

UCL Division of Medicine – 4-Year EPSRC PhD Studentship

Centre for Precision Healthcare, UCL Division of Medicine

Developing Biosensors to Study the Immune Response

UCL Division of Medicine and UCL Institute for Materials Discovery, University College London

Elevated pro-inflammatory cytokines are associated with many diseases. Recent events (COVID-19) have highlighted the need for new tools capable of fast, decentralized (point-of-care), real-time monitoring of multiple analytes that can influence healthcare by optimizing patient selection, predicting outcomes and facilitating the assessment and implementation of new therapies.

We offer a full-time 4-year EPSRC-funded PhD studentship that will investigate the novel use of electrochemical impedance spectroscopy bio-sensing for real-time monitoring of the inflammo-immune response via highly selective determination of biomarkers (e.g. cytokines and other inflammatory mediators). The project will utilize the existing expertise that the supervisory team has in the use of inflammatory models and electrochemical sensor technology and will link-in with collaborators working in this field at UCL and beyond, as well as industry collaboration.

The project will provide the PhD student with multidisciplinary training involving fundamental aspects of biology (e.g. immunology, inflammation, biochemistry), chemistry (e.g. surface coating, surface-enhanced Raman scattering), materials science (e.g. design and fabrication of sensor components and prototype extra-corporeal devices) and experimental medicine. This will be crosscut by stakeholder engagement with industry, management of intellectual property, and regulatory authorities to ensure the tools being developed match end-user requirements. The breadth of activity in the project will enable the PhD student to develop a range of highly sought after creative and technical skills in academia and industry and become articulate in communicating across different disciplines.

Applicants should hold, or expect to receive, a minimum upper-second class degree or equivalent in a subject associated with biology, chemistry, chemical or biomedical engineering. A Master's degree or previous lab-based research experience is desirable.

Informal enquiries should be made to Prof. Richard Day (r.m.day@ucl.ac.uk)

Formal applications should be submitted by email in the form of a CV, covering letter outlining motivation, interest, and suitability for this project, and contact details for two referees to Prof. Richard Day (r.m.day@ucl.ac.uk). Shortlisted candidates will be contacted directly for interview.

The successful candidate is expected to start 28th September 2020.

Funding Notes

This studentship is funded for 4 years by the EPSRC and includes UK/EU UCL PhD tuition fees, laboratory costs and an annual salary stipend starting at £17,285.

Eligibility

The full studentship (tuition fees and salary stipend) is eligible to all UK nationals and EU nationals if they have been resident in the UK for at least 3 years immediately before the PhD start date. EU nationals who don't meet the residency criteria are eligible for a tuition fees-only award.

Application deadline: Friday 24th July 2020

Proposed interview date: w/c Monday 3rd August 2020