



RESEARCH PROGRESS REPORT SUMMARY

Grant 02241: The City Dog Study: Dermatologic and Respiratory Disease among Inner-City Dogs Living in the Homes of Children with Asthma

Principal Investigator: Dr. Meghan F. Davis, DVM, MPH, PhD

Research Institution: Johns Hopkins University

Grant Amount: \$158,367.00

Start Date: 2/1/2016

End Date: 1/31/2019

Progress Report: Mid-Year 1

Report Due: 7/31/2016

Report Received: 8/20/2016

Recommended for Approval: Approved

(Content of this report is not confidential. A grant sponsor's CHF Health Liaison may request the confidential scientific report submitted by the investigator by contacting the CHF office. The below Report to Grant Sponsors from Investigator can be used in communications with your club members.)

Original Project Description:

We know that children who live in inner-city households of low economic means suffer disproportionately from skin and lung diseases, including asthma. We propose to evaluate the burden of skin and respiratory disease among the dogs who live with them. These dogs often can be hard to study because their owners may not have the means or access to take them to the veterinarian. Hence, we will use a funded public health research effort targeting 200 children with asthma to enroll 100 dogs and follow them at three home visits over six months. We also will perform two additional evaluations. First, we will study the microbial communities on the dogs to determine how these change over time and if these changes are associated with skin or respiratory diseases in the dogs. Then, we will look at how the children and the dogs share bacteria (i.e. microbiome). We know that early life exposures to dogs may protect children against the development of asthma, so we will investigate if dogs also have a beneficial impact to children when the children are older and have existing disease. Because children who are allergic to dogs may have worse asthma when they live with dogs, we will not study these few children but instead look at the many children who are not allergic to dogs. We hope that our work will provide knowledge needed to help underserved dogs in urban neighborhoods, supporting keeping dogs and keeping them healthy to benefit both dogs and their owners.



Report to Grant Sponsor from Investigator:

The City Dog Study is enrolling dogs that live with inner-city children diagnosed with asthma in order to understand the health of urban dogs that may or may not have routine access to veterinary care. We are interested in specific health outcomes related to skin and respiratory disease that will help veterinarians understand community incidence and triggers of these common ailments. In addition, we are studying how the dogs and children share bacteria and what role these bacteria play in promoting health. Because we evaluate the dogs over the course of six months, we are able to identify new cases and track changes over time. This work also will have implications for underserved dog populations and may help veterinarians better target care to disadvantaged urban communities.

The City Dog Study already has nearly a quarter of our target dog enrollment and will continue to enroll dogs through the end of 2017. We have found that we have tremendous diversity of dog breeds represented; nearly half of the dogs we have enrolled are small-breeds (e.g. Chihuahua, Jack Russell, Shih Tzu, Yorkshire Terrier). Our large breeds enrolled to date include Akita, American Staffordshire Terrier, Doberman, English Pointer, and mixed breeds. Understanding dog ownership in communities like the one we study may be helpful for breed rescue groups to better target their important services.

We also are providing training opportunities to students. Our team includes a veterinarian postdoctoral fellow who is learning critical skills in scientific leadership and gaining experience with research coordination, fieldwork, and molecular epidemiology. In addition, in summer 2016, we hosted a Meriel Veterinary Student Scholar, who conducted molecular laboratory analysis and data analysis in the City Dog Study cohort and presented her work nationally. This fall, we will welcome an additional postdoctoral fellow and a MPH student, both of whom are veterinarians. This training and experience provided by the City Dog Study is critical to build the next generation of veterinarian researchers.