UNIVERSITY of OTAGO

Te Whare Wānanga o Otāgo

NEW ZEALAND

Postdoctoral Opportunity

Parasitic Puppeteers - How do They Pull the Strings?

We are currently seeking an outstanding postdoctoral researcher with interests in genetics, evolution and parasitology to spearhead a new project to investigate the molecular mechanisms through which parasitic worms alter the behaviour of their insect hosts.

The position is funded by a grant from the Royal Society Marsden Fund and is available with an immediate start through to 29/2/2020.

Project Description: Parasites can have profound effects on the animal hosts they invade, manipulating host biology with exquisite precision to enhance host-to-host transmission. One of the most extraordinary of these host manipulations is the water-seeking behaviour that some nematodes and hairworms induce in their hosts so that the worms might exit the host and reproduce. The process is the stuff of science fiction; the worm hijacks the host's central nervous system forcing it to seek water. Once water is found the adult worm, often many times the size of the host, emerges, sacrificing the host. This amazing alteration in behaviour is induced by parasitic worms spanning two phyla (Nematoda and Nematomorpha) and is observed in a variety of arthropod hosts, notably crickets, weta, earwigs, and sandhoppers, leading us to hypothesise that a common and conserved mechanism is being utilised by the parasites to induce this behaviour in their hosts. Here we propose to couple field and laboratory studies of two phylogenetically distinct hosts and their parasites, with powerful genomic and bioinformatic comparisons to elucidate the trigger and genetic cascade through which these parasitic puppeteers elicit this highly conserved, yet astonishing behavioural response.

The project emerges from a new Marsden Grant headed by Professor Neil Gemmell (Anatomy) in collaboration with Professor Robert Poulin (Zoology) and will be based in the Gemmell laboratory at the University of Otago.

The Ideal Candidate: will possess experience in molecular genetics/genomics, evolutionary biology and bioinformatics. Knowledge of NGS approaches and analyses is essential, while past work in comparative genomics and an interest in parasitology and neurobiology may be helpful. The successful candidate will be motivated and organised, with a demonstrated capacity to master the broad skill set necessary for the successful completion of a research project. They will be collegial and able to work alongside a wide variety of people. In addition they will have a strong commitment to research excellence with a track record of high research productivity based on international, peer-reviewed publications commensurate for their career stage.

How to Apply: Interested applicants are encouraged to make informal enquiries to Professor Neil Gemmell. Please send your Curriculum Vitae, a sample of your best scientific work and the names of three referees with a covering letter to:

Professor Neil J. Gemmell
e-mail: neil.gemmell@otago.ac.nz

Formal Applications must be made at: https://otago.taleo.net/careersection/2/jobdetail.ftl?lang=en&job=1700616

Salary Level and Range: Postdoctoral Fellow ($74,896)

Reference Number: 1700616

Closing Date: 21 April 2017