Project Title: Cross-reactive immune responses to Nairoviruses – CCHFV and NSDV

Supervisors: Emmanuel Maze, Anna Ludi & Georgina Limon-Vega
Research group: Mucosal Immunology/Vesicular Disease Reference Laboratory/Transmission Biology

Project Summary:

Bunyavirales is a huge order of viruses with over 300 species. Our project focuses on the two main species of virus relevant for livestock and human health: the Nairobi sheep disease virus (NSDV) that causes severe haemorrhagic disease in sheep and goats [Baron and Holzer 2015] and the Crimean-Congo haemorrhagic fever virus (CCHFV) causing severe haemorrhagic disease in humans with livestock playing a key role to keep the virus circulating [Ergonul 2006]. Our interest is on the dynamics of circulation of each agent in the field using serological approaches such as Enzyme linked Immunosorbent assays (ELISA) and virus neutralisation tests (VNTs). However, CCHFV and NSDV share antigenic similarities [Casals and Tignor 1980; Davies et al. 1978]. As a result, cross reaction might occur in places where both viruses are circulating with important implications for livestock surveillance programmes. This project will aim to get a holistic understanding of the magnitude of such cross-reactions using different serological techniques in samples previously collected.

Depending on progress, the successful student may undertake the following in the duration of the research project:

- ELISA
- Viral neutralisation assay
- NSDV virus amplification in vitro
- Virus titration via TCID50 and Plaque assay
- Virus staining in cell lines in vitro

References for Suggested Reading:


To Apply:
Please email your CV (no more than two sides of A4) and a covering letter detailing why you would like to undertake the placement and the knowledge and skills that you will bring to the Institute to lucy.drudge@pirbright.ac.uk

Closing date to apply: 02.05.2021