RE-ADVERTSED CALL FOR APPLICATION FOR PhD SCHOLARSHIP IN DATA SCIENCES

I. Background

The University of Rwanda (UR) in collaboration with Temple University's Department of Biology (Boni Lab) and Rwanda Biomedical Centre (RBC), is seeking an exceptional Ph.D. student to join our innovative research team, modeling 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 critical at a time when artemisinin resistance is spreading in many countries in Africa.

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. The Ph.D student will be trained by the PI (Dr. Maciej Boni) and scientists working at Temple University (Philadelphia, USA) and supervisors from UR and RBC. The goal of the Ph.D thesis will be to answer novel research questions for optimal malaria and drug-resistance control policy, and/or to provide evaluations of current efforts in this area. Specific responsibilities of the Ph.D 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 Ph.D period

III. Call for application

We call applicants for one Ph.D fully funded position for a duration of 4 years.

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) and any other research expenses following the UR standards/guidelines. The Ph.D 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. Open for all Rwandan citizen living in Rwanda from institutional partners to UR and RBC
3. Be committed to staying and working in Rwanda at RBC during the Ph.D period
4. Have a master's degree in mathematical science, statistics, computer science, data science, or other computational related fields
5. Meet University of Rwanda admission requirements
6. Not be older than 40 years for males, and 45 years for females.

Desired Qualifications

1. We seek candidates with a 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 Procedure

The application process consists of:

- Applicants must apply to University of Rwanda by email to the scholarship officer ur-cpgscholarship@ur.ac.rw at UR-CPGS, and a copy to Dr. Jean Claude Semuto Ngabonziza, Health Scientific Innovation Analyst at RBC, E-mail: jclaude.ngabonziza@rbc.gov.rw)

Documents to provide while applying for this first step:

- Motivation letter addressed to the UR Director for the Center for 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 used.
- 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 CV if any.

VII. Selection methodology

An interview will be organized for candidates fulfilling the requirements.

VIII. How to apply and key dates

Applicants are requested to send documents as listed above by email to the scholarship officer on email: ur-cpgscholarship@ur.ac.rw at the UR- Centre for Postgraduate Studies, Tel: 0792988304 and a copy to Dr. Jean Claude Semuto Ngabonziza at RBC, Email: jclaude.ngabonziza@rbc.gov.rw , Tel: + 250 738 740 490 and mboni@temple.edu.

Deadline for application: 30th November 2025 at 5:00pm

For more information, contact:

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

Done at Kigali on 07/11/2025

Assoc. Prof. KAYIHURA Muganda Didas
Acting Vice Chancellor