

UGANDA SCHISTOSOMIASIS MULTIDISCIPLINARY RESEARCH CENTRE (U-SMRC)

Call for PhD Opportunities

Schistosomiasis is a major neglected tropical disease, estimated to affect 240 million people worldwide, and 90% of this burden is in sub-Saharan Africa. Uganda is highly endemic for *Schistosoma mansoni* (Sm). Intestinal schistosomiasis is universal in many villages around its Great Lakes and the River Nile. The Ministry of Health's Vector Control Division (VCD), responsible for schistosomiasis control, has long been concerned by the high rates of severe schistosomal morbidity in the North-Western Lake Albert region (LA), compared to the Central and Eastern Lake Victoria region (LV), despite comparable transmission and programmes of praziquantel mass drug administration.

The Uganda Virus Research Institute together with The Ministry of Health's Vector Control Division and other local and international partners has been funded by the NIH for five years to establish The Uganda Schistosomiasis Multidisciplinary Research Center (U-SMRC) to build expertise and understanding of the underlying determinants of severe schistosomal morbidity, addressing each stage of the parasite's life cycle; and to develop an integrated model for identifying appropriate interventions for prevention and management of this important disease.

The U-SMRC's core research goal is to understand the biological determinants of severe Sm-associated morbidity and to identify better strategies for its prevention and control.

We hypothesise that key biological determinants of severe schistosomal morbidity occur at each stage of the parasite's life cycle: in the human host, in the parasite, and in the snail host and its environment. To investigate this hypothesis, two study designs will be used: (i) cohorts of pre-school-age children (PSAC) in LA and LV, to explore the early evolution of immune responses that may lead to severe morbidity and (ii) an adult case control study to identify chronic exposures associated with severe disease.

Our specific aims are

1. To compare early-life immune responses to Sm exposure and infection between LA and LV and identify co-exposures that modulate Sm-specific immune responses and morbidity risk
2. To establish a platform for local genetic surveillance of schistosome parasites in Uganda and determine whether there is a parasite genetic basis to differences in clinical outcomes in LA and LV
3. To determine which population biological determinants of *Biomphalaria* spp. snails act as local epidemiological drivers of Sm, filtering its diversity within and between LA and LV ecosystems; and whether detection of environmental (e)DNA signatures from *Biomphalaria* and Sm can be used to better predict snail/parasite diversity at transmission sites and (re)infection risk within key demographic groups

U-SMRC core partnerships include;

Five Ugandan institutes

1. Vector Control Division (VCD) of the Ministry of Health
2. Uganda Virus Research Institute (UVRI)
3. Medical Research Council / Uganda Virus Research Institute and London School of Hygiene & Tropical Medicine (MRC/UVRI and LSHTM) Uganda Research Unit
4. Makerere University
5. Mbarara University of Science and Technology

International collaborators

1. Johns Hopkins University Schools of Medicine and Public Health (JHU, USA)
2. The Leiden University Medical Centre (LUMC, The Netherlands)
3. The University of Cambridge (UK)
4. The University of Glasgow (UK)
5. The Liverpool School of Tropical Medicine (LSTM, UK)
6. The Royal Museum for Central Africa (RMCA, Belgium)

Opportunities available

U-SMRC shall support three full time PhD studentships for each aim; one student will be recruited for each aim (immunology, schistosome genetics, snail biology). Immunology and schistosome genetics students will be registered at Makerere University, while the snail biology student will be registered at Mbarara University of Science and Technology.

In addition to the formal training, the PhD candidates will benefit from other trainings including but not limited to scientific writing, grant writing, science journalism, policy analysis, media, public and community engagement, evidence appraisal, scientific preparedness for emergencies, research management, responsible conduct of research and safeguarding, Good Clinical Research Practice and Human Subjects Protection.

The programme will provide a laptop, tuition fees, medical insurance and a stipend throughout the studentship.

To be eligible, candidates must:

- i) Be a national of a country in sub-Saharan Africa and with not more than 10 years' experience upon completion of their highest degree (MSc or equivalent).
- ii) Hold a minimum of an upper second-class honours first degree, AND a Master's degree in a subject relevant to the aim in which they would like to undertake their PhD.
- iii) Have at least 1-year full time equivalent work experience since completion of their first degree. Project time during the master's project may be considered.

How to apply

- Applicants should complete the [online application form](#) and attach an updated CV and copies of academic transcripts by 17th July 2022.
- Additionally, applicants should contact at least two of their referees to send confidential letters of support to rmuganyizi@uvri.go.ug by 17th July 2022.
- Successful candidates will be required to register at Makerere University or Mbarara University of Science and Technology.
- Only candidates who meet the minimum criteria will be shortlisted and contacted.
- Applications received after the closing date will not be considered.

Enquiries

Informal enquiries concerning the opportunities can be made to vbukirwa@uvri.go.ug or rmuganyizi@uvri.go.ug.