RESEARCH FELLOW

Job Title:	**Research Fellow – Bioinformatics/Computational Biology**
Department:	Vaccines and Immunity Theme
Faculty:	MRC Unit The Gambia
Location:	Fajara, The Gambia
FTE:	1.0
Grade:	G6
Accountable to:	Professor Toyin Togun, Principal Investigator (PI) CORRAL Study
Job Summary:	The Research Fellow – Bioinformatics/Computational Biology will develop, coordinate, and conduct under supervision robust analysis of high-throughput host protein data using advanced analytical and bioinformatics approaches related to the objectives of the CORRAL Study. This study aims to validate and refine a novel host protein biosignature of tuberculosis (TB) in children.

General Information

The London School of Hygiene & Tropical Medicine (LSHTM) is one of the world's leading public health universities.

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.

Staff and students are committed to helping create a more healthy, sustainable and equitable world for everyone, because we believe our shared future depends on our shared health.

We embrace and value the diversity of our staff and student population and seek to promote equity, diversity and inclusion as essential elements to improve 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.

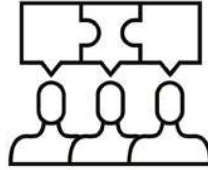To find out more please visit our Introducing LSHTM page.

Our Values

Our values establish how we aspire to achieve our mission both now and in the future - demonstrating what it means to work and study at LSHTM. Please visit our LSHTM Values page for further information.

Act with integrity   **Embrace difference**   **Work together**   **Create impact**

Faculty Information

MRC Unit The Gambia (MRCG) at the London School of Hygiene and Tropical Medicine is a leading research centre in sub-Saharan Africa. Research is carried out by three major Research Themes (Disease Control & Elimination; Vaccines & Immunity; and Nutrition & Planetary Health) that benefit from the core-supported strategic platforms and of the research services. Disease Control & Elimination investigates the interactions between hosts, pathogens and vectors; and evaluates interventions aimed at interrupting transmission and/or reducing the burden of diseases. Research is multidisciplinary and include a large epidemiological component complemented by social sciences and combined with strong laboratory and genomics support. Vaccines & Immunity studies the ontogeny of immunity as a baseline to inform the design of vaccines and maximise their impact. It hosts a portfolio of Phase 1-4 clinical trials of existing and novel vaccines and employs cutting-edge system biology methods to understand host responses to infection and vaccination. The Theme is also working on tuberculosis by examining host/pathogen interactions in adults and children. Nutrition & Planetary Health aims to understand the pathophysiology of diet-disease interactions in order to accelerate the development of more effective next-generation community and clinical interventions, and to build a major new program in planetary health. Two Cross-Cutting Programs, i.e. Maternal & Neonatal Health and West Africa, involve all Themes, often in synergy, and underpin the Unit's commitment to carry out research to decrease the current high burden of maternal and neonatal mortality in sub-Saharan Africa and the Unit's vocation as a Regional Centre of Excellence for Research and Training. A third cross-cutting Program, Planetary Health, is currently being developed.

Besides the main campus in Fajara, the MRCG has 2 field stations, Keneba and Basse.

The Unit, led by Professor Umberto D'Alessandro, receives an MRC core investment grant every 5 years, following the review of past activities and future plans. In addition, all research activities are supported by external grants from a variety of sources. The Unit has a turnover of in excess of £22m per annum and employs about 1400 staff.

The main base is in Fajara on the coast and comprises laboratories, clinics, offices, workshops, residences etc. There are also field stations upcountry – Basse, Keneba, Walikunda (in The Gambia) - each in a different ecological setting, providing varied research opportunities.

With an estimated 1.2 million annual cases and 214,000 deaths, childhood tuberculosis (TB) remains a serious threat to global child health. More than 70% of the global childhood TB estimates occur in the World Health Organisation (WHO) Africa and southeast Asia region, where childhood cases remain underdiagnosed and underreported principally due to difficulties with diagnosis. As part of its established programme of research on childhood TB, the MRCG at LSHTM is set to tackle this persistent global health challenge in a new research project funded by the UKRI via a Developmental Pathway Funding Scheme (DPFS) grant award.

This new project, i.e. the **CORRAL Study,** is led by **Professor Toyin Togun**, and it aims to validate and refine a novel host protein biosignature that promises to redefine the diagnosis of TB in children.

The portfolio of duties outlined below will vary in accordance with the academic expectations of the role, 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 LSHTM policies.

5. Develop, coordinate, and conduct under supervision robust analysis of high-throughput host protein data using advanced analytical and bioinformatic approaches related to the objectives of the CORRAL Study.

6. To develop project proposals linked to the project work or aligned to the Unit research portfolio and/or those of external collaborators

7. Get protected time in achieving progression to intermediate fellowship in order to undertake independent research

8. Involved in co-ordination of different streams of work to support the planned research project.

9. Get protected time in achieving progression to intermediate fellowship in order to undertake independent research.

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 LSHTM'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, MRC Unit or LSHTM;

2. To reflect LSHTM's EDI goals in your work and behaviour;

3. To participate in LSHTM's PDR process.

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4. To undertake limited Supervisory role.

5. To contribute to the Units agenda to disseminate research findings both locally and internationally through participation in Unit seminars, regional and international scientific conferences.

6. To contribute to publication of research in peer-reviewed Journals.

External Contribution

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

Professional Development and Training

1. To keep up to date with the latest research/thinking in your academic field and with changes to pedagogic practice within LSHTM 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 LSHTM as appropriate to the role.

4. To develop compelling early- or intermediate-career research grant applications and undertake research activities that advance his/her subject area of specialization but related to the Theme's interest and aligned to MRCG's research portfolio.

5. Develop plans to transit into mid-career research career path

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 LSHTM 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 LSHTM's best interests;

2. Treat staff, students and visitors with courtesy and respect at all times;

3. Comply fully with LSHTM 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 LSHTM's values (as set out in the LSHTM Strategy);

5. Act as ambassadors for LSHTM when hosting visitors or attending external events.

Academic Expectations

All academic roles have a statement of academic expectations attached to each level. Please ensure that these have been read and understood. For further information please refer to the Academic Expectations page.

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.

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

Essential criteria:

1. A postgraduate degree, ideally a doctoral degree, in a relevant topic.
2. Experience in computer-based analyses and presentation of experimental data.
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. Minimum of 2 first-authored paper within the last 3 years
8. Good communication skills including scientific discussion and writing
9. Demonstrated proficiency in a coding language used for data analysis, e.g. R, Python, STATA. Must be able to present scripts written for data analysis.
10. Proof of previous data analysis experience and use of basic statistical methods - able to do statistical summaries, basic data visualisation, t-tests, linear models. Must present papers or scripts and result reports as evidence at the later stages of the application process.
11. Previous experience in 'predictive mathematical modelling', preferably in protein work. However, the predictive modelling skills are more important than the type of data that was used previously. Must present a presentation of the workflow or of the results at the later stages of the application process.
12. In-depth understanding of how diagnostic/other test performance is evaluated. Must be able to explain sensitivity, specificity, PPV, NPV, area under the ROC curve, etc.
13. Evidence of practices that enable reproducible research. Must present previous projects with scripts, use git for version control of code, preferably have Github repositories to show, and use a structured approach to writing result reports, like Quarto.

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. Demonstrated ability to develop compelling research grant applications and/or win small- to medium size seed money for pilot study.

Salary and Conditions of Appointment

The post is fixed term until 31 March 2027 with a possibility to extend upon further funding and full-time 35 hours per week, 1.0 FTE. The post is funded by the UKRI and is available immediately. The salary will be on the Academic scale, Grade 6 scale in the range at £45,097 to £47,205 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 "Wellbeing Days". Membership of the Pension Scheme is available.

LSHTM has a Hybrid Working Framework, which alongside agreed service requirements, enables teams to work more flexibly (if the role allows), promoting a greater wellbeing and work/life balance.

Application Process

Applications should be made on-line via our jobs website. 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. We regret that late applications cannot be accepted. Any queries regarding the application process may be addressed to 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", "Yes" or "No" will not be considered acceptable and will not be scored.

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

This post is based overseas and 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 send a notarised copy of their passport prior to their start date.

Applicants will be required to have the right to work in the country in which the post is based (or be eligible to apply for a suitable work visa).

Date amended: June 2025