# Centre for Medical Education

# Summer Studentship Project Summaries

## For studentships commencing on 15th June 2026

Please find below an overview of the summer projects available in the Centre for Medical Education.

There are 10 projects available to choose from, however only 8 will be funded.

Some projects may support more than one student.

Places are allocated competitively.

It is possible to complete some of the projects remotely, however, this is at the discretion of the project supervisor(s).

## PROJECT 1: Achieving Good Medical Practice - Mapping Medical Student Teaching Opportunities in the C25 Curriculum

**Supervisor(s):** Dr Grainne Kearney, Prof Mark Harbinson & Dr Kelly Oliver

**Project description:**

In 2020, the Centre for Medical Education (CME) at QUB introduced the 'C25' curriculum. One aspect of this new curriculum were various helical themes (Kennedy et al, 2021). One of these, the 'A theme', short for 'Achieving Good Medical Practice' involves a number of subthemes. One of these subthemes highlights teaching opportunities for medical students. A recent BMJ opinion paper, critiquing the assumption that all doctors can and should teach, states "We maintain that if we want to be true to the doctors as teachers mantra, education around this should begin at medical school. Medical students need to be taught not just how to be medical educators themselves, but how educational research and pedagogy can apprise them as current and future teachers."

This project therefore involves mapping the current opportunities for teaching for medical students in the C25 curriculum and considering further development of opportunities.

References

Kearney G P, Gardiner N, Carr D, Kelly M, Gormley G J. See one, do one, teach one: other professionals don't accept this so why should the medical profession? BMJ 2025; 389 :r432 doi:10.1136/bmj.r432

Kennedy N, McKeown P, Boohan M. C25 in QUB: a transformed curriculum for a transformed healthcare system. Ulster Med J. 2021 Sep;90(3):138-141. Epub 2021 Nov 11. Erratum in: Ulster Med J. 2022 Jan;91(1):3.

**Benefits to the student(s):**

The student will have the opportunity to map out any student teaching opportunities, as an innovative part of the curriculum and consider developments where gaps are identified. Under the guidance of Prof Harbinson and Dr Kearney, they will liaise with relevant teaching staff including the Academic Year leads and use 'Notion', the mapping software used by the Centre for Medical Education. The student will also look for relevant literature in medical education.

**Project duration:** 8 weeks

*This project could be completed remotely, if requested.*

## PROJECT 2: Using RNase P Cycle Threshold (Ct) Values to Assess Sample Quality

**Supervisor(s):** Dr Ciara Cox & Dr Kathy Li

**Project description:**

RNase P is a ribonucleoprotein that is present in all nucleated human cells and its detection serves as an internal control in molecular diagnostic assays. The presence of RNase P confirms that human cellular material has been successfully collected, extracted, and amplified. This helps reduce the risk of false-negative results arising from poor sample collection, or the presence of PCR inhibitors.

In the Regional Virology Laboratory (RVL), all respiratory samples analysed using the extended respiratory molecular panel include RNase P as a quality control. Currently, RNase P is only reported when absent, in which case the sample is reported as "poorly taken." However, emerging evidence suggests that the Ct value of RNase P—rather than simply its presence or absence—may provide a quantitative measure of sample quality. This creates the potential to normalise pathogen load relative to the amount of human material present, improving the clinical interpretation of viral or bacterial quantities detected.

During the summer placement, the student will:

- Analyse existing laboratory datasets of positive and negative respiratory samples and corresponding RNase P Ct values.
- Investigate correlations between RNase P Ct values and pathogen load across a range of respiratory infections.
- Determine threshold RNase P Ct values that may indicate inadequate sample collection.

If time allows, the student will also have the opportunity to test Chlamydia/Gonorrhoea swab samples for RNase P. This exploratory work will assess whether RNase P could serve as a similar quality control marker in genital sample diagnostics, where self-taken swabs are increasingly used.

**Benefits to the student(s):**

Students will gain skills and techniques in the following:

- Introduction to molecular diagnostics, including qPCR principles
- Understanding internal controls in clinical virology and microbiology
- Interpretation of Ct values in clinical contexts
- Basic statistical analysis and data analysis
- Laboratory exposure to nucleic acid extraction and molecular testing methods (depending on lab capacity and training requirements)
- Scientific writing and presentation of findings

This project is ideal for medical students interested in infection science, clinical laboratory medicine, diagnostics, or data-driven research. No prior laboratory experience is required; training will be provided.

**Project duration:** 8 weeks

*This project could be completed remotely, if requested.*

## PROJECT 3: Mapping the medical education curriculum for diversity

**Supervisor(s):** Dr Mairead Corrigan & Dr Paul Hamilton

**Project description:**
The successful candidate will be responsible for mapping the C25 curriculum (years 1-5) for diversity to identify how well it meets the GMC Outcomes for Graduates and where there are any gaps. This will be done using the online platform 'Notion'. You do not need to be familiar with the platform as you will receive training on how to use it. This is an opportunity for you to contribute to improving how diversity is taught in the curriculum.

**Benefits to the student(s):**
- Working as part of team to improve diversity in the curriculum
- IT skills
- Conference presentation

**Project duration:** 4 weeks

*This project could be completed remotely, if requested.*

## PROJECT 4: Peer support for neurodivergent medical students

**Supervisor(s):** Dr Mairead Corrigan & Dr Andrew Spence

**Project description:**
This research project aims to evaluate a peer support network, that is being co-developed with neurodivergent and neurotypical medical students, for the start of the 2026-27 academic year. The successful candidate will develop a research ethics proportionate review protocol to evaluate students' experiences of the network. This will involve:

- Reviewing the literature on peer support networks;
- Developing data collection methods to evaluate students' experiences of the network;
- Developing materials to advertise the network.

**Benefits to the student(s):**
The student will gain the valuable research skills of conducting a literature search, professional writing and data collection methods. They will be part of a vibrant team of medical students and staff involved in co-developing a peer support network. They will have an opportunity to present the results of the studentship at conference.

**Project duration:** 4 weeks

*This project could be completed remotely, if requested.*

## PROJECT 5: Developing a webinar for GP tutors to support students on clinical placement

**Supervisor(s):** Dr Mairead Corrigan, Dr Louise Sands & Dr Clare Puddifoot

**Project description:**

Reports published by the British Medical Association (BMA) show that undergraduate students and postgraduate trainees experience racism, sexism, ableism and homophobia from peers, staff and patients [1-4]. A lot of this is experienced on clinical placement.

This project aims to develop a webinar to support GP tutors in developing an inclusive learning environment. It will focus on supporting students to raise concerns while empowering GPs and other staff, working in GP practices, to respond to those concerns and to support students.

The successful student will:

- work with the GP Sub-Dean, the ED&I Leads in QUB and UU and with the Northern Ireland Medical and Dental Training Agency (NIMDTA) to develop the training;
- develop pre- and post- data collection methods so that the training is based on evidence;
- develop the training content.

References:


1. BMA. Sexism and sexual violence towards medical students. 2025
2. BMA. Disability and neurodivergence in the medical profession. 2025
3. BMA. Sexual orientation and gender identity in medicine report. 2022
4. BMA. Racism in medicine. 2022


**Benefits to the student(s):**

The student will gain valuable teaching and training and research skills. They will be part of a multi-institutional team that successfully developed online ED&I training for healthcare educators, from a previous summer studentship, which won an award and which has been completed worldwide. They will have an opportunity to present the results of the studentship at conference.

**Project duration:** 8 weeks

*This project could be completed remotely, if requested.*

## PROJECT 6: Creating the OSUE - Objective Structured Understanding Examination

**Supervisor(s):** Prof Michael Williams

**Project description:**

OSCEs assess clinical and practical skills, occasionally having 1-2 questions in a station testing relevant factual knowledge. The Synoptic and Progress tests assess knowledge and understanding, but it can be difficult to capture students' depth or breadth of understanding using MCQs.

The Royal College of Surgeons of Ireland (RCSI) use a structured viva as part of their summative assessment profile, asking students to answer three factual questions based on year 1 content, in six minutes, in a face to face setting.

This project will develop and pilot a new idea: the Objective Structured Understanding Examination or "OSUE". The exact form isn't determined - that is the aim of this studentship, balancing reliability, validity, practicality and fairness. The project will explore the practicalities and the pedagogy through asking stakeholders, learning from the RCSI experience and piloting a trial.

There are unknowns, such as whether it would be best to assess a practical skill and follow it with questions or whether a station of just questions would be best, and also whether 3 independent questions, or some structured follow-up questions would work better.

The justification for exploring this is firstly as the idea might address concerns about students' current focus of learning being to practice MCQs, obviously driven by their assessments, and secondly as the OSUE would be AI-proof, presently.

**Benefits to the student(s):**

The student would gain skills in:

- Project management
- Running focus groups
- Analysing data
- Running an OSCE style exercise
- Understanding assessment principles
- Writing up and presenting the work

**Project duration:** 8 weeks

## PROJECT 7: Exploring QUB medical undergraduates' educational, personal and professional development needs in advance of possible introduction of legislation for assisted dying in UK

**Supervisor(s):** Dr Carol Stone, Dr David Bell, Dr Michael Trimble, Dr Catherine Doherty & Dr Jennifer Doherty

**Project description:**

Proposed legislation to introduce assisted dying (AD) in England and Wales is being scrutinized by the House of Lords. The bill makes provision for adults who are terminally ill and expected to die within 6 months to request, and lawfully be provided with, assistance to end their own life. Whilst enactment of legislation is not imminent, it is likely to occur during the working lives of today's medical students. Whilst QUB offers a SSC which facilitates students to consider rationale behind opposing positions on AD, and practice ethical decision-making within existing law and professional guidelines, today's students can anticipate working in a health care system whereby new guidelines allow doctors to actively end patients' lives in specified circumstances.

The educational, personal and professional development needs of UK medical students regarding their role as doctors working in this altered health care system are unknown. Anecdotally, QUB students have requested that we cover this topic.

Project; Develop survey instrument to collect views of students regarding wish for teaching on AD and domains to be covered. Administer and test survey with QUB students. Study will be published and act as pilot for national survey by collaborative group with Cambridge and Brunel Universities.

**Benefits to the student(s):**

- Gain experience of research methodology including literature search, survey development and software, descriptive statistics, paper writing.
- Project management
- Planned publication of survey.

**Project duration:** 6-8 weeks

*This project could be completed remotely, if requested.*

## PROJECT 8: Embedding penicillin de- labelling in the AMU

**Supervisor(s):** Dr Philip Toner, Dr Aaron Brady & Dr Bernice Ng

**Project description:**

Inappropriate and excessive antibiotic use increases the risk of emergence of antibiotic resistant bacteria and associated increased in deaths related to these infections1. This project aims to identify those inappropriately labelled and challenge them, allowing the patients to utilise penicillin-based antibiotics. This has been deemed a vital action plan by the 2024 Four Nation National Action Plan2.
This has two aims:

1) identify those most in need of potential antibiotic therapy (immunocompromised and pre or post-transplant patients) and de label anyone inaccurately burdened with a penicillin allergy. Step one will be the identification of patient labelled penicillin allergic. Following this a risk assessment will be carried out to determine the likelihood of a true allergy. In those deemed low risk the patients are invited for a supervised penicillin challenge and followed up after this.
2) to develop an interactive education tool to increase knowledge of false penicillin allergies and how to assess for de labelling.

References


1. Department of Health & Social Care (2024). Confronting antimicrobial resistance 2024 to 2029. Available at: Confronting antimicrobial resistance 2024 to 2029 - GOV.UK (www.gov.uk) (Accessed: 24th September 2024).
2. UK Health and Security Agency (2023). Antibiotic resistant infections and associated deaths increase. Available at: Antibiotic resistant infections and associated deaths increase - GOV.UK (www.gov.uk) (Accessed: 24th September 2024).


**Benefits to the student(s):**

The students will be involved in an exciting new project aimed at reducing the impact of antibiotic resistance and hopefully improving quality of life outcomes for high-risk patients.
They will gain experience (supervised) including the assessment and treatment of allergic reactions.
They will see the impact pharmacology can have both on an individual patient and a wider group.
Further they will assist in the development of an interactive tool aimed to improve education with resident doctors.

**Project duration:** 6-8 weeks

## PROJECT 9: Resource Development for the Medics in Primary Schools Student Selected Component

**Supervisor(s):** Ms Mairead Boohan

**Project description:**
Since 2000, second year medical students have been able to choose Medics in Primary Schools (MIPS) as a Student Selected Component (SSC), spending one afternoon each week teaching primary school pupils about key health related topics. Students deliver sessions either face to face in Greater Belfast schools or via live online teaching to schools across Northern Ireland. This studentship builds on work completed in 2025 to revise the Study Guide and associated resources for students undertaking the online version of MIPS. In February 2026 feedback from students teaching in schools within the Greater Belfast area indicated that the materials used for face-to-face delivery now require updating to ensure they remain relevant and fit for current practice.

**Benefits to the student(s):**
Through this work, the student will directly enhance the learning experience of primary school pupils by creating engaging, age appropriate educational resources. In doing so, they will refine their pedagogical skills, gaining a deeper understanding of how well designed materials support children's health literacy, curiosity, and confidence.

**Project duration:** 8 weeks

*This project could be completed remotely, if requested.*

## PROJECT 10: Development of Medical Statistics resources

**Supervisor(s):** Dr Vikki O'Neill

**Project description:**
The medical curriculum requires students to take some lectures and tutorials in statistics (see, the General Medical Council's Outcomes for Graduates[1]). Statistics classes introducing basic data analysis, t-tests and chi-squared tests, are often cited as being anxiety-inducing experiences for students. This project aims to reduce the 'stats fear' through the development of resources, helping student's to engage with the course material and make learning statistics more fun. Resources could include instructional videos, explaining key statistical concepts, explaining how to perform basic statistical analysis, crib sheets to support revision, etc. The project will also aim to develop a bank of statistical based Multiple Choice Questions (MCQs) on Canvas for students.

**Benefits to the student(s):**
The student will have the opportunity to build upon their existing statistical knowledge though the development of teaching resources. The student will develop knowledge of best practise MCQ writing. The student will also gain knowledge of the statistical software. The student will develop IT and AV skills.

**Project duration:** 8 weeks

*This project could be completed remotely, if requested.*

[1] Outcome 26: Newly qualified doctors must be able to apply scientific method and approaches to medical research and integrate these with a range of sources of information used to make decisions for care.