



PHD FELLOWSHIP OPPORTUNITY

“Genetic diversity of multi-drug resistant *Teladorsagia circumcincta*”

Walsh Fellowship Ref Number 2016110

Background

Grazing sheep are naturally exposed to gastrointestinal nematodes which can result in ill-thrift, decreased production of meat and wool and in some severe cases may result in death. Nematode control is highly dependent on the availability of efficacious anthelmintics, however the intensive use of these drugs has quickly led to the development of anthelmintic resistant nematodes. In temperate regions of the world resistance has occurred almost exclusively in one species, *Teladorsagia circumcincta*. In addition, simultaneous resistance to multiple drugs has been described for this species in Ireland, New Zealand and other countries. Recently there have been reports of the rapid development of resistance to a new anthelmintic class, and this has always occurred in multi-drug resistant worm populations. This project tests the hypothesis that multi-drug resistant *T. circumcincta* are more genetically adaptable in their responses to stress than susceptible nematodes i.e. they are more genetically diverse with higher mutation/recombination rates and that selection for drug resistance leaves a genomic signature. Anthelmintic resistant populations of *T. circumcincta* from Ireland and New Zealand will be identified, isolated and subjected to genome sequencing in order to compare with susceptible isolates.

Requirements

Applicants should have a primary degree (First Class or Second Class First Division Honours) or M.Sc. in an appropriate discipline (Biology, Agricultural Science, Zoology, Molecular Biology or a related subject). The successful candidate should be highly self-motivated and be prepared for field work, laboratory work and bioinformatics/analysis. A full driving licence is also required.

Award

The PhD Fellowship is a joint research project between AgResearch, the University of Otago and Teagasc, the Irish Food and Agriculture Development Authority. The student will spend periods of time in both New Zealand and Ireland and will be registered at the University of Otago, under the supervision of Prof. Robert Poulin. The Fellowship will start when a suitable candidate is appointed.

The fellowship provides an annual stipend of NZ\$25,000 for 4 years, as well as covering University fees.

Further Information

For further information please contact one of the project supervisors: Dr John McEwan (john.mcewan@agresearch.co.nz), Dr Orla Keane (orla.keane@teagasc.ie), Prof Robert Poulin (robert.poulin@otago.ac.nz) or Dr Dave Leathwick (dave.leathwick@agresearch.co.nz).

Application Procedure

Submit an electronic copy of Curriculum Vitae and a letter of interest (including names and email addresses of two referees), as a single PDF file, by 31st October 2016 to:
Prof Robert Poulin (robert.poulin@otago.ac.nz)