# Current Alberta Research Projects

**Improving and putting parasite molecular diagnostics to work**

**Applicant:** University of Calgary – Dr. John Gilleard

**Timeline:** September 2018 – December 2022

- Monitoring the impact of two new anthelmintic drugs on Western Canadian sheep flocks.
- Roundworms cause major disease and production loss in Canadian sheep.
- Control depends on anti-parasitic drugs but resistance to current drugs is now widespread. Two new anti-parasitic drugs have been recently licensed for sheep in Canada and it is imperative to avoid parasites becoming resistant to these.
- This project will develop novel molecular diagnostic methods to undertake surveillance for the emergence of resistance to these new drugs as well as monitor resistance to the older drugs.

**Developing Nanopore DNA Sequencing for Routine Molecular Diagnostic of Gastrointestinal Nematode (GIN) Parasites and Drug Resistance in Ruminants**

**Applicant:** University of Calgary – Dr. John Gilleard

**Timeline:** September 2022 – August 2025

- This proposal will lever our previous “nemabiome” work which has provided surveillance tools to monitor anthelmintic drug resistance emergence.
- The limitations of those tools developed in previous studies are that they are only suitable for research or large-scale surveillance.
- The aim of this new project is to develop more routine diagnostic tools to help veterinarians and producers direct more effective and sustainable parasite control as part of flock health programs.
- The aim is to provide rapid flexible assays suitable for routine diagnostic use on fecal samples based on nanopore sequencing technology.

**Sheep & Goat Vegetation Management Accreditation Program Project**

**Applicant:** Alberta Lamb Producers

**Timeline:** May, 2022 – March, 2024

- To develop a series of modules for Alberta Sheep and Goat producers to learn best practices for grazing forages under normal and unique circumstance.

- Modules will form a sheep and goat vegetation management accreditation program curriculum, that will be offered by post secondary institutions.
- Stakeholders requiring or offering vegetation management services, using livestock, will use these resources for contract and partnership development.

**Metabolomics and genomic identification of predictive biomarkers related to sheep parasitic infection**

**Applicant:** Olds College – Sean Thompson

**Timeline:** September 1, 2021 – June 30, 2024

- Identification and quantification of a panel of predictive blood markers of sheep parasitic infection

**Adaptation and development of the anesthetic elastrator band for use in the Canadian lamb industry**

**Applicant:** Alberta Lamb Producers

**Timeline:** March 1, 2022 – December 31, 2022

- Chinook Contract Research Inc. (CCR) has developed a novel anesthetic delivering elastration ligation band. The LidoBand™ can be used with all current elastrator tools.
- It has been designed to deliver a clinically relevant therapeutic dose of anesthetic for the duration of its application(s).
- CCR has partnered with Alberta Veterinary Laboratories/Solvet (AVL/Solvet) to manufacture the device in Alberta.
- Studies are in progress to register this device for sale in Canada with a pain mitigation label claim for use in cattle. This product was developed at the request of Alberta's beef cattle industry to provide an inexpensive and efficient way to deliver anesthesia during castration.
- The purpose of this project is to adapt this novel made-in- Alberta welfare technology for use in Alberta's lamb industry for welfare friendly tail docking and castration applications

**Efficacy of Ovipast Plus Vaccine in reducing bacterial pneumonia in preweaned lambs and feedlot lambs**

**Applicant:** Alberta Lamb Producers

**Timeline:** February 1, 2021 – July 31, 2022

- Evaluate the efficacy of Ovipast Plus bacterin to reduce morbidity and mortality from pneumonia in preweaned lambs by vaccinating ewes twice prior to lambing to boost colostral immunity.

- Evaluate the efficacy of Ovipast Plus bacterin in weaned lambs to reduce morbidity and mortality from pneumonia by vaccinating them twice, at weaning and boosting them a few weeks later.

**Smart handheld technology for automatic blood analysis: Innovate prediction of sheep pregnancy and litter size.**

**Applicant:** Lakeland College – Susan Markus

**Timeline:** August 2, 2021 – July 30, 2023

- To develop a single handheld point-of-care device capable of accurately detecting both sheep pregnancy and estimating litter size at ~50 days.