UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Mathematical and Statistical Models of Viral Dynamics
Faculty of Mathematics and Physical Sciences

Salary: Grade 7 (£33,199 – £39,609 p.a.) – Due to funding restrictions, an appointment will not be made above spine point 32 (£35,211 p.a.)

Reference: MAPMA1110

Closing date: 30 July 2019

Fixed-term for one year

We will consider job share / flexible working arrangements

Research Fellow in Mathematical and Statistical Models School of Mathematics, Faculty of Mathematics and Physical Sciences

Are you an ambitious researcher looking for your next challenge? Do you have an established background in mathematical and statistical models of viral dynamics? Do you want to further your career in one of the UK's leading research intensive universities?

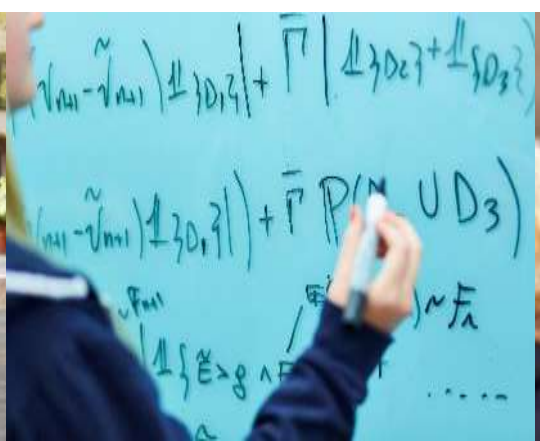
We are looking for a Research Fellow in Mathematical and Statistical Models of intra-cellular viral dynamics to join our project on the estimation of a human dose range for VH244 for the prevention and treatment of respiratory infections. You will work together with teams at the University of Leeds and Virion Biotherapeutics (VB) to mathematically, statistically and computationally characterise the dynamics of respiratory virus infection and a therapeutic interfering particle (TIP), making use of experimental data.

You will have a PhD in Applied Mathematics, Physics or a closely allied discipline. You will also have a strong background in mathematical biology, multi-scale modelling, agent-based modelling, and statistical inference and multi-variate analysis; as well as in theoretical immunology and infection, and mathematical, statistical and computational modelling of immune responses. In addition, you will have the ability to conduct independent research and a developing track record of publications in international journals, alongside excellent communication, planning and team working skills.

What does the role entail?

As a Research Fellow, your main duties will include:

- Leading the development of novel mathematical models of influenza A and TIP co-infection to identify a minimum effective dose and a maximum safety dose;
- Leading the development of novel mathematical models of respiratory virus infections (RSV and HRV) and TIP co-infection to identify a minimum effective dose and a maximum safety dose;
- Maintaining a comprehensive and state of the art literature review of data sets of influenza A and respiratory virus infections;



- Calibrating, making use of Bayesian inference, the mathematical models developed with data generated by VB at different doses of wild type (WT) virus and TIP;
- Preparing monthly research reports to share the outputs of the projects;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

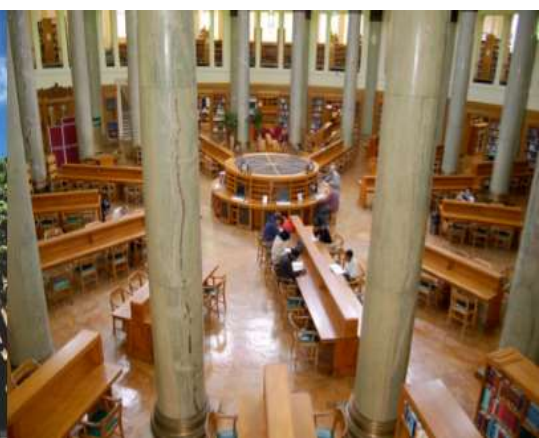
These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD in Applied Mathematics or Physics or a closely allied discipline;
- A strong background in mathematical biology, multi-scale modelling, agent-based modelling, and statistical inference and multi-variate analysis;
- A strong background in theoretical immunology and infection, as well as in mathematical, statistical and computational modelling of immune responses;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;





- A proven track record of peer-reviewed publications in high impact factor journals;
- Excellent written and verbal communication skills including presentation skills, with a proven track record of delivering talks and poster presentations at international research meetings;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Experience of collaboration with industrial partners;
- Experience of bringing together experimental data and mathematical models, making use of Bayesian inference methods to calibrate model parameters;
- Experience in the development of mathematical models of within-host viral dynamics;
- A background in python and high performance programming.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

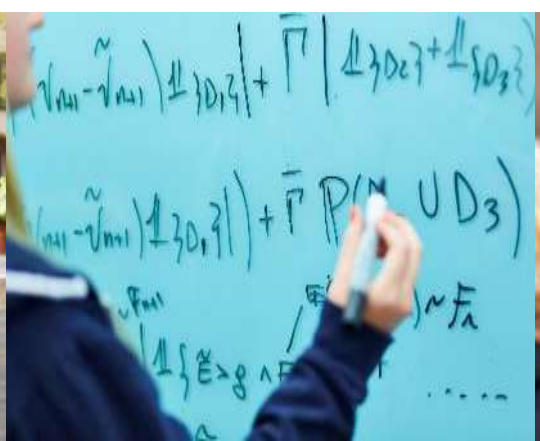
To explore the post further or for any queries you may have, please contact:

Professor Carmen Molina-Paris
Tel: +44 (0)113 343 5151
Email: carmen@maths.leeds.ac.uk

Additional information

A diverse workforce

The Faculty of Mathematics and Physical Sciences is proud to have been awarded the Athena SWAN Bronze Award from the Equality Challenge Unit, the national body


that promotes equality in the higher education sector. Our equality and inclusion webpage provides more information.

Working at Leeds
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974
A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our Criminal Records information page.