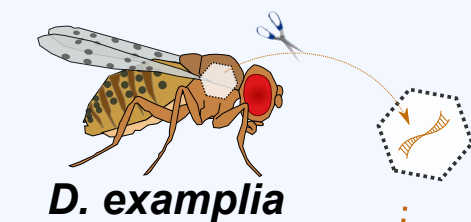
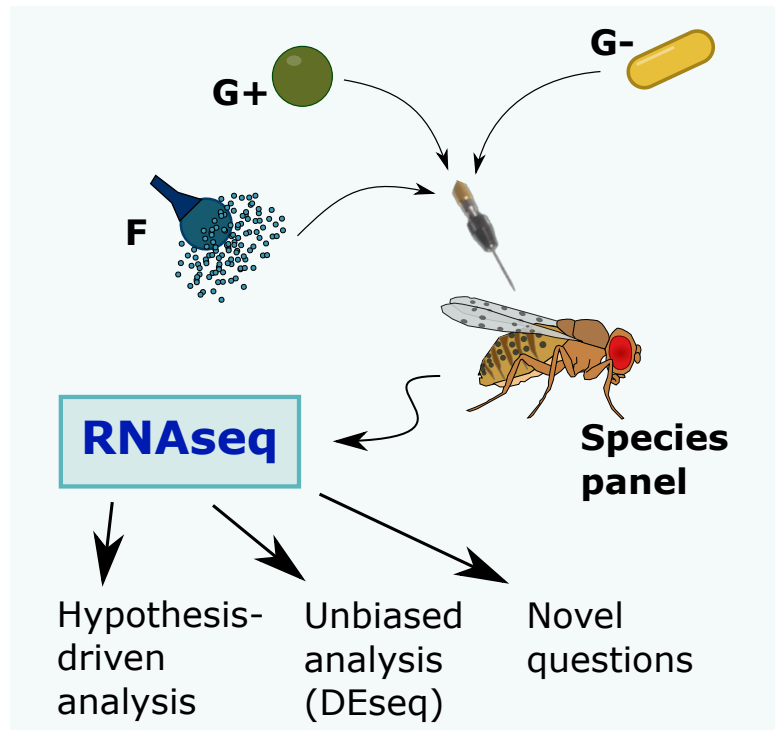
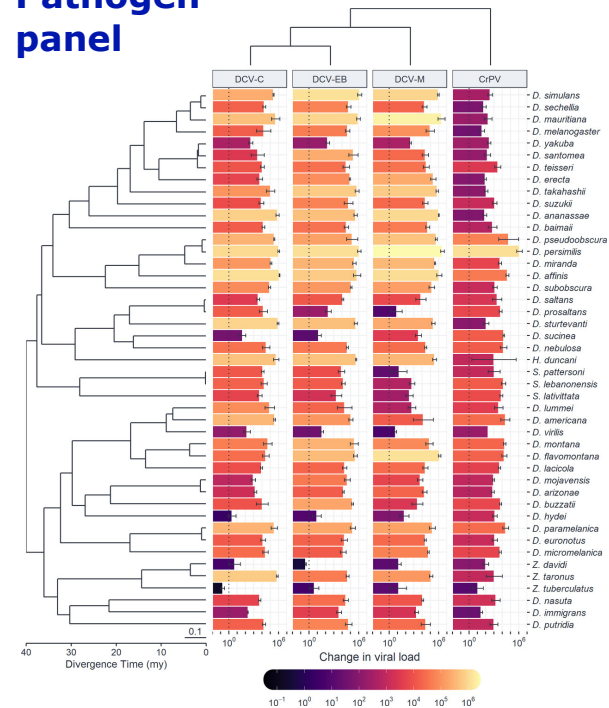


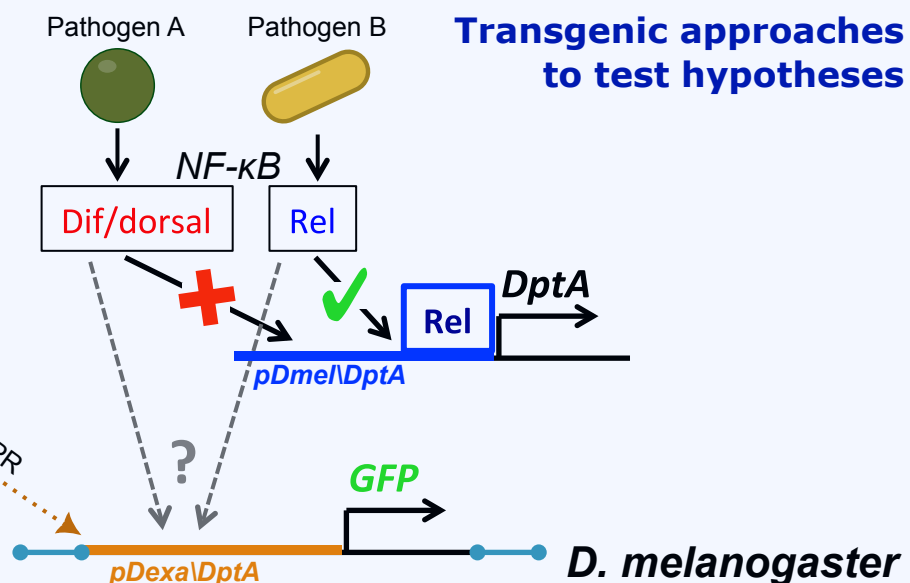
# Evolutionary mechanisms underlying differences in the innate immune response to infection

**Supervisory team:** Mark A. Hanson, Ben Longdon, Helen White-Cooper

## Pathogen panel



## Transgenic approaches to test hypotheses



University of Exeter  
CARDIFF UNIVERSITY  
SWBO  
Application deadline  
Dec 11th 2024  
Contact:  
m.hanson@exeter.ac.uk

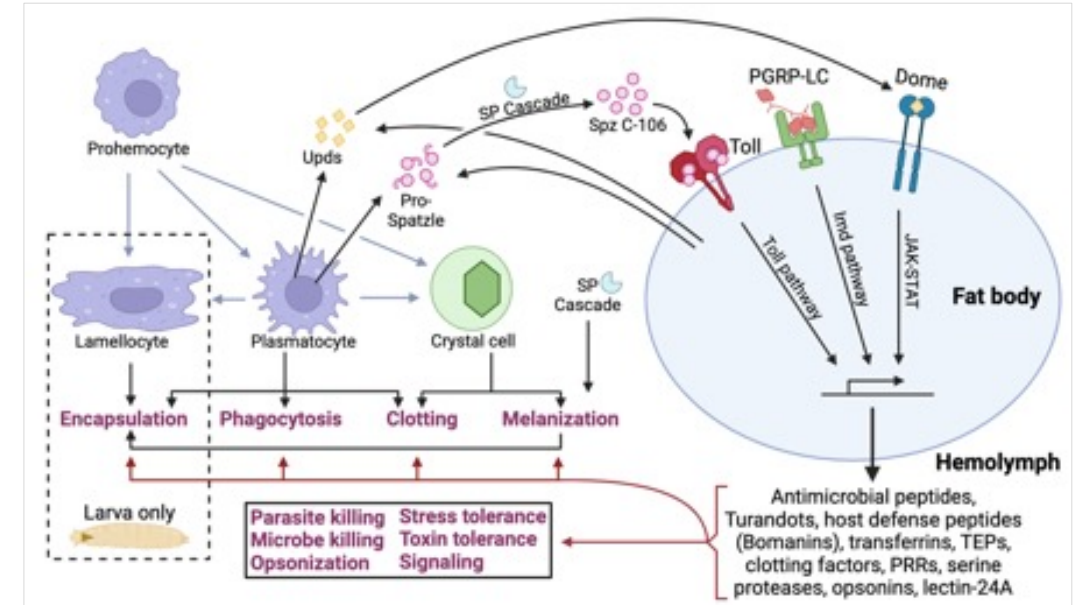
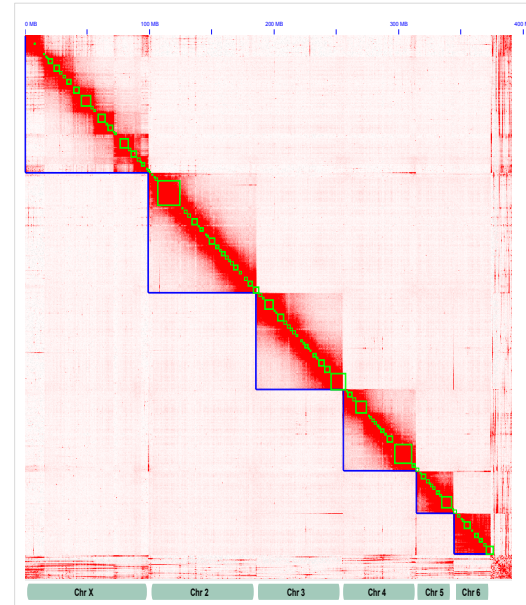
Host species vary markedly in susceptibility to infection. Animal immune pathways are widely conserved, including Toll-like receptors regulating NF-κB immunity. However, the realised defence response of related species can differ drastically. To understand why, the interested student will use *Drosophila* as a model species group to learn **1)** how immune activation differs across a systematic panel of related species, **2)** how information flows through immune pathways differently, and **3)** study molecular evolution to test candidate genes for causative differences in the activation of the immune response. This work is part of the BBSRC remit for Tackling Infections and Integrated Understanding of Health. The interested student is encouraged to reach out ahead of the application deadline to discuss the project with MAH.



University  
of Exeter

# Characterising the immune repertoire of a global crop pest *Myzus persicae*

Supervisory team: Dr Mark Hanson, Dr Bartek Troczka, Prof Chris Bass



Aphids are economically important insects. Their immune systems are poorly-studied, and what is known suggests aphid immune evolution plays by different rules. Interested candidates will investigate fundamentals of innate immune evolution, and at the same time reveal how aphids interact with potential parasites and pathogens. The increasing need to adopt non-chemical biocontrol strategies makes aphid immunity an especially important knowledge gap to fill. The interested student will perform infections and use bioinformatic approaches in aphids and *Drosophila* as a model to learn how innate immunity functions in this economically important insect group.

**China Scholarship Council**  
**PhD studentship opportunity**

<https://www.exeter.ac.uk/study/pg-research/csc-scholarships/environment/>

**For more information, email:**  
[m.hanson@exeter.ac.uk](mailto:m.hanson@exeter.ac.uk)

**Ideally email by:** Nov 22nd 2024

**Application deadline:** Dec 2 2024