

FoodBioSystems DTP - PhD Project Advertisement

Project title:

FBS2021-12-Mills: Does a coffee a day keep the doctor away? Investigating the impact of coffee on cardiometabolic health

Lead supervisor:

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Project description:

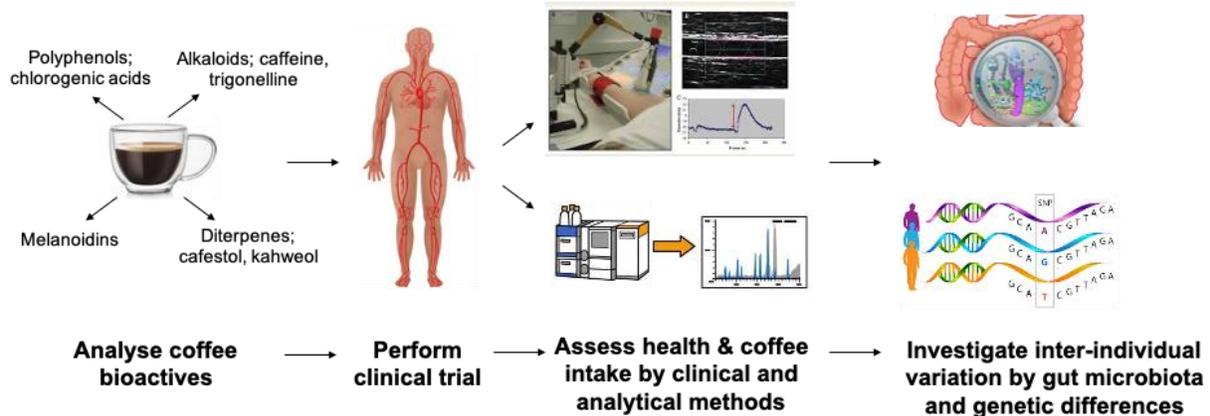
Coffee is an extremely popular beverage worldwide; 95 million cups per day are consumed in the UK alone. Historically, there has been debate about the health impacts of consuming coffee, however recent findings from observational studies has provided evidence that drinking 3-5 cups of coffee per day is protective against cardiometabolic diseases. These studies, however, do not prove causality; randomised controlled trials are needed.

Coffee is a chemically complex beverage and contains many different bioactive component (e.g. polyphenols, alkaloids, melanoidins, diterpenes), which are likely to differ depending on how the coffee is consumed; this makes it hard to fully understand what is driving these health effects. Identifying biomarkers of different coffee consumption would contribute towards understanding the health effects. This complexity is exacerbated by the observation of large inter-individual variation in response to coffee; some individuals seem to have marked health responses, whereas others do not. It is not clear what is driving this, although it is possible that it is a combination of genetic polymorphisms and gut microbiota composition.

The objective of this project is to understand the impact of coffee consumption on cardiometabolic health.

In this project the student will:

- 1) Analyse a variety of coffee prepared by different methods for bioactive compound content
- 2) Perform a randomised controlled trial to test the impact of coffee on cardiometabolic health
- 3) Investigate the inter-individual variation in response to coffee on cardiometabolic health
- 4) Identify biomarkers of coffee consumption and to predict cardiometabolic disease risk



Training opportunities:

The student will gain a vast array of research experience including both basis science and clinical skills. Namely these will be HPLC, LCMS and NMR methods and molecular techniques such as PCR and FISH. They will be trained to perform a randomised controlled trial and will be given training in clinical assessment methods, notably ultrasound and applanation tonometry. They will also gain experience in dietary assessment and anthropometric methods. The student will also receive training in clinical trial statistics and bioinformatics analysis to process the data from the project.

Student profile:

Students with a passion for food and nutritional science and an inquisitive nature would be suited to this project. We welcome applicants with backgrounds in nutrition, health and food sciences or broadly related subjects (e.g. life sciences, biochemistry or biomedical sciences). Previous laboratory experience is essential and practical experience in clinical science would be beneficial.

Funding Note

This project is part of the FoodBioSystems BBSRC Doctoral Training Partnership (DTP), it will be funded subject to a competition to identify the strongest applicants.

The studentship is open to UK and international students (including EU countries) however due to funding rules, no more than 30% of the projects can be allocated to international students.

The funding will include a tax free stipend (minimum £15, 285 per year), support for tuition fees at the standard UK rate (currently £4,407 per year) and a contribution towards research costs. **Please note** that the host universities have not yet confirmed the level of fees charged to international students funded by the DTP. Fee levels may vary across the institutions. This information will be shared on the FoodBioSystems DTP website as soon as it becomes available.

To apply

Please go to [FoodBioSystems DTP website](#) for information on how to apply for this studentship. The closing date for applications will be 8 February 2021.