

# RESEARCH FELLOW



<b>Job Title:</b>	<b>Research Fellow</b>
<b>Department:</b>	Infectious Disease Epidemiology
<b>Faculty:</b>	Epidemiology and Public Health
<b>Location:</b>	Keppel Street
<b>FTE:</b>	0.2 FTE
<b>Grade:</b>	Research Fellow Grade 6
<b>Accountable to:</b>	Sebastian Funk
<b>Job Summary:</b>	Applications are invited for a post to conduct research on real-time cholera models to inform decision making during outbreaks. The post-holder will be expected to help develop methods for model-based forecasts that can be deployed in a cholera outbreak, and to systematically assess the quality of these forecasts. This will involve liaising with partners responsible for public health decision making as well as the UK Public Health Rapid Support Team. There is considerable scope for developing methodology for integrating different data streams, such as individual, spatial, behavioral or genetic data that is collected in outbreaks, and to inform collection of such data to inform decision making.

## GENERAL INFORMATION

### The London School of Hygiene & Tropical Medicine

The London School of Hygiene & Tropical Medicine is a world-leading centre for research and postgraduate education in public and global health. Our mission is to improve health and health equity in the UK and worldwide; working in partnership to achieve excellence in public and global health research, education and translation of knowledge into policy and practice.

Founded in 1899, the School has expanded in recent years at its two main sites on Keppel Street and Tavistock Place. Our staff, students and alumni work in more than 150 countries in government, academia, international agencies and health services. Research income has grown to more than £140 million per year from national and international funding sources including UK government and research councils, the European Union, the Wellcome Trust, Gates Foundation and other philanthropic sources. The School's multidisciplinary expertise includes clinicians, epidemiologists, statisticians, social scientists, molecular biologists and immunologists, and we work with partners worldwide to support the development of teaching and research capacity.

Our education provision has expanded to more than 1,000 London-based Master's and Research students, 3,000 studying postgraduate courses by distance learning, and 1,000 each year on short courses and continuous professional development. Our free online courses (Moocs) are studied by more than 55,000 participants globally.

The School performs strongly in various global university league tables. In the 2018 Shanghai World Ranking we placed 151-200 overall, and ranked 3rd in public health, 40th in clinical medicine, and 76th in human biology. In the US News Best Global Universities Ranking 2019, we ranked ninth in the UK overall and 13th in the world in the fields of social sciences and public health. We ranked 21st for medicine in the 2018 QS World University Rankings.

In 2017, the inaugural Center for World University Rankings by Subject placed LSHTM first in the world for tropical medicine research, second for parasitology and seventh for infectious diseases, public, environment and occupational health, and social sciences and biomedical. LSHTM ranked first in Europe for research impact in sciences, based on its proportion of publications that belong to the top 1% most frequently cited publications, in the 2018 CWT Leiden Ranking.

LSHTM was named University of the Year 2016 by Times Higher Education and awarded a Queen's Anniversary Prize for Higher and Further Education in 2017 in recognition of our response to the 2014 Ebola epidemic in West Africa. (LSHTM does not appear in the Times Higher Education World University Rankings as universities are excluded if they do not teach undergraduates).

We seek to foster and sustain a creative and supportive working environment based upon an ethos of respect and rigorous scientific enquiry. We embrace and value the diversity of our staff and student population and seek to promote equality as an essential element in contribution to improving health worldwide.

## FACULTY INFORMATION

The Faculty of Epidemiology & Population Health (EPH) houses a large group of epidemiologists, demographers, statisticians and nutritionists working on issues of major public health importance in the UK and globally. EPH has approximately 400 staff members organised into four research departments.

- Department of Infectious Disease Epidemiology
- Department of Medical Statistics
- Department of Non-communicable Disease Epidemiology
- Department of Population Health

The Faculty has a teaching programme consisting of ten MSc courses: Epidemiology, Demography and Health, Medical Statistics, Public Health for Development (run jointly with the Faculties of Infectious & Tropical Diseases and Public Health & Policy), Nutrition for Global Health, Reproductive & Sexual Health Research, Veterinary Epidemiology (run jointly with the Royal Veterinary College), Global Mental Health (run jointly with Kings College London - Institute of Psychiatry) and the Distance Learning courses in Epidemiology, Clinical Trials and Demography in Health. The Faculty also has approximately 120 research students studying for an MPhil, PhD or DrPH degree.

The Dean of Faculty is Professor Liam Smeeth.

For further information on the Faculty see: <https://www.lshtm.ac.uk/research/faculties/eph>

## THE DEPARTMENT

The Department of Infectious Disease Epidemiology conducts research on the epidemiology and control of infectious diseases of public health importance. It also conducts research on maternal and neonatal health. Work is carried out in low-, middle- and high-income countries, including the United Kingdom. Research ranges from ecological studies of variations in disease frequency in different populations, through observational case-control and cohort studies to define risk factors for disease, to randomized controlled trials to test the impact of specific preventive and curative interventions.

The Department Head is Professor Katherine Fielding and Professor Richard White.

For further information on the Department see: <https://www.lshtm.ac.uk/research/faculties/eph/ide>

The portfolio of duties outlined below will vary in accordance with the detailed expectations of the role (attached), which may be varied from time to time, and agreed at your annual Performance and Development Review (PDR).

## THE CENTRE

The Centre for the Mathematical Modelling of Infectious Diseases (CMMID) is a multidisciplinary grouping of epidemiologists, mathematicians, economists, statisticians and clinicians from across all three faculties of the LSHTM. Research focuses on understanding and predicting the epidemiology of infectious diseases so that more effective control programmes can be devised. Researchers are developing and applying mathematical models to a range of emerging and endemic infections, often focused on improving public health policy. More fundamental research includes developing methods to measure underlying contact patterns, sampling hard-to-reach populations (such as drug users), efficiently fitting complex mathematical models to data, and the integration of epidemiological models with economic analyses. CMMID is frequently working in collaboration with organisations such as the World Health Organization (WHO) and Médecins Sans Frontières (MSF), and is actively engaged in developing links with other modelling groups; members of the CMMID include mathematical modellers working at Public Health England (formerly the HPA) and the Royal Veterinary College.

The portfolio of duties outlined below will vary in accordance with the detailed expectations of the role (attached), which may be varied from time to time, and agreed at your annual Performance and Development Review (PDR).

## **JOB DESCRIPTION**

### **Main Activities and Responsibilities**

#### **KNOWLEDGE GENERATION**

1. To undertake high quality research & scholarship, including contributing to drafting major grant proposals and/or leading on drafting small grant proposals;
2. To contribute to peer-reviewed publications, including as lead author;
3. To make a contribution to research degree student supervision, as appropriate to qualifications and experience;
4. To manage small grants or elements of larger grants, ensuring compliance with good practice in relation to the conduct of research, the ethics policy and other relevant School policies.
5. The specific responsibilities of this post are:
  - a. To work on historic and current data sets of cholera to develop methodology for generating model-based forecasts during outbreaks, and to evaluate the quality of the generated forecasts.
  - b. To contribute to the development of a computational platform that is ready to be deployed to model outbreaks in real time.
  - c. To liaise with collaborators to assess and review the ability of the modelling results to inform decision making.

#### **EDUCATION**

1. To contribute to the delivery of high quality, research-informed teaching and assessment in relation to your specific subject and within the broader area covered by your department and disciplinary field;
2. To contribute to the improvement of the quality of the School's education, by participating in the development of new and updated learning and teaching materials or approaches.

#### **INTERNAL CONTRIBUTION**

1. To undertake activities that support the Department, Faculty or the School;
2. To participate in the School's PDR process.

#### **EXTERNAL CONTRIBUTION**

1. To demonstrate good external citizenship by contributing to learned society/conference events, journal and grant reviews etc;

#### **PROFESSIONAL DEVELOPMENT & TRAINING**

1. To keep up to date with the latest research/thinking in your academic field and with changes to pedagogic practice within the School and more generally;
2. Where the length and nature of the position permits, to apply for and, if accepted, undertake a doctoral degree (if not already acquired);
3. To undertake and successfully complete the mandatory training required by the School appropriate to the role.

## GENERAL

All academic staff are free within the law to question and test received wisdom, and put forward new ideas and controversial or unpopular opinions, to enable the School to engage in research and promote learning to the highest possible standards.

All staff at LSHTM are also expected to:

1. Act at all times in the School's best interests;
2. Treat School staff, students and visitors with courtesy and respect at all times;
3. Comply fully with School policies, procedures and administrative processes relevant to the role, including when acting as Principal Investigator, accepting academic, managerial, financing and ethical responsibility for a project
4. Uphold and support the School's values (as set out in the School Strategy document);
5. Act as ambassadors for the School when hosting visitors or attending external events.

*The above list of duties is not exclusive or exhaustive and the role holder will be required to undertake such tasks as may reasonably be expected within the scope and grading of the role.*

*Role descriptions should be regularly reviewed to ensure they are an accurate representation of the role.*

## PERSON SPECIFICATION

This form lists the essential and desirable requirements needed by the post holder to be able to perform the job effectively.

### ESSENTIAL CRITERIA:

1. PhD in a quantitative discipline such as mathematics, physics, statistics, bioinformatics or computational biology, or similar research experience.
2. Experience in constructing and analysing mathematical or statistical models of cholera transmission.
3. Proficient knowledge of a programming language for mathematical or statistical modelling, such as R, Python, Julia or C/C++.
4. Ability to produce high-quality writing for publication in peer-reviewed journals.
5. Ability to communicate findings to both academic and non-academic audiences.
6. Ability to work within a team environment.
7. Commitment to open and collaborative software development and/or research.

### DESIRABLE CRITERIA

1. Experience with statistical approaches for model fitting and inference (e.g. MCMC/SMC or machine learning approaches).
2. Experience with using models for forecasting, ideally of cholera.
3. Experience in working with public health decision makers.

## **SALARY AND CONDITIONS OF APPOINTMENT**

The post is available from 1 June 2019 and funded until 31 May 2020 in the first instance. The salary will be on the Academic scale, Grade 6 scale in the range £39,304 - £44,634 per annum pro rata (inclusive of London Weighting). The post will be subject to the LSHTM terms and conditions of service. Annual leave entitlement is 30 working days per year, pro rata for part time staff. In addition to this there are discretionary "Director's Days". Membership of the Pension Scheme is available.

Applications should be made on-line via our website at <http://jobs.lshtm.ac.uk>. Applications should also include the names and email contacts of 2 referees who can be contacted immediately if shortlisted. Online applications will be accepted by the automated system until 10pm of the closing date. Any queries regarding the application process may be addressed to [jobs@lshtm.ac.uk](mailto:jobs@lshtm.ac.uk).

The supporting statement section should set out how your qualifications, experience and training meet each of the selection criteria. Please provide one or more paragraphs addressing each criterion. The supporting statement is an essential part of the selection process and thus a failure to provide this information will mean that the application will not be considered. An answer to any of the criteria such as "Please see attached CV" will not be considered acceptable. Please note that if you are shortlisted and are unable to attend on the interview date it may not be possible to offer you an alternative date.

## **ASYLUM AND IMMIGRATION STATEMENT**

The School will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Candidates will be required to email a copy of their passport (and visa if applicable) to HR prior to their interview and if appointed will be asked to bring the original documents in to be copied and verified before their start date.

This role does not meet the minimum requirements set by UK Visas and Immigration to enable sponsorship of migrant workers. Therefore we cannot progress applications from candidates who require sponsorship to work in the UK.

Further information about Certificate of Sponsorship and eligibility to work in the UK, can be found at: [www.ukba.homeoffice.gov.uk/employers/points](http://www.ukba.homeoffice.gov.uk/employers/points)

## Academic Expectations: Research Fellow

Examples of expected types of activities are listed; the selection of activities will vary from year to year and not all activities in each category would necessarily be done in any one year. The statement in each shaded heading summarises the general expectations for contributions in each category. Given the nature of employment as a Research Fellow, it is expected that most activity will focus on knowledge generation, but some activity in other areas is required and will support career progression.

<b>Knowledge generation: Independent contributions and a clear trajectory towards excellence as an academic researcher</b>
<i>Research and scholarship</i> <ul style="list-style-type: none"><li>• Undertaking research</li><li>• Working with PIs to draft grant proposals and/or leading writing of small grants, work packages or sections of larger proposals or personal fellowship applications</li><li>• Contributing to peer-reviewed outputs, including as first author, as expected by the subject area/discipline in terms of types of output</li><li>• Poster/oral presentations at relevant conferences, translation of research findings into educational materials</li><li>• Social media contributions such as twitter, blogs, web-based media or webinars</li></ul> <i>Doctoral degree supervision</i> <ul style="list-style-type: none"><li>• For RFs with Doctorate, some contribution to doctoral degree supervision is encouraged (e.g. specialist skills training; ad hoc advice; advisory committees). RFs without a Doctorate may also advise in areas of specialist knowledge<sup>1</sup></li></ul> <i>Research management, leadership and support</i> <ul style="list-style-type: none"><li>• Effective management of own time and activities</li><li>• Management of small research grants or elements of larger grants, including management of data collection and relationships with research collaborators, support to grants management</li></ul> <i>Professional development</i> <ul style="list-style-type: none"><li>• Courses and other professional development activities, referenced to RDF</li><li>• To apply for and undertake a doctoral degree (if not already acquired), if contract and funding source permit;</li></ul>
<b>Education: Basic competence in teaching and assessment</b>
<i>Teaching and assessment</i> <ul style="list-style-type: none"><li>• Research-informed teaching and assessment contributions (e.g. contributions to modules, MSc project supervision)</li></ul> <i>Educational development and innovation</i> <ul style="list-style-type: none"><li>• Contributing to the development of new educational materials, learning opportunities or assessments approaches</li></ul> <i>Education leadership and management</i> <ul style="list-style-type: none"><li>• None expected</li></ul> <i>Professional development</i> <ul style="list-style-type: none"><li>• Participation in professional development activities referenced to UKPSF (e.g. HEA, PGCILT, preparation for doctoral degree supervision, shadowing more experienced colleagues)</li></ul>
<b>Internal contribution: Contributions to School functioning and development</b>
<i>Internal citizenship</i> <ul style="list-style-type: none"><li>• Contributing to at least one Department, Faculty, School, or Centre event or special interest group in any one year;</li><li>• Supporting external School collaborations/partnerships (beyond own research or education role) where relevant</li></ul> <i>School leadership and management roles</i> <ul style="list-style-type: none"><li>• None expected</li></ul>

<sup>1</sup> Such RFs are expected where the length and nature of the position permits, to apply for and, if accepted, undertake a doctoral degree (if not already acquired)

***External contribution: Contribution beyond the School***

*External citizenship*

- Contributing to learned society/conference events, journal and grant reviews etc

*Knowledge translation and enterprise: not expected but options include:*

- Collecting evidence of research impact for impact case studies (e.g. policy records, correspondence with policy makers, media highlights)
- Engaging with policy/practice/industry/NGO communities and the general public
- Supporting MOOCs/OERs or other (e.g. educational) outreach