NHS
Cambridge
University Hospitals
NHS Foundation Trust

UNIVERSITY OF CAMBRIDGE

Academic Clinical Fellowship

In

Medical Microbiology

OR

Infectious Diseases and Medical Microbiology

(ST3)

One post

Entry: August 2027

Job title	Academic Clinical Fellow in Medical Microbiology OR Infectious Diseases and Medical Microbiology
Post(s)	ACF-2027-37-001 – Response Mode – Medical Microbiology OR Medical Microbiology/Infectious Diseases NIHR post allocated via UK Health Security Agency (UKHSA)
NIHR Priority Research Theme	Post **ACF-2027-37-001** has been awarded under the research theme Response Mode. The appointee will be expected to develop a research programme in that theme area.

These posts will attract an Academic National Training Number – NTN(a)

Duration and Outcome

The successful applicant will be a medical graduate who wishes to pursue a career that combines excellence in academic and clinical microbiology, including candidates who wish to dually train in infectious diseases and clinical microbiology. This post will be appointed at ST3 level and is funded for three years. The principal aim of the ACF scheme is to allow academically gifted clinical trainees the opportunity for 25% protected research training and during that time to formulate and submit an application for an externally funded Research Training Fellowship (RTF) (e.g. Medical Research Council, National Institute for Health and Care Research). If candidates are unsuccessful in obtaining funding for an RTF/PhD, they can transfer into non-ACF ST3+ posts and pursue full-time clinical sub-specialty training. It is anticipated that all successful ACFs completing RTFs would be in a strong position to compete for Clinical Lecturer posts following award of their higher research degree, as per the Integrated Academic Training programme.

NHS Organisation(s) in which training will take place

Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust and UKHSA Clinical Microbiology and Public Health Laboratory (CMPHL), with possible rotation to regional hospitals.

Research Institution(s) in which training will take place

University of Cambridge and Cambridge University Hospital NHS Foundation Trust.

Day release or block release for protected research time?

It is anticipated that the successful applicant will be available for research on a block basis (e.g. 3-9 months durations) comprising 25% WTE over three years. This will be subject to negotiation.

Description of the Research Component

The ACF would have 25% of their time allocated to research. It is anticipated that this would be taken as a three-month block every year, although the department would be flexible about this. To facilitate this, and depending on previous experience of the appointee, there is an opportunity to rotate through research disciplines and groups.

The appointee will be encouraged to find a research niche in infection, of which an extensive variety of options exist in Cambridge (see Research Environment below). The successful candidate will be allocated laboratory space as required. During the course of the Academic Clinical Fellowship, the trainee would be expected to develop their own PhD research proposal, and to apply for funding. They will be strongly encouraged to apply for prizes, grants, scholarships and fellowships as well as to attend national and international meetings.

The Research Environment

Cambridge has a strong track record in microbiology and infectious diseases research with a number of groups working on basic science and clinical studies. Academic microbiology was established in Cambridge in 2009 with the appointment of Professor Peacock to the Chair of Clinical Microbiology. In 2019 Professor Ravi Gupta took up the Chair and leads a research program on viral evolution and biological characterisation of virus escape from therapeutics and vaccines, with a focus on HIV and SARS-CoV-2. He is also Faculty at the Wellcome Africa Health Institute in Durban and heads the NIHR Cambridge BRC Infectious Disease Threats theme.

Current diagnostic and translational microbiology research themes within the Clinical Microbiology department are focused on the utility of high-throughput whole genome and metagenomic sequencing technologies in diagnostic and public health microbiology. The Trust has benefited from fully electronic records for over 10 years enabling large-scale clinical and epidemiological analyses, including a number of infection dashboards supporting antimicrobial stewardship and infection control.

In the **Department of Medicine** (https://www.med.cam.ac.uk), Dr Ewan Harrison's group uses genomics to understand the biology and evolution of upper respiratory tract microbiome and bacterial and viral pathogens, as well as to track the transmission of antimicrobial resistant and nosocomial pathogens He collaborates closely with Dr Theo Gouliouris on clinical and public health applications of pathogen genomics and their integration with epidemiological analyses. Dr Mark Wills' group studies the control of HCMV infection by the immune system. Dr Gkrania-Klotsas leads clinical trials, including early-phase, in the theme of infection and supervises trainees who wish to attain NIHR Associate PI certification.

In **Cambridge Institute for Medical Research** (http://www.cimr.cam.ac.uk), Professor Michael Weekes's group uses quantitative multiplexed proteomic approaches to characterise sensing and

host restriction of intracellular pathogens, particularly human cytomegalovirus and mpox virus. Professor Julian Rayner seeks to understand the interactions between Plasmodium parasites and human cells, in order to identify and prioritise new drug and vaccine targets. Professor Jeanne Salje's group studies how obligate intracellular bacteria survive in their cellular hosts and cause human diseases such as scrub typhus.

In the **Cambridge Institute of Therapeutic Immunology & Infectious Disease**, as mentioned above, Professor Ravi Gupta's group studies viral evolution and characterises virus escape from therapeutics and vaccines, with a focus on HIV and SARS-CoV-2. Professor Paul Lehner's group uses functional genetic and proteomic technologies to study how viruses evade the immune system, with particular reference to silencing and depression of retroviruses, including HIV. Dr Nicholas Matheson's group studies viral and cellular regulation of immunometabolism. Professor Sam Wilson's team studies how coronaviruses and influenza viruses adapt to humans and the molecular processes that lead to severe disease.

In the **Molecular Immunity Unit at the MRC Laboratory of Molecular Biology**, Professor Andres Floto's group uses population-level whole genome sequencing to understand the biology of bacterial infection in the lung and investigates novel strategies to treat multidrug resistant pathogens. Dr Yorgo Modis's group aims to gain a mechanistic understanding at the molecular level of how important pathogens interact with their host cells during infection. Professor Lalita Ramakrishnan's group works on the pathogenesis of Mycobacterium tuberculosis and has developed a zebrafish model to study immunity to these mycobacteria.

Within the **Department of Pathology**, Dr Dami Collier leads clinically translational research investigating the mechanisms underlying HIV-associated central nervous system (CNS) escape integrating epidemiology, molecular virology, cellular models and multi-omic approaches. Dr Jordan Skittrall mainly works on finding previously undescribed and possibly druggable biology in RNA viruses of clinical importance, using mathematical/computational approaches. He may also be able to offer projects around optimising the use of clinical diagnostics, or pandemic preparedness of diagnostic laboratories.

There are close collaborations and additional research opportunities available at the **Wellcome Sanger Institute** (http://www.sanger.ac.uk/programme/parasites-and-microbes), and with Professor Daniela de Angelis at the **MRC Biostatistics Unit** (www.mrc-bsu.cam.ac.uk).

Additional research opportunities are available through the Department of Veterinary Medicine (https://www.vet.cam.ac.uk), the Cambridge Infectious Diseases Initiative (http://www.infectiousdisease.cam.ac.uk/), the Cambridge Africa Programme (http://www.cambridge-africa.cam.ac.uk/), and the WHO Collaborating Centre for the modelling, evolution and control of emerging infectious diseases (http://www.whocc.infectiousdisease.cam.ac.uk/).

Description of the Clinical Training Component

The successful candidate will follow the new medical microbiology curriculum incorporating combined infection training, which was implemented in August 2015 and updated in 2021 https://www.rcpath.org/static/7341d732-8f3b-4371-acc04c01a62d14eb/7fafa911-b2ad-4fed-94d463749c4e8b50/Medical-Microbiology-2021-curriculum.pdf.

If the candidate is granted dual training in Medical Microbiology and Infectious Diseases, they will also be expected to follow the infectious diseases curriculum. More information on the Combined Infection Programme can be found at https://heeoe.hee.nhs.uk/pathology/pathology-specialties/medical-microbiology-virology/training-programme-medical And https://www.thefederation.uk/sites/default/files/Rough%2520guide%2520to%2520Infection%2520Specialties%25202021%2520curricula%2520130121.pdf

The training and service commitments will mainly be based in the UKHSA Clinical Microbiology and Public Health Laboratory (CMPHL), alongside the Department of Infectious Diseases if dual training, in Addenbrooke's Hospital with accommodation located within each department. Rotation to other hospitals such as West Suffolk, Watford and others may be included in the programme. Further details of the programme and clinical training environment are given below.

The Cambridge UKHSA CMPHL functions as the diagnostic laboratory to Cambridge University Hospitals NHS Foundation Trust and surrounding GPs and is located on-site. The service provides clinical advice and consultation services to a unique range of specialist services ranging from secondary to quaternary level and has close links with the Infectious Diseases unit with daily communal handover meetings. It has a strong outward facing presence covering 15 distinct clinical areas via rounds and MDTs in addition to running *Staphylococcus aureus* bacteraemia and *C. difficile* rounds. The service also provides further infection control and antimicrobial and antifungal stewardship training opportunities and has been recognised as a commended Centre of Excellence by GAMSAS. In addition, there are established partnerships for global health training.

The department has a strong track record in clinical microbiology training and the range and complexity of patients seen at Cambridge University Hospitals provide excellent clinical training opportunities. During this period the candidate will gain proficiency in microbiology and laboratory practice, the basic biology of bacteria, viruses, fungi and parasites and host-pathogen relationships and health and safety. The trainee will be introduced to and gain proficiency in the diagnosis of clinical syndromes where infection is an important differential diagnosis and acquire expertise in antimicrobial agents and their use in the clinical setting by attending ward rounds, clinical consultations and by clinical liaison with medical practitioners and other clinical staff. It is anticipated that during this time at least two months will be spent in virology.

Day-to-day clinical practice includes dealing with telephone enquiries from clinicians, participating in ward rounds and clinical consults, and authorisation of laboratory reports. The appointee will liaise closely with clinical colleagues concerning the diagnosis and management of patients, and infection control in specialist and non-specialist units at Cambridge University Hospitals, and with GPs. Where appropriate, bench work training in the laboratory will be provided.

For dual trainees, training in Infectious Diseases will include inpatient and outpatient care of patients with a range of conditions, including immunodeficiency and HIV infection, travel-related and parasitic infections, tuberculosis, orthopaedic infections, endocarditis, viral hepatitis, and patients receiving outpatient parenteral antibiotic therapy (OPAT) or complex outpatient therapy (COpAT). The service provides Infectious Diseases advice for the whole region.

Depending on site of post and service requirements, the post holder with participate in microbiology, virology and infectious diseases out-of-hours on call rotas (frequency and availability depending on site).

Further Information and Contacts

Clinical Academic Training Office (CATO) at the University of Cambridge

CATO Director	Professor Alasdair Coles Email: ajc1020@medschl.cam.ac.uk
ACF Programme Director	Dr Virginia Newcombe Email: vfjn2@cam.ac.uk
Academic Training Lead (Medical Microbiology)	Dr Theodore Gouliouris (Medical Microbiology) Email: theodore.gouliouris@nhs.net
Academic Training Lead (Medical Microbiology)	Professor Mike Weekes (Infectious Diseases) Email: mpw1001@cam.ac.uk
Other Contacts	
Training Programme Director	Dr Michelle Toleman Email: england.microbiology.eoe@nhs.net
Clinical Services Lead	Dr Jenifer Mason Email: jenifer.mason2@nhs.net
NHS England East of England	2-4 Victoria House, Capital Park, Fulbourn, Cambridge, CB21 5XB Email: england.recruitment.eoe@nhs.net
NIHR	http://www.nihr.ac.uk/IAT