



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Microneedle Delivery Systems: Addressing Global Challenges in Health
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	2
*Summary descriptive text / Example of research project	These two interdisciplinary studentships are both focussed on overcoming Global Challenges in health, namely antibiotic resistance, HIV infection and non-melanoma skin cancer. Microneedle arrays are minimally-invasive devices that painlessly, and without drawing blood, penetrate the skin's <i>stratum corneum</i> barrier. This allows delivery of a range of substances that would otherwise not be able to move into or across the skin. Though microneedles have found great use in intradermal vaccines, our Group focusses on high-dose drug delivery, thus allowing bypass of the human gut so as to prevent development of antibiotic resistance, deposition of slowly dissolving nanoparticles for controlled administration of HIV drugs and targeting gold nanoparticles to skin lesions that can then be treated by near-infra red light instead of surgically excised. The benefits to patients of the technology developed during these studentships will be profound. The student will work at the cutting edge of developments in a leading research Group.
*Supervisor(s)	Professor Ryan Donnelly
*Eligibility / residence Status	UK/EU only
Country	Northern Ireland
*Start date and duration	1 October 2018 Funding covers a three-year full-time PhD.
*Faculty	MHLS
*Research centre / School	Pharmacy
Subject area	Drug delivery, pharmaceuticals, pharmaceutical engineering
Candidate	Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant

requirements / Key skills required for the post	subject. Relevant subjects include Pharmacy, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, Psychology, Social Sciences 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	31 January 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, <i>via</i> 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	Microneedles, antibiotic resistance, HIV, high-dose drug delivery, macromolecular drug delivery, photothermal therapy
Training provided through the research project	This interdisciplinary project will provide training in a range of analytical methods, design and assessment of novel delivery systems and biological models for assessment of the potential clinical efficacy of formulations. Furthermore, student training will take place within a highly active international research culture. In addition to laboratory based-skills, the student will also undergo training in research methodology and statistics and will have opportunities to develop both verbal and written communication skills.
Expected impact activities	Enhanced patient care and quality of life, overcoming antibiotic resistance, treating and preventing HIV infection, trauma-free management of skin cancers