



Job Description

Job title	Research Associate
Department/School	Life Sciences
Job family	Education and Research
Grade	7
Reporting to	Principal Investigator (PI) or Co-Investigator (CI)
Responsible for	There may be a requirement for: day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students
Location	University of Bath premises

Background and context

This job is part of a BBSRC sLola funded consortium MultiDefence (<https://sites.exeter.ac.uk/multidefence/>). This consortium brings together leading specialists as well as early career researchers and technicians from the universities of Exeter, Cambridge, Durham, Manchester, Bath, Bristol, Liverpool and St Andrews to build a network of expertise in bioinformatics, molecular microbiology, biochemistry, mathematical modelling, microscopy, and experimental evolution techniques. Our collective ambitious goal for this project is to tease apart how complex, multi-layered, bacterial immune systems operate at the level of individual molecules, cells, populations and microbial communities.

You will benefit from the broad expertise of this consortium and have opportunities to train in other labs. At the University of Bath, you will be within the Taylor lab group (<https://tiffanybtaylor.wordpress.com/>) where our goal is to utilise the power of microbial experimental evolution to decode the evolutionary and ecological forces shaping bacterial genomes.

We foster a supportive and respectful environment and are committed to maintaining the highest standards of scientific integrity.

Job purpose

Bacterial genomes have evolved sophisticated defence systems against infections by mobile genetic elements (MGEs), including phages and plasmids, that shape genome structure and function. The very recent discovery of dozens of diverse and formerly unknown defence systems that cluster in 'defence islands' has led to the hypothesis that bacterial immune systems consist of multiple integrated layers that act in concert to constrain MGE infections; analogous to how our own innate and adaptive immune systems work together to combat pathogen infections. This project will propel our understanding of microbial genome evolution, improve our ability to predict and manipulate the spread of antimicrobial resistance (AMR), and help to optimise the use of phages to combat bacterial pathogen infections (phage therapy).

Your part in the project will be focused on understanding how these multilayered defence systems are regulated, both locally (i.e. on the defence islands) and globally (i.e. with regulatory elements in the host cell). You will hold a PhD or be near competition in a relevant discipline. You will have good, practical experience with molecular microbiology techniques and genetic engineering which will be used to validate predicted regulatory elements. In addition, previous experience with flow cytometry and FACS would be beneficial for expression analysis. Some experience with bacteria-phage culture techniques is desirable. Excellent experimental design, scientific writing and data analysis skills are essential. This role will involve working closely with a full-time research technician that will support the project for the first year.

Main duties and responsibilities

	Responsible to the PI/CI for (as appropriate to discipline):
1	Conduct individual and/or collaborative research projects. Contribute to the design and execution of the project e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Generate, collect and analyse existing data related to the project using qualitative and/or quantitative techniques.
2	Write-up results of research and contribute to the publication of results in high-quality peer-reviewed academic literature.
3	Disseminate results of research project as appropriate to the discipline through activities such as <ul style="list-style-type: none">• overseas research visits• conference presentations• public engagement activities
4	Participate in departmental/group meetings and prepare and deliver presentations/seminars to project team, internal and external stakeholders or funders.

5	Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge.
6	Continually update knowledge and understanding in field or specialism to inform research activity.
7	Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants.
8	Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required.
9	Disseminate knowledge of research advances to inform departmental teaching.
10	<p>As a member of Research Staff at the University, you will be encouraged to take up a minimum of 10 days' professional development pro rata per year. You should use this time to spend on activities that will benefit your career development and your personal growth. Examples include: attending workshops, career development coaching, mentoring, training courses, participation in networks, attending conferences, writing fellowship or funding applications, and representing the research staff community on committees or working groups.</p> <p>The University, as a signatory to the Concordat for the Career Development of Researchers, is committed to its principles. We aim to provide a supportive and inclusive environment, where researchers' contributions are recognised and valued, and we provide opportunities to enable research staff to develop their full potential.</p>
	You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.



Person Specification

Criteria	Essential	Desirable
Qualifications		

Undergraduate degree (e.g. BA, BSc, BEng)	√	
PhD degree in subject area of direct relevance for the project; or	√	
Professional/Industrial/Creative Doctorate in subject area of direct relevance for the project (e.g. DBA, MD, EdD, PsyD, EngD, DA); or		
Professional qualification (e.g. Chartership) and relevant experience equivalent to that of a PhD; or		
Professional experience in relevant discipline equivalent to that of a PhD		
Experience/Knowledge		
Post doctoral experience		√
Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities	√	
Demonstrated awareness of latest developments in the field of research and in research design	√	
Demonstrated potential to publish in high quality, peer reviewed journals	√	
Skills		
Ability to prepare research proposals, to conduct individual research work and to disseminate results		√
Ability to organise and prioritise own workload to meet required deadlines	√	
Ability to write research reports and to effectively disseminate outcomes	√	
Excellent oral, interpersonal and written communication skills	√	
Proficiency in appropriate techniques (as appropriate to discipline)	√	
Proficiency in IT skills (as appropriate to discipline)	√	
Attributes		
Commitment to working within professional and ethical codes of conduct	√	
Innovation and developing creative solutions	√	

Commitment to excellence in research	√	
Enthusiasm and self-motivation	√	
Tenacity – working to achieve own and team objectives and to overcome obstacles	√	
Ability to be an effective team worker	√	
Commitment to safe working practices	√	