



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Multifunctional peptide hydrogels as a chronic wound therapy
Value / what is covered?	Awaiting funding decision from British Skin Foundation. Also available as self-funded project.
Awarding body	British Skin Foundation
Number of studentships	1
*Summary descriptive text / Example of research project	Chronic wounds are among the most debilitating healthcare disorders impacting society with a UK incidence of 575,600 patients annually costing the NHS up to £3.1billion per year. Chronic wounds differ from acute wounds in that they are associated with prolonged and uncontrolled inflammation that prevents the lesion from healing fully. They are more difficult to treat due to the failure of current therapies to resolve the key biological processes within the local wound environment namely: persistent inflammation; presence of infective microorganisms that increase inflammation and an impaired ability for new tissue to form. This project will create a novel therapy to target these important biological processes using an innovative peptide-based that will promote the body's ability to heal at the wound site. Natural peptides form the building blocks of tissues and skin therefore their application as a wound therapy is promising but limited by the degradation by enzymes. Peptide-like molecules, termed peptoids, are unnatural peptides not recognised by host enzymes therefore possess increased stability/therapeutic efficacy and can be manufactured within our laboratory to reproduce the unique properties of natural tissue. Peptoids possess numerous chemical groups that can be utilised to tailor functional (mechanical strength, stability, hydrogel formation) and pharmacological properties (antimicrobial, anti-inflammatory, pro-angiogenic). This proposal will provide significant data that will be utilised to develop our platform as a future wound care product.
*Supervisor(s)	Dr Garry Laverty and Prof Helen McCarthy
*Eligibility / residence Status	UK/EU/ and International subject to Visa acceptance
Country	Northern Ireland
*Start date and duration	1 October 2018
*Faculty	MHLS
*Research centre /	Pharmacy

School	
Subject area	Biofunctional nanomaterials
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	Open (self-funded), if BSF funded to be confirmed
*How to apply / contacts	Postgraduate Research applicants for Pharmacy who are interested in applying for a 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	Experimental medicine, Pharmaceutical Sciences, Biomaterials, Wound healing, Peptide science, Dressing
Training provided through the research project	This research will be conducted at the School of Pharmacy Queen's University Belfast which in 2017 was ranked for the third consecutive year as the top UK School of Pharmacy (Sunday Times Good University Guide) underpinning the school's investment in and commitment to world-class facilities and staff, with internationally leading research programmes. The School of Pharmacy Queen's University Belfast was particularly outstanding ranking as first amongst Pharmacy submissions in REF 2014. The School of Pharmacy is a leading UK centre for pharmaceutical research and has been supported by philanthropic donations of more than £7 million for strategic research developments. The School's research strategy has focused on developing high profile projects, including in cancer and dermatological therapies that ultimately have the potential to meet identified clinical needs and, consequently, also have high priority status with the pharmaceutical industry. As a member of the Russell Group, Queen's University Belfast which is consistently recognised as one of the leading universities for knowledge exchange in the UK, thus ensuring research is creating jobs, wealth, skills and innovation. The projects lead investigator Dr Laverty is a PhD graduate from the School of Pharmacy and has first-hand knowledge experience of the successful pathway a PhD from Queens University Belfast can provide. The project's co-investigator, Prof McCarthy, is currently the Chair of the Postgraduate Research Committee (PGRC) and is responsible for all post-graduate studies within the school. The PGRC advises and supports all PGR students, ensures appropriate training is provided, considers all matters relating to recruitment, admission, progress and examination for postgraduate degrees, monitors and reviews supervision, appoints external examiners, reviews complaints, refers student

	<p>appeals to the University Postgraduate Appeals Committee and also submits an annual report to the University Postgraduate Office. The School of Pharmacy expects monthly meetings with students where electronic records must be kept. Students must also complete a three-month initial review and annual progress review to proceed to years two and three. The annual progress review involves written work, presentation and/or mini viva. These are the standard management and monitoring arrangements that must be adhered to by the academic partners. As such the School of Pharmacy has the best PhD completion rates within Queen's University Belfast. Each PhD student must also complete the centrally organised Queen's University Belfast researcher development framework program consisting of 30 days of training. These have been created by vitae, and endorsed by the QAA and Research Councils UK. The training areas include four domains that encompass: (A) knowledge and intellectual abilities, (B) personal effectiveness, (C) research governance and organisation and (D) engagement influence and impact. For this studentship the student will be trained in the following generic skills; developing writing skills, developing presentation skills, power point for academic presentations and posters, communication skills, introduction to research design, academic plagiarism, basic and advanced statistics, networking and negotiating, lab demonstrating and introduction to ref works. Students are also encouraged to use the Personal Development Planning (PDP) process to build a portfolio on learning, performance and achievement. PDP encourages the students to adopt a good work practice and supports the timely submission of thesis. The student will receive formal training in the following specialist skills necessary for this project; peptide/peptoid synthesis, confocal microscopy, scanning and transmission electron microscopy, tissue culture, Fourier Transform infra-red spectrometry, circular dichroism, Mass Spectroscopy, 1H NMR, HPFC and in vivo facilities. The combination of these skills is highly transferable and should give the student a distinct advantage in the employment sector.</p>
<p>Expected impact activities</p>	<ul style="list-style-type: none"> -Involved in development of intellectual property -Attendance at relevant conferences -Engagement with industry, patients and key stakeholders -Generation of publications