



AMERICAN KENNEL CLUB
**CANINE HEALTH
FOUNDATION**
PREVENT TREAT & CURE®

Discoveries

Issue 39 • Winter 2012



MISSION

The Foundation is dedicated to advancing the health of all dogs and their owners by funding sound scientific research and supporting the dissemination of health information to prevent, treat, and cure canine disease.

THIS ISSUE AT A GLANCE

Intervertebral disk disease (IVDD)2
What is Posture and Why Should We
Care about it? 4
Focus on Research 6
Spotlight on Genetic Tests: Musladin-Leuke
Syndrome in the Beagle 8

Champion of Canine Health: Joye Neff.. 10
Donate Your Vehicle to CHF 11
Westminster Kennel Club Dog Show
Poster Will Benefit the AKC Canine Health
Foundation..... 11

Update From the AKC Canine Health Foundation CEO, Terry T. Warren, PhD, JD

UPDATE FROM THE CEO

Happy New Year from the AKC Canine Health Foundation! Together, we are advancing the health of all dogs and their owners. Because of your generous contributions, the Foundation has increased its funding of research grants and educational programs for 2012. We are announcing 21 new Oak grants. This new research will advance our understanding of canine cancers, lymphoma, melanoma, and osteosarcoma, and will expand our understanding of other canine diseases such as epilepsy, liver disease, dermatitis, and inflammatory diseases of the canine respiratory tract. Samantha Wright, CHF's Program Manager, will be contacting Health

Liaisons to assist you in understanding the new grants and encouraging support. The details of all the new grants are listed on page 6.

With the New Year, we are energized as we move forward with the recently announced joint venture of the AKC Canine Health Foundation (CHF) and the Golden Retriever Foundation (GRF) to fund a \$1 million canine cancer research project by 2013. The Foundations are partnering to solicit, review and ultimately select a canine cancer research project focusing on golden retrievers and potentially benefitting the health of all dogs. "Cancer is the number one cause

of death in golden retrievers, so it's important for us to support this type of research," said David Kinghorn, GRF past president. CHF is very excited to partner with GRF in this large funding initiative that will help the golden retrievers and all dogs live longer, healthier lives.

2012 is the time to renew our commitment to clipping weight circles and sending them into Nestlé Purina. Parent Club Partnership Program (PCPP) participants who are proactive and clip the weight circles off Purina dog food bags and send them in are directly benefiting research to
(continued on page 9)

Intervertebral Disk Disease (IVDD)



The intervertebral discs (the cushion that resides in the space between adjacent spinal vertebrae) are subject to a number of degenerative conditions and forces that predispose them to bulge or rupture over time. This rupture leads to two types of damage to the spinal cord, compression and concussion.

Overview of Intervertebral disk disease

Intervertebral disk disease is degeneration and protrusion of the intervertebral disk that results in compression of the spinal cord, spinal nerve, and/or nerve root. It is a common cause of spinal cord disease in dogs.

The intervertebral discs (the cushion that resides in the space between adjacent spinal vertebrae) are subject to a number of degenerative conditions and forces that predispose

them to bulge or rupture over time. This rupture leads to two types of damage to the spinal cord, compression and concussion. Compression is the physical pressure exerted over time against the spinal cord which leads to slow degeneration and loss of neurons (nerve cells). Intervertebral disc rupture that is purely compressive usually begins slowly and leads to gradual worsening of neurologic function. Concussion force is the physical damage caused by a rapidly extruded disc impacting the spinal cord causing profound swelling and degeneration and loss of neurons. Purely concussive forces are usually rapidly progressive and have an acute onset. Most intervertebral disc ruptures are a combination of compressive and concussive forces that lead to the rapid degeneration of nervous tissue in the spinal cord.

Breeds at risk

Chondrodystrophoid (dwarfed) breeds of dogs with a short, stout appearance—ie: Dachshund, Beagle, Shih Tzu, Lhasa Apso, and Pekingese—are most commonly affected.

Other chondrodystrophic breeds that may be affected by IVDD include Corgis, Cocker Spaniels, Pekingese, Shih-Tzu and Poodles. Nonchondrodystrophic breeds that are commonly affected by IVDD include the German Shepherd, Labrador Retriever and Doberman Pinscher. Obese dogs of predisposed breeds are especially likely to suffer from IVDD.

After researching a breed of dog to add to her family, Helen Tjader decided on Cardigan Welsh Corgis. Her greatest concern about possible genetic conditions that affect this breed was

hip dysplasia. None of her research indicated that Cardigan Welsh Corgis were at high risk of developing IVDD. Ieuan was a happy dog, full of pep. He was never overweight and was always in excellent condition with good muscle tone, facts that were noted by every veterinarian Ieuan visited over the years.

Shortly after Ieuan's 7th birthday, he suffered a ruptured disc in his back and was diagnosed with IVDD. Ieuan underwent successful surgery at Tufts University Hospital in North Grafton, MA and Ms. Tjader followed the post-op recovery plan set out by the veterinary surgeon. Ieuan improved and recovered nearly all function in his hind limbs with only a slight, occasional 'knuckling' in one back paw. In an effort to prevent injury, Ms. Tjader had always made sure Ieuan followed the advice of the breeder and veterinarians to avoid stairs. The only stairs Ieuan encountered regularly were the two leading into Ms. Tjader's home—stairs that the veterinarian, after Ieuan was well recovered—indicated would be ok for him to handle. Unfortunately, one evening Ieuan came up the two stairs into Ms. Tjader's home and was suddenly in pain. After consultation with an emergency room veterinarian and Ieuan's regular veterinarian, Ms. Tjader declined more surgery and opted instead to begin a slow and cautious recovery plan similar to what Ieuan had experienced a few months earlier. Sadly, Ieuan's pain grew much worse over the weekend and after returning to the emergency veterinarian, it was agreed that there was no hope for recovery.

(continued on page 3)

AKC CANINE HEALTH FOUNDATION

AKC CANINE HEALTH FOUNDATION

INTERVERTEBRAL DISK DISEASE (IVDD) *continued from page 2*



Symptoms

The observable signs of IVDD vary. And while the following list of symptoms associated with IVDD is not exhaustive, affected dogs may show one or more of the following signs which can be sudden, intermittent or gradual in onset:

- Neck and/or back pain and stiffness (reluctance to move the neck and head)
- Lowered head stance
- Abdominal tenderness or tenseness
- Arched back (hunched posture, called "thoracolumbar kyphosis")
- Sensitivity to touch (possible aggression)
- Weakness, stiffness, and/or sensitivity to movement (yelping unexpectedly)
- Impaired, incomplete or inappropriate urination
- Lameness and/or paralysis in one or more limbs
- Dragging one or more legs when walking
- "Toeing over" or "knuckling over" when walking or standing
- Stilted gait; tentative gait
- Reluctance to rise and/or collapse
- Tremors, trembling, shaking
- Lack of coordination ("ataxia")
- Abnormal reflexes

Acute traumatic injury is not the same as IVDD, although the symptoms can be very similar. IVDD involves a degenerative process and does not result merely from sudden trauma, although sudden trauma can cause rupture or herniation of an intervertebral disk in a dog whose disks already are weakened by IVDD.

Treatment

Definitive diagnosis of IVDD is made by a veterinarian through physical exam and x-rays. In less severe cases

In less severe cases medication may be provided for pain relief with a combination of crate rest. If IVDD has progressed and the dog has ruptured a disc, surgery is the normal course of treatment, along with pain medication and crate rest. In any case, it is recommended that if your dog seems to be suffering from IVDD symptoms a veterinarian is consulted to determine the best course of treatment in order to help the dog live comfortably and free from pain.

medication may be provided for pain relief with a combination of crate rest. If IVDD has progressed and the dog has ruptured a disc, surgery is the normal course of treatment, along with pain medication and crate rest. In any case, it is recommended that if your dog seems to be suffering from IVDD symptoms a veterinarian is consulted to determine the best course of treatment in order to help the dog live comfortably and free from pain.

Ms. Tjader hopes that by sharing Ieuan's story, more dog owners will understand that while keeping your dog fit and healthy are important steps, awareness of genetic conditions like IVDD is critical in order to seek appropriate medical care and consultation. As Ms. Tjader discovered, IVDD can affect many different breeds of dogs and canine health alone is not always an accurate indicator of the presence of a degenerative, genetic disease. "Ieuan was a wonderful dog," said Ms. Tjader, "above and beyond all our expectations as a pet and I will never forget him."

References

The Merck Veterinary Manual

American College of Veterinarian Surgeons (ACVS)

<http://www.acvs.org/AnimalOwners/HealthConditions/SmallAnimalTopics/IntervertebralDiscDisease/>

WiggleLess

<http://www.wiggleless.com/chondrodystrophic-dog-breeds/>

PetWave

<http://www.petwave.com/Dogs/Dog-Health-Center/Bone-Joint-Muscle-Disorders/Intervertebral-Disk-Disease/Symptoms.aspx>

What is Posture and Why Should We Care about it?

This article is the first in a four part series. This series is being contributed by Dr. Karen Gellman, DVM, PhD and Dr. Judith M. Shoemaker, DVM. Dr. Gellman provides postural rehabilitation continuing education for veterinarians in addition to a variety of other special clinical skills. She can be reached at equinesportsmed@mac.com.

When we think about the activities of our dogs usually we picture their play, their “jobs,” or their quiet repose on our laps or couch. However, in all animals the ability to stand quietly at rest is critically important for health and soundness. Many dog owners don’t realize that the reason their dogs flop down on the ground as soon as they come to rest may be that they have postural problems that make it uncomfortable or tiring to stand up for very long. In some ways, standing is harder than moving. Think about riding a bicycle—the faster you go, the easier it gets. We have many mechanisms for balance in motion that are not available to us for standing. What does it take to just stand up? A lot, actually!

Running animals, including humans, have multiple centers in the brain that are devoted to postural control. Their job is to coordinate signals from many parts of the body about where the limbs, trunk, and head are located in space, relative to each other, and to the ground. It’s like a big air traffic control center where unconscious decisions are made about standing and moving based upon information from the feet, the joints, the muscles, the inner ear, the eyes, and the jaw. The information is coordinated, analyzed and then sent to the movement centers of the brain to generate stance or gait. Many of us know that when someone has an inner ear infection their balance

and coordination can be affected, but some of the other inputs for stance and balance are not quite as widely known. For instance, we are highly dependent upon our eyes to maintain equilibrium. This is why some people and dogs can get carsick when riding in the back seat. Under most circumstances, the eyes can see level surfaces that give visual clues to the terrain being traveled. But when watching scenery rush by from a car, the body perceives motion visually and is not able to register the ground surface, resulting in queasiness from mismatched information.

Much of the postural information the body uses is related to gravity or “knowing where down is.” It seems pretty simple to know where down is, but when it goes wrong big trouble ensues! The postural control system is a complex system in which small changes to the input can have far-reaching changes in the output. For instance, you can turn off a large part of your own postural stability by clenching your hands in a fist with the tips of your fingers tucked in against your thumb. Get a pal and try this. Stand neutrally, with your hands at your sides in a fist, and then ask a friend to try and push you off balance from front or behind. Feel your body’s responses to resisting the external forces and think about which muscles you are using. Now switch your hand position so that the pads of your fingers are flat on the heel of your palm. Try again to resist your friend’s attempt to push you over. Again, feel your body’s response. Quite different! In the second instance you are more stable, able to resist the force of being pushed with very little effort.

This is an example of how our “fore-feet” are programmed to give information to our brain about the ground surface. If we

had four legs and the pads of our front toes were stretched flat on the ground, like the flat fingered hand, our brain would conclude that we had contacted a ground surface that was appropriate to support our bodies. This sets off a cascade of reflexes to enable standing: the extensor muscles of the leg switch on, making it straight to stand on; the trunk muscles switch on, holding the trunk and spine firm; and the head is held in an appropriate position for standing; our stance stabilizers are at work.

Why are all animals, including humans, posturally programmed to stand up straight? Because it is the most economical way to stand. Dogs, like humans and horses, are large, fast animals compared with most vertebrates. Comparative biomechanics has shown that the larger an animal is, the lower its metabolic rate. This means that large animals have less metabolic energy per pound of body weight to devote to body maintenance. Large, fast animals have solved this “problem” by minimizing the metabolic energy required to support their own weight through anatomic adaptations. They have long, straight legs that support body weight in a vertical column. When the limbs are in position correctly—like the legs of a table—the only muscles working are slow twitch postural muscles, which are strategically placed to stabilize joints without a lot of costly energy. However, when the legs are misplaced, or are very crooked, many muscles must be recruited to keep the dog standing.

Normal neutral posture in dogs is like a table, with a limb at each corner. Dog show competitors are very familiar with this posture; it is “stacking” the dog for the judge to examine, with *(continued on page 5)*

WHAT IS POSTURE AND WHY SHOULD WE CARE ABOUT IT? *continued from page 4*



FOR VETERINARIANS AND OTHER LICENSED PROFESSIONALS (DC, PT)

Introduction to Postural Rehabilitation, March 23–25, 2012 , Nottingham, PA

Postural Rehabilitation is an integrative, evidence-based approach to alleviating chronic performance problems and preventing musculoskeletal injury. It provides a global perspective on how manual therapies alter the complex systems that control the neuro-musculoskeletal apparatus in animals. The training program includes in depth study of the neuroanatomy and neurophysiology concerned with initiating and maintaining normal standing posture and locomotion, analysis of distal mechanoreceptor systems that contribute to postural control (upper cervical, stomatognathic, distal extremity), and diagnostic and treatment methods using applied clinical neurology and advanced neurologic reprogramming techniques.

Through lectures, demonstrations, hands-on labs, and individually tailored tutorials, participants will learn how to diagnose and treat postural abnormalities. Correct posture promotes normal function of the neuro-musculoskeletal system while at rest, allowing healing to take place. Correct posture integrates the movements of locomotion, improving performance and decreasing the risk of injury. Postural Rehabilitation training also emphasizes correct postural usage for the practitioner, both to facilitate effective kinesthetic communication with animals and to prevent work-related injuries. The program utilizes a unique team teaching approach, with integrated contributions from our clinical, scientific, and kinesthetic experts throughout.

PR is open to licensed professionals only and programs are approved for 25 AVCA hours each (CE approval by individual state veterinary boards is in process, please ask us if your state accepts PR yet). The introductory session is for both equine and companion animal practitioners. For more information, contact Dr. Karen Gellman (equinesportsmed@mac.com) or go to www.PosturalRehabVets.com.

its forelegs and hocks-to-the-ground vertical. The reason this pose is used, historically, is that high quality dogs with good neurologic responses will stack naturally.

So what are some of the reasons our dogs have trouble standing or “stacking” correctly? And how does this affect everything they do? We will discuss this in later segments. It’s amazing how important simply standing properly is!

Coming up in this Postural Rehabilitation series:

Oh, that flexible neck! In this segment we learn how the neurologic feedback from the upper neck is critically important to posture and balance and how daily canine activities that include restraint and confinement, as well as athletic feats, can compromise this system.

Feet on the ground. For all terrestrial animals essential information about their ground surface is transmitted by the feet. However our modern man-made environment tends to obliterate the sensitivity of this feedback loop. Even more critically, dogs can get very large distortions in ground perception if their toenails scrape the ground in daily life, leading to postural distortions that are punishing to their joints. How does this mechanism work, and can we fix it when it goes wrong?

It’s more than just bite! Did you know that more than half AKC breed standards allow for a bite other than a scissors bite? It’s not just aesthetics we are worried about—malformed dentition and distorted skull shapes have a profound effect on posture and balance. Some simple juvenile interventions can go a long way to helping your dogs get a better bite.

Focus on Research

Below is a list of the new OAK research grants approved for funding in September of 2011. These research projects commence in 2012. Visit our website at www.akcchf.org for more detailed information about any of our research grants and to make a donation.

Grant 1557: High-Resolution Cytogenetic Analysis of Histiocytic Malignancies and Development of a Targeted Assay to Screen for Expression Level Changes

Dr. Matthew Breen, PhD; North Carolina State University

PROJECT GOAL: The goal of this project is to narrow down the search for genes playing a key role in Histiocytic Malignancies and thus move a step closer to developing targeted therapies for canine patients diagnosed with this devastating cancer.

Grant 1569: Evaluation of GS-9219 in Canine Cutaneous Lymphoma

Dr. Douglas H Thamm, VMD; Colorado State University

PROJECT GOAL: This clinical trial aims to determine if the novel cancer drug GS-9210 is effective in fighting canine cutaneous T cell lymphoma.

Grant 1572: Targeting Neutrophil Activation to Develop Novel Drugs to Treat Respiratory Tract Inflammation in Dogs

Dr. Samuel L. Jones, DVM, PhD; North Carolina State University

PROJECT GOAL: This research group has developed a new compound called the MANS peptide. The goal of the project is to determine if MANS peptide can be used to treat serious inflammatory diseases of the canine respiratory tract.

Grant 1577: Fine Mapping of Loci for Transitional Cell Carcinoma in the Scottish Terrier, West

Highland White Terrier, and Shetland Sheepdog

Dr. Elaine Ostrander, PhD; National Human Genome Research Institution

PROJECT GOAL: The goal of this project is to find the gene mutation that is responsible for Transitional Cell Carcinoma, a type of bladder cancer, in three breeds of dogs with higher risk for the disease.

Grant 1584: Conformation in Cranial Cruciate Ligament Deficiency in Dogs

Dr. Dominique J. Griffon, DVM, PhD; Western University of Health Sciences

PROJECT GOAL: The goal of this project is to understand the relationship between genetics, body characteristics and Cranial Cruciate Ligament Deficiency (CCLD) in dogs. Identifying which dogs are predisposed to the disease is a crucial first step to reducing risk or delaying onset of CCLD.

Grant 1585: Phase I Study of Involved-Field Radiotherapy (IFRT) for Advanced Stage Canine Lymphoma

Dr. Michael Deveau, DVM, MS; Texas A&M University

PROJECT GOAL: The goal of this phase I clinical trial is to determine the safety of treating canine lymphoma with Involved-Field Radiotherapy using helical tomotherapy. This treatment is being used in human medicine and needs to be evaluated for use in veterinary medicine.

Grant 1586: Genome Wide Association Analysis for Sebaceous Adenitis in Havanese Dogs

Dr. Sandra N. Koch, DVM; University of Minnesota

PROJECT GOAL: The ultimate goal of this study is to develop DNA-based tests for susceptibility to the inflammatory skin disease sebaceous adenitis that would be used for diagnostic confirmation; in breeding decisions to help reduce the incidence of the disease; and potentially develop more specific therapies for the disorder.

Grant 1591: Discovery of Genetic Susceptibility Loci in Atopic Dermatitis using a Genome-Wide Association Study in West Highland White Terriers

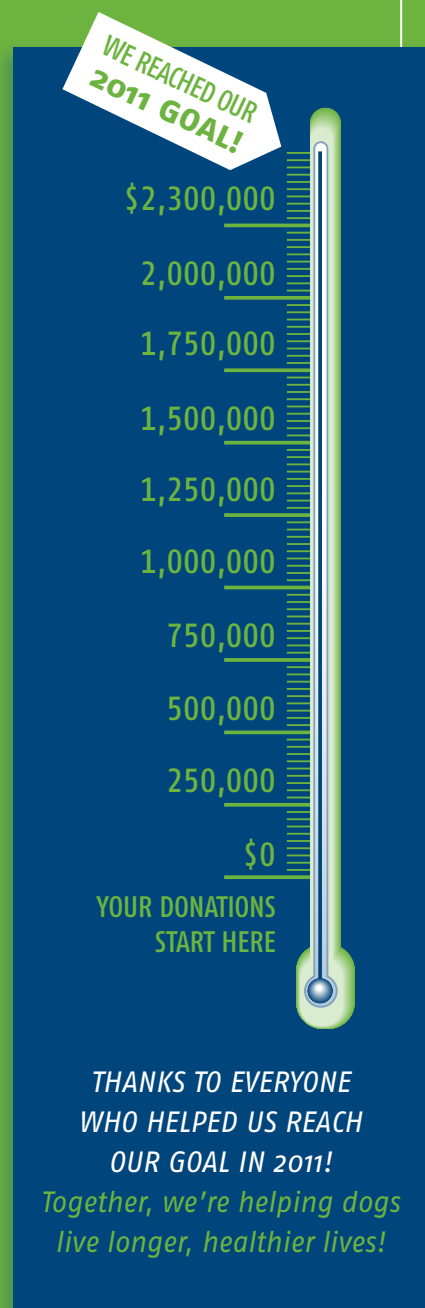
Dr. Natasha J Olby, VetMB, PhD; North Carolina State University

PROJECT GOAL: This research team will conduct a genome wide association study of Atopic Dermatitis in Westies to identify chromosomal regions associated with the disease. The long-term goal is to develop genetic tests that can be used by breeders to decrease the prevalence of this condition.

Grant 1592: Investigation into the Genetics of Scottie Cramp: Sequencing of Associated Chromosomal Regions

Dr. Natasha J Olby, VetMB, PhD; North Carolina State University

PROJECT GOAL: Following up on previous research funded by CHF, the goal of this project is to use



deep sequencing techniques to identify genetic mutations associated with Scottie Cramp.

Grant 1594: Genetic Analysis of Familial Glaucoma in the Basset Hound
(continued on page 7)

FOCUS ON RESEARCH *continued from page 7*

Dr. Markus H. Kuehn, Ph.D.; University of Iowa

PROJECT GOAL: Primary angle closure glaucoma appears to be an inherited autosomal recessive trait in Basset Hounds. The goal of this project is to map and identify the disease gene so breeders will have the tools to identify dogs carrying the disease gene.

Grant 1601: Unraveling the Genetic Background of Intrahepatic Portosystemic Shunt in Irish Wolfhounds

Dr. Peter A.J. Leegwater, PhD; University of Utrecht

PROJECT GOAL: Intrahepatic portosystemic shunt is a liver disease that is hereditary in Irish Wolfhounds. The goal of this project is to identify the genes responsible for the disorder and develop a test that will help breeders reduce the incidence of the disease.

Grant 1602: Longitudinal Study Investigating the Progression and Pathogenesis of Atypical Hyperadrenocorticism in Scottish Terriers

Dr. Kurt Zimmerman, DVM, PhD; Virginia-Maryland Regional College of Veterinary Medicine

PROJECT GOAL: This research group will use a combination of traditional laboratory, functional and genetic tests to try understand why Scottish Terriers are predisposed to developing atypical Hyperadrenocorticism and how best to treat and screen for the disorder.

Grant 1609: Probiotic VSL# 3 Reduces Enteritis in Dogs with Inflammatory Bowel Disease

Dr. Albert E. Jergens, DVM, PhD; Iowa State University

PROJECT GOAL: Idiopathic inflammatory bowel disease (IBD) is a common cause of gastrointestinal disease in dogs. This study will help to determine if probiotic therapy is effective and can be applied to widespread clinical use. The study will be beneficial for the treatment of both canine and human IBD.

Grant 1612: Use of Modified Cyclosporin A to Improve Cataract Surgery Outcomes

Dr. Heather Chandler, PhD; Ohio State University

PROJECT GOAL: Posterior capsular opacification is a complication of cataract surgery that causes secondary vision loss. This project will evaluate the use of the drug Cyclosporin A to prevent this complication in hopes of improving the veterinary ophthalmologists options for restoring long-term vision.

Grant 1615: Identification of Idiopathic Epilepsy Genes in Australian Shepherds

Dr. Ned E. Patterson, DVM, PhD; University of Minnesota

PROJECT GOAL: This research group aims to identify the genetic mutation associated with epilepsy in Australian Shepherds and develop a DNA-based test to identify affected dogs and aid in diagnosis. After identifying a mutation, the researchers will also test to see if the mutation(s) affect other dog breeds with a high incidence of epilepsy.

Grant 1620: Clinical and Laboratory Efficacy and Safety Studies of T-Cell Receptor (TCR) Peptides in Canine Atopic Dermatitis

Dr. Daniel A. Gingerich, DVM; Imulan Bio Therapeutics, LLC

PROJECT GOAL: The purpose of this study is to confirm efficacy and safety of TCR peptide treatment in dogs with the frustrating and chronically relapsing skin disease, atopic dermatitis.

Grant 1633: Phase I S100B Inhibitor Clinical Trial for Canine Melanoma Therapy

Dr. Heather M. Wilson, DVM; Texas A&M University

PROJECT GOAL: This study is a collaborative effort between basic scientists and clinicians to determine if combined pentamidine/chlorpromazine therapy is safe for canine melanoma patients. These drugs are currently used in veterinary medicine to treat other diseases, so the probability is high that they will be safe for melanoma treatment and improve survival for dogs with melanoma.

Grant 1651: Serum Antibody Reactivity Profiling for Canine Lymphoma Detection and Monitoring

Dr. Stephen A Johnston, PhD; Arizona State University

PROJECT GOAL: Most canine lymphoma patients respond to chemotherapy but eventually relapse. This project is meant to investigate serum immunoproteomic profiling for monitoring of remission status in dogs with lymphoma.

Grant 1657: Defining New Therapeutic Approaches for Osteosarcoma through Genome Wide Screening and Comparative Oncology

Dr. Carl Walkley; St Vincent's Institute of Medical Research

PROJECT GOAL: This project uses high-throughput screening technology (siRNA libraries) in human and dog osteosarcoma cells in combination with the chemotherapy drug doxorubicin. The researchers will be looking for the individual genes that are silenced by siRNA and improve the response to doxorubicin.

Grant 1658: Urinary Protein and Gene Expression Characterization and Comparison with Renal Biopsy Findings and Clinical Data in Dogs with Proteinuric Renal Diseases

Dr. Mary B Nabity, DVM, PhD; Texas A&M University

PROJECT GOAL: The purpose of this study is to evaluate promising indicators of kidney injury that might improve the detection and/or assessment of progression in dogs with chronic kidney disease. The results can be evaluated to determine if the novel tests are more accurate and less invasive for assessing kidney damage in dogs.

Grant 1660: Alternative Genetic Approaches for Identifying Canine Osteosarcoma Genes

Dr. Carlos E. Alvarez, PhD; Ohio State University College of Medicine

PROJECT GOAL: This research group will use an innovative genetic approach that enables genome-wide discovery of the genetic variations in Greyhounds to assess risk for osteosarcoma. Findings on the genetic risk for osteosarcoma would lead to rapid development of therapies and clinical trials for dogs with translation to human medicine.

Spotlight on Genetic Tests: Musladin-Leuke Syndrome in the Beagle

Musladin-Leuke Syndrome (MLS), previously known as Chinese Beagle Syndrome, is a genetic disease in Beagles that affects the development and structure of connective tissue. It involves multiple body systems, including bone, heart, skin and muscle. The disease resembles human stiff skin syndrome. Beagles with MLS are born with several defects characterized by short outer toes on the front and sometimes all four feet, high set creased ears on a flat skull with extra cartilage in them, slant narrowed eyes and very thick tight skin with little scruff. Such pups are small in stature with a very stiff gait. Seizures have also been noted in affected dogs.

Breeders worked with Dr. Mark Neff and provided the necessary DNA samples for his team to identify the genetic mutation responsible for Musladin-Leuke Syndrome as well as document the phenotypic presentation of the disease. The researchers also developed a genetic test for the mutation.

The mode of inheritance for Musladin-Leuke Syndrome is homozygous recessive. When breeders or owners submit a sample for testing, they will receive results identifying their dog in one of these three categories:

CLEAR: *the dog has two copies of the normal gene and will neither develop MLS, nor pass a copy of the MLS gene mutation to any of its offspring.*

CARRIER: *the dog has one copy of the normal gene and one copy of the mutant gene that causes MLS. It will not develop MLS but will pass on the mutant gene to 50% (on average) of its offspring.*

AFFECTED: *the dog has two copies of the mutation and is affected with MLS.*

Breeders can reduce the incidence of MLS by testing their breeding stock and making breeding decisions that avoid producing offspring with two copies of the mutation. The test can also be used by Beagle owners to confirm diagnosis if there is a question about whether a dog is affected.

To order the test kit visit the University of California, Davis Veterinary Genetics Laboratory at <http://www.vgl.ucdavis.edu/services/MLS.php>.

Taken from the Musladin-Leuke Syndrome webpage maintained by Salenko Beagles in the UK (<http://www.salenko.co.uk/MLS/>) and the University of California, Davis Veterinary Genetics Laboratory (<http://www.vgl.ucdavis.edu/services/MLS.php>).



Calendar of Events

FEBRUARY 11

Charity Cocktail Party, Affinia Manhattan, New York, NY

APRIL 12

Breeder's Symposium
Colorado State University

Visit our Booth

FEBRUARY 13-14

Westminster Kennel Club Dog Show
New York, NY

FEBRUARY 23-26

International Kennel Club of Chicago Dog Shows, Chicago, IL

MARCH 24-25

Tarheel Cluster Dog Shows
Raleigh, NC

New Club Members

New Club Members as of November 10, 2011
(new since August 5, 2011):

Mid Florida Havanese Club
Russian Toy Dog Club of America

Scott Linden's Wingshooting USA presents

TRUCK VAULT
Cares
... about conservation, canines & kids

**PUT TRUCKVAULT'S MONEY
WHERE YOUR MOUSE IS!**



feed the pups, raise funds for CHF

At **www.truckvaultcares.com** your vote turns into cash for the AKC Canine Health Foundation. Track votes by watching the CHF puppy's bowl fill up. You're also entered in a random drawing for fantastic prizes ranging from a TruckVault to Scott Linden's own Fausti DEA SL shotgun, Filson apparel and TriTronics training collars ... dozens of prizes just for voting!



AMERICAN KENNEL CLUB
**CANINE HEALTH
FOUNDATION**
PREVENT TREAT & CURE

Tell your friends, raise even more money for CHF. Forward a link, post on FaceBook, send a Tweet, spread the word!

A pool of \$10,000 has been provided by Truck-Vault, Scott Linden's Wingshooting USA television show, and our sponsors. Every dollar will be allocated on a proportional basis by number of votes to six beneficiary groups – including CHF. **Everyone wins!**

Participating sponsors:



Vote today: www.truckvaultcares.com
And watch



on VERSUS, Sportsman Channel,
Legacy TV, TUFF TV and AMG TV!
More information: scottlindenoutdoors.com.

UPDATE FROM THE AKC CANINE HEALTH FOUNDATION CEO, TERRY T. WARREN, PHD, JD
continued from page 1

prevent, treat and cure canine disease. This program alone raises approximately \$250,000 annually for canine health research. So, please take the time to be an active member and clip those weight circles in 2012! Go to www.purinaproclub.com for more details.

On sale now is the 2012 Living Art Calendar. We thank our art photographer Miguel Betancourt and the Living Art Calendar Publisher, Tom and Amy Grabe of *The Canine Chronicle* for again producing a keepsake calendar. And a huge thank you goes to all the dog owners that have each contributed \$5,000 to canine health research for the honor of being part of this outstanding project.

There are so many that continue to help us achieve our mission through their generous support. We are pleased to announce that when you purchase a 2012 Westminster Kennel Club Dog Show Poster, you will be supporting the work of the AKC Canine Health Foundation. The Westminster Kennel Club has generously named the Foundation as the recipient of all proceeds from the sale of this year's Poster. More details on how to purchase are on page 11. And please join us at our Cocktail Party being held on Saturday, February 11, 2012 at the Affinia Manhattan Hotel. Tickets can be ordered on line at www.akcchf.org.

The 2011 year ended with a very successful "Canines and Cocktails," where we raised a glass to honor the importance of the purebred dog as the ideal research model for canine and human health. Thanks to our corporate sponsor, *The Canine Chronicle*, all of our host sponsors, individual ticket purchasers and for the generous contribution made to our raffle by Darla and Kevin Brooks of BB Unlimited for making this a huge success.

We also thank our major alliances, the American Kennel Club, Nestlé Purina PetCare and Pfizer Animal Health for their continuing commitment to advancing our mission to prevent, treat and cure canine disease.

Wishing you all a very prosperous and healthy 2012!

Champion of Canine Health: Joye Neff



Since she was little Joye Neff has grown up with dogs. It wasn't until 1985 though, when she got her first Bernese Mountain Dog, that her love for the breed was fully recognized. After her best friend got a Berner she decided to go to the same breeder and it was love at first sight. Joye's love for the breed remains true today and she devotes her time and energy supporting canine health research.

Joye has been called a fundraising "guru" for her success in helping raise money for canine health, education, and rescue. Those familiar with Joye appreciate her passion to help the Berner breed. Through this passion she uses her acute fundraising skills to help our beloved canines. Her secret for success? Target specifically and get the word out to as many people as possible to let them know what you are raising money for. When raising money for canine health Joye actively keeps in touch with several contact lists including the Berner-L, BARC, Working Dogs, and the BMDCA's Regional Club Council as good sources for donations.

Each year Joye helps raise money at the Bernese club specialty. She has served as co-chair of their health auction and is also on the Health Auction permanent committee each year. At the specialty she collects items for the auction donated by vendors who are sympathetic to the cause. Joye also helps Pat Long, owner of Berner-L, with Longshots Photography to raise money for the breed. Over the past two years Joye has raised more than \$89,000 for health projects benefitting Bernese Mountain Dogs.

Most recently Joye helped raise over \$58,000 for Histiocytic Sarcoma (HS), formerly known as Malignant Histiocytosis (MH). Joye achieved 100% participation from every regional club in the USA, and donations from the Bernese Mountain Dog Club of America and the Bernese Mountain Dog Club of Canada. Additionally, two regional clubs in Canada, members of the Australian Club, and the BMD Club of Great Britain also made donations. Histo is a type of cancer common in the breed, and one that often strikes them young. Joye has lost one Berner at 4 years of age and a second at 7 years old. According to Joye, if you have been in the breed longer than a year, you have either been directly affected by it, or you know someone who has lost a dog to Histo.

Joye lives in Pittsburg, PA with her husband, Bill; her first female Berner, Breeze; and their German Shorthaired Pointer, Will.



Kudos

Outstanding work from the Westie Foundation of America, Inc. for supporting Grant 1663-A for \$3,000.00!

Mr. George Pappas expressed his support by donating \$5,000 towards the Berner Lover DAF for research to benefit the breed.

Our sincere gratitude goes to the Gray Lady Foundation for donating \$25,000 towards canine cancer treatment research.

We applaud Coyote Classic dog shows for their unrestricted donation of \$1,250.00.

Many thanks to the Leonberger Health Foundation for contributing \$7,500 towards Grant 1678-A, 1651, and 1672-A.

We are grateful to the Kenneth A. Scott Charitable Trust, a KeyBank Trust for their recent grant of \$10,000 in support of the Genome Barks Podcast Series.

Hats off to the French Bull Dog Club of America for a successful fundraiser at their national specialty show and raising over \$7,400 in donations from individuals and the club for their DAF.

Donate Your Vehicle for Canine Health



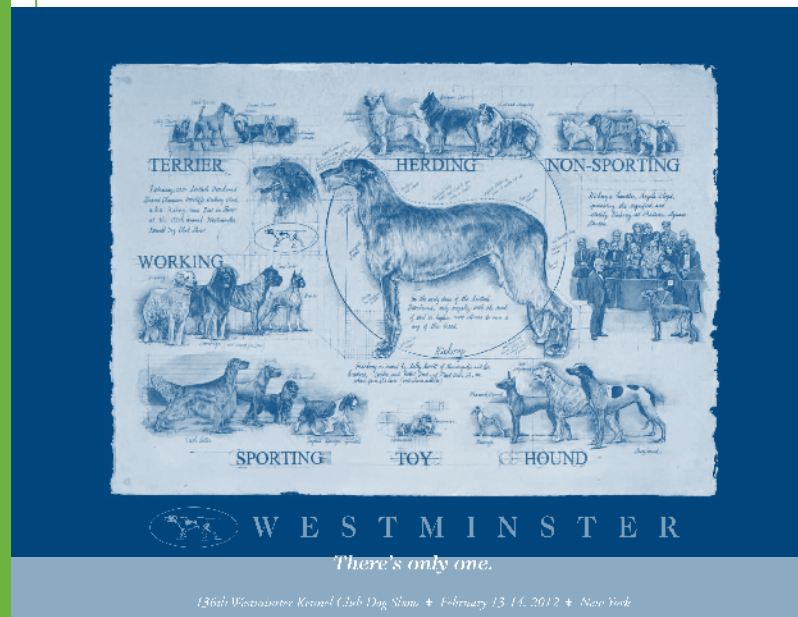
You can donate your vehicle to the AKC Canine Health Foundation through V-DAC (Vehicle Donation to Any Charity).

- Donate any vehicle, anywhere in the United States even if it doesn't run anymore!
- It is free, easy, quick, and a secure alternative to selling or trading-in yourself.
- There are potential tax benefits.
- Donate through the internet or over the phone.
- Proceeds will benefit the AKC Canine Health Foundation

Look for us on the V-DAC website (www.v-dac.com) as either "American Kennel Club Canine Health Foundation" or "Canine Health Foundation."

If you would like assistance or have questions please call us at 1-888-682-9696.

Westminster Kennel Club Dog Show Poster Will Benefit the AKC Canine Health Foundation



"Hickory" a pen, ink, and watercolor image produced on paper by noted illustrator Chris Duke has been selected as the winning artwork to represent the 136th Annual Westminster Kennel Club Dog Show February 13-14, 2012.

For the second consecutive year the contest was sponsored by the New York Academy of Art, which also selected five additional finalists. The winning image of the 2011 Best In Show winner will be utilized in a poster and in other club materials to promote the 2012 show.

Proceeds from sales of the poster will go to benefit the AKC Canine Health Foundation (CHF). CHF will also receive the original artwork. Posters will be available for sale at the dog show, or you can visit www.akcchf.org/wkcpster to order today!

Thank you Westminster Kennel Club for your support of the AKC Canine Health Foundation!



AMERICAN KENNEL CLUB
**CANINE HEALTH
FOUNDATION**
PREVENT TREAT & CURE®

Discoveries

Issue 39 • Winter 2011

THIS ISSUE FEATURES

Intervertebral disk disease (IVDD)

*What is Posture and Why Should
We Care about it?*

*Musladin-Leuke Syndrome
in the Beagle*

Champion of Canine Health: Joye Neff

Donate Your Vehicle

AKC CANINE HEALTH FOUNDATION

CHARITY COCKTAIL PARTY

PLEASE JOIN US FOR AN EVENING OF CELEBRATION HOSTED BY:
FRIENDS OF THE AKC CANINE HEALTH FOUNDATION

SATURDAY, FEBRUARY 11, 2012
6:00 – 8:00 PM

AFFINIA MANHATTAN
371 SEVENTH AVE, NEW YORK, NY

RSVP by January 27, 2012

**\$100 Per Person to Benefit the
AKC Canine Health Foundation**

TICKETS ARE AVAILABLE ONLINE AT WWW.AKCCHF.ORG
YOUR CONTRIBUTION IS TAX-DEDUCTIBLE AND HELPS DOGS LIVE LONGER, HEALTHIER LIVES.

Many of the photos are courtesy of American Kennel Club.

888.682.9696

WWW.AKCCHF.ORG

If it's been awhile please mail in a gift,
or donate online, so we can keep sending
you this publication filled with information
on canine health. Thank you!

PLEASE DON'T LET THIS BE YOUR LAST ISSUE!
IF YOU HAVE GIVEN RECENTLY, THANK YOU.

PO Box 90061
Raleigh, North Carolina 27675-9061

AMERICAN KENNEL CLUB
**CANINE HEALTH
FOUNDATION**
PREVENT TREAT & CURE®

