Job Description

Job title	Research Associate
Department	Biology & Biochemistry
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

Urethral catheterisation is commonly used to manage a range of conditions in older people, but blockage is a common complication that has serious consequences for patient health. Blockage is mainly due to infection by Proteus mirabilis which forms extensive crystalline biofilms on catheter surfaces. Blockage can occur rapidly and without warning, often leading to pyelonephritis, septicaemia and shock. Currently all available catheter types are vulnerable to encrustation by P. mirabilis, and there is no reliable way to predict or prevent blockage. The aim of this project is to build upon our recent research in this area to develop an encrustation-resistant “theranostic” coating for urethral catheters. This coating will be able to provide both early warning of the potential for blockage through a simple colour change, and automatically deliver anti-biofilm drugs to combat the infection and prevent blockage. Using a representative in vitro model of the catheterised urinary tract available in our laboratories, we will evaluate the performance of our theranostic coatings in terms of drug delivery and ability to prevent catheter blockage. This will include exploring the potential for this approach to deliver a combination of drugs that can simultaneously inhibit multiple targets required for P. mirabilis biofilm formation.

Job purpose

We are seeking a highly motivated individual to work with us on this project, and conduct the laboratory work, assist with data analysis, and contribute to publication of study findings. Suitable candidates will hold a PhD in a relevant subject area, preferably microbiology or a subject with a major component of biology and/or molecular biology. Candidates with qualifications in related disciplines such as chemistry who have gained relevant experience in microbiology are also encouraged to apply. Experience in standard microbiology techniques is essential, with experience in basic molecular biology techniques desirable. Experience in preparing and facilitating the publication of research findings is also required. The candidate will also be required to contribute to the general day-to-day running of the laboratory and the supervision of research students. The successful candidate will be employed at 1.0 FTE, on a

fixed term contract for 24 months from the start date. Work will be conducted in the laboratory of Dr B V Jones, and associated laboratories within the Department of Biology and Biochemistry, University of Bath.

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	Writing up results of research and contributing to the publication of results in high-quality peer-reviewed academic literature.
3	Disseminating results of research project as appropriate to the discipline through activities such as • 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.
	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		
A PhD degree in subject area of direct relevance for the project, or equivalent significant relevant experience and professional qualification	√	
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	√	