UNIVERSITY OF WARWICK

Job Description

Job title	Research Fellow
Department	Life Sciences
Grade	FA6

Job purpose (a brief summary of the role)	**Postdoctoral researcher in Bacterial Molecular Biology** We are seeking a postdoctoral researcher with expertise in molecular biology and bacterial cell biology, to join a multi-institution interdisciplinary team aiming to tackle the emerging problem of antimicrobial resistance in the critical human pathogen *Clostridioides difficile*. Vancomycin is the frontline therapeutic for *C. difficile* infection in the UK, yet we know surprisingly little about the mechanisms or capacity for resistance. We aim to address this knowledge gap in a broad interdisciplinary programme that spans from fundamental mechanistic biochemistry to genomic epidemiology. Working closely with the wider team, your focus will be understanding the molecular basis of resistance. You will use a suite of molecular biology methods, including genetic manipulation, transcriptomics and high-resolution imaging, to dissect the contribution of resistance-conferring mutations identified in our large-scale experimental evolution experiments and in a world's first national genomic epidemiology programme.
Duties and responsibilities	**RESEARCH** • Help establish a sound research base within the department in order to assist the development of research objectives and proposals for own or joint research. • Conduct individual and collaborative research projects. • To publish research outcomes in appropriate journals of international standing and to publish and disseminate the result of research to other reputable outlets. • Translate knowledge of advances in the subject area antimicrobial resistance into research activity. • May contribute to preparing proposals and applications to external bodies, e.g. for funding and contractual purposes, to support a developing research agenda. • May present information on research progress and outcomes to bodies supervising research, e.g. steering groups. • May contribute to the preparation of papers for steering groups and other bodies. • Communicate complex information (orally and in writing) and material of a specialist or highly technical nature. • Continually update own knowledge and understanding in bacterial molecular biology. **TEACHING AND LEARNING SUPPORT** • Could be expected to contribute to the teaching and learning programmes in the department. • Assist in the supervision of student projects and the development of student research skills. • May be involved in the assessment of student knowledge and supervision of projects. **ADMINISTRATION AND OTHER ACTIVITIES**

	• May be required to attend departmental meetings and to participate (where necessary) in other committees and working groups within the department, the faculty and the University. • Ensure compliance with health and safety in all aspects of work. • Work within budget constraints. The duties and responsibilities outlined are not intended to be an exhaustive list but provide guidance on the main aspects of the job. You will be required to be flexible in your duties.

Person Specification

The Person Specification focuses on the essential and desirable knowledge, skills, experience and qualifications required to undertake the role effectively. This is measured by (a) Application Form, (b) Test/Exercise, (c) Interview, (d) Presentation.

Essential Criterion No.	Essential Criterion Description	Measured by
E1	Good honours degree and possession of a PhD or equivalent, with an educational background in the general areas of microbiology, molecular biology or biochemistry who can demonstrate a focused interest in bacterial cell biology studies.	A & C
E2	Breadth or depth of specialist knowledge in microbiology and/or molecular biology and of research methods and techniques to work within established research programmes.	A,C & D
E3	A developing research profile with the ability to publish and/or produce high-quality research output.	A,C & D
E4	Effective communication skills (oral and written), including the ability to articulate and present research results to diverse audiences.	A,C & D
E5	Ability to work independently and as part of a team on collaborative research programmes.	A,C & D
E6	Evidence of research ability/experience and quality research output, including experience gained during PhD studies and post PhD qualification (where appropriate).	A,C & D
E7	Use of software including Microsoft applications (word, excel, teams) and appropriate statistical packages and a willingness to use other applications including laboratory information management systems to organise and report on experiments and data.	A,B,C & D

Desirable Criterion No.	Desirable Criterion Description	*Measured by*
D1	Expertise in bacterial genome manipulation, including in the design and construction of plasmids to introduce mutations, bacterial mutagenesis, screening and validation using standard methods.	A,C & D
D2	A research background in the study of antimicrobial resistance, particularly resistance to antibiotics that target cell wall biogenesis.	A,C & D
D3	Experience of imaging live and fixed bacteria by light and fluorescence microscopy and methods for quantitative analysis of imaging data.	A,C & D
D4	Experience of anaerobic microbiology and genetic manipulation of anaerobes.	A,C & D
D5	Experience with computational methods (beyond basic sequence comparison) to predict protein function and experience devising or adapting suitable assays to test resulting hypotheses.	A,C & D