity for leading researchers to present their findings to AKC Parent Club liaisons, veterinary professionals, and scientific media.”

Planning for the 2021 National Parent Club Canine Health Conference is already underway. With continued support from Purina, additional sponsors, and our donors, CHF will continue to share the outcomes of health research that can directly impact our canine companions. Even if you can’t attend a conference, you can learn more at akcchf.org/educational-resources. Working together, we can help all dogs live longer, healthier lives. 🐾



It's Our Anniversary

In 2020, CHF is celebrating its 25th anniversary.

Learn more about CHF milestones and achievements at akcchf.org/25years.

Osteosarcoma Research Focuses on Vaccine Therapy & Immune Responses

By Barbara Fawver
Manager of Pet Influential Communications, Purina



® Osteosarcoma, or bone cancer, is a tough, challenging malignancy. No one knows exactly what causes osteosarcoma; however, large and giant breeds are considered to be at higher risk due to their size and weight.

Standard treatment for the aggressive, most common primary bone cancer in dogs is surgical amputation of the affected leg followed by chemotherapy to help slow the development of metastasis. According to the Modiano Lab at the University of Minnesota, about 50 percent of dogs receiving the standard of care treatment live approximately one year. About 30 percent live two years, and 10 percent survive three years. Comparatively, dogs receiving neither surgery nor chemotherapy typically survive less than three months.



The gravity of osteosarcoma and its devastating effect on dogs and their families have prompted the American German Shepherd Dog Charitable Foundation Inc. (AGSDCF) to support research at the University of Florida investigating a vaccine therapy (funded by AKC Canine Health Foundation (CHF) Grant O2215: A Cancer Vaccine for Canine Osteosarcoma) and to fully fund a CHF Clinician-Scientist Fellowship allowing a medical oncology resident at the University of Minnesota to investigate the unique DNA methylation patterns that characterize the immune cells present in osteosarcoma tumors.

Efforts to develop a life-extending vaccine for dogs with osteosarcoma that can be used as an adjuvant immunotherapy with standard of care treatment was the purpose of the two-year vaccine therapy study at the University of Florida. Lead investigator Rowan J. Milner, BVSc, MMedVet, PhD, DACVIM (Oncology), DECVIM (Oncology), professor and director of Clinical and Translational Research, conducted a vaccine clinical trial to evaluate the effectiveness of a nanoscale liposomal disialyl-ganglioside (GD3)-based vaccine.

Found on the cellular surfaces of normal neuronal cells and melanocytes, GD3 is also highly expressed on osteosarcoma and melanoma cells, and is believed to enhance malignancy in cancers and thus is being tested as a tumor antigen for immunotherapy. Forty dogs diagnosed with osteosarcoma were enrolled in the vaccine trial conducted from January 2016 through April 2018. An abstract of the research, published in *Cancer Immunology Research*,¹ reported on the results.

“Although it is too early to predict vaccine survival rates, the results thus far are promising,” Dr. Milner says. “Approximately 30 percent of the vaccinated dogs lived significantly longer than the dogs receiving standard of care treatment only.”

Meanwhile, Caroline Wood, DVM, PhD, a recent medical oncology resident at the University of Minnesota whose AKC Canine Health Foundation Clinician-Scientist Fellowship is funded by AGSDCF, is focusing on the immune system in dogs with osteosarcoma by looking at the DNA methylation patterns of lymphocytes, the main immune cells in the body.

“DNA methylation is a biological process by which a molecule acts as a chemical tag on DNA, which can alter the expression of the gene without changing its sequence,” Dr. Wood explains. “This leads to either increased or decreased transcription, and usually changed activity of the gene. The goal of this study is to characterize the specific types of memory T-lymphocytes that help the immune system kill cancer cells present in osteosarcoma.”

Her mentor, Jaime Modiano, VMD, PhD, the Perlman Endowed Chair of Animal Oncology at the University of Minnesota, is a longtime cancer researcher. “This work will help us better understand the role of the immune system in canine osteosarcoma,” he says. “This is a completely new application to canine cancer studies, though similar approaches have been used in human tissues to quantify the immune response.”

Reflecting, Dr. Wood adds, “As we learn more about what causes cancer in dogs, we will be able to develop more effective and less harmful treatment options. In essence, we hope that one day cancer will become a manageable chronic condition rather than a terminal diagnosis.”

1. Sahay B, Hutchison S, Cascio M, et al. Changes in Immune Profiles of Osteosarcoma Dogs Receiving a GD3-Based Vaccine Concurrently with Carboplatin Chemotherapy and Surgery. *Cancer Immunology Research*. 2018;6(9 Suppl):Abstract. 🐾

How You Can Help

As you plan your year-end giving, we invite you to consider the many ways you can support AKC Canine Health Foundation’s mission to advance the health of all dogs and their owners:

CHF’s Greatest Need

Your donation will help the AKC Canine Health Foundation bring about a brighter future for dogs. Make a lasting impact at akcCHF.org/donate.

Amazon Smile

Remember CHF during your holiday shopping. Go to smile.amazon.com, select American Kennel Club Canine Health Foundation, Inc. as your charitable organization, and Amazon will donate 0.5% of eligible purchases to CHF.

Purchase a brick

Looking for a unique gift or to make a tribute? Order a personalized engraved brick on the Walk of Champions or Path of Honor at the Purina Event Center and the proceeds will benefit canine health research. akcCHF.org/brick.

For even more ways to give, visit akcCHF.org/how-to-help.



MISSION: The mission of the American Kennel Club Canine Health Foundation, Inc. is to advance the health of all dogs and their owners by funding scientific research and supporting the dissemination of health information to prevent, treat and cure canine disease.

Donor Spotlight

Dr. Sheila Morrissey

Sheila Morrissey, BVSc, DVM is the owner and solo practitioner of North County Veterinary Clinic, Inc. in Massachusetts. She is a Siberian Husky breeder who competes with her dogs in AKC conformation, obedience, rally, and FastCAT. Dr. Morrissey has been a race veterinarian for numerous sled dog races and hikes and recreationally sleds with her own dogs. She supports the AKC Canine Health Foundation (CHF) to help find answers and solutions for health issues in dogs. She notes that information from CHF-funded research on hemangiosarcoma, tick-borne disease, epilepsy, and more allows her to provide current information and treatment options for her clients' dogs.

Dr. Morrissey makes memorial contributions to CHF in honor of her canine patients that pass away. "The response from our clients has been overwhelmingly positive. They are very appreciative of this special gesture being done for their dog," Dr. Morrissey says. "I would recommend CHF tribute donations to any veterinarian as the donations are well managed. Plus, the supported research goes through a rigorous review process both before and during study, so you are assured that the studies are scientifically sound. My clients truly appreciate the extra thought being shown and this helps with client retention."

Thank you to Dr. Morrissey and all veterinary professionals that support the AKC Canine Health Foundation!
akcCHF.org/tribute



Recent CHF Grant Highlights

Grant 02821-A: Investigating the Role of *Aedes aegypti* in Dog Heartworm Transmission in Communities along the U.S.-Mexico Border

Principal Investigator: Gabriel Hamer, PhD; Texas A&M AgriLife Research

With reports of potential heartworm resistance to commonly used preventatives, a better understanding of the mosquito vectors that spread this parasite is increasingly important for disease management.

Grant 02806-MOU: Strategic Prevention of Canine Hemangiosarcoma: Lifetime Follow-Up

Principal Investigator: Jaime F. Modiano, VMD, PhD; University of Minnesota

Long-term data collection to validate that a blood test can detect hemangiosarcoma at its earliest stages of development, before it becomes a clinically detectable disease.

Grant 02768: Defining the Functional Consequences and Therapeutic Vulnerability of Dystrophin Alterations in Canine Osteosarcoma

Principal Investigator: Cheryl A. London, DVM, PhD; Tufts University

Understanding the incidence and role of a genetic mutation affecting dystrophin protein in canine osteosarcoma tumors may provide a new treatment target.

See our full research grants portfolio at akcCHF.org/research.



Double Your Impact!

The American German Shepherd Dog Charitable Foundation will match donations to the AKC Canine Health Foundation's Hemangiosarcoma Research Initiative up to \$33,000 as part of a three-year, \$100,000 pledge to fight this devastating canine cancer.

Double your impact and support canine health research today at akcCHF.org/match.



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