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| **\*Title of studentship** | Chemical Tools to Tackle Antimicrobial Resistance |
| **Value / what is covered?**  |  |
| **Awarding body** |  |
| **Number of studentships** |  |
| **\*Summary descriptive text / Example of research project**  | Antimicrobial resistance is a major global threat to human health. The latest and most comprehensive analysis to date of the burden from AMR estimates that globally, 1.27 million deaths in 2019 could be directly attributed to AMR, and a further 4.95 million deaths were associated with AMR. Without immediate action, it has been predicted that AMR will put 10 million lives at risk annually by 2050, causing a cumulative loss of US$100 trillion of economic output. New strategies to combat the rise of AMR are therefore urgently required.The goal of this interdisciplinary project is the development of novel chemical tools to study molecular mechanisms of antimicrobial resistance, and to identify novel approaches for antibiotics development. The project will involve the rational design and chemical synthesis of target molecules as well as their application and evaluation in relevant bioassays. The student will receive in-depth training in a broad range of experimental techniques including advanced organic synthesis, NMR spectroscopy, preparative and analytical chromatography, and *in vitro* assays.The project is ideally suited for a student who wants to pursue a career in drug discovery, medicinal chemistry or chemical biology. |
| **\*Supervisor(s)** | Dr Stephen Cochrane, School of ChemistryProfessor Gerd Wagner, School of Pharmacy |
| **\*Eligibility / residence Status** | International Scholarship, International self-funding  |
| **Country** |  |
| **\*Start date and duration**  | September 2022 |
| **\*Faculty** | Medicine Health and Life Sciences / Engineering and Physical Sciences  |
| **\*Research centre / School** | School of Pharmacy / School of Chemistry |
| **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, Molecular Biology, 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** | All postgraduate research applicants who are interested in the project must submit an application all required supporting documents via the Direct Applications Portal (link below)**.** Any interested applicants can informally contact Dr Cochrane by email at s.cochrane@qub.ac.uk and Prof. Wagner by email at g.wagner@qub.ac.uk <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/><https://www.qub.ac.uk/schools/SchoolofPharmacy/Research/ResearchThemes/>NanomedicineandBiotherapeutics/<https://www.qub.ac.uk/schools/SchoolofPharmacy/Research/find-a-phd-supervisor/dr-gerd-wagner.html>  |
| **Keywords for search filters** | Antibiotics; peptide synthesis; chemical probes; organic synthesis; chemical biology |
| **Training provided through the research project** | Synthesis of peptides by manual and automated peptide synthesis, preparative and analytical chromatography, analysis of synthetic compounds by NMR and mass spec, *in vitro* assays. |
| **Expected impact activities** |  |