

Investigating the contribution of liver endothelial cell gene regulatory networks in hepatic homeostasis and disease

Imperial College London

British Heart Foundation - Imperial Centre for Translational and Experimental Medicine (ICTEM)

London, United Kingdom

Deadline: Sunday, March 08, 2020

Project Description

The Vascular Sciences (National Heart and Lung Institute) and the Genetics & Genomics Sections in the Faculty of Medicine, Imperial College, have combined expertise in translational research and the study of genetic and epigenomic mechanisms that lead to diverse cardiometabolic pathologies. The three groups sit side by side in the new state-of-the-art Imperial College Centre for Translational and Experimental Medicine (ICTEM) on the Hammersmith Hospital campus. The present scheme takes advantage of the multidisciplinary setting that ICTEM offers, with jointly supervised projects to explore novel areas in cardiovascular science.

The BHF 4-year MRes/PhD studentships at ICTEM typically comprises a 1-year MRes in Biomedical Research, followed by a 3-year PhD. During the MRes year, students undertake two projects which will prepare them for the Ph.D. The project will investigate how genetic and/or epigenomic mechanisms of liver sinusoidal endothelial cells (LSEC) contribute to cardiometabolic diseases, such as non-alcoholic fatty liver disease and cardiovascular disease. To this end, the student will develop new in vitro systems to study LSECs and characterise them using state-of-the-art chromatin assays, including ATAC-seq and Cut&Tag. These new tools will be used to address fundamental questions related to the role of LSECs in cardiometabolic disease. The student will also perform functional validation experiments, including CRISPR/Cas9 genome editing, to investigate cardiometabolic disease mechanisms. In this project, the student will be exposed to a multidisciplinary environment, learning how to apply both experimental and computational approaches to study genetic factors contributing to human disease.

The successful candidate will be based in the Cebola, Randi and Birdsey labs at the Hammersmith Campus for the period of their study. They will join a cohort of Ph.D. students affiliated with the BHF Centres at Imperial, with particular interests in cardiovascular medicine and novel technologies. They will also link to the wider Imperial College through multiple training opportunities provided throughout the course of the studentship.

To apply, you will need to complete the following step:

Please email Veena Dhulipala (v.dhulipala@imperial.ac.uk) with the following documents:

- Your CV
- The names and addresses of at least two academic referees
- A personal statement of no more than 1,000 words explaining your interest in the project

Interviews will be held in late March 2020

Funding Notes

Applicants must hold, or expect to obtain, a first or upper second-class honours degree or equivalent in an appropriate subject from a recognised academic institution. Candidates must fulfil College admissions criteria and meet BHF residency requirements.

This is a highly interdisciplinary project and previous theoretical and practical experience in at least one of the areas of the following is essential: bioinformatics (including bash, python and/or R coding), cell culture, molecular cloning, qRT-PCR, CRISPR/Cas9 genome editing, lentiviral production, and chromatin immunoprecipitation.

<https://www.findaphd.com/phds/project/investigating-the-contribution-of-liver-endothelial-cell-gene-regulatory-networks-in-hepatic-homeostasis-and-disease/?p117604>