

Host-parasite interactions offer fascinating opportunities to study coevolution, local adaptation and rapid evolutionary change. Our work uses a unique experimental system of up to 50 species of *Drosophila* and naturally occurring RNA viruses to ask fundamental questions about pathogen host shifts – where a pathogen jumps from one host species to another. Host shifts are a major source of emerging infectious diseases, with HIV, Ebola virus and SARS coronavirus having all jumped into humans from other host species. By taking a comparative approach, with a strong set of hypotheses from ecological and evolutionary theory, we can provide insights into the factors underlying host shifts that will be generally applicable to any group of hosts or viruses.

Understanding pathogen host shifts is critical, especially in light of environmental change. Our model system has provided key insights into host shifts, namely the importance of genetic similarity between hosts. Based on work in *Drosophila melanogaster*, we know the interactions between host antiviral immunity and the ability of the virus to suppress this immune response, can play a role in explaining differences in susceptibility. The initial aim of the postdoc is to examine why viruses can infect some hosts and not others by looking at how the viral suppressor of immunity functions in different host species, and how this influences patterns of susceptibility across the host phylogeny, but there are many opportunities to develop new projects to explore the ecology and evolution of pathogen host shifts.

The successful applicant will be responsible for leading experimental work, data collection and analysis, working closely with the PI and collaborators. The post will be based at the University of Exeter in the internationally excellent Centre for Conservation and Ecology <https://www.exeter.ac.uk/cornwall/research/facilitiesandcentres/cec/>. The centre has a huge number of researchers working in ecology and evolution, including a large group of researchers working on host-parasite interactions (including Prof Angus Buckling, Prof Camille Bonneaud, Prof Edze Westra, Prof Robbie McDonald, Dr Alex Hayward and Dr Stineke Van Houte) and provides an exciting and stimulating research environment.

The postdoctoral fellow will also have opportunities to spend time working in the labs of collaborators Prof Ronald Van Rij (Radboud Institute for Molecular Life Sciences, Nijmegen, the Netherlands <https://vanrijlab.org/>) and Dr Darren Obbard (University of Edinburgh, UK <http://obbard.bio.ed.ac.uk/>) to develop additional skills and experience.

Some relevant papers for the project from our groups are listed below:
<https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1004728>
<http://genesdev.cshlp.org/content/20/21/2985.long>
<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002210>

Please highlight in your cover letter why you would like to work in our group (www.benlongdon.com), why you are interested in this project, and how your skillset/experience is relevant. If you think you might be a great fit for this position but are unsure on whether you have relevant experience, please get in touch before applying, happy to consider applicants from different backgrounds.

Informal enquiries strongly encouraged to Dr Ben Longdon, e-mail b.longdon2@exeter.ac.uk.

The position is for 2 years, with possible extension.