IDEMU

INFECTIOUS DISEASES EPIDEMIOLOGY AND MOLDELLING UNIT

CALL FOR RESIDENT FELLOWS – 2023-2024 (12 months)

Introduction

IDEMU Mathematical Modeling Unit, Uganda is affiliated with the Department of Epidemiology and Biostatistics, Makerere University School of Public Health, Uganda. IDEMU mathematical modeling unit modelling interests are; Mathematical Modeling, Statistical Modeling, Computational Modeling, Machine Learning Modeling, Artificial Intelligence Modeling and Economic Modeling. There are weekly virtual journal club meetings **(Wednesdays 1-2pm EAT)** to appraise the progress of members. IDEMU mathematical modeling unit normally organizes short course trainings in R, Python, and mathematical modelling.

We aim at contributing to; future projections of disease prevalence, transmission dynamics, control strategies, elimination strategies, cost-effectiveness, climate change, budget impact, ecological modelling and causal inference. We are currently seeking **04 research fellows** interested in joining the IDEMU Mathematical Modeling Unit, Uganda to continue contributing to this agenda.

Expected roles/responsibilities:

1. Formulate research objectives, projects, and proposals.
2. Design and implement short courses on *R, python and mathematical modelling*.
3. Execute independent or team-based research projects, leveraging mathematical modeling techniques to address complex infectious diseases problems.
4. Identify potential sources of funding and actively contribute to securing research grants and financial support for projects.
5. Author or contribute to research publications and effectively disseminate findings through appropriate academic channels and media.
6. Deliver presentations at conferences and showcase work at relevant events to share insights and advancements in mathematical modeling research.
7. Skillfully convey intricate and conceptual ideas to individuals with varying levels of mathematical knowledge and understanding.
8. Cultivate external networks to identify funding opportunities, generate income, engage in consultancy projects, and establish collaborations for future research endeavors.
9. Provide guidance and mentorship to less experienced colleagues, offering support and advice to aid in their professional growth.
10. Address standard research challenges and assist colleagues in resolving issues related to research progress and objectives.
11. Assess, interpret, and evaluate the outcomes of research projects, drawing meaningful conclusions and insights.
12. Collaborate with peers and, as necessary, gain approval from the head of the research program to make decisions on research programs, methodologies, and fundamental issues.

13. Develop and execute plans for research programs, coordinating activities, timelines, and resources efficiently.
14. Manage and account for any resources allocated to you.
15. Plan and execute consultancy projects related to mathematical modeling, delivering valuable insights to clients.

Eligibility/Job requirements:

1. A master's degree in a relevant field such as **Public Health**, **Environmental Health, Epidemiology, Mathematics, Applied Mathematics**, **Computational Science**, **Statistics**, or a related discipline.
2. Demonstrated expertise in mathematical modeling and a strong track record of research in the field. This might include a portfolio of publications, conference presentations, or successful projects.
3. Knowledge in mathematical modeling software, data analysis tools, and relevant programming languages (e.g., **Python, MATLAB, R**).
4. Proven analytical, statistical, and computational skills.
5. A history of securing research grants or the potential to contribute to securing funding for research projects (**is added advantage).**
6. Excellent written and verbal communication skills.
7. The ability to work both independently and as part of a research team since collaboration is one of our core values.
8. Strong organizational and project management skills to plan and execute research projects effectively.
9. Adherence to ethical standards and responsible conduct of research.
10. The ability to adapt to evolving research priorities and methodologies.

Benefits;

1. Professional recommendation letters (whenever needed)
2. Modeling authorship and co-authorship opportunities
3. Networking opportunities and training from global modellers.
4. Contribute to scientific writing.
5. Weekly scientific journal club presentations

Payments: None for now until funds are available

Application process

The application should contain:

- Brief Cover Letter (in English) stating your motivation in and qualifications for the post.
- Current and complete 2-page CV in English
- Please group all your documents into one single PDF document and submit to admin@idemu-mak.org by **17th November 2023 at 23:59pm EAT.**