



# QUEEN'S UNIVERSITY BELFAST

<b>*Title of studentship</b>	Molecularly imprinted polymers for selective capture and sensing of cancer biomarkers
<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 project is focused on developing novel selective capture and detection methods for cancer biomarkers from plasma using Molecularly Imprinted Polymers (MIPs). Specifically, research is focused on the development of MIPs that enable the selective capture and pre-concentration of methylated RNA nucleotides from patient samples. The PhD project will involve the design of MIPs using inexpensive, commercial or tailor-made functional building blocks, exhibiting high affinity for methylated nucleotides. MIPs will be tested on biological samples that will be prepared from patient material and cultured cancer cells. The most promising MIPs will be brought forward and tested in vitro and in a patient study.
<b>*Supervisor(s)</b>	Fiona Furlong, School of Pharmacy Panagiotis Manesiotis, School of Chemistry and Chemical Engineering
<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>	Analytical chemistry, personalised medicine, cancer, diagnostics
<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, or a closely related discipline.

<b>*Deadline for applications</b>	7 <sup>th</sup> January 2019
<b>*How to apply / contacts</b>	<p>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.</p> <p><a href="https://dap.qub.ac.uk/portal/user/u_login.php">https://dap.qub.ac.uk/portal/user/u_login.php</a></p>
<b>Relevant links / more information</b>	<p><a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/</a></p> <p><a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/</a></p>
<b>Keywords for search filters</b>	Molecular Imprinting, cancer, biomarker, analytical chemistry, Mass Spec
<b>Training provided through the research project</b>	The project will provide a thorough understanding of cancer biology, personalised medicine, biomarker discovery, and analytical chemistry methodologies. This PhD will provide expert training in the following laboratory techniques; patient sample preparation, isolation and detection of RNA, DNA and protein from biological samples, tissue culture and <i>in vitro</i> bioassays, LCMS, chromatography, spectroscopy, chemical synthesis and biostatistics.
<b>Expected impact activities</b>	MIPs can be engineered into sequence selective materials and applied to biosensor technologies in which the future application of this work is the development of low-cost biosensors for cancer.