TU RISE PhD Scholarship

Project Title: In Vitro Vein

Department of Biological and Pharmaceutical Sciences

About the Project

We invite applications for a **fully-funded 4-year PhD project** as a full-time programme of study. This PhD project, ***In Vitro Vein***, is funded by MTU supported by TU RISE funding.

Venous disease affects one in four people and is the 4th most common chronic disease globally. This progressive disease culminates in debilitating venous leg ulcers that minimises quality of life for sufferers and places a huge burden on health care systems. Our industry partner, InVera Medical, have developed a minimally invasive medical device treatment for all chronic venous disease patients. It represents the first effective non-thermal medical device and uses the body's natural healing response to treat varicose veins and venous ulcers without harmful side effects.

The project aims to develop complex 3D co-cultures of human vascular cell lines grown on industry-relevant polymers, **creating a unique laboratory generated vein for preclinical testing of vascular medical devices and therapies**. Leveraging off the successful outcomes from our recent *BioVascular 3D* project (a collaboration with MET at Atlantic Technological University), this project is designed to support the needs of our industry partner, and its success will not only benefit their specific vascular device but greatly help to bridge the translational gap between *in vitro* and *in vivo* vascular preclinical data sets for the industry in general.

To project will develop a 3D *in vitro* model of a vein capable of generating data that correlates to existing preclinical *in vivo* data for our industry partner's venous medical device, therefore proving its potential to save vascular medical device companies time and cost while reducing the requirement for animal use in preclinical testing.

Requirements:

Applicants must have achieved at least a **second-class higher level (2H1)** classification or equivalent in an appropriate scientific discipline area relevant to the research field (e.g. biology, physiology) from a recognised degree awarding body OR possess a Master's Degree in an appropriate discipline area relevant to the research field from a recognised degree awarding body. Previous laboratory experience would be an advantage.

The successful candidate must be **highly self-motivated** with enthusiasm to develop technical skills and knowledge across the following topics: **mammalian cell culture**, ***in vitro* model characterisation**,

molecular cell biology, microscopy, **immunology**, and **bioassays**. They must have an interest in and an aptitude for laboratory–based research and vascular physiology and pathophysiology.

For applicants whose first language is not English, the English language requirements accepted by MTU for entry into postgraduate studies are:

- IELTS Academic 6.0 (No less than a 5.5 in any one band)
- PTE Academic 51 (Minimum 45 in each component)
- TOEFL IBT 80 min (score of 18 in each component)
- Duolingo score Min of 100

Please refer to: https://www.mtu.ie/international/eu-applicants/

General terms and conditions of this PhD scholarship award

Start date & location: This PhD starts no later than **1st Jan 2025.** The student will be based primarily at Shannon Applied Biotechnology Centre (Shannon ABC) laboratories on South Campus of MTU Kerry. The student will be registered at MTU, working under the supervision of Dr Niall Burke (MTU Kerry) in association with Dr. Derek Whelan (MTU Cork) and our industry partner. The PhD Scholar is required to spend **at least 12 weeks on placement with an enterprise partner** within the four-year term of their doctoral programme. The project supervisor/PI (in conjunction with the PhD scholar) is responsible for arranging the student placement with a suitable enterprise partner.

Funding: The scholarship funding is tax free and includes payment of University PhD fees (EU or non-EU) and a student stipend at a flat rate of €25,000 per annum which is tenable for 4 years.

To Apply:

Please send a **single PDF file** consisting of the following to niall.burke@mtu.ie with **'TU RISE PhD Application' in** the subject heading:

1. Resume/Curriculum Vitae (CV), including:
    - Education History
    - Relevant skills
    - Research projects/publications
2. A cover letter (2-pages max) including a description of the applicant's research interests, reasons for applying for the position. The Cover letter must clearly indicate how the applicant's profile and skills fit the requirements of this PhD position.
3. Scanned copies of relevant academic transcripts and English language certificates.
4. A minimum of two recommendation letters and/or contact information for referees.

Further information or queries please e-mail (niall.burke@mtu.ie)

Closing date for applications: 31st October 2024

Interviews (on-line) anticipated to be held early/mid November 2024

PhD commencement date latest by 1st January 2025.

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