



# QUEEN'S UNIVERSITY BELFAST

<b>*Title of studentship</b>	Microneedle Delivery Systems: Addressing Global Challenges in Health
<b>Value / what is covered?</b>	Fully funded  100% of UK/EU tuition fees paid and an annual stipend for UK residents only (living expenses), currently at £14,777
<b>Awarding body</b>	DFE
<b>Number of studentships</b>	1
<b>*Summary descriptive text / Example of research project</b>	This interdisciplinary studentship is focussed on overcoming Global Challenges in health. 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, for example, 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-infrared light instead of surgically excised. The project here will centre on development of microneedle systems for enhanced drug delivery, with a view to overcoming current challenges in global health. The benefits to patients of the technology developed during this studentship will be profound. The student will work at the cutting edge of developments in a leading research Group.
<b>*Supervisor(s)</b>	Professor Ryan Donnelly
<b>*Eligibility / residence Status</b>	UK/EU only
<b>Country</b>	Northern Ireland
<b>*Start date and duration</b>	1 October 2019 Funding covers a three-year full-time PhD.
<b>*Faculty</b>	MHLS
<b>*Research centre / School</b>	Pharmacy
<b>Subject area</b>	Drug delivery, pharmaceuticals, pharmaceutical engineering

<b>Candidate requirements / Key skills required for the post</b>	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, Psychology, Social Sciences or a closely related discipline.
<b>*Deadline for applications</b>	31 January 2018
<b>*How to apply / contacts</b>	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.  <a href="https://dap.qub.ac.uk/portal/user/u_login.php">https://dap.qub.ac.uk/portal/user/u_login.php</a>
<b>Relevant links / more information</b>	<a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/</a>  <a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/</a>  <a href="https://pure.qub.ac.uk/portal/en/persons/ryan-donnelly(7f46a524-c3a4-46a9-b347-834f0a3640f2).html">https://pure.qub.ac.uk/portal/en/persons/ryan-donnelly(7f46a524-c3a4-46a9-b347-834f0a3640f2).html</a>
<b>Keywords for search filters</b>	Microneedles, antibiotic resistance, HIV, high-dose drug delivery, macromolecular drug delivery, photothermal therapy
<b>Training provided through the research project</b>	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.
<b>Expected impact activities</b>	Enhanced patient care and quality of life, overcoming antibiotic resistance, treating and preventing HIV infection, trauma-free management of skin cancers