

CANDIDATE BRIEF

Research and Innovation Fellow in Gut Microbiome Impact of Alternative Proteins (GutMAP), School of Food Science and Nutrition, Faculty of



Salary: Grade 7 (£38,205 - £45,585 p.a.)

Reference: ENVFS1122

Fixed-term for 33 months from 1st January 2025

Research and Innovation Fellow in Gut Microbiome Impact of Alternative Proteins (GutMAP)

School of Food Science and Nutrition, Faculty of Environment

Overview of the Role

Are you an ambitious researcher looking for your next challenge? Do you have an established background in microbiology, gut microbiome or microbial ecology and functional foods? Are you interested to explore the innovation potential of a scientific discovery to bring the research to marketplace by working with food industry stakeholders? Do you want to further your career in one of the UK's leading research-intensive universities?

We are looking for a Research and Innovation Fellow to join a project funded by the National Alternative Protein Innovation Centre (NAPIC). NAPIC is a £38m entity (including a £15m UKRI investment) to lead the UK's alternative protein knowledge and Innovation ecosystem. NAPIC's vision is to make alternative proteins mainstream for a sustainable planet. The centre is led by the Universities of Leeds, Sheffield, Imperial College London and the James Hutton Institute, in collaboration with over 100 national and international partners. NAPIC is a cohesive pan-UK centre poised to revolutionise the UK's agri-food sector by harnessing our world-leading science base through a co-created alternative protein strategy across the Discovery → Innovation → Commercialisation pipeline to support the transition to a sustainable, high growth, blended protein bioeconomy. NAPIC features four integrated activity streams: research to address innovation challenges; a national alternative protein knowledge base; workforce of the future; and accessible Innovation facilities.

NAPIC is actively recruiting a number of Research and Innovation Fellows across the four leading organisations. We seek highly motivated researchers across a range of disciplines who are eager to lead the UK's alternative protein revolution. These Research and Innovation fellows will benefit from collaborations (industry and academia), international placement opportunities and tailored entrepreneurship training. They can also lead their own alternative protein agile projects within the centre.



This particular project will use a combination of *in vitro* models of the human colonic microbiota, small-scale human dietary interventions, analytical chemistry and both culture-based and culture-independent measurement of the gut microbiome to assess the impact of new and alternative proteins on gut health. Specifically, this project will measure the ability of new/alternative proteins to modify the composition of the gut microbiota, influence microbial production of beneficial metabolites (e.g. short chain fatty acids, amino acids and derivatives, bile acids, small phenolic acids) and improve markers human gut health (e.g. intestinal permeability and inflammation).

This position will generate new data on the gut health properties of new and alternative proteins and in collaboration with other NAPIC researchers, generate an multi-functional database of new and alternative protein functional properties, which using AI/ML will then be used to develop predictive relationships between the fundamental properties of the individual proteins: amino acid sequence (e.g., from the Protein Data Bank); extent of digestion, production of beneficial metabolites, modulation of the gut microbiota and regulation of human gut health markers. The overall aim is to develop a model testing system to establish the ability of new and alternative proteins to support human gut health, and enable population based transition to a low animal protein diet by delivering nutritious, health promoting alternative protein foods.

You will join a highly dynamic, interdisciplinary team focusing on the whole theme of alternative proteins, collaborating with a wide range of academics and industrial partners, helping to run workshops and outreach activities as well as conducting your own research program.

You will have a PhD or near completion in Microbiology, Microbial Ecology, Biochemistry, or Biological Sciences or a closely related discipline together with a strong background in gut microbiome and functional foods. You will also have a positive attitude to collaborative research and the drive to make a significant contribution to making this ground-breaking project a success.



Main duties and responsibilities

As Research and Innovation Fellow, your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with senior academic colleagues in the School
- Generating independent and original research ideas and methods for measuring the impact of new and alternative proteins on markers of gut health;
- Undertaking appropriate experimental measurements to model how new/alternative proteins modulate the gut microbiota and their metabolite output;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations to your own work and research;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals, and by presentation at national and international meetings;
- Working both independently and as part of a larger team of researchers, both internally and externally and engaging in knowledge-transfer activities where appropriate;
- Contributing to the supervision of junior researchers and PhD students and acting as a mentor to less experienced colleagues;
- Maintaining your own continuing professional development;
- Contributing to, and encouraging, a safe working environment.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

Qualifications and skills

As Research and Innovation Fellow, you will have:

- A PhD or near completion in Microbiology, Microbial Ecology, Biochemistry, or Biological Sciences or a closely related discipline;
- A strong background and experience in gut microbiome, functional foods and microbial ecology;
- Experience in intestinal microbiology, metagenomics (16S rRNA amplicon based metataxonomics and shotgun sequencing), microbial *in vitro*



- cultivation, and metabolite analysis (GC-MS, LC-MS);
- Literacy in managing large data sets & analysis of sequence based microbiome characterisation;
 - Experience of using software for fitting data, statistics and data management;
 - Experience of combining the results of multiple approaches across different disciplines to develop new insights into a field of study;
 - The ability to design, execute and write up research independently;
 - A developing track record of peer reviewed publications in international journals;
 - Excellent communication skills, both written and verbal and the ability to communicate your research at national and international conferences;
 - Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close supervision;
 - A proven ability to work well both independently and as part of a team;
 - A strong commitment to your own continuous professional development.

You may also have:

- Experience in molecular cell biology;
- Experience in metabolomics;

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

To explore the post further or for any queries you may have, please contact:

Professor Kieran Tuohy, Professor of Energy Metabolism & Microbiome

Email: k.m.tuohy@leeds.ac.uk



Professor Alan R. Mackie, Head of School and Professor of Colloid Chemistry

Email: A.R.Mackie@leeds.ac.uk

Additional information

Please note: If you are not a British or Irish citizen, from 1 January 2021 you will require permission to work in the UK. This will normally be in the form of a visa but, if you are an EEA/Swiss citizen and resident in the UK before 31 December 2020, this may be your passport or status under the EU Settlement Scheme.

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information please visit: www.gov.uk/skilled-worker-visa

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information please visit: <https://www.gov.uk/global-talent>

Find out more about the [Faculty of Environment](#).

Find out more about the [School of Food Science and Nutrition](#)

Find out more about our [Research and associated facilities](#)

Find out more about [Equality in the Faculty](#)

Working at Leeds

We are a campus based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

A diverse workforce

The Faculty of Environment has received a prestigious Athena SWAN silver award from [Advance HE](#), the national body that promotes equality in the higher education sector. This award represents the combined efforts of all schools in the Faculty and shows the positive actions we have taken to ensure that our policies, processes and



ethos all promote an equal and inclusive environment for work and study. Our [equality and inclusion webpage](#) provides more information.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information.

