



ESIDA - Epidemiological Surveillance for Infectious Diseases in Sub-Saharan Africa

PhD Scholarships

Two PhD scholarships available, one based at the School of Computational and Communication Sciences and Engineering (CoCSE) and one at the School of Life Sciences and Bio-engineering (LiSBE)

Call for applications open until Nov 20th, 2020

Background

To strengthen national public health surveillance and response systems, cross-border cooperation and information exchange is critical. However, in resource-restricted areas, like sub-Saharan Africa, local surveillance systems often lack the capacity for adequate disease reporting and timely response due to limited data, with diseases often going unnoticed. The most recent examples of the urgent need of innovative strategies to optimize the collection of health data and monitoring of epidemic events are the ongoing COVID-19 epidemic and the Ebola disease outbreaks in Africa. Sub-Saharan Africa's growing digital infrastructure and advancements in communication technologies, especially in the mobile-phone sector, offer promising opportunities for more efficient and real-time information exchange to improve local epidemiological surveillance and response systems. For example, health data collection through mobile devices and the use of Open Data (e.g. freely shared population and environmental data) as a new component of traditional public health surveillance systems come with enormous potential, but require intelligent connectivity of qualified actors across national borders and research disciplines.

The project ESIDA aims to develop approaches of data-driven health information systems synergizing skills, methods and data objects from various research disciplines. The proposed activities build on prior research and existing collaboration networks between German and African partners with the objective to develop joint strategies of efficient early outbreak detection and containment in the target area of Tanzania. The expected outcome is a pre-prototypical electronic health information system designed to strengthen epidemiological surveillance and alerting local public health actors. In the long term, the health information system could be expanded to other member states of the East African Community as part of an existing national laboratory project.

The PhD doctoral training in CoCSE will be focused on:

1. Building a database to combine health and environmental data
2. Using agent-based models and simulations to study the spatial distribution and spread of infectious diseases
3. Working on a proof of concept
4. Developing / amending an infectious disease surveillance mobile application as a validating tool for the agent-based models

The PhD doctoral training in LiSBE will be focused on:

1. Gathering health surveillance and environmental data across Tanzania
2. Consolidating existing health-surveillance data bases
3. Working together with the PhD in CoCSE on developing a comprehensive data base
4. Verifying and validating the health-related information needed for testing an e-based questionnaire (eHISS)
5. Developing a sound surveillance tool for infectious diseases
6. Evaluating the acceptance and uptake of an e-based infectious disease reporting system (interactive voice response system)

Eligibility

To be eligible for the ESIDA PhD scholarship, applicants must:

- Have a relevant MSc degree in one of the fields of study. The master's degree must have been completed less than six years before 30th September 2020.
- Meet the specific admission requirements of the Nelson Mandela African Institution of Science and Technology (see NM-AIST webpage: <https://www.nm-aist.ac.tz/>).
- **Be aware: closing date of NM-AIST applications for Jan 2021 is October 30th, 2020**
- Be willing to enroll full-time in a PhD program at NM-AIST in Jan 2021 for the new academic year.
- Demonstrate that their research interests are well aligned with the ESIDA objectives.
- Have a publication in an international peer-reviewed journal to be able to enter the PhD program by Research and Thesis as offered through NM-AIST
- Have an interest in interdisciplinary research
- Enjoy practical hands-on research
- Be able to engage and closely interact with health workers, hospitals, stakeholders

Benefits

The ESIDA PhD scholars will receive the following benefits:

- The scholarship will cover tuition and related fees, competitive stipend to cover on campus living expenses, travel, medical insurance and research costs.

- Small funds for research activities (although proposal writing to receive some additional research funds will be required)
- Scholars will be supported to visit our international partner university/research institute to learn new skills and meet with stakeholders / partners

Further information can be sought through

<https://www.nm-aist.ac.tz/>

<https://www.nm-aist.ac.tz/index.php/schools/lisbe>

<https://www.nm-aist.ac.tz/index.php/schools/cocse>

<https://www.bnitm.de/en/research/research-groups/epidemiology-and-diagnostics/infectious-disease-epidemiology-department/>

Mode of application

Applications are accepted upon meeting and only with secured admission into the relevant program at NM-AIST. Together with the NM-AIST admission letter, applicants must attach the following:

- Three-page Curriculum Vitae
- Three-page concept note on one of the ESIDA topics above
- Journal paper (if already published in peer reviewed journals) – mandatory for Research and Thesis admission mode.

Applications should be sent via email to:

Prof. Anna C. Treydte, School of Life Sciences and Bioengineering, Nelson Mandela African Institution of Science and Technology (anna.treydte@nm-aist.ac.tz) and in cc to: Dr. Devotha Nyambo (devotha.nyambo@nm-aist.ac.tz)

Submission deadline:

November 20th, 2020, at 6:00 pm