

ONTARIO VETERINARY COLLEGE
Project Proposal Form:
Summer Research Assistantship



ONTARIO
VETERINARY COLLEGE

1. BASIC INFORMATION

Advisor Name: Dr. John S Lumsden

Department: Pathobiology

Proposed Start Date: 2019-05-01

CONTACT INFORMATION FOR STUDENT APPLICATIONS

Name: John S. Lumsden

Phone Extension: 54716

Email: jsl@uoguelph.ca

2. DETAILS OF PROJECT

Title of Proposed Project:

Nutritional myopathy of seahorses

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

Seahorses are iconic and many species are at risk and so they are maintained by aquariums for display and conservation however their nutritional requirements are poorly understood. Drs. Lumsden and LePage (Ripley's Aquarium veterinarian and who will participate in this project) published the description of a myopathy in seahorses suspected to be due to a nutritional deficiency. Ripley's Aquarium donated 20 lined seahorses (*Hippocampus erectus*) for our research and their offspring are the subject of the proposed trial. A previous preliminary trial performed during last summer and fall examined replete and unsupplemented live brine shrimp diets. Seahorses at this early life-stage are only fed live foods as only 24-48 hr live brine shrimp are small enough. There was no difference in growth or feeding behaviour and a myopathy was not present. Live foods are nutritionally more complete so the proposed trial will involve larger seahorses weaned to two frozen diets, replete and deficient, and with treatments in triplicate tanks (6 tanks total, ~20 fish per tank). These fish are presently housed in the Hagen Aqualab on campus in Lumsden's research room. They are maintained by a team of volunteers who feed and observe the fish three times daily seven days a week.

The summer student will be responsible for feeding - three times daily (along with our existing volunteers) and maintenance of the seahorses tanks. The summer student will also grow the live food that is needed to feed the juvenile seahorses. (There are several other personnel who maintain the larger recirculation systems that house the seahorse tanks). The student will actively interact with graduate students, post-docs, Dr. LePage and myself. All of the knowledge for the project is in-house and will be transferred to the student. The student will participate in analysis of tissue and diets and in the histopathology of affected seahorses. The student will also be taught key aspects of marine recirculation systems and will also be involved to some extent in our marine research including corals. The student will also be expected to participate in the OVC CORE program.

The OVC student who participated in the seahorse project last summer is the first author of a case report presently under author review and to be submitted to the Journal of Fish Diseases.

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