

Clinical Trials

A Mission for Molly



Molly, who was lost to canine epilepsy, and Moore at his information booth.

In May of 2006 Willard Moore set out on a journey to find a new companion, preferably a setter as he had grown up with and loved English Setters. A search on Petfinder located a likely candidate in a shelter in eastern North Carolina—a thin, shy, tan and white English Setter named Molly.

Molly settled in nicely to the Moore home and began to enjoy her life with her new family. About one month after her adoption, however, Moore witnessed Molly's first grand-mal seizure. Molly raised up, yelped, and fell to her right side with her jaws clenched and her legs thrashing. Moore and his wife tried to reach their veterinarian and were referred to a local emergency clinic. During this time, Molly had a second, then a third episode. She was hospitalized overnight and diagnosed with idiopathic epilepsy. Daily administration of the anticonvulsant drug phenobarbital was prescribed.

Moore was hopeful that the drug would control Molly's episodes but the violent seizures continued to worsen. Other drugs such as potassium bromide and rectal diazepam were added to her treatment regimen. The medications made her appetite and thirst insatiable. She would strip bark from trees, drink from the garden hose—all changes in behavior that can be side effects of the drugs. She continued to experience cluster seizures with several episodes in a row at any time of the day or

night. The seizures were difficult to witness, especially for Moore who had spent many days and nights next to her while her body continued to "misfire."

Additional months passed. Molly graduated from obedience class and enjoyed many great times with her family, but the epilepsy continued to take a toll on Molly and the Moore family. Molly's quality of life was slipping away and Moore grieved



for her and for the life she never had a chance to experience. After one long and particularly difficult night of watching Molly endure ever stronger seizures, Moore had a long discussion with his

veterinarian and made two fateful decisions. First, he contacted Erin Kennerly, a PhD candidate in the Department of Genetics at NC State who is studying the underlying genetic contributions to drug response in epileptic dogs, to draw a blood sample from Molly so drug response in treatment-resistant epileptic dogs could be better understood and potentially lead to predictive test for refractoriness. Second, Moore allowed his veterinarian to euthanize Molly and finally free the suffering dog from the devastating disease.

Molly's story may have ended there but Moore committed himself to help change the "face" of canine epilepsy. He contacted Dr. Karen Munana, an associate professor of neurology, who directs an epilepsy research program in the CVM Veterinary Teaching Hospital, as well as officials with the Epil-K-9 Foundation and AKC Canine Health Foundation. Moore began to distribute information related to the study of canine epilepsy at kennel club shows, agility trials, the CVM Dog Olympics, and numerous other canine events. By fall of 2008 he had attended more than 30 events, distributed hundreds of copies of clinical information, and met many

other "kindred spirits" whose lives have also been affected by pets with epilepsy.

"In Molly's honor, I created a traveling display booth to help spread the word about canine epilepsy," says Moore, adding, "I will always miss Molly. This crusade helps me to deal with the pain of the last ride we had together."

A fund has been established in Molly's memory as a part of the Seizure Studies Fund to help support projects related to the causes and treatment of canine epilepsy as well as education efforts about the disease. Moore and the spirit of Molly continue to make a difference toward a more complete understanding of epilepsy.

For more information or to donate to the Seizure Studies "Molly" Fund, contact julie_osborne@ncsu.edu.

Julie Nettifee Osborne, RVT

Genetics and seizures

Some five percent of dogs experience seizures and medication remains an effective cornerstone of treatment for two-thirds of this group that are identified with primary or idiopathic epilepsy. The other third, however, are resistant to medical therapy and these dogs never attain satisfactory seizure control even with treatment with two or more drugs at maximally tolerated doses.

Investigations underway in the CVM Veterinary Teaching Hospital are examining how genetics may play a role in why some dogs respond poorly to seizure medication. Dr. Karen Munana, associate professor of neurology, is collaborating in the first investigation, which evaluates the effect of a specific known genetic deletion in epileptic dogs of the herding breeds.

The second investigation, which has just been completed, examined genetic variation in phenobarbital responsive and non-responsive epileptic dogs to determine whether dogs that respond poorly to seizure medications have a specific genetic profile.

This study is a joint venture involving faculty in the CVM Department of Clinical Sciences and the Department of Genetics in the NC State College of Agriculture and Life Sciences.