

Discoveries



Highlights From the 2023 National Parent Club Canine Health Conference

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Prevent, Treat & Cure was the theme of the 2023 National Parent Club Canine Health Conference, held in St. Louis, Missouri on August 11-13, 2023. The conference was the 14th biennial event hosted by the AKC Canine Health Foundation (CHF) and sponsored by Purina to share the latest updates from CHF-funded research with AKC Parent Club members, donors, veterinary professionals, veterinary students (sponsored by the American Kennel Club and Orthopedic Foundation for Animals), and all dog lovers. This year was the first time both in-person and virtual attendance options were offered to share canine health information more broadly – an important part of CHF's mission.



CHF-funded investigators presented results from their published and ongoing research to advance the health of all dogs. Active discussion about practical use of study results to improve breeding programs and veterinary care took place during panel discussions. Attendees left with actionable information to improve the health of current and future generations of dogs.

Prevent

The first half of the conference featured preventive medicine topics with a focus on the microbiome and management of heritable canine diseases.

Microbiome: the community of microorganisms (such as fungi, bacteria, and viruses) that exists in a particular environment.

- Research shows that up to 65% of dogs with chronic diarrhea due to canine chronic enteropathy (previously known as inflammatory bowel disease) respond to diet change alone, usually within the first ten days. Treating chronic enteropathies with antibiotics has fallen out of favor due to the long-term effects these medications have on the gut microbiome. Since the gut microbiome may be a driving factor in an individual dog's response to chronic enteropathy treatment, new strategies such as fecal microbiota transplantation, designer probiotics or synbiotics, and further diet modification options are being studied.
- Ongoing CHF-funded research is exploring when and how the canine gut microbiome develops from a limited microbial population in puppies into the mature and stable microbiome found in adult dogs.
- Other research is examining the microbiome profiles of mild, moderate, and severe periodontal disease with hopes of informing new treatment strategies for this common disease.

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Fall 2023

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Calendar of Events

Where to Find Us

October 12-14

Veterinary Cancer Society
Annual Conference
Reno, NV

November 3-5

North Carolina Veterinary Conference
Raleigh, NC

December 14

Canines & Cocktails
Orlando, FL

December 15-17

AKC National Championship
Orlando, FL

Upcoming Webinars

October 25

Canine Liver Disease: Clinical Relevancy
Presented by Dr. Shropshire and Dr. Ullal
Register at vet-etc.com

Thank you to our 2023 conference sponsors!



AMERICAN
KENNEL CLUB



Highlights From the 2023 National Parent Club Canine Health Conference *continued*

- CHF-funded research on two heritable diseases common in Sighthounds is providing clues to the genetic mutations and resulting metabolic alterations that drive these conditions. Both slower anesthetic metabolism and delayed post-operative hemorrhaging (DEPOH) can affect multiple breeds, but genetic tests are now available to diagnose them in specific Sighthound breeds.
- Progress is also being made toward a genetic test to decrease the incidence of congenital idiopathic megaesophagus (CIM) in German Shepherd Dogs and Great Danes. While specific genes have been implicated, the mutations show incomplete penetrance – meaning that not all dogs with the mutation will develop this esophageal motility disorder.
- Finally, tick-borne disease is another important area of study where prevention is the ultimate goal. CHF-funded investigators continue to discover new infectious organisms and improve our diagnosis of these insidious diseases.

Treat

Conference presentations also highlighted new treatments being explored for our canine companions with the help of donors like you.

- Fecal microbiota transplantation has the potential to enhance existing treatments for obesity by modulating the gut microbiome and energy intake.
- Gene therapy is being developed to alter calcium transport in heart muscle cells and therefore treat a specific type of dilated cardiomyopathy in Doberman Pinschers.
- Several approaches are being studied to treat gallbladder mucocele formation in dogs – including searching for environmental toxins that may trigger the disease, causative genetic mutations, and ways to improve mucous secretion within the gallbladder.
- Finally, the topic of breed differences in pain sensitivity was shared, detailing results from an ongoing CHF-funded study into the physiologic mechanisms of canine pain and how human beliefs impact the recognition and treatment of that pain.



Presenters answer questions from the audience, led by Dr. Alison Manchester (far left).

Cure

The 2023 conference concluded with updates on research making progress towards curing various canine cancers.

- CHF-funded investigators have characterized the epigenetic characteristics of diffuse large B-cell lymphoma in Golden Retrievers, the most common form of lymphoma in this breed. These characteristics can be measured in a blood sample and will hopefully be used to diagnose, treat, and prevent lymphoma from developing.
- Histotripsy, an ultrasound technology, is being developed to provide non-invasive treatment for bone cancer, impacting both the primary tumor and metastatic disease.
- Technology known as optical coherence tomography is showing promise as a reliable way to assess tumor margins in real time during surgical removal of cancerous tumors such as soft tissue sarcoma or mammary cancer.
- Finally, a study is underway to develop a ‘vaccine’ to treat hemangiosarcoma, a deadly cancer of the cells that line blood vessels. The treatment will stimulate the immune system to attack an intercellular communication molecule overexpressed in several cancers.

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Twenty-four veterinary students representing 22 US veterinary schools attended the conference thanks to financial support from the OFA and AKC.



Dr. Gary Johnson, 2023 Asa Mays, DVM Award for Excellence in Canine Health Research recipient, gave the keynote address at this year's conference. He reviewed the dramatic advances in DNA research observed during his career which have resulted in genetic tests to help decrease the incidence of many diseases affecting humans, cattle, and our beloved dogs.

Thanks to CHF's generous donors and dedicated researchers, meaningful health research, such as the work presented at the 2023 conference, continues to develop more accurate diagnostics and more effective treatment and prevention strategies to benefit all dogs. Sharing the results of this research with dog owners, breeders, and veterinary professionals ensures progress in CHF's mission to prevent, treat and cure canine disease. View our full research portfolio at akcchf.org/research.



Canines & Cocktails

Save the date!

Join us on Thursday, December 14 in Orlando, FL for Canines & Cocktails, our annual gala to celebrate achievements in canine health research. Thank you to Purina for their Title Sponsorship of this year's event. Stay tuned for ticket information at akcchf.org/caninesandcocktails.



How You Can Help

As you plan your year-end giving, we ask that you continue to make a difference in the health of the dogs we love.

Support our mission to advance the health of all dogs and their owners

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

Honor a special dog or person

You can demonstrate your compassion and commitment to canine health by honoring or memorializing a special dog or person with an AKC Canine Health Foundation tribute at akcchf.org/tribute. We'll send an announcement of your gift to the person you designate.

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.

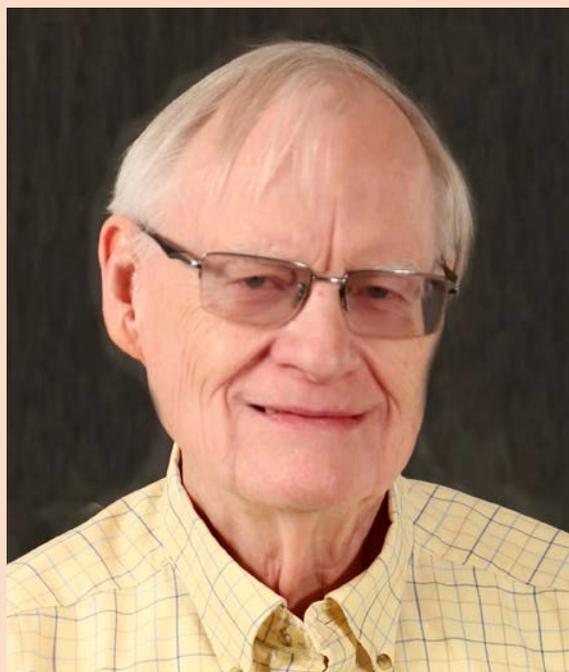
Asa Mays, DVM Excellence in Canine Health Research Award

Named for Dr. Asa Mays, a member of the AKC Canine Health Foundation's first Board of Directors in 1995, the Asa Mays, DVM Excellence in Canine Health Research Award is a biennial honor presented to a research investigator who demonstrates meritorious achievements in furthering the mission of identifying, characterizing, and treating canine disease and ailments.

This year's recipient is Gary Johnson, DVM, PhD, Assistant Professor in the Department of Veterinary Pathobiology at the University of Missouri College of Veterinary Medicine. Dr. Johnson received a BA degree in Chemistry from Augsburg College and a PhD degree in Biochemistry from Kansas State University. Next, he did postdoctoral studies at Johns Hopkins University. From there, he entered veterinary school and received a DVM from the University of Minnesota in 1977. He then did postdoctoral studies on canine bleeding disorders at the New York State Department of Health.

Since the early 1990's, Dr. Johnson has been searching for genetic mutations responsible for a wide variety of heritable diseases in domestic animals. In 2013, Dr. Johnson and his colleagues were among the first to use whole genome sequencing to identify mutations responsible for heritable canine diseases. They have used this technology to identify the genetic causes for numerous heritable canine diseases such as degenerative myelopathy, neuronal storage diseases, glaucoma, and more.

Dr. Laura Liscum, CHF Scientific Review Committee Chair and Board member, and Dr. Carolyn Henry from the University of Missouri College of Veterinary Medicine presented the award to Dr. Johnson during the 2023 National Parent Club Canine Health Conference on August 12.



Recent CHF Grant Highlights

Grant 03121: Optimizing HITI CRISPR/Cas9 Gene Editing for Treating Defective Pyruvate Dehydrogenase Kinase 4 in Doberman Pinschers

Principal Investigator: Christopher J Martyniuk, PhD; University of Florida

Use a gene editing technique to restore normal function to heart cells in Doberman Pinschers with dilated cardiomyopathy.

Grant 03114: Pain Catastrophizing: A Clinically Relevant Phenomenon in Dogs?

Principal Investigator: Margaret Elizabeth Gruen, DVM, PhD; North Carolina State University

Establish a measure of pain catastrophizing in dogs to improve surgical recovery and chronic pain management.

Grant 03106: Clinical Validation of Urinary miR-126 as a Marker of Immune Complex-Mediated Glomerulonephritis in Dogs

Principal Investigator: Mary B Nabity, DVM, PhD; Texas A&M AgriLife Research

Determine the clinical utility of a micro-RNA measured in urine to diagnose a specific type of kidney disease in dogs, facilitating more accurate diagnosis and more effective treatment.

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



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