

MRC/UVRI and LSHTM Uganda Research Unit



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MEDICINE



Postdoctoral Fellowship Opportunity in Genetic Epidemiology

The MRC/UVRI and LSHTM Uganda Research Unit is an internationally recognised centre of excellence with dominant research themes in the areas of HIV and emerging infections, vaccines and immunity, chronic diseases and cancer. Through a multidisciplinary approach, intersecting basic science, epidemiological research, social-behavioural research and the conduct of new intervention evaluation studies, the Unit contributes knowledge on changing epidemics and diseases, the evaluation of innovative health care options, treatment and prevention and the development of health policy and practice in Africa and worldwide. Following the signing of strategic transfer agreements between the London School of Hygiene & Tropical Medicine (LSHTM) and the Medical Research Council (MRC UK), the Unit formally joined LSHTM on 1st February 2018. The exciting new partnership will boost research capacity into current and emerging health issues in Africa and throughout the world. The Unit is based at the UVRI Entebbe campus with established outposts in Kalungu, Masaka, Wakiso and Kampala districts.

Applications are invited from individuals who are interested in a Postdoctoral fellowship in Genetic epidemiology & Bioinformatics at the Unit who can support the research activities of Dr. Segun Fatumo and other scientists at *The African Computational Genomics* (TACG) Research Group. The post holder will work on rich genetic data from Africa and collaborators globally. Studies of the genetics of Non-Communicable Diseases (NCDs) will particularly focus on kidney disease and other cardiovascular diseases using approaches such as Genome Wide Association Study (GWAS), Polygenic Risk Score (PRS), fine mapping and specifically Mendelian randomisation studies with a focus to use this approach for the prediction of drug targets and repurposing.

Applicants are expected to be able to direct research independently and have a good breadth of knowledge of computational genomic research methodologies and background. This Postdoctoral position will also be expected to write papers, review papers, support grant proposals and supervise and mentor research assistants and students in a highly supportive environment for both early- and mid-career researchers.

The African Computational Genomics group largely focuses on the genetic impact of non-communicable diseases in Africa. The group explores statistical and computational methods to understand the genetic mechanisms underlying susceptibility to complex diseases in African ancestry populations with strong partnership with organisations such H3Africa, H3ABioNet and other research groups in Africa and globally.

The group consists of researchers and trainees with expertise in a wide range of methods including GWAS, PRS, fine mapping, functional analysis, Mendelian randomisation studies, drug targets discovery and repurposing to understand the genetic determinants of diseases in African and global populations.

The group will provide a unique opportunity to work with rich African genomic datasets and closely with top researchers in the frontier between genetic epidemiology and NCDs. The group offers an engaging and international research environment where you get an opportunity to contribute to high-quality research at an international top level. The group also provides an opportunity to work remotely and flexible working hours.

Main Activities and Responsibilities

Under the direction of the group leader of *The African Computational Genomics* Research Group, the post holder will drive multiple bioinformatics and genomic approaches including Mendelian randomization method to understand the causal relationship between a range of modifiable exposures and kidney and other cardiovascular diseases in Africa in major studies in the group. The main activities include:

- Design genomic epidemiology study and apply within established Africa cohorts
- Perform genetic association analysis on African genomic dataset
- Integrate genomic data to identify and validate causal links between genes and diseases.
- Interact with collaborators to obtain materials and exchange data and analyses
- Write manuscripts, disseminate and publish results
- Develop research objectives and proposals for research
- Contribute to grant proposal and develop own's fellowship
- Attend regular group meetings and journal clubs
- Undertake any necessary training and/or development
- Liaison with co-investigators in African and globally
- Make a contribution to teaching and research degree student supervision, as appropriate to qualifications and experience;

In addition to the above, there will be plenty of opportunities to contribute ideas and develop own research agenda. The group provides an informal and collaborative atmosphere and always strives to accommodate researcher's interests and research ideas whenever possible.

Essential Criteria

- PhD in Genetic Epidemiology/ Computational Genomics/ Computational Pharmacogenomics or related (ideally within 1 year of completing PhD).
- Knowledge and/or research experience in GWAS, Mendelian randomization studies and

computer-aided drug design.

- Experience programming in Python, or Perl with knowledge of Linux.
- Experience using statistical computing software.
- Knowledge of statistical methods related to genetic epidemiology.
- Knowledge of bioinformatics tools to analyse genetic data.
- Knowledge and/or research experience in drug discovery and repurposing.
- Knowledge of statistical methods and experience of Machine Learning model.
- Experience with high performance computer clusters and parallel computation.
- Evidence of scientific publications in reputable journals.
- Evidence of excellent interpersonal skills, including the ability to communicate effectively both orally and in writing.
- Evidence of good organizational skills, including effective time management.

Application Procedure

- An application letter expressing interest for the position.
- Curriculum vitae (highlighting your skills and relevant experience), including names, email addresses and telephone contact details of three (3) referees.
- Scanned copies of your professional and academic transcripts.

How to Apply

Applications should be addressed to the Head of Training and Career Development and submitted by email to training@mrcuganda.org and copy to segun.fatumo@lshtm.ac.uk. Combine all application documentation into one PDF document. Please specify the fellowship opportunity (Postdoc2021-002) you are applying for in the subject line of the email. Only successful candidates will be contacted.

The closing date for receiving applications is 19th February 2021.