

Discoveries



The AKC Canine Health Foundation Celebrates 25 Years of Advancing Canine Health

By Sharon Albright, DVM, CCRT

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In 2020, the AKC Canine Health Foundation (CHF) celebrates our **25th anniversary**. Founded by the American Kennel Club (AKC) in 1995 as an independent, non-profit organization and bolstered by outstanding donor support, CHF has made great strides in advancing the health of all dogs.

One of the initial projects CHF completed with the support of our donors was contributing to the research and publication of the first genetic linkage map of the canine genome. Understanding the frequency with which genes tend to be linked, or passed on to offspring together, provided a valuable resource to map canine traits of interest and served as the foundation for the complete canine genome map.

Progress in the study of canine genetics continued as CHF collaborated with the Orthopedic Foundation for Animals to create the **Canine Health Information Center**, a database of canine health information and a repository of canine DNA available for use in health research. CHF-funded researchers discovered the genetic mutations responsible for numerous canine diseases such as cystinuria in Newfoundlands, stationary night blindness in Briards, exercise-induced collapse (EIC) in Labrador Retrievers, von Willebrand Disease in several different dog breeds, and more. Investigators eventually improved our understanding of complex, polygenetic diseases such as dermatomyositis in Shetland Sheepdogs and Collies. Thanks to collaboration with our donors, this work into canine genetics continues today.

Over the years, research initiatives in canine cancer, bloat, epilepsy, hemangiosarcoma, and tick-borne disease have contributed much-needed funds to discover more accurate diagnostics and more effective treatment and prevention strategies for these important diseases. The Search & Rescue Dog Health Fund was created in 2001 to launch the 9/11 Medical Surveillance Study, a sentinel and longitudinal study into the physical and behavioral health of dogs deployed to New York City and the Pentagon following the 9/11 terrorist attacks compared to controls, across their entire lifetimes. The outcomes and impact from this research continue through today.

Finally, CHF and its donors have established a strong portfolio of **educational grants**. Clinician-Scientist Fellowships encourage the next generation of canine health researchers. The American Kennel Club/AKC Canine Health Foundation/Theriogenology Foundation Small Animal Theriogenology Residency Program supports training of practitioners in canine reproductive medicine and clinical genetics. These programs ensure that our mission to advance the health of all dogs will endure for years to come.

CHF remains committed to the physical, mental, and social well-being of dogs. Chief Executive Officer, Dr. Diane Brown states, "Thank you to the AKC, Purina, our corporate partners, funded researchers, and every supporter that has contributed to this mission. The future of canine health looks bright as we reflect back and look forward to many more discoveries that will help all dogs live longer, healthier lives." 🐾

Winter 2020

CALENDAR OF EVENTS

WHERE TO FIND US

February 8-11, 2020

Westminster Kennel Club Dog Show
New York, NY

February 28-March 1, 2020

Beverly Hills Dog Show
Pomona, CA

March 21-22, 2020

Tarheel Cluster
Raleigh, NC

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Canine Giardiasis (Giardia)

Information for Dog Owners

Key Facts

Canine giardiasis is a highly contagious protozoal infection that occurs globally. Infectious *Giardia* cysts can be shed by sick and healthy dogs and can survive in the environment for months. Infection without signs of disease is common. Clinically it dogs most commonly have diarrhea; in puppies this is often pale in color and foul-smelling. Treatment consists of medication for dogs with diarrhea, along with environmental disinfection to remove infectious *Giardia* cysts. Some types of *Giardia* can be transmitted between dogs and people (zoonoses). In developed regions, the risk of transmission between dogs and people is considered low.

What is it?

Canine giardiasis is due to infection with *Giardia* duodenalis. This organism is a highly infectious and environmentally resistant protozoa that occurs throughout the world. *Giardia* has numerous assemblages ("types") identified as A through H, of which types C and D most commonly infect dogs. Veterinarians most often diagnose giardiasis after owners notice a sudden onset of diarrhea in their young dog. Infected dogs frequently have a history of being purchased or adopted from places with dense dog populations or a history of being around other dogs or places where other dogs visit (e.g., dog parks, boarding facilities, etc.).

Who gets it?

Dogs, cats, and humans, along with multiple other mammals and birds, can be infected with *Giardia*. With few exceptions, specific *Giardia* assemblages tend to infect specific species, e.g., *Giardia* types C and D predominately infect dogs, types A1 and F infect cats, types A2 and B infect humans.

Can people get sick with it?

Yes, an estimated 2% of adults and up to 8% of children in developed countries are infected with *Giardia* (see Resources). These infections are most frequently the result of direct or indirect contact with contaminated water or food.

Purina Is Proud of Its Legacy Partnership with the AKC Canine Health Foundation

By Barbara Fawver
Manager of Pet Influential Communications, Purina



Long before the canine genome was sequenced, researchers were working on a genetic linkage map of the dog identifying genetic markers that were important in the search for clues to more than 300 genetic diseases. The promise of identifying gene mutations and developing DNA tests to identify carriers of potentially fatal or debilitating diseases sparked a collaborative spirit among researchers, breeders and parent clubs.

Founded in 1995, the AKC Canine Health Foundation was keenly interested in the genetic basis of diseases in dogs and the work underway on the linkage map. Focused on preventing, treating and curing canine diseases, the Foundation was the first organization to financially support research of the canine genetic map.

Meanwhile, Purina, a leader in pet nutrition research, also was interested in canine genetics as a way to understand the relationships between nutrition and genetics that would help optimize Purina dog foods. The goal was to enhance the performance and health of dogs everywhere. The shared vision of the Foundation and Purina to help advance the lives of dogs and those who love them led to a partnership in 1996. The next year, Purina sponsored the first biennial AKC Canine Health Foundation National Parent Club Canine Health Conference in St. Louis, attended by 145 parent club representatives. The meeting was a catalyst for many genetic research endeavors with Purina and the Foundation playing key supporting roles.

In 2003, the dog was selected for sequencing of its genome. A cover story was published in the Dec. 8, 2005 issue of *Nature* on the completed canine genome, providing insights about the blueprint for how a dog is formed and functions, essential information for geneticists trying to find genes responsible for disease.

“Purina and the AKC Canine Health Foundation share many common goals,” says Purina Director of Conformation Ann Viklund, a member of the board of directors of the Foundation. “The strength of this partnership lies in our shared passion and commitment to support research that will truly help dogs live long, healthy lives.”

The tradition of communicating important canine health findings and addressing genetic and disease concerns continued at the 12th biennial AKC Canine Health Foundation National Parent Club Canine Health Conference Sponsored by Purina, which was held in August 2019 in St. Louis. Nearly 300 attendees listened to talks by researchers on how nutrition impacts diseases, autoimmunity and vector-borne diseases, infectious diseases and cancer, genetics and dog breeding.

Congratulations on your 25th anniversary, AKC Canine Health Foundation! Purina is proud to be your partner and share in the legacy of improving the health of dogs. 🐾

2020 Research Grants Portfolio

The 2020 edition of CHF's Research Grants Portfolio, detailing active research projects funded through CHF, is now available at akcchf.org/portfolio.





2020 AKC Canine Health Foundation Clinician-Scientist Fellows

Established in 2013, the AKC Canine Health Foundation's **Clinician-Scientist Fellowship Program** encourages and supports the next generation of canine health researchers to sustain future advancements in canine health. The 2020 fellows are:



Shelby Gasson, DVM is a PhD candidate in the Department of Small Animal Clinical Sciences at Texas A&M University. She is continuing her work as the AKC Canine Health Foundation GCHP Hill Country's Let's Get Ready To Rumble "Rumble" Clinician-Scientist Fellow (akcchf.org/rumble). Under the mentorship of Dr. Brian Saunders, she is researching the development of tissue engineering constructs for treatment of osteochondral defects.

This fellowship is generously sponsored by Rumble's owners, Carolyn and Gary Koch, breeders Kristy and Kevin Ratliff, and handler Esteban Farias.



Liza Gershony, DVM, PhD is a postdoctoral scholar in the Animal Science Department of the University of California, Davis. Under the mentorship of Dr. Anita Oberbauer, she is studying complex inherited disorders and the current state of genetic testing in dogs.



Sarah Murphy is a doctoral candidate in the Department of Genetics and Biochemistry at Clemson University. Continuing her research under the mentorship of Dr. Leigh Anne Clark, she is researching the genetics of congenital idiopathic megaesophagus in German Shepherd Dogs and Great Danes.

This fellowship is generously sponsored by the Orthopedic Foundation for Animals (OFA).



Pradeep Neupane, MS is a doctoral candidate in the Intracellular Pathogens Research Laboratory at North Carolina State University. Under the mentorship of Dr. Edward Breitschwerdt, he is studying serodiagnostic testing options for infection with canine *Bartonella* spp. and evaluating the association between *Bartonella* infection and hemangiosarcoma in dogs.



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.

2019 AKC Canine Health Foundation Awards

The AKC Canine Health Foundation (CHF) presents the **President's Award** annually to a person or organization that has made an exceptional contribution to advancing canine health. The 2019 President's Award recipient is **Elanco Animal Health**. Their support for CHF makes Elanco a valuable partner for advancing canine health.

CHF also presents the **Distinguished Research Partner Award** annually to clubs or organizations for their ongoing and outstanding commitment to support canine health research. The 2019 Distinguished Research Partners are the **Bernese Mountain Dog Club of America, Berner Lovers, and the American Bullmastiff Association**.



Dr. Charles Garvin, Chairman of the CHF Board of Directors, Dr. Diane Brown, CHF Chief Executive Officer, and Dr. Kristin Bloink, Vice President of Global Research and External Innovation for Elanco.

Recent CHF-Awarded Grant Highlights

Grant 02742-A: Assessing Microvasculature for Intestinal Viability in Obstructed Small Intestines and Effects of Resection & Anastomosis Techniques

Principal Investigator: Penny Regier, MS, DVM; University of Florida

Investigators are studying the use of a microvascular imaging device to assess intestinal tissue viability during foreign body obstruction surgery. Results could decrease complications associated with this surgery in dogs.

Grant 02686-A: Pattern of Thyroid Function Tests during Recovery from Acute Nonthyroidal Illness

Principal Investigator: Timothy Bolton, DVM; Virginia-Maryland Regional College of Veterinary Medicine

Investigators are studying when thyroid hormone levels return to normal following recovery from non-thyroidal illness to improve accuracy of hypothyroidism diagnosis and monitoring.

Grant 02783: Transcriptional Profiling of Canine Soft Tissue Sarcoma

Principal Investigator: Andrew D. Miller, DVM; Cornell University

Investigators are studying the transcriptome (RNA molecules) of canine soft tissue sarcomas. Combining this molecular analysis with traditional microscopic tumor evaluation may improve diagnostic and prognostic information for dogs afflicted with this common cancer.

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

How You Can Help

We Appreciate Your Support!

Support the AKC Canine Health Foundation to help find better treatments, more accurate diagnoses, and an improved understanding of the mechanisms that cause disease in dogs. Whatever your capacity to give, there is a way for you to help. Learn more at akcchf.org/how-to-help.



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