

7/05/2021

**Graduate Studentship: University of Calgary Faculty of Veterinary Medicine, Canada**

**Investigation of macrocyclic lactone drug resistance in cattle lice and the development of rapid pen-side molecular diagnostics**

A graduate studentship (MSc or PhD) opportunity exists in the Gilleard laboratory, University of Calgary (<http://www.ucalgary.ca/jsgilleard/>) A start date is flexible but September 2021 is desirable.

Lice are an increasing clinical problem in beef cattle and there are increasing reports of louse populations being unresponsive to ivermectin treatment in north American beef cattle. The overall project goals are to investigate whether louse control failure in beef cattle is due to ivermectin resistance as well as to develop better diagnostic methods to assess louse infestations and inform treatment/control decisions. This RDAR-funded project has three specific objectives: Objective 1: Develop and use high throughput next-gen DNA sequencing approaches to identify louse species and genetic subpopulations present in beef cattle before and after ivermectin pour-on treatments. Objective 2: Determine whether louse populations are developing phenotypic macrocyclic lactone (ivermectin) resistance using experimental infestations and *in vitro* assays. Objective 3: Develop and test a rapid, sensitive and semi-quantitative pen-side test for lice based on Loop-mediated isothermal amplification (LAMP) technology.

This is an excellent opportunity to undertake important and novel research, develop expertise in parasitology/entomology and in cutting-edge next generation sequencing and molecular diagnostic approaches. The graduate student will join a research group of 10-15 members and will interact with a wider vibrant team of infectious disease, genomics and bioinformatics researchers. They will receive a competitive stipend and be enrolled in the Veterinary Medical Sciences graduate program <https://vet.ucalgary.ca/future-students/graduate-students/how-apply>. They will also be a member of our award-winning Host-Parasite Interactions (HPI) research training network which comprises 19 principal investigators and >70 trainees engaged in community engagement and professional development activities <https://ucalgary.ca/host-parasite-interactions>.

The candidate should have an excellent academic record with a strong interest in learning molecular biology, genomics and molecular diagnostics approaches to tackle important problems in animal health. An interest in parasitology and/or livestock entomology is also an advantage.

Calgary is a vibrant, multicultural city of ~1,400,000 people near the Rocky Mountains, Banff National Park and Lake Louise. The University of Calgary is a research-intensive, comprehensive university that supports innovation in research, education and service to the community.

For enquiries or further information please email Dr John Gilleard at [jsgillea@ucalgary.ca](mailto:jsgillea@ucalgary.ca).