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| Job Title: | Postdoctoral Research Assistant |
| Department: | Pathogen Molecular Biology Department |
| Faculty: | Infectious and Tropical Diseases |
| Location: | Keppel Street |
| FTE: | 1.0 |
| Grade: | G5 |
| Accountable to: | Head of Department through Principal Investigator Dr Michael Gaunt (PI) |
| Job Summary: | Contribute to defining the molecular determinants for antibody dependent enhancement in Zika virus using cutting edge sequence technologies and reverse genetic engineering to understand the transmission patterns of Zika virus, a causative agent of congenital microcephaly. |

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 £110 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 30,000 participants globally.

The School performs well in various global university league tables. In the US News Best Global Universities Ranking 2017, we are ranked sixth in the world (together with Oxford University) in the fields of social sciences and public health. In the 2016 CWTS Leiden Ranking, the School was ranked fifth in the world for research impact across all disciplines, based on the share of institutions' outputs within the top 1% of papers by citation in all areas of science and independent of size of output.

The School was named University of the Year 2016 by Times Higher Education, in recognition of our response to the Ebola epidemic. The School is a member of the M8 Alliance of Academic Health Centres, Universities and National Academies, the Association of Schools of Public Health in the European Region, and the Consortium of Universities for Global Health.

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 Brendan Wren, who is **Professor of Microbial Pathogenesis**. 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 four large research departments comprising: Pathogen Molecular Biology, Immunology and Infection, Disease Control, and Clinical Research. 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 Pathogen Molecular Biology (Head: Professor David Conway)

Research in the Department of Pathogen Molecular Biology focuses on the molecular biology and genetics of pathogens and interaction with their hosts, to improve understanding and control of infectious diseases. This includes: (i) determining mechanisms of infection of globally important viral, bacterial and parasitic pathogens; (ii) deciphering the genetic diversity of disease agents in natural populations to understand epidemiological and functional processes, (iii) studying immune evasion mechanisms of particular disease agents, (iv) exploiting pathogens as model biological systems, and (v) developing practical applications including improved diagnostic tests and characterisation of vaccine candidates or drug targets.

Studies in the Department include analyses of malaria parasites (*Plasmodium* spp), Chagas disease (*Trypanosoma cruzi*), African sleeping sickness (*Trypanosoma brucei*), amoebic dysentery (*Entamoeba*), the Leishmania species, bacterial food borne pathogens (*Campylobacter jejuni* and *Yersinia enterocolitica*), gastric ulcers/cancer (*Helicobacter pylori*), pseudomembranous colitis (*Clostridium difficile*), plague (*Yersinia pestis*), paddy field melioidosis (*Burkholderia pseudomallei*), Tuberculosis (*Mycobacterium tuberculosis*), Pneumonia (*Streptococcus pneumoniae*), Bluetongue viral disease of livestock, Herpesviridae, SARS, hemorrhagic fever viruses, and enteric rotaviruses that cause significant diarrhoeal disease.

The overall aim of our research is 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 rational 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. Members of the Department are 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.

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 as directed by your line manager, including contributing to drafting grant proposals and peer-reviewed and other outputs;
2. To support the administration of projects linked to your employment, helping ensure compliance with good practice in relation to the conduct of research, the ethics policy, and other relevant School policies;
3. To design, implement and optimise the targeted mutagenesis of Zika virus full genomes and in vitro or in vivo evolution of Zika virus by sequencing by using RNA extraction, library preparation, sequencing, PCR amplification, Sanger sequencing and/or high-throughput sequencing technologies;
4. To undertake cell culture and microbiology techniques with Zika virus to assay phenotypic change around the mutated Zika virus using an established assay and perform in vitro or in vivo passage of Zika virus;
5. To assist training of a PhD (already in post) regarding points 4. The student provide assistance with the assay described in point 4;
6. Participate in general laboratory duties as designated by the Principal Investigator and provide laboratory support for members of the team, including ordering and maintaining supplies essential to the project;
7. Collate and analyse research data and prepare it for presentation and publication
8. Keep meticulous records of experimental data
9. Observe School and Departmental Safety Guidelines relating to good laboratory practice and the handling of pathogenic materials

EDUCATION

1. To participate in some aspects of the School's Education Programme or educational outreach activities;
2. Contribute to the Faculty teaching programme, up to 10% of your time per annum, subject to the policy of any funding agency (by agreement, some staff may make a greater contribution than this

INTERNAL CONTRIBUTION

1. To undertake activities that support the Department, Faculty or the School;
2. To participate in the School's PDR process;
3. Play an active role in laboratory and departmental scientific meetings and journal clubs

EXTERNAL CONTRIBUTION

1. To demonstrate good external citizenship by supporting the external academic and practice communities;

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. For lab-based disciplines: to register for and complete a doctoral degree (if not already acquired);
3. To undertake and successfully complete the mandatory training required by the School as 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;
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.

[JAN 2017]

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. PhD in a relevant area of biological sciences
2. Proven experience of laboratory work in molecular virology, as well as virus reverse genetics
3. Familiarity with international standards for laboratory safety
4. Experience of working in a category level 3 laboratory
5. Excellent management, organizational, written and verbal communication skills
6. Willingness to assist in the training of students, visiting workers or new staff in the laboratory

DESIRABLE CRITERIA

1. Processing of samples for next generation sequencing (RNA sequencing, genome sequencing)
2. Experience in RNA virus infectious clones
3. Working with RNA viruses
4. Experience with *in vivo* models

SALARY AND CONDITIONS OF APPOINTMENT

The post is funded by EU2020 for a period of two years and is available from 1st May 2018. The salary will be on the Academic Grade 5 scale in the range £33,567 to £38,533 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 "Director's Days". Membership of the Pension Scheme is available.

Applications should be made online 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. Please quote reference ITD-PMBD-2018-03.

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 bring their passport (and visa if applicable) to interview so that it can be copied and verified.

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 Certificate of Sponsorship and eligibility to work in the UK, can be found at: www.ukba.homeoffice.gov.uk/employers/points.

Date compiled: March 2017

Academic Expectations: Research Assistant

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 Assistant, it is expected that most activity will focus on knowledge generation, but some activity in other areas is desirable and will be required for career progression.

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| <i>Knowledge generation: High quality support for, and contribution to, research</i> |
| <i>Research and scholarship</i> <ul style="list-style-type: none">• Undertaking research, as directed by line manager• Contributions to funding applications including supporting more senior staff in completing applications• Contributing to peer-reviewed outputs as expected by the subject area/discipline in terms of types of output• Poster/oral presentations at conferences• Social media contributions such as twitter, blogs, web-based media or webinars <i>Doctoral degree supervision</i> <ul style="list-style-type: none">• None expected though involvement in advisory activities/roles or provision of practical skills training is encouraged where relevant <i>Research management, leadership and support</i> <ul style="list-style-type: none">• Effective management of own time and activities• Supporting the administration of projects he/she is employed on, eg taking meeting minutes <i>Professional development</i> <ul style="list-style-type: none">• Appropriate courses and other development activities, referenced to RDF• For lab-based disciplines: to seek to register for and complete a doctoral degree (if not already acquired), if contract and funding source permit. |
| <i>Education: Participation in educational activities</i> |
| <i>Teaching and assessment</i> <ul style="list-style-type: none">• Limited participation in some aspects of the School's Education Programme or education outreach activities e.g. contributions to taught courses, research methods training, mentoring school pupils on outreach programmes <i>Educational development and innovation</i> <ul style="list-style-type: none">• Limited contributions to educational innovations or developments, e.g. helping to update the content or delivery of a course or module <i>Educational leadership and management</i> <ul style="list-style-type: none">• None expected <i>Professional development</i> <ul style="list-style-type: none">• Formal study/training and/or other activities that develop educational knowledge and expertise, referenced to UKPSF |
| <i>Internal contribution: Support to the academic environment in the Department or beyond</i> |
| <i>Internal citizenship</i> <ul style="list-style-type: none">• Supporting Department/Faculty/Centre/School events or special interest groups; organising seminars/lab meetings/journal clubs; group or departmental social organising; support to Athena Swan activities; support to external partnerships <i>General leadership and management roles</i> <ul style="list-style-type: none">• None expected |
| <i>External contribution: Support to the external academic community</i> |

External citizenship

- Involvement in journal or book reviews, if opportunities arise
- Sharing examples of good practice (e.g. contributing to discipline-specific interest group or professional bodies)

Knowledge translation and enterprise: not expected but options include

- Collection of evidence of research impact for impact case studies (e.g. policy records, correspondence with policy makers, media highlights)
- Engagement with policy/practice/industry/NGO communities and with the general public