



**QUEEN'S
UNIVERSITY
BELFAST**

SCHOOL OF
MEDICINE,
DENTISTRY AND
BIOMEDICAL
SCIENCES

FROM DISCOVERY TO RECOVERY

MSc
EXPERIMENTAL MEDICINE

Entrance Requirements

A minimum 2.1 Honours degree or equivalent qualification acceptable to the University in a relevant biological subject is required. Evidence of equivalent professional qualifications (MBBS, BDS or BVSc) or experience will be considered on an individual basis. Intercalating students are encouraged.

International Qualifications

For information on international qualification equivalents please select Your Country from the list on our International Students website.

Additional Information for International Students

International students wishing to apply to Queen's University Belfast (and for whom English is not their first language), must be able to demonstrate their proficiency in English in order to benefit fully from their course of study or research. Non-EEA nationals must also satisfy UK Visas and Immigration (UKVI) immigration requirements for English language for visa purposes.

Evidence of an IELTS* score of 6.5, with not less than 6.0 in any component, or an equivalent qualification acceptable to the University is required.

*Taken within the last 2 years.

For more information on English Language requirements for EEA and non-EEA nationals see: qub.ac.uk/EnglishLanguageReqs

Fees and Funding

For specific funding opportunities, please review the course information at www.qub.ac.uk

Duration

1 year full time

Teaching Times

Morning/Afternoon

Assessment

Assessment is by a combination of oral presentations and written assignments. The research project is written up as a dissertation.

Contact Us

askmhls@qub.ac.uk

Further Information

www.qub.ac.uk

MSc EXPERIMENTAL MEDICINE

Overview

Experimental Medicine aims to identify mechanisms of pathophysiology of disease, and demonstrate proof-of-concept evidence of the efficacy and importance of new discoveries or treatments. It spans fundamental research in the biosciences to the application of new strategies towards clinical translation that will improve delivery of healthcare. There is an increasing need for graduates who can undertake basic and clinical research, and translate it into improved medical treatments for patients. Students will be provided with advanced research training in a broad range of laboratory based biomedical sciences.

Students can also choose from specialist modules in "Infection, Inflammation and Immunology", or "Diabetes and Cardiovascular Medicine".

This research-intensive MSc programme in Experimental Medicine will equip you with the rigorous research skills, and the innovative mentality to tackle the major medical and therapeutic challenges of the 21st century.

Content

Semester 1

The MSc comprises 3 months of intensive teaching in Semester 1 followed by an extensive research project, which is undertaken in Semester 2 and Semester 3.

Fundamental Research Skills in Experimental Medicine

This core module will provide comprehensive training in systematic literature reviews, laboratory and clinical research experimental design, data analysis and management, scientific writing and presentation, research integrity and ethics and intellectual property and commercialisation

Diabetes and Cardiovascular Medicine Stream

Students on this stream will undertake two complementary taught modules focusing on fundamental experimental and translational principles of diabetes and cardiovascular disease. They will provide a strong understanding of the pathophysiology of these major diseases. These modules will also provide in depth information about strategies to develop novel diagnostic, prognostic and therapeutic approaches for the clinical management of cardiovascular disease and diabetes, which are leading causes of death worldwide.

Infection and Immunity Stream

This stream will provide a comprehensive understanding of infection and immunity as it pertains to infection biology, antimicrobial resistance, host/pathogen interactions, inflammatory processes and the role of immunity in health and disease. There is a strong emphasis on current developments in this rapidly accelerating field of translational medicine. Students will learn how the immune system maintains health, identifies and responds to invading pathogens or allergens and prevents repeated infections through strong adaptive immune responses.

Semester 2 and Semester 3

This 9 month period will be dedicated to a comprehensive research project. The research project will provide a unique opportunity to focus for 9 months on an extensive research project chosen from a large panel of projects offered by Principal Investigators in the Centre for Experimental Medicine. This period will be interspersed with monthly training to develop project-specific transferable skills, such as oral and poster presentation, and scientific writing.

Diabetes and Cardiovascular Medicine Stream

Within this theme, research projects will focus on the major vascular complications of diabetes, including retinopathy, cardiomyopathy, peripheral vascular disease, nephropathy and pre-eclampsia (in pregnancy). Stem cells, cell reprogramming and their enormous potential for novel therapies will also be covered.

Infection and Immunity Stream

Within this theme, research will include pathogenesis of respiratory diseases, such as ARDS, COPD, and cystic fibrosis, stem cell biology and therapeutic exploitation, host/pathogen interactions, antimicrobial resistance, molecular pathogenesis of respiratory bacteria and viruses, neuroimmunology in multiple sclerosis and neuron repair, and vaccines.

Why Queen's

You will be taught and mentored within the Centre for Experimental Medicine: a brand new, purpose-built institute at the heart of the Health Sciences Campus, boasting state-of-the-art research facilities.

The programme offers comprehensive research training with access to over 50 research groups and the state-of-the-art research facilities at the Centre for Experimental Medicine (CEM). Research facilities include Central Technology Units for Imaging and Genomics which are leading the way in research excellence and innovative healthcare.

The strong links between the Centre for Experimental Medicine and the biotech or biopharmaceutical sectors provides a stimulating experimental and translational environment, while also expanding your career opportunities.

Careers

The programme is designed for students wishing to pursue a career in experimental medicine, whether it is in academia, clinical practice, industry or government. The programme will also provide an excellent platform for progression to PhD programmes either in Queen's or worldwide.