



## RESEARCH PROGRESS REPORT SUMMARY

**Grant 02780:** Bladder Carcinogen Exposures in Pet Dogs

**Principal Investigator:** Lauren Trepanier, DVM, PhD

**Research Institution:** University of Wisconsin, Madison

**Grant Amount:** \$149,145

**Start Date:** 3/1/2020      **End Date:** 2/28/2022

**Progress Report:** End-Year 1

**Report Due:** 2/28/2021      **Report Received:** 2/16/2021

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*(The content of this report is not confidential and may be used in communications with your organization.)*

### **Original Project Description:**

Bladder cancer is an aggressive cancer that affects ~ 20,000 dogs per year, and often leads to euthanasia. Certain breeds have a higher incidence of bladder cancer but genetic studies even in the highest risk breeds have been inconclusive and still indicate influence from environmental exposures. The investigators propose that specific household environmental chemical exposures contribute to the risk of bladder cancer in dogs. In this study, they will measure urinary concentrations of five different chemicals that are known or suspected to be bladder carcinogens, in dogs with bladder cancer compared to unaffected dogs. The investigators will determine whether the presence of certain chemicals is associated with household exposures, based on owner questionnaires and household proximity to industrial sites. Finally, they will determine whether urinary chemical concentrations are linked to early DNA damage in the urinary cells of healthy dogs that do not have bladder cancer. The overall goal of this study is to provide veterinarians and dog owners with evidence-based bladder cancer prevention strategies.

**Publications:** None to date

### **Presentations:**

December 2020. Translational Medicine: How Our Environment May Increase the Risk of Cancer for Dogs and People. Podcast interview, What Your Dog Wants You to Know.  
<https://www.caninecanceracademy.com/podcast-ep-28>



January 2021. Environmental Cancer Risk in Dogs and People. CTSA One Health Alliance Interview: One Health: Untold Stories.

**Report to Grant Sponsor from Investigator:**

Right after our AKC Canine Health Foundation grant funding started in March 2020, our lab was closed for 3 months due to COVID-19 and has since been limited to 50% occupancy. In addition, our teaching hospital has had limited appointments since March 2020.

We finished a few validation experiments on our DNA damage assays that were needed before recruitment, and we have started recruiting dogs with bladder cancer and matched controls. We enrolled our first two new cases and two controls this month.

We also received additional funding from the University of Wisconsin to measure environmental chemicals in the air, household dust, and drinking water from case and control households. These assays will be performed in a subset of 25 households of dogs with bladder cancer and 25 control households.