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:**
**Point-of-care device for ultrasensitive detection of miRNA associated with cardiovascular disease.**

**Project Description** We will develop a sample-to-answer device for the ultrasensitive, PCR free, multiplexed detection of low concentrations (sub-femtomolar) of miRNA biomarkers of theranostic value in CVD, including miR-126, miR-133, miR-143, miR-208 and the let-7 family. Novel metal and polymer nanoparticles will be synthesised and characterised. These particles significantly amplify the electrochemical or optical signal generated by biomarker capture allowing them to be directly detected. Multiplexing will allow a small panel of biomarkers to be detected thus improving early diagnosis as well as the monitoring of treatment efficacy and disease recurrence.

**Requirements:** Applicants must have a BSc (hons), Grade 1:1 or 2:1 (or MSc) in a chemical / analytical discipline ideally with experience in assay/sensor development, electrochemistry or materials science.

**Main Supervisor:** Professor Robert Forster, School of Chemical Sciences, 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: ECMEP2RF - in email subject header

Application Closing Date: 31st July 2017