



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Nano-engineered Systems for the Targeted Delivery of Oncology Drugs for Breast Cancer
Value / what is covered?	Fully funded PhD studentship for 42 months 100% of UK/EU tuition fees paid and an annual stipend (living expenses), currently at £14,553 Funding is subject to final contractual agreements
Awarding body	EPSRC CASE Studentship
Number of studentships	1
*Summary descriptive text / Example of research project	<p>Breast cancer is the most common cancer in the UK with over 55,000 cases each year, with approximately 65% of patients receiving chemotherapy. The standard of care (SoC) chemotherapy is an anthracycline based regimen usually consisting of epirubicin (E) and Cyclophosphamide (C), both of which confer debilitating side-effects, resulting in sub-optimal dosing with a reduced clinical efficacy.</p> <p>This PhD project is designed to modify this SoC regimen to be incorporated into the RALA++ patented technology, developed by Phion Therapeutics, for targeted efficient delivery to tumours. RALA++ can be used to deliver nucleoside and nucleotide analogue drugs specifically to solid tumours following intravenous administration in a nano-formulation. This projects forms part of an exciting collaborative partnership between Dr Buckley, a breast cancer researcher with expertise in personalised medicine, and Professor McCarthy from Phion Therapeutics, a pharmaceutical company dedicated to optimising therapeutic value through precise and effective drug delivery.</p> <p>The student will benefit from training in both an academic and industry setting including a 6 month placement in Phion Therapeutics. The project workplan encompasses a broad range of molecular biology, physiochemical and in vivo techniques providing the student with an excellent training environment and key transferable skills for future development.</p>
*Supervisor(s)	Dr Niamh Buckley (QUB) Prof Helen McCarthy (QUB & Phion Therapeutics)
*Eligibility / residence Status	EU/UK citizens that satisfy a requirement of being ordinarily resident in the UK for the three years prior to the start of the studentship
Country	Northern Ireland
*Start date and duration	01/10/18
*Faculty	Medicine, Health and Life Science
*Research centre /	School of Pharmacy

School	
Subject area	Cancer and Nanomedicine
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	28 th February 2018
*How to apply / contacts	Postgraduate Research applicants for Pharmacy who are interested in applying for this fully funded 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/ResearchThemes/NanomedicineandBiotherapeutics/ http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/ResearchThemes/NanomedicineandBiotherapeutics/DrNiamhBuckley/ http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/ResearchThemes/NanomedicineandBiotherapeutics/ProfessorHelenMcCarthy/ https://www.phiontx.co.uk https://www.qub.ac.uk/schools/SchoolofPharmacy/
Keywords for search filters	Breast Cancer, Nanomedicine, Personalised Medicine, Industry Partnership, Drug Delivery

Training provided through the research project	<p>Right from the start the PhD student will be using academic research designed to have an industrial purpose with real world impact. This dual approach spans:</p> <p>1) Research Skills: the academic supervisor will ensure excellent training in breast cancer techniques while the industrial supervisor will ensure the student is considering product design, manufacturing and scale-up right at the start of the design of this new medicine. Further training with industrial regulators and awareness of a typical data package required for pre-clinical development will give the student a unique perspective.</p> <p>2) Record keeping & monitoring: Monthly meetings with the student will take place with electronic records. Students must also complete a 3-month initial review and annual progress review to proceed to years 2 & 3. The annual progress review involves written work, presentation and/or mini <i>viva</i>. However at each of these meetings, the industrial supervisor will also be present ensuring that the data records and presentations are also suitable for industrial purposes.</p> <p>3) Additionally, there will be opportunities to present at both academic and industrial sectors, networking and negotiating, personal development on courses for animal licenses, GLP, advanced statistics, regulatory issues and placements with Phion spanning at least 50% of the time where the student will work alongside current Phion employees. Phion labs are located in QUB further enhancing a truly integrative approach</p>
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Expected impact activities	<p>Thousands of women each year are treated with chemotherapy in the UK. While substantial benefit can be gained from this treatment, it is associated with significant side effects due to off target effects of chemotherapy. This means that patients are often treated with suboptimal doses of drug in order to manage this and/or patients experience considerable ill effects. This project aims to improve the efficacy of chemotherapy through precise and effective cancer specific delivery of the drug therefore maximising clinical benefit while reducing the associated side effects.</p>
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