

CALL FOR APPLICATIONS

Tanzanian Postgraduate AMR Genomics and Plate-Sweep Metagenomics Capacity-Building Initiative

Opportunity for continuing MSc and PhD students in Tanzania

APPLICATION DEADLINE: THURSDAY, 20 AUGUST 2026

Overview

The Department of Microbiology and Parasitology at St. Francis University College of Health and Allied Sciences (SFUCHAS), in collaboration with Professor Lesley Hoyles at Nottingham Trent University, United Kingdom, invites applications from motivated continuing MSc and PhD students in Tanzania whose research addresses antimicrobial resistance, bacterial pathogens, microbiology, One Health or a closely related field.

One or two candidates will be selected to participate in an emerging research and capacity-building initiative led by Dr Reuben S. Maghembe, Senior Lecturer and Head of the Infectious Disease Research Group at SFUCHAS. The initiative links isolate-level phenotypic and genomic analysis with plate-sweep metagenomics and structured training in bioinformatics, biostatistics, scientific writing and collaborative research development.

ELIGIBILITY Continuing MSc or PhD students	GEOGRAPHIC SCOPE Universities and research institutions in Tanzania	PLACES AVAILABLE One or two candidates
PRIMARY AREAS AMR genomics and plate-sweep metagenomics	APPLICATION FORMAT One combined PDF	SUBMISSION Email application

Programme focus

Genomic characterisation of *Klebsiella* and other priority Enterobacterales.
Antimicrobial-resistance phenotyping, genomics and genomic epidemiology.
Plate-sweep metagenomics, also known as quasi-metagenomics.

Bacterial community and resistome analysis.
Bioinformatics, biostatistics and scientific data analysis.
Scientific writing and development of collaborative research proposals.

Why this initiative matters

Conventional bacterial surveillance often analyses only one or a few colonies selected from a culture plate. This can overlook important organisms and antimicrobial-resistance determinants present within the wider cultured bacterial community.

The initiative will combine targeted characterisation of individual bacterial isolates - particularly members of the *Klebsiella pneumoniae* and *Klebsiella oxytoca* species complexes - with plate-sweep metagenomics of mixed bacterial growth recovered from culture plates. This approach is intended to connect isolate-level phenotypic and genomic evidence with community-level information on priority Enterobacterales and antimicrobial-resistance genes.

Eligibility

Applicants must meet all of the following requirements:

- Be currently registered as a continuing MSc or PhD student at a recognised university or research institution in Tanzania.
- Be conducting, or preparing to conduct, research involving bacterial pathogens, antimicrobial resistance, microbiology, One Health, clinical microbiology, veterinary microbiology, food microbiology, environmental microbiology or a closely related field.
- Have access to an existing or developing collection of bacterial isolates relevant to the initiative.
- Have basic practical experience in microbiology or molecular biology, such as bacterial culture and identification, antimicrobial-susceptibility testing, DNA extraction, PCR or maintenance of bacterial isolate collections.
- Have basic exposure to bioinformatics, biostatistics, data analysis or programming. Advanced expertise is not required, but applicants must demonstrate a strong willingness to learn.
- Be able to devote regular time to training, laboratory work, data analysis, project meetings and agreed deadlines.
- Be willing to work collaboratively, document methods carefully, share agreed project information responsibly and contribute to joint scientific outputs.
- Be formally recommended by a current project or postgraduate supervisor, postgraduate programme coordinator, head of section or department, head of laboratory, or another senior academic who directly oversees the applicant's current research.

Priority isolates and research materials

Applicants should preferably have access to viable, appropriately preserved isolates accompanied by basic de-identified metadata. Priority organisms include:

- *Klebsiella pneumoniae* species complex;
- *Klebsiella oxytoca* species complex;
- *Escherichia coli*;
- *Enterobacter* species;
- *Citrobacter* species; and
- Other clinically or epidemiologically important Enterobacterales.

Relevant isolate sources may include human clinical specimens, animals or animal products, food, wastewater, hospital or community environments, and other One Health settings.

What selected candidates may receive

- Mentorship in AMR genomics and genomic epidemiology.
- Training in isolate quality control, metadata management and antimicrobial-susceptibility analysis.
- Exposure to bacterial whole-genome sequencing and plate-sweep metagenomic approaches.
- Training in bioinformatics, biostatistics and scientific data analysis.
- Support with data interpretation, manuscript preparation and grant development.
- Participation in seminars, workshops and collaborative research meetings.
- Integration into an emerging Tanzanian postgraduate AMR genomics network.
- Consideration for authorship on resulting publications where internationally accepted authorship criteria are met.

Scope of sequencing and analytical support

Depending on scientific relevance, sample quality, ethical approval, institutional agreements and available resources, a reasonable number of selected isolates or plate-sweep materials may be considered for sequencing or advanced analysis through collaborating laboratories.

Selection does not guarantee overseas travel, scholarship funding, employment, stipends, tuition support or sequencing of every isolate submitted. The initiative is intended for active trainee researchers, not applicants seeking sequencing services only.

Formal recommendation requirement

Applicants must be formally recommended by a person who currently has direct academic or institutional responsibility for their postgraduate training or research. Self-nominations without a formal recommendation will not be considered.

An eligible recommender may be:

- The applicant's current MSc or PhD research supervisor.
- The applicant's current project supervisor.
- The postgraduate programme coordinator.
- The head of the applicant's section, unit or department.
- The head of the applicant's laboratory or research group.
- Another senior academic or research leader who directly oversees the applicant's current work.

The recommendation should confirm the applicant's current registration, scientific motivation, dependability, basic laboratory competence, access or a realistic pathway to relevant isolates, ability to allocate sufficient time, and suitability for collaborative training and research.

Selection principles

The initiative seeks motivated, ambitious, reliable and intellectually curious postgraduate researchers. Academic distinctions are not the primary basis for selection.

Not required for ranking	Primary considerations
• GPA or examination grades • Class rank • Best-student awards • Number of academic prizes	• Authenticity and strength of motivation • Quality of the recommendation • Relevance of the postgraduate project • Suitability and documentation of isolates • Laboratory and foundational analytical skills • Reliability, learning potential and commitment to deadlines • Supervisor and institutional support • Potential contribution to postgraduate capacity building and the wider network

Personal characteristics unrelated to the opportunity - including gender, ethnicity, religion, disability, marital status or family status - will not be used to rank applicants.

Required application documents

Submit the following six documents as one combined PDF. The application should be clear, complete and internally consistent.

1. Motivation letter - *maximum two pages*

- Current MSc or PhD research and the central scientific question.
- Reason for applying and long-term research ambition.
- Available isolates or samples and their relevance to the initiative.
- Existing laboratory, bioinformatics, biostatistics or data-analysis skills.
- Skills the applicant hopes to develop.
- How participation would strengthen the thesis and future career.
- How the applicant would contribute to the wider Tanzanian research network.

2. Curriculum vitae - *maximum three pages*

- Education and current postgraduate registration.
- Research experience and laboratory skills.
- Bioinformatics, biostatistics, programming or data-analysis exposure.
- Publications, presentations and relevant training, where applicable.
- Contact details for the current supervisor and recommender.
- GPA, class rank and best-student awards are not required.

3. Preliminary isolate inventory

- Species or preliminary identification and approximate number of isolates.
- Specimen, host or environmental source and geographical location.
- Collection period, storage method and current viability.
- Availability of antimicrobial-susceptibility testing results, extracted DNA and de-identified metadata.
- Ownership or custodianship and ethics or institutional approval status.

Confidentiality reminder

The preliminary inventory must not contain patient names, direct identifiers or confidential institutional information.

Required application documents (continued)

4. Formal recommendation letter

- Written and signed by an eligible recommender.
- Explains the recommender's relationship with the applicant.
- Confirms registration, motivation, dependability, basic competence and availability.
- Confirms access or a feasible pathway to relevant isolates or materials.
- Indicates support for training, meetings, laboratory activities, data analysis and collaborative outputs.

5. Supervisor support statement - *where required*

- Required when the formal recommender is not the current research supervisor.
- Confirms that participation is compatible with the degree programme.
- Supports appropriate discussion of isolate use, data ownership, material transfer and authorship.
- One combined letter is sufficient when the current supervisor is also the formal recommender.

6. Signed availability and commitment statement

- Commitment to regular meetings, training, laboratory and computational work.
- Willingness to meet milestones and deadlines, including agreed periods of intensified work.
- Commitment to honest progress reporting and early communication of constraints.
- Compliance with ethics, biosafety, confidentiality, authorship and data-governance requirements.

Selection process

Stage 1 - Application review. Applications will be assessed for eligibility, motivation, scientific fit, isolate suitability, foundational skills, recommendation quality, supervisor support and capacity-building potential.

Stage 2 - Interview. Shortlisted candidates will be interviewed to assess their understanding of their own research, scientific reasoning, motivation, basic microbiology and AMR knowledge, familiarity with their isolate collection, readiness to learn genomic and metagenomic methods, problem-solving ability, availability and teamwork.

Applicants will not be tested on advanced bioinformatics methods they have not previously been taught.

Expected commitment

- Regular virtual or in-person meetings.
- Preparation of an auditable isolate inventory.
- Laboratory quality-control and documentation activities.
- Independent reading and structured training exercises.
- Bioinformatics or biostatistics assignments.
- Progress reports and contribution to analyses.
- Participation in manuscript and future proposal development.

How to apply

Combine all six required application documents into one PDF file using the following filename:

Required filename

Surname_FirstName_AMR_Genomics_Application.pdf

Submit the application by email using the subject line:

Required email subject

Application: Tanzanian Postgraduate AMR Genomics Initiative - [Applicant's Full Name]

Submission contact

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Incomplete applications, applications submitted without a formal recommendation, and applications received after Thursday, 20 August 2026 may not be considered.

Important governance and collaboration notice

This is a research capacity-building and collaborative mentorship opportunity. It is not an offer of employment, a scholarship award or a guarantee of overseas travel.

No biological material will be transferred, sequenced or analysed before completion of the necessary scientific review, ethics verification, institutional authorisation, data-sharing arrangements and material-transfer requirements.

Selection into the initiative will not automatically transfer ownership of isolates or thesis data.

Sample use, data ownership, authorship, acknowledgement, material transfer and benefit sharing will be governed by written agreements involving the student, supervisors and participating institutions before substantive collaborative work begins.

Applicants from universities and research institutions across Tanzania are encouraged to apply.