



## RESEARCH PROGRESS REPORT SUMMARY

**Grant 02659:** Breed Specific Reference Ranges for Canine Thyroid Testing

**Principal Investigator:** Brian Petroff, DVM, PhD

**Research Institution:** Michigan State University

**Grant Amount:** \$139,975.00

**Start Date:** 6/1/2019      **End Date:** 5/31/2023

**Progress Report:** FINAL

**Report Due:** 5/31/2023      **Report Received:** 5/26/2023

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### **Original Project Description:**

Thyroid disease is common in dogs with the incidence of hypothyroidism approaching 30% in some breeds. Evaluation of thyroid function currently involves comparison of thyroid hormone concentrations in an individual patient with reference ranges generated from past testing of dogs of many breeds. However, while such all-breed reference ranges are generally accurate, they may not be optimal for some individual breeds, necessitating the generation of breed specific thyroid reference ranges. In thyroid testing specific for four breeds: Irish Setters, Rhodesian Ridgebacks, Borzois and Whippets, dogs will be examined and tested sequentially to insure a healthy cohort for generation of a breed specific reference range for a panel of thyroid function assays. Once completed this study will generate breed specific thyroid testing reference ranges for three dog breeds. This work offers immediate and tangible improvements in canine health by refining thyroid testing interpretation in purebred dogs.

### **Publications:**

We are preparing a manuscript currently, with plans to submit a manuscript in the summer of 2023, most likely to the American Journal of Veterinary Research.

### **Presentations:**

A portion of this research was presented at the MSU Phi-Zeta Research Day in October 2022. An additional presentation is being planned for the Endocrine Society meeting taking place June 2023.



### **Report to Grant Sponsor from Investigator:**

The goal of this work is to generate reference thyroid testing data using verified healthy dogs from four breeds: Afghan Hounds, Borzoi, Irish Setters, Rhodesian Ridgebacks. We have been working closely with the Rhodesian and Irish Setter breed clubs in order to collect samples at the specialty shows. We have also used a retrospective analysis of samples previously submitted to the MSU VDL to calculate reference ranges for the Borzoi and Afghan Hound breeds. This work presents statistical comparisons and preliminary reference ranges for the breeds. Further prospective studies are needed to confirm the retrospective reference intervals generated in this study. The work suggests differences in TSH that need to be confirmed and investigated further in Irish Setters. Data also suggest slightly lower T4 in the sighthound breeds examined. This is in agreement with previous studies in Whippets and Greyhounds.