

AKC Canine Health Foundation
2009 National Parent Club Canine Health Conference
Sponsored by Purina
October 23 – 25, 2009
Summary of Presentations

Navigating the Grant Process

C. Haakenson, PhD, Director of Research at the CHF

Christine Haakenson, Director of Research at the CHF, outlined the grant processes for the OAK and ACORN type grants administered by CHF. She stressed that the parent clubs are involved early to help set priorities, then the RFP goes out to researchers around the globe. Proposals, along with at least three peer scientific reviews, are sent to the CHF Grants Committee for funding selection. According to Dr. Haakenson, “the CHF goes to great lengths to make certain that funded research is of the highest quality and thereby ensure that the results are significant and add to the body of research. Because of the similarities between humans and canines, research funded by CHF often provides information for discoveries in human illnesses, as well. Not only are we helping our beloved companions, but we are helping ourselves.”

The two types of grants, OAK and ACORN, are similar, however ACORN grants can be submitted at any time during the year, and have a maximum amount of \$12,000.00. ACORNs are frequently targeted by researchers as a preliminary grant for an OAK proposal, which can be for larger projects. Since their inception, over \$23,000,000.00 has been awarded through these grant programs.

One Health, One Medicine – Strengthening the Human – Animal Links

Keynote Speaker – Mike Sampson

Mike Sampson, an Emergency Management consultant, spoke on the “One Health” initiative. To summarize,

“The One Health concept is a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans and animals. The synergism achieved will advance health care for the 21st century and beyond by accelerating biomedical research discoveries, enhancing public health efficacy, expeditiously expanding the scientific knowledge base, and improving medical education and clinical care. When properly implemented, it will help protect and save untold millions of lives in our present and future generations.” (From the One Health Initiative Website)

Mr. Sampson talked about zoonotic disease and potential threats to humans. He stated 57 percent of the CDC’s Category A and 100 percent of Category B agents are zoonotic. Most of these are considered to be potential weapons of mass destruction.

Canine Cancer and Comparative Genomics: New Technologies, New Opportunities

Matthew Breen, PhD – NC State University, Raleigh, NC

Dr. Breen summarized his research on canine genetic aberrations and their close link to some types of cancer. Using his “cytogenetic score” metric, his team is able to accurately predict the survival time of canines undergoing lymphoma treatments. The metric relies on a high resolution FISH analysis, which at this time is cost prohibitive for clinical use (even for humans). However, given the recent advances in genome comparison techniques, clinical availability in the relatively near future is probable.

Matthew Breen was instrumental in the successful mapping of the first canine genome in 2004.

Clinical Trials in Veterinary Oncology – Past, Present and Future
David M Vail, DVM, DACVIM (Oncology)

Dr. Vail, an expert on clinical trial methodologies, outlined the phases of clinical trial experiments. Typically there is a “dose finding” phase designed to explore safe ranges of doses, followed by a longer phase to test the efficacy of the doses, then a comparative (phase III) set of trials, to prove the efficacy of the treatment within statistical boundaries.

Dr. Vail also spoke on “Translational Trials” in which canine subjects are used in clinical trials, and depending on the outcome, may be followed by human trials. Linking canine and human in trial experiments is beneficial for dogs, in that there are more research funds available for the animals in such trials, the integrity of the canine trials, and the standard of canine care, is improved, and the treatments which pass the trials will also be made available to dog owners and veterinarians. Translational trials benefit human disease research as well by providing quicker preliminary trial results, and also benefit genetic research by generating comparative data used in biomarker development.

Immunonutrition

Ebenezer Satyaraj PhD Senior Research Scientist, Nestle Research Center

Dr Satyaraj told us that malnutrition leads to immune problems. Other factors, such as stress, fatigue, disease and some stages of life (puppy, senior) negatively affect a dog’s immunity. Lowered immunity is characterized by a reduction of antigen presenting cells (APC) function. This causes increased infectious disease, autoimmunity and cancer.

Over 65% of the immune cells are in the gut GALT (gut associated lymphoid tissue). Some ingredients that interact with GALT increase the body’s systemic immune response. One such ingredient is bovine colostrums. His research shows significant improvement in the measured APC function for dogs on the colostrums diet. Other immune system boosters include vitamin A, C, E, Zinc, Iron, and Magnesium. Dr Satyaraj detailed his research and answered several questions about increased autoimmune response.

Matters of the Heart: Advances in Canine Cardiac Research

Mark A. Oyama DCM DACVIM (Cardiology)

Dr Oyama spoke on heart diseases in boxers, Cavalier King Charles Spaniels, Norfolk Terriers, and Great Danes. He reviewed common heart diseases of dogs, including degenerative mitral valve condition, common to small dogs, and dilated cardiomyopathy (DCM) in large dogs. His talk cited several studies, some genetic, including recent work suggesting a link between DCM and calcium flow and the triadin gene, as well as a link between serotonin levels and enhanced mitro valve function.

Dr. Oyama stressed the importance of wide participation by dog owners in these clinical heart trials, since so many dogs stand to benefit. His research also included a survey of dog owners and the importance of quality of life versus longevity -- most owners, it turns out, would sacrifice number of years for higher quality of life for their pets.

New Diagnostic and Therapeutic Investigations of Neurological Disease in Dogs

Simon Platt BVM&S, DAVCIM, DECVN, University of Georgia, Athens, GA

Dr. Platt discussed the role of MRI in diagnosis of Chiari – like malformation/syringomyelia, epilepsy, brain tumors, brain and spinal strokes and breed associated meningitis. Novel treatments for epilepsy and strokes are currently being investigated by UGA – CVM and this pilot work was discussed.

Dalmatian Bladder Stones: not just a Dalmatian Problem
Danika Bannasch DVM, PhD, University of California, Davis

Other breeds besides Dalmatians have uric acid containing bladder stones. The other breeds also have the same genetic mutation. DNA testing is commercially available for uric acid excretion in dogs, however, DNA testing is not completely straightforward since the frequency of the mutation varies between breeds and not all dogs that are homozygous for the mutation will show clinical signs of bladder stones.

Nutrients to Promote Physical Recovery in Active Dogs
Brian M. Zanghi Ph.D. Senior Scientist, Molecular Nutrition Group, Nestle Purina PetCare Company, St. Louis, Mo, USA

Extensive research was done and in summary, nutrients like carotenoids and specific amino acids/carbohydrates can provide optimizing benefits during brief events that are metabolically and physically challenging. These nutrients can help pets recover more effectively and perform at their peak ability the next day and following days.

Canine Herpesvirus – 1: a new Pathogenic Role for an Old Virus
Eric C Ledbetter, DVM, DACVO, Cornell Univeristy, Ithaca NY

CHV-1 as an ocular pathogen in mature dogs has been recognized. The true prevalence and spectrum of CHV-1 ocular diseases remains unknown, but recent discoveries suggest a common and substantial role for this virus in the development of a variety of ocular diseases in dogs of all ages.

Metabonomics: A Tool for Nutritional Research
Ziad Ramadan Ph.D., Nestle Research Center, St. Louis, Missouri

Dr. Ramadan spoke on Metabonomics, the science of profiling the small molecule metabolites in an organism, and the potential for correlating metabolic signatures and known physiological and pathological states. The chemical signature left behind by the metabolic processes in dogs, and humans, promises to be a useful predictor of diseases and an indicator of nutritional health. Much of the current research is directed at finding metabolic biomarkers, which is analogous to gene mapping in the area of proteomics. Biomarkers, it is expected, can be used in disease diagnosis and treatment through nutritional modification. The complete profile for an organism, called the metabolome and is analogous to the genome, captures all of its metabolites, i.e., the end products of the gene expressions. How the metabolome of an organism relates to its genome and nutritional intake is a difficult and complex problem, but the current research holds much promise.