Candidate Information

Position:	Research Assistant
School/Department:	School of Medicine, Dentistry and Biomedical Sciences
Reference:	26/113179
Closing Date:	Monday 9 March 2026
Salary:	35,136
Anticipated Interview Date:	Thursday 19 March 2026
Duration:	11 months

JOB PURPOSE:

Professor Valvano, from the Wellcome-Wolfson Institute for Experimental Medicine, seeks an individual with research experience in fish immunology and fish infection biology. The candidate will contribute technical knowhow in ongoing and planned research to understand the evolution of pathogenesis from marine environments to humans.

Demonstrated research experience on mucin isolation, bacterial adhesion assays and experience in handling fish infection models are essential for this post. The post holder will also perform specialised imaging and molecular microbiology techniques to examine the course of infection in zebrafish and in fish primary macrophages and epithelial cell models.

Applications are invited from individuals with combined expertise in microbial genetics, molecular biology, and cell biology in the context of fish bacterial pathogenesis. Examples include recent research experience in mucin isolation from fish or other animal models, bacteria-cell adhesion assays, cell culture, handling of fastidious Gram-negative pathogens, and confocal microscopy,

MAJOR DUTIES:

1. Isolating and culturing primary human macrophages from zebrafish.
2. Designing, developing, and refining bacterial infection experiments in zebrafish and primary human macrophages.
3. Isolation of mucin from fish or other animal models and performing mucin-bacterial adhesion assays.
4. Performing ELISA assays for cytokines, Western blot analyses to detect components of the inflammasome and/or specific cellular proteins.
5. Extracting mRNA and processing for single-cell transcriptomic analyses.
6. Performing molecular cloning/mutagenesis of bacterial genes suing the latest molecular tools in the field (e.g., Gibson ligation, marker-less gene deletion approaches).
7. Conduct experimental procedures according to Standard Operating Procedures and obtain reliable and reproducible data of publication quality.
8. Demonstrate innovative approaches to improve experimental design upon analysis of results in consultation with Line Manager.
9. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
10. Maintaining a clean and organised laboratory workspace; assisting in the preparation and storage of reagents and experimental materials; supporting the upkeep and maintenance of laboratory equipment.
11. Responsible for accurate and detailed documentation of experimental procedures, data, and results; monitoring and advising on project costs and stock levels relating to the programme of work; collaborating with the research team to maintain organised records of the project's progress.
12. Providing help and guidance to research students and newly appointed staff on equipment use and laboratory procedures/techniques.
13. Attending training courses, as required, for professional development to enhance skills and knowledge relevant to the research project and personal growth.

14. Carrying out any other duties that are appropriate to the post as may be reasonably requested by the academic leadership team.

ESSENTIAL CRITERIA:

1. Degree or equivalent in subject relevant to research activity.
2. Two years relevant laboratory experience to include the following:
   - Handling of fish models and fish cell lines
   Bacterial adhesion assays and experience in zebrafish or other fish infection models (e.g., seabass).
   - Current experience with infection quantification in cells and confocal fluorescent imaging methods using live or fixed samples, relevant to the project.
   - Current experience with identification by confocal fluorescence microscopy imaging of bacterially-infected cells.
   - Current experience in mucin isolation and handling.
3. Current research experience in state-of-the-art molecular cloning using Gibson ligation) and cellular (bacterial infections in eukaryotic cells) microbiology, cell culture, and cellular and molecular imaging techniques including super-resolution microscopy.
4. Prior experience in handling Gram-negative bacterial pathogens relevant to the project.
5. Demonstrated experience on detailed documentation of experimental procedures, data, and results.
6. Demonstrated strong initiative and independence in thought and work but also to work within a highly collaborative team to support/train other team members as appropriate.
7. Very good oral and written communication skills and excellent time management skills.
8. Willing to work in a team setting.

DESIRABLE CRITERIA:

1. MSc degree level or working towards a PhD in microbiology, immunology or any other subject relevant to research activity.
2. Experience in fish mucin isolation and handling.
3. Current experience handling fish pathogens (e.g., Photobacterium damselae).
4. Experience in bacterial mutagenesis (e.g. making gene deletion mutants) in Gram-negative bacteria.
5. Experience in protein purification and Western blot analysis of bacterial proteins.
6. Experience in biofilm and bacterial adhesion assays.
7. Prior experience in extracting mRNA and processing for single-cell transcriptomic analyses.
8. Proficient in the use of statistical analyses/graphical software to represent experimental data.
9. Demonstrated ability to communicate research.
10. Demonstrated ability to handle conflict.

ADDITIONAL INFORMATION:

Informal enquiries can be directed to: Dr. Hanah Parks - h.parks@qub.ac.uk.