***Title of studentship**	Repurposing drugs to treat antibiotic resistant pathogens
Value / what is covered?	Fully funded 100% of UK/EU tuition fees paid and an annual stipend for UK residents only (living expenses), currently at £14,553
Awarding body	DFE
Number of studentships	1
***Summary descriptive text / Example of research project**	Long-term respiratory infections can develop in people with conditions such as cystic fibrosis, chronic obstructive pulmonary disease and bronchiectasis and can cause significant morbidity and worse clinical trajectory. Therefore, management of these conditions may include the use of antibiotics chronically for suppression of infection or acutely to treat symptom flare-ups known as exacerbations. However, multi-drug resistant bacteria can emerge during repeated and prolonged use of antibiotics, which is not only a serious worry for patient management but a global health concern. Furthermore, the respiratory microenvironment in chronic infections may affect the ability of bacteria to persist in the presence of antibiotic treatment including the availability of oxygen, pH, ionic conditions and biofilm formation. It is well recognised that there is an unmet need for the development of new antibiotics or combination of antibiotics that possess activity against increasingly resistant bacteria. However, an alternative to developing new antibiotics is to repurpose approved drugs for new indications. This is an appealing approach as the safety profile of these drugs has already been determined in clinical trials. This research project will: (1) Screen a selection of compounds alone and in combination for antibiotic activity against a panel of respiratory bacterial pathogens under various experimental conditions which mimic *in vivo* respiratory conditions (2) Aim to elucidate mechanisms of action (3) Determine if candidate compounds induce cross-resistance to currently used antibiotics. A large collection of clinical isolates is held in the Halo Research Group Biobank and were isolated previously from samples including sputum and bronchoalveolar lavage fluid from adult and paediatric patients and are available for this research project.

***Supervisor(s)**	Dr Laura Sherrard, Prof Michael Tunney
***Eligibility / residence Status**	UK/EU only
Country	Northern Ireland
***Start date and duration**	1 November 2018 Funding covers a three-year full-time PhD.
***Faculty**	MHLS
***Research centre / School**	Pharmacy
Subject area	Pharmacy, microbiology, molecular biology
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**	30th September 2018
***How to apply / contacts**	Postgraduate Research applicants for Pharmacy who are interested in applying for a fully funded DFE studentship must have applied to Queen's, via the Direct Applications Portal, and submitted all required supporting documents by the closing date, which will be announced later in the Academic year. 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	Drug resistance, antibiotics, drug repurposing, drug repositioning, infection, respiratory, lung diseases
Training provided through the research project	The successful applicant will be integrated into the highly collaborative Halo Research Group in the School of Pharmacy. The candidate will benefit from broad training in microbiology, molecular biology and statistical analysis of data. Presentation, writing and interpersonal skills will be developed.

Expected impact activities	Presentations at local, national and international conferences Publication of scientific papers in peer reviewed journals