

**MEDICAL RESEARCH COUNCIL UNIT THE GAMBIA AT THE
LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE**

JOB DESCRIPTION

MANAGER MOLECULAR DIAGNOSTICS LABORATORY

Laboratory Services Department

1. Job Title: Manager, Molecular Diagnostics Services/Platform

2. Introduction:

Established in 1947, the MRCG at LSHTM has an international reputation for ground-breaking research into some of the leading causes of morbidity and mortality in the tropics. Achievements include a large trial showing the efficacy of *Haemophilus influenzae* type B vaccine in The Gambia and the subsequent near elimination of the disease, pioneering studies of the impact of insecticide treated bed nets as a preventive measure against malaria leading up to their worldwide use, studies demonstrating the impact of conjugate pneumococcal vaccines on pneumonia and child mortality and the demonstration of a dramatic reduction in the carriage of Hepatitis B in The Gambia due to the effects of vaccination.

To reflect changes in national and global health priorities and new international funding opportunities a new research portfolio has been organized under three themes: Child Survival; Disease Control & Elimination; Vaccination. These themes have been selected to target national health needs, to reinforce sub-regional and international links and to address some of the major current priorities in the Millennium Global Health Goals.

The Unit runs a Laboratory Services Platform comprising Clinical and Research Laboratories equipped with modern cutting-edge technologies to support research activities across the three themes. There are three areas of platform laboratory services: immunology, serology and molecular diagnostics. Services provided by the molecular diagnostics laboratory range from generic assays to complex molecular analysis including DNA sequencing and various genotyping assays. Laboratory activities are conducted under Good Clinical Laboratory Practice (GCLP) principles with the Clinical Laboratories fully compliant and accredited.

3. Grade: 2 – 32 Points.

4. Purpose of the Job:

The Molecular Diagnostics Laboratory Manager will be responsible for the day-to-day operations of the Molecular Diagnostics (MDx) Laboratories and supervision of staff. S/he will be responsible for strengthening core platform capabilities to support research through conducting existing assays to a unified standard, developing standardised protocols, training members of the laboratory and developing new tools and methods in molecular analysis to meet the needs of Research Projects. The post holder may dedicate up to 20% of work time to independent research in an area of interest in molecular biology towards strengthening the overall Unit research agenda.

5. Role:

The post-holder will perform the following duties:

Technical:

- Support the manager of the molecular biology facility in developing, explore and expand the research and development of molecular diagnostic protocols.
- Support the manager of the molecular biology facility to optimize molecular diagnostic assays and laboratory procedures as part of the core services of the Molecular Diagnostics Labs.
- Support the manager of the molecular biology facility to assess project requirements for molecular diagnostics support including COVID-19 other highly infectious diseases and collaborate with the principal investigators to establish these assays as platform service.
- Support the Principal Investigator, manager and Scientific officers to maintain, analyze and report Quality Assurance (QA) performance towards improvement of quality standards.
- Assist the manager of the Molecular biology facility to investigate, assess and set-up appropriate methodology with specific focus on molecular diagnostic processes.
- Oversee and ensure regular calibration and maintenance of all equipment on the Molecular Diagnostic Platform laboratories.
- Oversee the implementation and review of Standard Operating Procedures (SOPs) for generic and specific molecular biology research assays including nucleic acid extraction, amplification and diagnostic assays.
- Advise projects on procedures of collection, handling and storage of samples for molecular analysis.
- Support the manager of the molecular biology facility to develop and implement a programme to adopt new scientific technologies for advancing pathogen detection and the overall Unit research agenda.
- Work with the research support office and other laboratory managers to identify and understand Principal Investigator/project requirements and evaluate viable technical solutions available or required.
- Collaborate with project leaders to validate new diagnostic technology/product concepts, and support the promotion of existing and new procedures and technologies.
- Oversee the performance of nucleic acid isolation, amplification and detection, infectious disease testing, and viral load analysis offered to projects as platform service.
- Ensure the separation of diagnostic activities from research and other incompatible activities.
- Record, analyze and report results of diagnostic services to project principal investigators.
- Assist the manager of the molecular biology facility to develop and utilize tools to communicate and disseminate information on new molecular diagnostics research opportunities to Unit Scientists towards achieving organisational targets.
- Disseminate research findings through peer-reviewed publications, local media and international meetings.

Managerial:

- Assist the manager of the molecular biology facility to develop and enforce guidelines to regulate the operation of Molecular Diagnostics Laboratory and procedures conducted in the facility.
- Manage a group of interrelated assay pipelines to improve efficiencies and enhance the quality of service to Projects in molecular diagnostics.
- Develop and foster collaborative links with other scientists within the Unit and with external collaborators.
- Collaborate with genomics laboratory staff and other Laboratory Managers on areas of overlap and expertise.
- Assist the manager of the molecular biology facility to direct the Units programme towards International accreditation / qualification of Molecular Diagnostics Assays to relevant International Quality Standards.
- Assist the manager of the molecular biology facility to manage and train all laboratory staff using the molecular diagnostics laboratories through periodic workshops to

disseminate information on new technologies and regulations on the Molecular diagnostics platform.

- Assist the facility manager to conduct staff appraisals, job evaluations, and probation review and managing leave schedules.
- Coordinate regular laboratory meetings of the Molecular Diagnostics working group.
- Assist the facility manager to work with project Principal investigators to establish systems for seamless platform support for projects through assay performance, laboratory data processing and preliminary analysis.
- Supervise scientific staff and students on the Molecular Diagnostics platform.
- Undertake all laboratory investigations following the relevant safety rules and regulations as laid down in the MRC Safety Manual.

Research:

- The Molecular Diagnostic manager will engage in research and provision of research services in molecular studies with a focus on:
- Investigating and implementing methods for collection, transport, and handling of various specimen types from pathogens, human and vectors for molecular analysis.
- Developing and implementing best practices in the application of molecular diagnostic testing in clinical and research sample analysis.
- Performing appropriate techniques and utilizing instrumentation and information management systems for molecular analysis and correlating results with acquired, inherited, and infectious diseases.
- Developing an area of personal scientific research interest in line with the Unit's research agenda and portfolio.

Training:

- Establishing best practices through organising laboratory user training workshops and short term training programs.
- Mentor and train staff to implement and improve SOPs and project management practices across the Molecular diagnostic platform.
- Supporting a robust laboratory internship programme that provides training at both undergraduate and post-graduate levels.
- Organise the structured induction of new members to the molecular services and oversee and sign off their generic training

Communication:

- Contributing to the Units agenda to disseminate research findings both locally and internationally through participation in Unit seminars, regional and international scientific conferences and publication of research in peer-reviewed Journals.

Finance:

- Managing laboratory and research project budgets and a delegated authority of up to £1000.00.
- Implementing a robust recharging system for cost recovery for assays and services to external projects with support from relevant departments (Finance, Research Support).

Other:

- Performing out-of-hours duties when required based on work demands.
- Travelling within and outside the country based on work demands.

6. Relationships:

- i) The post holder is a full-time member of staff at the MRC.
- ii) The post-holder will report to the Manager of the Molecular Biology facility

- iii) Head of Laboratory Management is Dr. Ousman Secka.
- iv) The Chief Operation Officer is Dr. Davis Nwakanma.
- v) The Unit Director is Professor Umberto Dalessandro.

7. Appraisals:

Appraisals are held at least annually.

8. Length of appointment:

The appointment is for an initial period of three years, (extendable by mutual agreement) and is subject to a probationary period of 6 months.

9. Any other duties:

To perform any other duties consistent with the remit of the post.

Person Specification:

Post: Manager of Molecular Diagnostics Laboratory

Essential:

- A minimum of MSC in Molecular Biology, Biochemistry or other Biomedical Sciences from an accredited University with significant experience in Molecular biology research.
- A minimum of 5 years experience of active work in a research laboratory environment.
- Experience managing a team of at least four staff.
- Ability to supervise staff, ensuring that high standards are maintained at all times.
- Demonstrated experience in current Molecular diagnostic technologies including variations of nucleic acid extraction, amplification and detection techniques.
- Demonstrated knowledge in assay development and optimization
- Demonstrated knowledge molecular laboratory diagnostics of Sars-CoV-2 and other infectious pathogens.
- Experience working in Bio-safety level-3 facility.
- Demonstrated knowledge and training in GCLP implementation and ISO15189 accreditation quality standards.
- Evidence of previous publications in the area of molecular biology techniques and genotyping.
- Experience in setting up basic bioinformatics analysis and use of softwares for sequence analysis.
- Computer literate (e.g., Microsoft Office applications)
- Excellent written and spoken English.
- Excellent time management skills.
- Good organisational and staff management skills (note: with the ability to co-supervise staff with other managers).
- Experience of working with people from different disciplines and cultures.

Desirable:

- Knowledge of Next Generation technologies and experience managing large diagnostic data sets.
- Training in quality management systems and processes in research and/or research laboratory environments.
- Good budgetary and cost management skills.
- Keenness to train and impart knowledge.

