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# PhD Studentship

**A mass spectrometry investigation of the nutritional status of acute kidney injury patients resulting from different modes of dialysis.**

## Biomedical Sciences & Leicester School of Pharmacy, Faculty of Health & Life Sciences, De Montfort University, Leicester

**STARTING OCTOBER 2014**

A PhD research studentship covering stipend and tuition fee costs is available within the Faculty of Health and Life Sciences working with an internationally recognised research team that has pioneered micro-analytical methods for a range of healthcare applications. It is available to suitably qualified UK or EU students.

The project will consider how different modes of dialysis affect the nutritional status of patients with acute kidney injury (AKI). AKI is a rapid decline in kidney function and is a common cause of in-hospital morbidity and mortality. About 20% of heart surgery patients and 20% of patients in intensive care develop AKI, and in the latter group mortality may exceed 50%. While short-term adverse effects of AKI can be considerable, a single episode of AKI also increases the risk of developing chronic kidney or cardiovascular disease long after recovery. The cost of managing AKI is high (~£620 million per annum) and the impact on an individual’s life can be considerable, particularly when dialysis is needed. Maintaining optimal nutritional status in patients is crucial to minimise both short- and long-term effects of AKI.

This project will measure markers of nutritional status in patient serum and in the dialysis tubing using mass spectrometry methods, and consider the differences that arise depending upon the dialysis method used. Ultimately the aim is to give appropriate supplementation that is tailored according to the dialysis method used. The project would also involve developing a dried blood spot (DBS) method in which a drop of blood is collected on a card non-invasively to measure water soluble vitamins. This project will include the development, validation and application of this novel DBS based analytical method.

This multidisciplinary project will give the student excellent training in understanding nutritional aspects relating to kidney disease, LC-MS/MS techniques, handling patient samples, data generation and reporting.

Good laboratory and instrumental skills are essential. Other essential requirements are the ability to handle and manipulate blood samples. Experience of using HPLC and/or LC-MS systems, and knowledge of nutrition and kidney disease is desirable.

Supervisors will be Dr Louise Dunford, Dr Sangeeta Tanna and Dr Graham Lawson (De Montfort University). The project is in collaboration with Dr Mark Devonald (Nottingham University Hospitals Trust) and Dr David Gardner (University of Nottingham). Please see the following website for more information about dried blood spot analysis: [www.dmu.ac.uk/dried-blood-spot](http://www.dmu.ac.uk/dried-blood-spot)

For more information about the project please contact Dr Dunford on +44 (0)116 2506498; or email [louise.dunford@dmu.ac.uk](mailto:louise.dunford@dmu.ac.uk)

This research opportunity builds on our excellent achievements in the past and looking forward to REF2020. It will develop the university’s research capacity into new and evolving areas of study, enhancing DMU’s national and international research partnerships.

Applications are invited from UK or EU students with a good first degree (First, 2:1 or equivalent) in a relevant subject and a keen interest in bioanalysis. Doctoral scholarships are available for up to three years full-time study starting October 2014 and provide a bursary of £13,770pa in addition to university tuition fees.

**Please quote ref: Scholarships 2014 HLS FB2**

**CLOSING DATE: Friday 21st March 2014**