

PhD Project Advertisement

Project title: A probiotic approach targeting the microbiota to improve Irritable Bowel Syndrome symptoms and associated low mood

Project No: FBS2025-084-Walton-rs

Lead supervisor: Gemma Walton, Department of Food and Nutritional Sciences, University of Reading

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Please note:

- This four-year studentship is available only to individuals who are eligible for UK/home student fees status. We regret that we can not fund international students on this occasion, and we will not process applications from any candidates who require a visa to study in the UK.
- The studentship start date is flexible up until March 2026.

Project description:

We all have billions of bacteria living within us, these microbial inhabitants break down left over foods and produce end products that can impact on our health. Irritable bowel syndrome (IBS) is a common gastrointestinal condition which effects an estimated 19% of the UK population. Low mood has been linked to IBS, both conditions can greatly affect quality of life, so finding ways to improve these symptoms is greatly important.

Links between the gut microbiota and both IBS and low mood have been observed. This means that by altering the microbiota we can possibly have an impact on both IBS symptoms and mood. In this project you will use probiotics as a tool for altering the microbiota, and increasing levels of microbial end products associated with improved mood. You will use in vitro models of the gut to determine microbial mechanisms at play in IBS and low mood. Subsequently you will investigate probiotics for their ability to impact on these mechanisms.

Following on from in vitro work you will carry out a human study using a probiotic combination that shows the best potential for interacting with mood and gut mechanisms. The plan is to determine whether the selected intervention can help improve gastrointestinal symptoms and mood.

Student profile:

We are looking for applicants with:

Essential

- at least a BSc (2.1) in biological sciences or a closely related subject
- a background in **one** or more of the following: microbiology, gut health or nutrition
- an interest in psychology

Desirable

- microbiology laboratory experience

Due to the multidisciplinary nature of this program, we do not expect the successful candidate to have knowledge and experience in all relevant areas. Full support and training will be provided by experienced staff.

Training opportunities:

You will receive project specific training in:

- In vitro gut modelling
- Metabolic profiling (including gas chromatography, liquid chromatography/mass spectroscopy)
- Microbial analysis including: SCFA analysis, bacterial sequencing and metagenomics
- Human trials including: experience of project management, people and ethical considerations
- Good clinical practice
- Psychological assessment at University of Surrey
- Statistical techniques

During your PhD studentship you will have the opportunity to develop your scientific communication skills (oral presentations, paper writing, thesis writing). You will also undertake training in transferable skills delivered by the University of Reading Researcher Development Programme.

This is a CASE studentship supported by Optibac, a probiotics company committed to sustainable products that support health and wellbeing. You will undertake a three-month placement at Optibac, working alongside a range of different teams learning about industry needs and how to take products forward. By working closely with Optibac you will gain an industrial perspective on your research and see how it can impact on product development.

Project Supervision Style

You will be primarily based in the gut microbiology lab, FNS, University of Reading, where CP will support training in a range of laboratory techniques. You will have a weekly one-on-one meeting with GW who runs an open-door policy, so there is an opportunity to meet more often. To keep everyone updated there will be quarterly update meetings with the wider project team. GW and the student will arrange additional meetings as required with AW, KK and RS via MS Teams. Students can expect feedback on work usually within two week of submission, but in busier periods this may take up to three weeks, short pieces of work will usually be turned around within a week.

Stipend (Salary):

FoodBioSystems DTP students receive an annual tax free stipend (salary) that is paid in instalments throughout the year. For 2025/26 this is £20,780 and it will increase slightly each year at rate set by UKRI.

Equality Diversity and Inclusion:

The FoodBioSystems DTP is committed to equity, diversity and inclusion (EDI), to building a doctoral researcher (DR) and staff body that reflects the diversity of society, and to encourage applications from under-represented and disadvantaged groups. Our actions to promote diversity and inclusion are detailed on the [FoodBioSystems DTP website](#) and include:

- Offering reasonable adjustments at interview for shortlisted candidates who have disclosed a disability or specific learning difference.
- [Guaranteed interview](#) scheme for applicants, with UK home fees status, from eligible under-represented ethnic groups.

These are opt-in processes.

Our studentships are offered on a part time basis in addition to full time registration. The minimum registration at University of Reading is 67% FT and the studentship end date will be extended to reflect the part-time registration.

For up to date information on funding eligibility, studentship rates and part time registration, please visit the [FoodBioSystems website](#).