PhD Studentship

Suitable candidates are invited to apply for a PhD studentship at Dublin City University (DCU) as part of the collaborative INTERREG VA programme. The studentship (with stipend) will be four years in duration and part of the DCU School of Biotechnology structured PhD programme.

Project:
Development of point-of-care (POC), rapid microfluidics-based diagnostic platforms for detection of cardiovascular disease.

Project Description: There is a significant need for effective diagnostic systems for cardiac disease and, particularly, for early detection of potential cardiac arrest. Current approaches rely mainly on troponin I (TnI) determinations but lack adequate sensitivity and existing testing formats have issues with sensitivity and specificity. In addition, reliance on Tn I levels provides inadequate information. We have developed high sensitivity recombinant antibodies to key troponin epitopes and to other markers. In addition, we have established novel approaches for the incorporation of such antibodies into microfluidic-based centrifugal and other platforms that currently outperform established lab-based technologies. We will utilise panels of antibodies to selected biomarkers on a novel microfluidics platform to successfully address the current limitations in detection of heart disease.

Requirements: Applicants must have a BSc (hons), Grade 1:1 or 2:1 (or MSc) in mechatronic or electronic engineering discipline with experience in product development and microfluidics (or liquid chromatography). Experience in optical or chemical detection methods would also be beneficial.

Main Supervisor: Dr. David Collins, School of Biotechnology, Faculty of Science and Health, Dublin City University, Ireland.

About INTERREG VA: The programme was established in 2017 as a cross-border centre of research programme spanning Northern Ireland, the Border Counties of Ireland and Western Scotland. The primary focus is on cardiovascular medicine with a particular emphasis on medical grade wearables, data analytics, ambient assisted living, rehabilitation and associated remote monitoring systems.

Point-of-care testing (POCT) is necessary to provide a rapid diagnostic result for a prompt on-site diagnosis and treatment. Microfluidic lab-on-a-chip technologies have been considered as one of the promising solutions that can meet the requirement of the POCT since they can miniaturize and integrate most of the functional modules used in central laboratories into a small chip. Hence, POCT detection of plasma markers associated with subclinical atherosclerosis will have important application for clinical practice.

To apply – please email your CV and refs to: liz.oconnor@dcu.ie
Please use this code: ECMEP3DC - in email subject header

Application Closing Date: 31st July 2017