

2nd Quarter 2023
NewfCare:
RESEARCH & RESCUE

YOUR GIFT
THEIR FUTURE



The 2023 Newfoundland National Specialty was a huge success by any measure. Thank You, to all of our donors and NCA members that visited the Trust information booth at the National Specialty to chat with us, pickup information and bid on items in our raffles. Without your support our efforts to support Newfoundland Rescue and Health Research would not be possible.

A link to the **NCA Charitable Trust Annual Report** is included in this issue of NewfCare, so please take the time to click the link and see our accomplishments this past year.

May is Cancer awareness month! Our Newfoundlands are not immune to cancer - the 6th highest ranked health concern in the 2022 health survey affecting 11% of your Newfoundlands. The Newfoundland Charitable Trust is supporting research grants thru the Morris Animal Foundation and the AKC Canine Health Foundation for osteosarcoma, hemangiosarcoma and lymphoma research. Interestingly, these three cancer areas are the same top three listed on the recent Health Survey.

Your support of the NCA Charitable Trust with your donations to the Newfoundland Health Challenge allows the Trust to continue funding this important research.

Clyde E Dunphy DVM
NCA Charitable Trust Chairman

Research News



Evaluating a Probiotic to Treat Pyoderma Dominique Wiener, Texas A&M University, D21CA-820
Estimated End Date: 9/30/23

Morris Animal Foundation-funded researchers are evaluating a novel probiotic's potential as a safe and effective treatment for bacterial pyoderma, the most common skin disease affecting dogs. Recurrent infections often are treated with repeated antibiotic use, which can lead to a higher risk for development of antibiotic-resistant infections. Researchers hope this new therapy could be an alternative and safe treatment option for dogs with pyoderma.

The co-investigator of this study recently identified a bacterial strain with potent activity against *Staphylococcus pseudintermedius*, the primary cause of pyoderma in dogs. Researchers are evaluating the ability of this bacteria, used as a novel probiotic, to reduce *S. pseudintermedius* infections as well as the safety of its application to canine skin. So far, the team has investigated the ability of a topical application of the bacteria and its protein extract to reduce *S. pseudintermedius* under laboratory conditions using canine skin explants. Early data show that both the live bacteria and its protein extract are effective in reducing the



Rescue Report: Bruce

"Bruce" was surrendered to North Central Newfoundland Club's Rescue with another Newf when their family was evicted from their Iowa home. These Newfs were transported to foster care in central Illinois. After a few months of care and training they were placed in adoptive homes. "Bruce" is now "King" and his new family report, "It's as if he has always lived here!"

growth of *S. pseudintermedius* in bench experiments.

The team then investigated whether the bacteria and its protein extract are safe in healthy dogs, as a first step toward a clinical trial in dogs with pyoderma. Data showed only the protein extract on the skin of dogs was safe; the topical application of the bacteria caused skin irritation reactions. Next steps are to evaluate the protein extract's effectiveness in dogs with superficial pyoderma lesions and the ability of the extract in reducing *S. pseudintermedius* burden and its effect on lesions.

Findings will inform the development of the first probiotic therapy to treat superficial pyoderma in dogs, reducing the need of antibiotics and resulting resistant infections.

**Learn more about the NCA
Rescue Program and how
you can help.**

What We've Been Up To...

The Research Advisory Committee, lead by Lori Littleford, has been communicating with Erin E. Hecht, Ph.D. Assistant Professor, Department of Human Evolutionary Biology, Harvard University about her work looking at the relationship between dog brains and behavior.

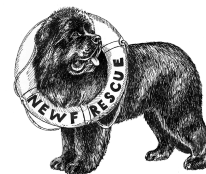
Minutes

January 2023

February 2023

March 2023

They are conducting a Life Experiences Study that will be looking at interactions between genetics and early life experience in the development of reactivity (fear and aggression). The goal is to understand if there are genetic risk factors that can amplify or attenuate the brain's sensitivity to stressful experiences like neglect or abuse. The genes they plan to examine are not unique to any one breed of dog, and they aren't trying to determine which breeds are "more aggressive" than others - rather, how individual genetics and experience interact in the brain to produce behavior. They will be scanning dogs that both do and do not have reactivity issues, both with and without early life stress.



We can help by participating in this online survey. **Please take a few moments and share information about your Newf's Life Experiences.**



Ways To Help



Understanding the Genetic Factors Associated with Forelimb Deformity

Vilma Yuzbasiyan-Gurkan, PhD, Michigan State University, D21CA-503



FINAL REPORT RESULTS: Researchers generate high-quality, long-read genomic assemblies of three Newfoundland dogs.

Morris Animal Foundation-funded researchers at Michigan State University generated high-resolution sequencing data on a Newfoundland dog affected by forelimb anomaly as well as on the dog's parents. The team is currently analyzing the data to look for variations that could be associated with the abnormality, with the ultimate goal of identifying a mutation that could form the basis of a genetic test for the disease.

Newfoundland dog forelimb anomaly is a deformity characterized by short stature and bowed, thickened front legs. Although early studies supported a simple recessive mode of inheritance, further research showed that disease manifestation is more complex.

Preliminary analysis revealed one genomic region of interest that contains a gene involved in bone and chondrogenesis, the process associated with cartilage development. Interestingly, this region is similar to a region on the long arm of chromosome 10 in humans, which contains a gene associated with spondyloepiphyseal dysplasia, a form of inherited chondrodysplasia that shares similarities to Newfoundland forelimb anomaly.

Long-read assemblies are becoming the backbone for understanding many genetic diseases which may result from not only coding variants, but, from structural changes in the genome. The data generated from this study will help identify both simple and complex genomic changes associated with Newfoundland forelimb anomaly as well as other diseases in the breed.

PRESENTATION:

Symposium, the 4th Precision Medicine Symposium at Michigan State University, "An Interesting and Unexplained Chondrodysplasia in Newfoundland Dogs. A Genomic Approach," October 2022



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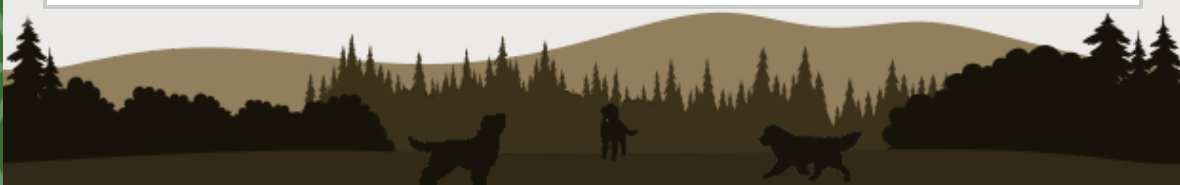


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Planned Giving

The NCA Charitable Trust has many planned giving opportunities, please contact us to learn more - - **Learn More**



NCA Charitable Trust

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