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| **\*Title of studentship** | Investigating the role of the clinical microbiome and its antimicrobial resistome in infection and disease |
| **Value / what is covered?**  | Fully funded |
| **Awarding body** | DfE |
| **Number of studentships** | 1 |
| **\*Summary descriptive text / Example of research project**  | Many infections and disease states are closely linked to associated microbiomes, either of the patient themselves or the surrounding clinical environment. From the gut to the skin, microbes play a huge role in maintaining health and contributing to disease, either directly via infections, or by indirect means. The clinical environment is also known to harbour vast reservoirs of antimicrobial resistance (AMR) genes, enabling bacteria to become resistant to antibiotic therapy and rendering treatment ineffective. However, much is still unknown about the relationships between the clinical microbiome, the AMR gene profile contained therein, and subsequent disease in patients.The successful candidate will join a dynamic research group focused on the analysis and functional exploitation of microbiomes from clinical settings, to help investigate the link between the hospital environment and infectious disease. This will be achieved using a combination of basic microbiology and culture-based techniques for the cultivation of clinically-relevant microorganisms, alongside DNA extraction and sequence analysis. Antimicrobial susceptibility testing will be used in conjunction with AMR gene profiles to assess the spread and enrichment of resistance genes in healthcare settings.The student will build on existing expertise in a welcoming research group to answer important research questions which may help inform infection control and prescribing policy, enabling real-life impacts for human health. Full technical training will be provided, with opportunities to attend international conferences in the research area, ensuring the successful candidate is well prepared for a career in a variety of sectors. |
| **\*Supervisor(s)** |  Dr Stephen Kelly, Prof Brendan Gilmore |
| **\*Eligibility / residence Status** |  |
| **Country** | Northern Ireland |
| **\*Start date and duration**  | October 2022 – September 2025 |
| **\*Faculty** | MHLS |
| **\*Research centre / School** | Pharmacy |
| **Subject area** |  |
| **Candidate requirements / Key skills required for the post**  | Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Pharmacy, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, or a closely related discipline. Students who have a 2.2 honours degree and a Master’s degree may also be considered, but the School reserves the right to shortlist for interview only those applicants who have demonstrated high academic attainment to date. |
| **\*Deadline for applications** |  |
| **\*How to apply / contacts** | Postgraduate Research applicants must have applied to Queen’s, via the Direct Applications Portal.<https://dap.qub.ac.uk/portal/user/u_login.php>  |
| **Relevant links / more information**  | <http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/><http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/> |
| **Keywords for search filters** | Microbiome, antimicrobial resistance (AMR), infection, clinical, human health |
| **Training provided through the research project** | The successful candidate will be trained in microbiology, including both culture-dependent and independent approaches, molecular biology techniques including molecular cloning, and microbial bioinformatics for analysis of large DNA datasets, as well as project management and data analysis training. Training received during this studentship will ensure the successful candidate possesses a comprehensive skillset, of high relevance to a career in a clinical microbiology setting, industry or in academia. |
| **Expected impact activities** | Attendance at international conferences, including the opportunity for conference presentations. Publication in international, peer-reviewed journals. Potential for clinical collaboration and application of novel discoveries. |