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

**Department:** Departments of Respiratory Sciences and Genetics and Genome Biology

**Supervisors:** Professors Mike Barer and Martha Clokie

**Eligibility:** UK/EU applicants only

**Project Title:** Detection of pathogen-specific bacteriophages in face-mask samples to distinguish colonisation from infection in exacerbations of chronic lung disease

**Project Description:**

Bacteriophages are surrogate indicators of the bacterial populations they infect; they are also readily aerosolised. In this project we combine two leading edge research programmes at Leicester to investigate how phages may be used to better understand and manage the lung diseases chronic obstructive pulmonary disease (COPD) and asthma in which the airways contain high microbial populations. When people suffer deteriorations (exacerbations) culture often detects pathogens and, despite weak evidence that these organisms are responsible, patients are treated with antibiotics. The student will use our Mask Aerosol Sampling System (MASS) to take exhaled breath samples from patients when stable and when unwell and will focus on analysis of the exhaled phage population in these samples. A central hypothesis is that bacteria involved in disease pathogenesis will be stressed and more likely to induce phage activation; we already know that phages are abundant in respiratory samples.

The work will be supported by the respiratory section of our NIHR Biomedical Research Centre and ongoing studies on COPD and asthma. The student will learn novel techniques in aerobiology, metagenomics and phage biology as well as key aspects of working with patients (ethics, consent and study power assessment).

Interviews will be held in the week commencing the 11th February 2019.

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: Mike Barer (mrb19@le.ac.uk; 0116 252 2933); Martha Clokie (mjrc1@le.ac.uk; 0116 252 2959)

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

Closing date for applications 20th January 2019