

Job Title: Research Assistant
Grade: 6
Salary: £32,546 - £37,174 per annum
Department: Molecular and Cell Biology
Hours/Contract: Full-time, fixed term contract till 28 February 2027
Job Family: Teaching and Research
Job Reference: 11658

Role Purpose

This is a fixed term post to conduct research on an Academy of Medical Sciences Springboard Award funded project to dissect the molecular mechanism underpinning conjugative transfer of genetic material by secretion systems in mycobacteria. The post holder will lead an independent project progressing from initial cloning to the purification of multi-megadalton membrane protein complexes, followed by structure determination and biochemical/biophysical mechanistic analysis. This project will focus on complex, multi-component membrane assemblies, investigated both *in vitro* and in live-cell environments. The research will employ a diverse array of structural biology techniques, including single-particle analysis and cryo-electron tomography, cross-linking mass spectrometry, molecular microbiology, bioinformatics, and live-cell imaging.

Main Duties and Responsibilities

Research

- To conduct research of secretion systems that drive conjugative transfer of DNA in mycobacteria.
- Generate constructs cloning genes encoding the entire secretion system in expression vectors and explore tagging of different subcomplexes.
- Optimise expression of the intact secretion system in mycobacterial overexpression cell lines.
- Purify the multi-megadalton membrane integrated secretion nanomachine using membrane protein biochemistry.
- Undertake biophysical characterization and structure determination of the secretion system using cryo-electron microscopy (cryo-EM).
- To support the day to day running of the project through interactions with the PhD students, project investigators and laboratory members.
- To prepare reagents/media and order consumables for the project, maintain strain/primer/plasmid collections.
- To summarise findings, record, and disseminate research to members of the group.
- Document the research findings, assessing the outcomes and options emerging from the research by contributing to the writing and publication of research papers.
- To assist in supervision of experimental project students.



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Professional Development:

- Duties and opportunities to engage in work that support your own professional development.

Impact and Knowledge Exchange:

- Participate in workshops and conferences to support the dissemination of research findings.

Leadership and Citizenship:

- Contribute to the overall success of the research programme

Internal and External Relationships

Communicate and liaise with colleagues and collaborators involved in the above mentioned research programme and other projects and the team is undertaking, on a regular basis to review and plan research activities.

Communicate with Technical Managers and core technical support staff on a regular basis to discuss ongoing lab issues, health and safety matters, and future plans for the laboratory areas.

Occasionally communicate and liaise with research collaborators, both nationally and internationally, under the instruction of your line manager.

Planning and Organising

With guidance from the Principal Investigator, or equivalent, plan own work and prioritise research and project/laboratory activities on a regular basis, including co-ordinating resources and maintenance of samples and equipment.

- The post-holder will be required to effectively manage their time to deliver on the priorities of the research programme with the support of their line manager.
- Attend suitable training courses or equivalent and be proactive in terms of continued professional development.

Qualifications, Knowledge and Experience

Essential

- Evidence of Honours degree and/or relevant experience *
- Practical experience and knowledge of applying research skills and techniques to deliver outputs on time and to the required quality.
- Previous experience working in a wet lab and excellent command of written and spoken English.
- Experience in designing and executing workflows for DNA cloning, membrane protein biochemistry and protein structure determination*



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- A strong motivation in pursuing biological questions and determination to actively contribute in establishing new research directions and strong interpersonal and teamwork skills.

Desirable

- A PhD or currently studying for a PhD
- Masters qualification
- Proficiency in cryo-electron microscopy (cryo-EM) workflows

Skills, Abilities and Competencies

Essential

- Ability to demonstrate research potential and enthusiasm for the subject area and contribute to delivering high quality research *
- Excellent analytical and problem solving skills *
- Evidence of continued personal development of subject expertise *
- Team player, support broader research group
- Excellent communication skills – written and verbal*
- Ability to prioritise tasks within agreed work schedules*
- Commitment to continuous professional development (CPD)
- Willingness to participate in workshops and conferences to support the dissemination of results and findings

****Criteria to be used in shortlisting candidates for interview***

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are encouraged to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We encourage all staff as citizens to work flexibly across the University if required. If supporting these activities is likely to affect your workload, please speak to your line manager in the first instance.



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University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equity support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equity, diversity and inclusion.



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