CALL FOR APPLICATION: PhD SCHOLARSHIP IN DATA SCIENCES

I. Background

The University of Rwanda (UR), in collaboration with Temple University's Department of Biology (Boni Lab) and the Rwanda Biomedical Centre (RBC), is seeking an exceptional PhD student to join our innovative research team, which models the spatiotemporal dynamics of malaria control and antimalarial drug resistance in Rwanda. This fully funded position offers the opportunity to learn about and develop mathematical and computational models to improve malaria control, predict resistance patterns, inform national malaria control strategies, and contribute to the global antimalarial stewardship efforts. This effort is crucial at a time when artemisinin resistance is spreading in many African countries.

The successful candidate will integrate field surveillance data from Rwanda's national malaria control program with genetic data on current resistance types to construct predictive models of resistance emergence and spread. The candidate will be trained by the PIs and scientists working at Temple University (Philadelphia, USA) and supervisors from UR and RBC under the ongoing partnership, which began in 2022. The candidate will have the opportunity to learn about and work with both (1) individual-based malaria simulations, recommended for individuals coming from a computer science background, and (2) compartmental mathematical models, recommended for individuals coming from mathematics or physics backgrounds. The goal of the PhD will be to answer new questions in optimal malaria control and drug-resistance control policy, and/or to provide evaluations of current efforts in this area.

II. Role and description

The successful candidate will integrate field surveillance data from Rwanda's national malaria control program with genetic data on current resistance types to construct predictive models of resistance emergence and spread. Specific responsibilities of the PhD fellow will include:

- Integrate national malaria surveillance and genetic resistance data into advanced modelling frameworks
- Develop and apply mathematical and computational models (e.g., individual-based simulations and/or compartmental models)
- Analyse spatial and temporal trends in antimalarial drug resistance and contribute to the optimization of malaria control policies
- Prepare scientific publications and contribute to national and international dissemination of findings
- Collaborate closely with the multidisciplinary teams, including data scientists, epidemiologists, and public health officials
- Support technical capacity-building activities at RBC and UR within the project team
- Participate in relevant academic activities, training workshops, and conferences, both nationally and internationally
- Maintain effective communication with project stakeholders and partners throughout the PhD period

III. Call for Application

We invite applicants for a fully funded PhD position, to be held for a duration of 4 years at the University of Rwanda.

IV. Funding

The successful candidates will receive a monthly living allowance (stipend) for the period of four years. Additional benefits include field allowances (mission fee). The PhD student's performance will be evaluated after one and a half years, and contract renewal will be contingent upon satisfactory performance.

V. Application requirements

Eligibility Criteria

Applicants must:

1. Not have been enrolled in any other PhD program at the time of recruitment
2. Be a Rwandan citizen living in Rwanda
3. Be a Permanent staff member of UR
4. Be committed to staying in Rwanda and working with RBC during the research.
5. Have a master's degree in mathematical science, statistics, computer science, data science, or other computational-related fields.
6. Meet University of Rwanda admission requirements.
7. Not be older than 40 years for males, and 45 years for females

Desired Qualifications

1. Strong quantitative background (mathematics, statistics, computer science, computational biology, or related field),
2. Programming experience.
3. And interest in infectious disease epidemiology.
4. Prior quantitative or coding experience is strongly encouraged

VI. Application File

- Motivation letter addressed to the UR Director of the Center of Postgraduate Studies, specifying the area of interest for your PhD research, ideally a high-level topic title (with 10 lines maximum concept idea) in the area of infectious disease, where you leverage mathematical and data sciences techniques.
- Copies of academic degrees (from the baccalaureate)
- Certified copies of academic transcripts (from the baccalaureate). Please provide the official explanation of the grading system, if applicable.

- Three letters of recommendation (from at least Associate Professors) from the institutions attended by the applicant
- Certified copy of the birth certificate
- Curriculum vitae, including, when applicable, a list of scientific publications, and justify any trajectory gap in the CV if any.

VII. Selection methodology

An interview will be organized for candidates fulfilling the requirements.

VIII. How to apply

Applicants must apply to the University of Rwanda by email to the scholarship officer, ur-cpgscholarship@ur.ac.rw at UR-CPGS, Tel: +250 788 897 814, and a copy to Dr. Jean Claude Semuto Ngabonziza – Health Scientific Innovation Analyst at RBC, E-mail: jclaude.ngabonziza@rbc.gov.rw, Tel: + 250 738 740 490

Deadline for application: 26th September 2025

For more information, contact:

(1) Dr. Jean Claude Semuto Ngabonziza , jclaude.ngabonziza@rbc.gov.rw, Phone: +250788740490
(2) Dr. Maciej Boni, mboni@temple.edu

Done at Kigali, September…09…,2025

UNIVERSITY OF RWANDA - UR

Assoc. Prof. KAYIHURA Muganga Didas
Acting Vice Chancellor