

# RESEARCH FELLOW



<b>Job Title:</b>	<b>Research Fellow – Molecular Biology</b>
<b>Department:</b>	Department of Infection Biology
<b>Faculty:</b>	Faculty of Infectious Diseases
<b>Location:</b>	Keppel Street
<b>FTE:</b>	1 FTE
<b>Grade:</b>	G6
<b>Accountable to:</b>	Head of Department through Principal Investigator (PI): Anil Koul
<b>Job Summary:</b>	<p>We are seeking to appoint a Research Fellow to work in our Tuberculosis translational biology research team seeking to developing new antibiotics for treatment of Tuberculosis. The project is funded by the Johnson and Johnson and includes development of new molecular biology tools dissecting biology of pathogen as well as regular bacteriology techniques used in the laboratory.</p> <p>The post holder will study the implications of resistance mediated mechanism to key metabolic targets using various omics platforms. The impact of bacterial resistome of drug efficacy and mechanistic understanding drug effluxes both in vitro and in vivo will be evaluated. The post holder with develop new molecular microbiology &amp; chemical genomics techniques to support drug efflux phenomenon.</p> <p>The role will involve working a cross functional teams including Industry partners and in an international research environment that provides an excellent academic as well as industry career opportunity for any enthusiastic and motivated scientist willing to learn the drug discovery process.</p> <p>The role will also require working closely with other academic research groups and professional support staff, and will require excellent communication, organizational and team working skills.</p>

## General Information

### The London School of Hygiene & Tropical Medicine

The London School of Hygiene & Tropical Medicine (LSHTM) is renowned for its research, postgraduate studies and continuing 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.

We embrace and value the diversity of our staff and student population and seek to promote equity, diversity and inclusion as essential elements in contribution to improving health worldwide. We believe that when people feel respected and included, they can be more creative, successful, and happier at work. While we have more work to do, we are committed to building an inclusive workplace, a community that everyone feels a part of, which is safe, respectful, supportive and enables all to reach their full potential.

### History

Founded in 1899 at the London Docks, LSHTM is now based in Bloomsbury, where it has two main sites at Keppel Street and Tavistock Place, and additional sites in The Gambia and Uganda. Today, our staff, students and alumni work in government, academia, international agencies and health services across the world.

## **Research**

Research income has grown to more than £180 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.

Our diverse research talents, skills and experience underpin our position as a leader in public and global health. These range from the molecular to the global, the theoretical to the applied, the analytical to the political. Our staff are conducting research in more than 100 countries.

## **Staff community**

We have 3,300 staff based all around the world with core hubs in London and at the MRC Units in The Gambia and Uganda, which joined LSHTM in February 2018. Our outstanding, diverse and committed staff make an impact where it is most needed - deploying research in real time in response to crises, developing innovative programmes for major health threats, or training the next generations of public and global health leaders and researchers.

## **Partnerships**

Working in partnership is central to achieving our mission. Our strategic collaborations in the UK and across high-, middle- and low-income countries deliver health and socioeconomic benefits across the world, especially in the most disadvantaged communities.

LSHTM is also a member of the M8 Alliance of Academic Health Centers, Universities and National Academies, the Association of Schools of Public Health in the European Region, and the Consortium of Universities for Global Health.

## **Education**

We deliver research-led educational programmes to future health leaders, managers and researchers across the world. We have more than 1,200 face-to-face Master's and Doctoral students, 3,000 studying by distance learning, and 1,000 each year on short courses and continuous professional development. Our free online courses are studied by more than 270,000 participants globally.

## **Excellence in research and education**

We perform strongly in various global university league tables. In the ShanghaiRanking's Global Ranking of Academic Subjects 2020 we placed 3rd in public health (1st in the UK). In the 2020 CWTS Leiden Ranking LSHTM is ranked the UK's top university for the proportion of academic research with women listed as authors, and third in Europe for publishing open access research.

In the US News Best Global Universities Ranking 2021, we ranked 3rd in the world for public, environmental & occupational health, 4th in the world for infectious diseases, 11th in the world for social sciences & public health, and 12th best University in the UK overall. We ranked 27th for medicine in the 2019 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 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.

LSHTM is one of around 20 specialist institutions that receive institution specific funding from the Office for Students (OfS). This funding recognises the additional costs that LSHTM incurs because of its unique range of teaching, specialist facilities, and the scale of its contributions to national and international agencies.

# FACULTY INFORMATION

## Faculty of Infectious and Tropical Diseases

The Faculty of Infectious and Tropical Diseases encompasses all of the laboratory-based research in the School as well as that on the clinical and epidemiological aspects of infectious and tropical diseases. It is headed by Alison Grant, who is **Professor of International Health**. The range of disciplines represented in the faculty is very broad and inter-disciplinary research is a feature of much of our activity. The spectrum of diseases studied is wide and there are major research groups with a focus on malaria, tuberculosis, HIV/AIDS and other sexually transmitted diseases, vaccine development and evaluation, and vector biology and disease control. The Faculty is organised into three large research departments comprising: Clinical Research, Disease Control, and Infection Biology. There is close interaction between scientists in different research teams. The Faculty has strong overseas links, which provide a basis for field studies and international collaborations in developed and developing countries. The teaching programme includes MSc courses, taught in-house and by distance learning, which are modular in structure, a variety of short-courses and an active doctoral programme (PhD and DrPH). For further information on the Faculty see: <http://www.lshtm.ac.uk/itd/index.html>.

### ***Department of Clinical Research (Head: Professor Shunmay Yeung)***

The Department of Clinical Research addresses infectious diseases of major public health importance in developing countries. Activities include trials of new therapies, vaccines and educational interventions; the development of new diagnostic tests; studies to elucidate the immunological and molecular correlates of pathogenesis and protective immunity, and to identify genetic polymorphisms conferring protection or susceptibility to infectious diseases; health services research which aims to identify the most efficient and cost-effective way to deliver health care; and health policy analysis. In addition to our many overseas collaborations, we have close links with the Hospital for Tropical Diseases, in purpose-built accommodation on the main UCL Hospital campus, five minutes' walk from the School. The Wellcome Trust Bloomsbury Centre for Global Health Research is based in the Department, and supports Clinical Fellows at all levels, most of whom are based overseas.

The Department's main research interests include HIV and related infections; in particular, the interaction between HIV infection and tuberculosis, and other sexually transmitted diseases; malaria; trachoma; leprosy; diagnostic tests for resource limited settings; eye health; disability; and travel medicine.

### ***Department of Disease Control (Head: Professor Jayne Webster)***

The Department of Disease Control is a multidisciplinary, cross-cutting department, operating in a global context and committed to excellence in research, innovation, learning and engagement. We have an outstanding reputation for internationally competitive research and teaching excellence, with demonstrable impact in the control of diseases, worldwide. Our diverse scientific staff comprises entomologists, epidemiologists, mathematical modellers, geographers, public health engineers, hygiene specialists, social scientists, engineers, statisticians and clinical scientists. We also have a strong team of project administrators, coordinators, managers, and communication specialists, who provide expert support to our research programmes in the UK and overseas. We are a highly collaborative Department, with extensive partnerships and collaborations with researchers from many countries and organisations around the world, as well as internally, with multiple School Departments. Our work cuts across several School Centres such as the Vaccine Centre, the Malaria Centre, Centre for Evaluation and the MARCH Centre.

Our staff play influential roles as consultants and key advisors to organisations including the WHO, CDC, Malaria Consortium, Public Health England, Department of Health, DFID, Bill and Melinda Gates Foundation, the Royal Society, Research Councils, Academy of Medical Sciences, the World Bank, Governments and private sector manufacturers and innovators, amongst many others. Our range of expertise provides us with an impressive set of tools for addressing the control of diseases that are insect-borne, water-borne or associated with poor hygiene – mostly in

low- and middle-income countries. Much of our research is directed at current health policy issues and addressing gaps between policy and practice.

***Department of Infection Biology (Head: Professor Martin Hibberd)***

The Department of Infection Biology brings together pathogen molecular biology and immunology and infection research across the School. The Department benefits from state of the art facilities and strong collaborations, many of which are with partners in disease endemic countries.

We study the molecular biology and genetics of pathogens and interaction with their hosts, to improve understanding and control of infectious diseases and to understand the complex and dynamic ways by which pathogens modulate virulence and interact with the human host. Such a holistic approach will vastly increase the scope for the rationale of design of long-term intervention strategies to reduce the burden of infectious disease. In recent years such a mission has been significantly enhanced by the availability of whole genome sequences. The Department is involved in several pathogen genome projects, and post genome studies which facilitate understanding of complex parasites. The interpretation and exploitation of this basic information is the platform for numerous new avenues of research on pathogenesis, epidemiology and the evolution of virulence.

Our research in immunology and infection centres on analysis of the host response to infection at the molecular, cellular and population levels. The goals are to develop a greater understanding of basic mechanisms of immunological protection versus pathology, and to apply this knowledge to the development of immunological interventions and the identification of correlates of immune status. Our work involves application of state of the art cellular and molecular approaches to the in vitro analysis of pathogen-host cell interactions, to in vivo studies in models, and to the study of immunity at the population level in disease endemic areas. We also conduct translational research for the development and evaluation of diagnostic approaches to identify disease foci and monitor drug resistance

***Teaching***

The School offers 19 one year full-time taught programmes leading to the Master of Science (MSc) degree of the University of London and the Diploma of the London School of Hygiene and Tropical Medicine (DLSHTM). The Faculty of Infectious and Tropical Diseases runs or contributes substantially to nine of these MSc programmes. In addition, the Faculty is responsible for the three-month Professional Diploma in Tropical Medicine and Hygiene, the Professional Diploma in Tropical Nursing and offers a range of specialist short courses lasting usually one or two weeks. The School offers a further six MSc programmes by Distance Learning, with the Faculty responsible for the MSc Infectious Diseases.

***Research Training***

The School offers two doctoral training programmes. The MPhil/PhD degrees are designed for those who wish to go on to a full time research career. The DrPH is directed towards those who expect their careers to be more in the practice of public health.

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, and evaluating teaching practice;
2. To contribute to peer-reviewed publications and other outputs, including as lead author;
3. To make a contribution to doctoral 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 post holder will study the implications of resistome mediated mechanism to key metabolic targets using various omics platforms. The impact of bacterial resistance on antibiotic/ drug efficacy and mechanistic understanding drug effluxes for key selected targets will be evaluated.
6. The post holder will develop new molecular microbiology & chemical genomics techniques to support drug efflux for certain selected metabolic targets in our portfolio .
7. The role will involve working a cross functional teams including Industry partners and in an international research environment & new career opportunity to learn the drug discovery process.

### Education

1. To contribute to the delivery of high quality, inclusive, 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.
3. Willingness to undertake any necessary training for the role

### Internal Contribution

1. To undertake activities that support the Department, Faculty, MRC Unit or the School;
2. To reflect LSHTM's EDI goals in your work and behaviour;
3. To participate in the School's PDR process.

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4. To demonstrate excellent leadership skills in order to support the output and development of more junior members of staff

### 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);
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.*

[Jul 2021]



## Person Specification

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

Applicants will be shortlisted solely on the extent to which they meet these requirements.

### Essential criteria:

1. A postgraduate degree, preferably a doctoral degree in Microbiology or Bacteriology or Tuberculosis molecular biology research
2. Substantial or significant experience in in vivo research and animal experimentation post PhD.
3. Contributions to written output, preferably peer-reviewed, as expected by the subject area/discipline in terms of types and volume of outputs.
4. Proven ability to work independently, as well as collaboratively as part of a research team, and proven ability to meet research deadlines.
5. Evidence of excellent interpersonal skills, including the ability to communicate effectively both orally and in writing
6. Evidence of good organizational skills, including effective time management.
7. Demonstrated experience with TB or bacterial genomics analysis and tool generation and analysis of complex biological data sets will be preferred and Metabolic pathway analysis would be an advantage.
8. Demonstrated experience in establishing 'omic data analysis pipelines with demonstrable awareness of the relevant scientific literature and contemporary 'omic data analysis practices.
9. A basic understanding of applied statistics and programming skills in relevant another computing language(s). Proficient in MS Office and Graphpad Prism.

### Desirable Criteria

1. Some experience of contributing to research grant applications.
2. Some experience of teaching and assessment.
3. Some experience of supervising and supporting junior researchers and/or research degree students, and non-academic staff.
4. Valid personal licence under the Animal Scientific Procedures Act 1986 for working with animals
5. Experience of working in a Biosafety Level 3 laboratory

## Salary And Conditions of Appointment

This post is fixed term until 31 May 2024 and is funded by Johnson & Johnson. The salary will be on the Academic Grade 6 scale in the range £40,611 - £46,119 per annum (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 "Wellbeing 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 appointed. 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). Please quote reference ITD-DIB-2022-12

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 current UKVI legislation, 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.*

*Applications from candidates who require sponsorship to work in the UK will be considered alongside other applications. Applicants who do not currently have the right to work in the UK will have to satisfy UK Visas & Immigration regulations before they can be appointed.*

*Further information about Sponsorship and eligibility to work in the UK, can be found at: <https://www.gov.uk/guidance/immigration-rules/immigration-rules-appendix-skilled-worker>*

Date amended: Jul 2021

## 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. Research Fellows employed on research projects will be expected to focus on Knowledge Generation, in accordance with their job description, but some activity in other areas is required and will support career progression. Research Fellows predominantly employed to support Education will be expected to focus on Education, again as reflected in their job description.

### ***Knowledge generation: Independent contributions and a clear trajectory towards excellence in knowledge generation***

#### *Research and scholarship*

- Undertaking research
- 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
- Contributing to peer-reviewed and other research outputs, including as first author, as expected by the subject area/discipline in terms of types of output
- Poster/oral presentations at relevant conferences, translation of research findings into educational materials
- Social media contributions such as twitter, blogs, web-based media or webinars

#### *Reflective practice and critical enquiry (RPaCE)*

- Contributing to RPaCE activities
- Designing evaluation studies
- Disseminating learning and experiences through presentations, blogs etc
- Contributing to enhancing teaching practice of others: e.g. mentoring, teaching observation and feedback

#### *Doctoral degree supervision*

- 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

#### *Research management, leadership and support*

- Effective management of own time and activities
- Management of small research grants or elements of larger grants, including management of data collection and relationships with research collaborators, supporting/mentoring colleagues, support to grants management

#### *Professional development*

- Courses and other professional development activities, referenced to RDF
- Where the length, nature and funding source of the position permit, to apply for and, if accepted, undertake a doctoral degree (if not already acquired)

<b>Education: Basic competence in teaching and assessment</b>
<p><i>Teaching and assessment</i></p> <ul style="list-style-type: none"> <li>• Research-informed teaching and assessment contributions (e.g. contributions to modules, MSc project supervision)</li> </ul> <p><i>Educational development and innovation</i></p> <ul style="list-style-type: none"> <li>• Contributing to the development of new educational materials, learning opportunities or assessments approaches</li> </ul> <p><i>Education leadership and management</i></p> <ul style="list-style-type: none"> <li>• None expected</li> </ul> <p><i>Professional development</i></p> <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); acquiring Associate Fellow HEA</li> </ul>
<b>Internal contribution: Contributions to School functioning and development</b>
<p><i>Internal citizenship including contributing to supportive academic environment</i></p> <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, including EDI activities;</li> <li>• Taking on role as Digital Champion or Decolonising the Curriculum facilitator; Supporting external School collaborations/partnerships (beyond own research or education role) where relevant</li> <li>• Support to others' success (eg careers advice to students)</li> </ul> <p><i>School leadership and management roles</i></p> <ul style="list-style-type: none"> <li>• None expected</li> </ul>
<b>External contribution: Contribution beyond the School</b>
<p><i>External citizenship</i></p> <ul style="list-style-type: none"> <li>• Contributing to learned society/conference events, journal and grant reviews etc.</li> </ul> <p><i>Knowledge translation and enterprise: not expected but options include:</i></p> <ul style="list-style-type: none"> <li>• Collecting evidence of research impact for impact case studies (e.g. policy records, correspondence with policy makers, media highlights)</li> <li>• Engaging with policy/practice/industry/NGO communities and the general public</li> <li>• Supporting MOOCs/OERs or other (e.g. educational) outreach</li> </ul>