

**ONTARIO VETERINARY COLLEGE**  
**Project Proposal Form:**  
**Summer Research Assistantship**



**ONTARIO**  
**VETERINARY COLLEGE**

**1. BASIC INFORMATION**

**Advisor Name:** Stefan Keller

**Department:** Pathobiology

**Proposed Start Date:** 2019-05-01

**CONTACT INFORMATION FOR STUDENT APPLICATIONS**

**Name:** Stefan Keller

**Phone Extension:** 54637

**Email:** smkeller@uoguelph.ca

**2. DETAILS OF PROJECT**

**Title of Proposed Project:**

Characterizing the immune response to canine osteosarcoma

**Outline of Proposed Research Project (please keep concise, approximately ½ page or less):**

Osteosarcoma is the most common tumor of bone in dogs and commonly fatal. A major challenge in managing patients is the lack of reliable prognostic markers and that cure is often not achieved. In humans, there is considerable interest in harnessing the adaptive immune system to predict outcome and to treat patients in different types of cancer. For this, it is important to gain a better understanding of anti-tumor immune responses. A novel method to characterize adaptive immune responses is immune profiling. Immune profiling identifies 'immune signatures' by high throughput sequencing of lymphocyte antigen receptor genes. The objective of this project is to profile anti-tumor immune responses in dogs with appendicular osteosarcoma and to correlate these data with survival. Lymph nodes from patients that underwent limb amputation have already been collected, the sequencing protocol has been established and patient survival data have been compiled for a previous study. The student will perform DNA extraction, polymerase chain reaction and next generation sequencing alongside an experienced technician or graduate student. If successful, this study could help to more reliably predict outcome in canine appendicular osteosarcoma..

**3. AVAILABLE ASSISTANTSHIPS**

Select assistantship most relevant to the proposed research project (multiple boxes may be checked).  
Please note restrictions.

**Andrea Leger Dunbar Summer Research Assistantship:**  
No restrictions

**James and Marjorie Pinkney Research Scholarship:**  
Projects in *animal health and welfare*, restricted to veterinary students



**OVC Summer Research Studentship:**

Restricted to veterinary students



**Boehringer Ingelheim (previously Merial) Veterinary Scholars Program:**

Projects in *veterinary medicine*, restricted to veterinary students