MRC-funded IMPACT (Integrated Midlands Partnership for Biomedical Training) Doctoral Training Partnership 3.5 Year PhD Studentship available for September 2019

Department:  Department of Genetics and Genome Biology, University of Leicester

Supervisors: Dr. Chris Bayliss, Dr. Derek Hood, Dr. Luisa Martinez-Pomares

Eligibility:  UK/EU applicants only

Project Title:  Impact of hypermutable sequences on microbial elicitation and evasion of host immune responses

Project Description:
Non-typeable Haemophilus influenzae (NTHi) cause multiple human diseases including otitis media, the commonest bacterial infection in children. This disease involves influxes of host immune modulators into the middle ear in response to bacterial infection\(^1\). Infections are often chronic due to poor antibiotic efficacy and ineffective immune responses. Multiple genes of NTHi undergo phase variation (PV) mediated by mutations in repetitive simple sequence DNA tracts. PV changes the expression of virulence determinants, such as lipopolysaccharide epitopes and iron-binding proteins, and allows the bacteria to evade or manipulate host immune responses\(^2\).

This project aims to determine how PV controls elicitation of host immune responses, survival of killing by immune effectors and induction of disease symptoms. The project will involve PCR-based analysis of repetitive DNA to monitor PV; engineering of mutant strains; assaying disease phenotypes in infection models such as interaction of bacteria with immune and epithelial cells and infections in mouse models of otitis media.

Cross-institutional supervision will provide a comprehensive training opportunity across multiple institutions; bacterial genetic research undertaken with Dr. Chris Bayliss at the University of Leicester; experimental models of infection with Dr. Derek Hood at MRC Harwell; and immunological assays with Dr. Luisa Martinez-Pomares at the University of Nottingham.

Interviews will be held in the week commencing the 11\(^{th}\) February 2019.

References:


Funding details:  MRC IMPACT DTP
Entry requirements:
Applicants are required to hold/or expect to obtain a UK Bachelor Degree 2:1 or better in a relevant subject. The University of Leicester English language requirements apply where applicable.

How to apply:
Please apply via: https://more.bham.ac.uk/mrc-impact/phd-opportunities/

Project / Funding Enquiries: Please contact Dr. Chris Bayliss, telephone 0116 2523465 or email cdb12@le.ac.uk, for further information.

Application enquiries to mrc-impact@contacts.bham.ac.uk

Closing date for applications 20th January 2019