This biennial presentation (August 7-9, 2015) sponsored by Purina and held at the Hyatt Regency in St. Louis celebrated its twentieth anniversary by offering an outstanding list of presenters with exciting advances in cutting edge research.

To date the AKC Canine Health Foundation (CHF), with the support and partnership of breed clubs, has funded $44 million in research and educational programs. Since 1997, Nestle Purina PetCare Company has invested over $13 million in CHF to help dogs live longer, healthier lives. The Parent Club Partnership Program provides a unique opportunity for dog enthusiasts to donate to CHF.

Over 20 presentations by outstanding researchers provided a wealth of new information on diverse research fronts. Dr. Jennifer Barrett’s team at Virginia Tech has made great strides in developing therapeutic techniques using stem cells to repair tendon, ligament and cartilage injuries. She is currently in the process of enrolling canine patients in clinical trials.

Also in the area of regenerative medicine, Dr. Brian Saunders presented advances made by his lab at Texas A&M in the treatment of osteochondrosis and osteoarthritis with ROPs- regenerative osteochondral plugs. These trilayered cylindrical plugs deliver adult mesenchymal stem cells to the site of injury differentiating into reconstructive cartilage, transitional tissue and bone.

Dr. Dominique Griffon from Western University reviewed the results of her efforts to formulate an equation to predict the risk of cranial cruciate ligament disease in Labrador retrievers, using radiographic features of the tibia and femur to calculate a “predictive score”. She is still in the process of enrolling eligible dogs in her studies.

On the senior pet front, Dr. Yuanlong Pan presented his results which support the use of medium chain triglycerides in senior diets to preserve and improve brain function and slow the progression of canine cognitive dysfunction.

His presentation dovetailed nicely with Dr. Gary Landsberg’s treatment of senior cognition and brain aging. Dr. Landsberg advocates a “do ask, do tell” philosophy regarding early recognition of canine cognitive dysfunction using his acronym DISHA (Disorientation, social Interaction, Sleep wake cycles, House soiling, and Activity). He provided a comprehensive list of food, supplements and medications that have been demonstrated effectively in the management of this condition.

Researchers at Auburn University, under the leadership of Dr. Bruce Smith, are investigating the use of an engineered oncolytic adenovirus to destroy bone cancer cells while leaving healthy tissue unharmed, improving survival and quality of life in canine bone cancer patients.
Dr. Jeffrey Bryan provided a broad overview of epigenetics and how the inheritance of DNA methylation can lead to the expression of such diverse conditions as renal disease in humans, idiopathic pulmonary fibrosis in West Highland White Terriers, and liver cirrhosis.

Dr. Doug Thamm from Colorado State University discussed the rationale driving research in targeted or precision therapeutics in individualizing treatment of canine cancer patients. A randomized clinical trial is currently underway to evaluate molecular profiling as a tool to select more appropriate therapy for dogs with mast cell tumors.

Dr. Alice Villalobos presented the keynote address on Saturday. She focused on quality of life in senior and end of life years in our canine companions. Application of her “HHHHHMM” quality of life scale enables both owners and veterinary practitioners to anticipate age related issues and address them in a proactive manner. By remaining mindful of hurt, hunger, hydration, hygiene, happiness, mobility, and more good days than bad days, our beloved senior companions can be assured of a quality passing that is kind and gentle.

Two presentations focused on research in canine allergy and atopy. Dr. Jan Suchodolski provided information from ongoing studies at Texas A&M delving into the role of fungi in the development of atopic dermatitis. The goal of the research team is to identify fungal classes that may serve as opportunistic pathogens, as well as discover potential therapeutics for the relief of severely itchy dogs and their owners who must provide long-term and costly care. Tying in nicely with the Texas research was the presentation by Dr. Charles Bradley and the University of Pennsylvania researchers, who are investigating the microbiome of atopic and healthy dogs with particular emphasis on the role of staphylococcal pyoderma in treatment failure.

Following this, several presentations focused on the canine gastrointestinal tract. Dr. Laura Nelson at Ohio State University has found several factors involved in the development of gastric dilatation (bloat) and progression to volvulus by using Smartpill technology to evaluate gastric contractions and the role of hormones motilin and ghrelin in the development of GDV.

Tufts University was well represented by Dr. Elizabeth Rozanski who focused on treatment of GDV with emphasis on early detection and aggressive treatment. She provided insight into the management of complications such as multiple organ dysfunction syndrome that slows recovery in treated pets.

At Cornell University Dr. Kenneth Simpson is focusing his research efforts on the interplay between host and bacteria in the development of chronic inflammatory bowel disease from the standpoint of microbiome dysbiosis, host genetic defects, and defective immunoregulation. He is in need of more blood samples from both affected and clinically normal dogs.

Dr. Josh Stern is looking into inherited heart disease from his position as chief of service in cardiology at UC Davis. He has determined that Doppler echocardiography is the most accurate way to characterize subvalvular aortic stenosis (of particular interest to Golden retriever enthusiasts). Whole genome sequencing is currently underway to better define a PICALM genetic insertion in Newfoundlands. This insertion error is involved in plaque formation in blood vessels, brain tissue and other locations.
Dr. Jason Stull and Dr. Matthew Krecic provided evidence-based recommendations for reduction of infection disease in canine group settings, and brucellosis respectively. Dr. Stull provided ten considerations when planning and executing events attended by many dogs, while Dr. Krecic outlined steps to follow in reducing the transmission of brucella infections in breeding kennels, including quarantine of new arrivals, regular testing of breeding animals, recognition of asymptomatic carriers, and proper use of effective disinfectants to minimize contamination.

On Sunday, Dr. Joan Coates (University of Missouri) presented results from her study of canine degenerative myelopathy as a disease model for translation of therapeutic strategies to amyotrophic lateral sclerosis. Her extensive research has revealed the existence of an SD1 mutation in Pembroke Welsh Corgis, boxers, German shepherds, and Rhodesian Ridgebacks (among 98 breeds identified thus far) that results in late onset, progressive hindlimb weakness. Research is currently aimed at using nucleic acid based therapy to slow the expression of the genetic mutation and thereby slow the disease progression.

The conference drew to a close with presentations by Dr. Ned Patterson (University of Minnesota) and Dr. Holger A. Volk (Royal Veterinary College) on canine epilepsy. Dr. Patterson presented recent research developments in the areas of genetics and biomarkers to identify dogs at high risk of developing epilepsy, development of new drugs for chronic management as well as emergency treatment of severe seizures, and brain electrical activity studies to identify new drugs and devices to predict seizures before they occur.

Dr. Volk provided a comprehensive overview of the current antiepileptic drugs on the market, the role of diet in controlling epilepsy, and the need for more research involving diet trials in epilepsy models. Dr. Volk’s research has shown that in drug resistant dogs (seizures not adequately controlled with one or more antiepileptic drugs), the addition of medium-chain triglycerides to the diet significantly reduced the incidence of seizures and improved the overall quality of life in these individuals.

For those desiring more information on any of these topics, all of the above presentations will be made available for viewing on the AKC Canine Health Foundation website, www.akcchf.org I would like to thank the CTCA Foundation for their generous support by providing me with the opportunity to attend this conference. I heartily encourage the club to continue to support this most timely and comprehensive research. Great strides are being made on many fronts, but there is much as yet undiscovered.