



# QUEEN'S UNIVERSITY BELFAST

<b>*Title of studentship</b>	Influence of smoking and vaping on the lung microbiome in surgical patients
<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>	Post-operative pulmonary complication (PPC) is frequent and occurs in up to 20% of surgeries. The incidence of PPC is associated with increased healthcare costs, ICU admission and mortality. PPC rate, as well as 30-day mortality, is significantly elevated in current cigarette smokers. However, there is very limited research into the mechanism through which CS increases the risk for PPC. Infection is a common cause for PPC and alteration of the lung microbiome could be one of the putative mechanisms. Similarly, the effect of E-cigarettes (EC) on the lung microbiome has not been investigated. The aim of this study will be to determine the effect of CS and EC on the lung microbiome in patients undergoing major upper abdominal and thoracic surgery. Endotracheal aspirate (ETA) and blood will be collected in non-smokers, cigarette smokers and E-cigarette users at the time of surgery. 16S Ribosomal RNA Gene-based Microbiome Profiling will be performed and compared with clinical data on PPC, ICU admission and hospital length of stay will The data collected will be invaluable in identifying at risk patients and prevent PPC.
<b>*Supervisor(s)</b>	Professor Michael Tunney, School of Pharmacy Dr Murali Shyamsundar, Centre for Experimental Medicine, SMDBS
<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>	Clinical Pharmacy, Microbiology, Infection and antimicrobial resistance

<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>	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.  <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>
<b>Keywords for search filters</b>	Infection, antimicrobial resistance, PCR, next-generation sequencing, tissue culture
<b>Training provided through the research project</b>	This 3-year project will provide extensive training in culture and non-culture based microbiological techniques, molecular microbiology and tissue culture, with an important clinical focus, as part of an internationally renowned research team. Candidates will gain experience of statistics and analysis of both lab results, and correlation with available clinical data.
<b>Expected impact activities</b>	PPC is associated with worse patient outcomes and impacts critical care resources. Understanding the mechanism by which CS and EC potentially increase the risk of PPC will be valuable in identifying at risk patients and prevent PPC.