

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	Pharmacy
<b>Reference:</b>	21/109379
<b>Closing Date:</b>	Monday 6 December 2021
<b>Salary:</b>	£34,304 - £37,467 per annum
<b>Anticipated Interview Date:</b>	Wednesday 15 December 2021
<b>Duration:</b>	Until 30 September 2023

### JOB PURPOSE:

The work forms part of a multidisciplinary EPSRC funded programme, which aims to develop sensitive, non-invasive 3D printed colourimetric indicators for monitoring wound infections. The Postdoctoral Research Assistant will conduct research and related activities in all aspects of the work, but focusing primarily on sensor evaluation using relevant microbiological and ex vivo models of acute and chronic wound infection.

The position will be based primarily at the School of Pharmacy and at the School of Chemistry and Chemical Engineering, Queen's University in Belfast, Northern Ireland.

### MAJOR DUTIES:

1. Develop appropriate in vitro and ex vivo biofilm models of chronic wound infections.
2. 3D printing of novel colourimetric wound indicator polymeric systems.
3. Develop appropriate multispecies biofilm models of major wound pathogens.
4. Develop appropriate ex vivo models of wound pathogens for antimicrobial susceptibility testing and therapeutic monitoring.
5. Formulation, extrusion of novel polymeric colourimetric indicator films for wound monitoring.
6. Undertake basic research for example by preparing, setting up, conducting and recording the outcome of experiments and field work, the development of appropriate methods.
7. Undertake research under supervision within a specific research project or as a member of a research team.
8. Assist in the commercialisation of technology research being conducted in the research group.
9. Carry out prescribed analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
10. Write up results of own work and contribute to the production of research reports, publications and proposals.
11. Prepare, in consultation with supervisor and industrial partner, material for publication in national and international journals and presentations at international conferences.
12. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
13. Carry out occasional undergraduate and postgraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
14. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

### Planning and Organising:

1. Plan own day to day activity within the framework of the agreed research programme.. Timescales range from 1-6 months in advance and contribute to research group planning.
2. Contribute to the planning of projects, reports and publications.
3. Plan for the use of research resources, laboratories and workshops where appropriate.
4. Assist with planning in advance to meet deadlines for journal publications and to prepare presentations for industrial partner.
5. Coordinate and liaise with other members of the research group and industrial partner over work progress.

**Resource Management Responsibilities:**

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

**Internal and External Relationships:**

1. Liaise on a regular basis with colleagues and industrial stakeholders on routine matters.
2. Participate in networks with other QUB groups involved in the research project and with the industrial stakeholders for the exchange of information and to form relationships for future collaboration.
3. Attend and contribute to relevant meetings.

**ESSENTIAL CRITERIA:**

1. At least a 2.1 Honours degree in Pharmaceutical Sciences or a closely related area.
2. Have or be about to obtain a PhD in the field of Pharmaceutical Microbiology or similar with a significant biofilm wound monitoring content in the research project.
3. At least 3-years recent relevant research experience in in vitro and ex vivo wound biofilm models and non-invasive wound biofilm monitoring using colourimetric polymeric systems.
4. Demonstrate significant experience in chronic wound microbiology and multispecies biofilm models and therapeutic (antibiotics or phage therapies) monitoring of wound biofilms following intervention using appropriate non-invasive colourimetric systems.
5. Demonstrable experience in use of mass spectrometry for wound headspace analysis.
6. Demonstrable experience in confocal microscopy, SEM and image analysis software (e.g. ImageJ).
7. Ability to contribute to broader management and administrative processes.
8. Contribute to the School's outreach programme by links with industry, community groups etc.
9. Ability to effectively manage material resources within budget for the project.
10. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within the research programme.
11. Ability to communicate complex information clearly.
12. Ability to build contacts and participate in internal and external networks.
13. Demonstrable intellectual ability.
14. Ability to assess and organise resources.

**DESIRABLE CRITERIA:**

1. Experience, evidenced by relevant output in peer-reviewed academic journals or conference presentations, commensurate with career stage, of wound biofilm monitoring.
2. Experience of using statistical and data analysis software, and use of PowerPoint to present research outcomes.
3. Experience of undergraduate teaching or demonstrating.
4. Demonstrate a willingness to take on leadership roles in supervision of laboratory researchers.