SLO and Addison's Research
Blood Samples Needed

SAMPLES NEEDED for additional Whole Genome Sequencing from Bearded Collies with the health criteria listed below. **Owners will not have to pay** for shipping or blood drawing (see below). **Note:** The technique used for WGS requires fresh blood samples for DNA extraction. If you have previously submitted a dog's sample to the study (buccal or blood) and this dog meets any of the below criteria, you may resubmit this dog's sample.

1. **Six confirmed SLO cases** diagnosed by a veterinarian based on clinical findings and/or biopsy (with vet records) and no other health issues either confirmed or suspected, including any other immune disease such as Addison's, hypothyroidism, immune mediated hemolytic anemia, etc.

2. **Six confirmed primary Addison's cases** diagnosed by ACTH stimulation test with vet records/bloodwork results, diagnosed between 2-6 years old, and no other concurrent health issues including any other immune disease such as SLO, hypothyroidism, immune mediated hemolytic anemia, etc.

3. **Six healthy Bearded Collies over the age of 10 years** with no health issues either confirmed or suspected. These healthy dogs will serve as controls for both SLO and Addison's cases.

Sample Collection and Shipment

1. **Shipment of samples will be prepaid by the research laboratory.** Contact research assistant, Janelle Belanger jmbelanger@ucdavis.edu, for instructions on sample collection, health questionnaires and FedEx shipping account information. **Please note: shipping paid for by the owner cannot be reimbursed.**

2. **Reimbursement for blood drawing.** If veterinarian charges for this BeaCon will pay for that service.
    a. Be sure there is a separate charge for blood drawing on the bill
    b. Email or snail mail a copy of the bill to beaconbb@bellsouth.net or Elsa Sell, 764 Liberty Rd, Milner, GA
    c. A check will be mailed to you

SLO Research Summary
AKC CHF Acorn Grant # 02187-MOU (Investigating SLO in Bearded Collies)

Research Findings. With BeaCon's support, a genome-wide association study has been recently conducted by Dr. Anita Oberbauer's research team on 43 Bearded Collies (26 healthy dogs and 17 SLO cases), resulting in the identification of regions of association on two chromosomes. Genes that encode proteins for extracellular matrix remodeling of collagen can be found in the associated regions of both chromosomes and are very good candidates for disease involvement. Moreover, associated regions in one of the chromosomes contains many functional genes of the immune system, which may be relevant to understanding the genetic basis of SLO in the Bearded Collie. Whole genome sequencing (WGS) was performed on one SLO Bearded Collie to help refine the regions of association identified by the genome-wide association study. Candidate genes of interest are currently being sequenced in additional dogs to compare genotypes between cases and controls. Other funding sources have been used by the research team to generate whole genome sequencing data from healthy and Addisonian Bearded Collies, and this

data is also being utilized to compare to the WGS data from the SLO dog. WGS data allows the research team to better refine the regions of association and is an important component of the next step of this study.