

Call for PhD fellowships in arboviral surveillance and integrated mosquito control interventions in the hospital setting of Zanzibar, Tanzania (2 positions).

Eligible PhD candidates must be from the East African region.

Project Outline

The Danish Ministry of Foreign Affairs has granted full support to the research project entitled *Building resilience to climate-sensitive mosquito-borne viral diseases: preventing epidemics through integrated mosquito control and sentinel surveillance in Zanzibar hospitals (MBD-Free)*. This includes funding for two PhD fellowships with a focus on integrated vector control approaches and molecular screening of mosquitoes for arboviral infections.

In this project, we address the risk of mosquito-infested hospitals acting as hotspots for mosquito-borne viral diseases (MBDs). Specifically, we aim to protect hospital staff, patients, and visitors from hospital-acquired MBDs and to prevent epidemic spread into surrounding communities by creating 'mosquito-free' hospital environments combined with a sentinel surveillance system for early warning of emerging MBDs.

PhD1

With a background in entomology, this PhD will develop a methodology for the integration of vector control methods that are applicable to the hospital setting of Zanzibar. In partnership with a PhD fellow in architecture, the PhD will employ a participatory process engaging local stakeholders in the selection and integration of relevant control options within i) mass trapping and ii) changes to the built environment (retrofitting). Upon selection of control options, the PhD will assess the impact of the integrated control intervention based on relevant entomological parameters and operational practices in different hospital sites. The PhD fellow will conduct all on-site activities in close collaboration with hospital management and academic staff from State University of Zanzibar (SUZA), as part of a larger team of regional and international researchers working on the MBD-Free project.

PhD2

With a background in molecular biology or similar, this PhD will pilot an operational framework for mosquito-based arboviral surveillance at hospitals and other sentinel sites. Specifically, the project will explore opportunities for using molecular methodologies (e.g., PCR, qRT-PCR, and next generation sequencing (NGS)) to determine vector speciation and viral infection of mosquito captures from mass traps used as part of the integrated control intervention (see PhD1). The project will also include serological methods to determine vector-bite exposure (IgG to mosquito salivary gland proteins) and pathogen exposure (e.g., IgM/IgG to arbovirus antigens) of individuals spending extended time within the hospital setting. The PhD fellow will conduct some activities at different sentinel sites, but most work will be laboratory-based in close collaboration with academic staff from Kilimanjaro Christian Medical University College (KCMUCo) and University of Copenhagen (UCPH), as part of a larger team of regional and international researchers working on the MBD-Free project.

Qualifications

- Candidates must be from the East African region
- Candidates are required to hold a relevant Master of Science degree within the field of natural sciences
- Experience with entomological fieldwork is considered essential (PhD1, specifically)
- Experience with participatory research is considered an advantage (PhD1, specifically)
- Experience with molecular techniques is considered essential (PhD2, specifically)
- Prior training/experience with NGS and bioinformatics is considered an advantage (PhD2, specifically)
- Willingness to commit full-time effort to the PhD programme is a requirement including staying in Zanzibar/Tanzania for periods of time (PhD1& PhD2)
- Candidates must have strong communication skills in English, both oral and written
- Willingness to work in a multi-disciplinary and multicultural team is a requirement
- Experience from an international research environment is considered an advantage
- First/co-authorship on publications related to the relevant research theme is considered an advantage
- Female candidates are encouraged to apply

Application

Applications must include the following documents:

- Cover letter describing why you wish to undertake this fellowship and how this study may further your career (max. 1 page)
- Concept note (max. 2 pages, excluding references) addressing the subject of the relevant PhD call with particular focus on:
 - PhD1: Engagement of local stakeholders in integrated vector control and possible outputs of 'your' PhD study
 - PhD2: Arboviral surveillance using mosquitoes as sentinels and possible outputs of 'your' PhD study
- Recent CV including brief educational background, previous and/or current employer(s) and position(s) held, as well as a list of peer reviewed publications (if any). Max 2 pages in Europass format
- Certified copies of academic transcripts and relevant certificates
- Letters of recommendation from two academic referees including phone numbers and e-mail addresses

Please note that all shortlisted candidates are required to attend a **selection interview** and to give a 10 min. **presentation of their concept note** as part of this interview. If necessary, the interview may be conducted online via Zoom or Skype. The date of the interview will be communicated **within 2 weeks** of the application deadline. Final selection of the candidate will be determined by the interview committee and communicated directly. Only shortlisted applicants will be contacted.

Application deadline

Applications must be submitted by email to Principal investigator, Karin Schiøler at ksch@sund.ku.dk and copied to Co-Principal investigator, Fatma Saleh at fatma.saleh@suza.ac.tz before 14.04.23. Applications received later than this date will not be considered. Further details may be obtained via above e-mails.

PhD enrolment and evaluation

The successful candidate **will be enrolled at a University in the African region** and offered a 4-year PhD scholarship covering university fees, research costs and a student stipend in accordance with national tariffs. The PhD supervision will be a joint effort between faculty at the University of enrolment, SUZA, KCMUCo and UCPH. Evaluation of the progress of the PhD activities will be done according to current regulations at the University of enrolment.

Commencement

The PhD program is scheduled to commence during the academic year of 2023.

