RESEARCH PROGRESS REPORT SUMMARY

Grant 01584: Creation of a Conformation Score to Evaluate Susceptibility to Cranial Cruciate Ligament Disease

Principal Investigator:	Dr. Dominique J. Griffon, DVM PhD	
Research Institution:	Western University of Health Sciences	
Grant Amount:	$34,000.00	
Start Date:	1/1/2012	**End Date:** 6/30/2015
Progress Report:	Mid-Year 4 (Final)	
Report Due:	6/30/2015	**Report Received:** 10/9/2015

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:

A torn ligament in the knee, known as cranial cruciate ligament deficiency (CCLD), is the leading cause of lameness affecting the knees of large breed dogs. Our research focuses on ways to identify individual dogs that are susceptible to this problem and, ultimately, prevent CCLD. We previously developed a "CCLD conformation score" to differentiate limbs of Labradors with or without CCLD based on their characteristics. We later found that sound Labradors with a high "CCLD conformation score" displayed stride and body mechanics that could predispose them to CCLD. We intend to evaluate the ability of this score to predict CCLD and explore the genetic origin of the disease in a large pet population.

Purebred Labradors with CCLD and those at low risk for the disease will be recruited from several practices. Radiographs will be conducted to calculate the "CCLD conformation score" of each limb and and blood will be collected to compare genes between dogs. We will evaluate the ability of the "conformation score" to correctly identify the status of each limb and will refine our discriminating ability through the use of genetic information. This project will, for the first time, combine clinical and genetic diagnostic tools to investigate CCLD in a large population of dogs. These results will help us understand the relationship between genetics, body characteristics, and CCLD in Labradors. Ultimately, successful identification of dogs

predisposed to CCLD is the first and crucial step in developing strategies to reduce the risk or delay the onset of CCLD.

Grant Objectives:

To determine the predictive value of a "conformation score" in identifying CCLD in Labradors.

Publications:

Manuscripts in preparation.

Report to Grant Sponsor from Investigator:

A total of 167 Purebred Labradors with CCLD and those at low risk for the disease have been recruited from several practices. Radiographs have been obtained to calculate the “CCLD conformation score” of each limb. Measurements have been made and analyzed on a preliminary set of 158 limbs. Based on these results, the conformation score seems to have a high predictive value, supporting its potential role to detect Labradors at risk for CCLD. The lack of difference between right and left limbs within dogs suggests that the score on one limb may be used to predict the risk of CCLD in a dog. Once confirmed on a larger population, these results will help us understand the relationship between body characteristics and CCLD in Labradors. Ultimately, successful identification of dogs predisposed to CCLD is the first and crucial step in developing strategies to reduce the risk or delay the onset of CCLD.