Using microRNA in canine cancers for early diagnosis and outcome prediction

**Proposed Start Date:** May 3, 2021
**Name and Title of Proposed Supervisor:** Geoffrey Wood, Associate Professor
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**Department:** Pathobiology
**Restrictions:** DVM students only

**Brief Outline of Proposed Research Project:** Cancer is frequently detected at late stages in the disease when it has already invaded tissue and spread (metastasized) to other organs. A relatively new concept in the cancer field is the use of routine, non-invasive blood sampling as a “liquid biopsy” for early diagnosis and prediction of therapy outcome. We have collected blood and tumour samples from dogs with a variety of cancer types as well as normal dogs, and banked the plasma. The goal of this project is to analyze specific molecules called microRNAs and look for correlations to clinical outcome. Our aim is to discover the most clinically relevant and powerful predictive markers for cancer in dogs. In addition, we will use samples from the Golden Retriever lifetime study where plasma has been banked yearly from >3000 dogs, to compare microRNA from dogs that eventually go on to develop cancer to those that do not. The summer student will assist in microRNA isolation and quality assessment, running PCR arrays, and integrating the results with clinical outcome data. A graduate student will help with mentoring and training the student along with a technician and other students in the lab. Students are encouraged to participate in the Summer CORE program as well as other activities in the Department of Pathobiology, such as research seminars and pathology rounds.

There will also be an experiential learning component to this position involving exposure to veterinary post-mortem examination procedures. The applicant must be a DVM student and proof of immunity to rabies (a protective titre) is required.

**APPLICATION PROCESS**

Please email Dr. Wood your CV and transcript