*Title of studentship	Clinical application of machine learning algorithms to determine appropriate antibiotic use in children with Gram-negative bacteria infections
Value / what is covered?	
Awarding body	The Department for the Economy (DfE)
Number of studentships	1
*Summary descriptive text / Example of research project	Digital health is a growing and productive field in recent years. The application of machine learning (ML) techniques in electronic healthcare databases has been successfully used for clinical diagnosis, outcome prediction, and disease progression. With increasing global antimicrobial resistance (AMR), appropriate antibiotic selection plays a key role to tackle AMR. The overall aim of this project is to develop and apply ML algorithms using global antimicrobial resistance data, to determine appropriate antibiotic use for children.
*Supervisor(s)	Dr Yingfen Hsia, Dr Deepak Padmanabhan, Professor Carmel Hughes
*Eligibility / residence Status	UK student
Country	Northern Ireland
*Start date and duration	1 October 2020
*Faculty	MHLS
*Research centre / School	Pharmacy
Subject area	Paediatric pharmaco-epidemiology
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, Statistics, Computer Science 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	

*How to apply / contacts	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. 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	paediatric infectious diseases, antibiotic use, pharmaco-epidemiology, machine learning
Training provided through the research project	The student will receive training on quantitative methods, pharmaco-epidemiological methods, generic skills in writing and presentations skills, critical thinking, and project management. Training will also be provided on computer languages (Python, C++) and statistical software (STATA, R, Rstudio). The student will work with a large interdisciplinary team which is highly experienced in such studies.
Expected impact activities	The findings for this project can help us to implement ML algorithms in global AMR surveillance system. The training provided to the student will also provide an excellent grounding for a career in medical research or information technology.