



OLLSCOIL NA GAILLIMHE
UNIVERSITY OF GALWAY



HR EXCELLENCE IN RESEARCH

Postdoctoral Researcher - Rumen Microbiology

Direct Interspecies Electron Transfer (DIET) contribution to methane formation in the rumen

School of Biological and Chemical Sciences

Ref. No. 011704

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full time, fixed term position as a Postdoctoral researcher with Microbiology/Ryan institute at the University of Galway, Ireland.

This position is funded by the Global Methane Hub and is available from May 2026 to contract end date of May 2028.

Understanding and manipulating electron flow in the rumen is critically important to reducing methane emissions from ruminants. The Global Methane Hub's (GMH) Enteric Fermentation Accelerator is funding a groundbreaking study on advancing the science behind methane production, electron flow, and its connection to animal productivity. Specifically in this role the potential contribution of Direct Interspecies Electron Transfer (DIET) to methane formation in the rumen will be investigated using approaches adopted from the field of environmental engineering in combination with rumen microbiology. The effects of conductive additives on methane production in *in vitro* experiments will help identify putative electroactive microbial taxa. In addition, rumen microbial communities will be inoculated into microbial fuel cells and microbial electrosynthesis cells to enrich electron donating and electron accepting microorganisms. Subsequently, novel isolation procedures will be used to isolate electroactive organisms in order to study them further in pure and co-culture. The work will contribute to this wider programme by determining whether direct interspecies electron transfer contributes to methane formation using conductive additives, microbial electrochemical technologies and via isolation and characterisation of direct interspecies electron transfer (DIET)-capable microbes.

Salary: Postdoctoral Researcher salary scale €46,805 - €59,654 per annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.

The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale.

[\(Research Salary Scales - University of Galway\)](#)

Closing date for receipt of applications is 17:00 (Irish Time) on 10th April, 2026. It will not be possible to consider applications received after the closing date.



***Please review full job description for further details and essential requirement**

JOB DESCRIPTION

Job Description:

The successful candidate will be a highly motivated postdoctoral researcher with expertise in rumen microbiology and bioinformatics to investigate microbial electron transfer processes in the rumen ecosystem. The successful candidate will lead integrative research combining meta-omic data analysis, anaerobic pure-culture and co-culture experimentation, and targeted microscopy to understand microbial interactions linked to methane production.

The postdoctoral researcher will apply anaerobic microbiological approaches to isolate and characterise electroactive taxa from rumen microbiomes. In addition, the candidate will analyse large-scale microbial community datasets and will use defined anaerobic cultures to experimentally validate hypotheses arising from computational analyses. A central expectation of the position is the development of innovative, independent research leading to peer-reviewed publications.

In addition to leading their own research, the postdoctoral researcher will contribute to a collaborative research environment by supporting the training and mentoring of PhD, MSc and/or undergraduate students, including assistance with data analysis, experimental design, and scientific writing.

Duties:

- Lead the analysis of rumen microbiome datasets using metagenomic and metatranscriptomic approaches to investigate microbial functions and interactions relevant to electron transfer processes.
- Interpret meta-omic data in the context of rumen microbial ecology, anaerobic metabolism, and methane production pathways.
- Isolate, maintain, and characterise anaerobic pure cultures, including methanogens and associated bacterial partners, and establish defined co-culture systems where appropriate.
- Integrate computational analyses with experimental validation, including activity assays and co-culture experiments.
- Apply microscopy techniques (e.g. FISH, SEM, TEM) to support interpretation of microbial interactions and culture-based experiments.
- Collaborate with other researchers within the project on experimental design, data analysis, and interpretation.
- Mentor and support PhD, MSc and undergraduate research projects, particularly in bioinformatics, anaerobic microbiology, and data interpretation.
- Lead and/or contribute to research outputs under the supervision of the Principal Investigator, including peer-reviewed publications, conference presentations, seminars, and project reports.
- Attend and disseminate research findings at national and international conferences and meetings.
- Support laboratory and project administration duties as required, including data management and adherence to Health and Safety.



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- Any other duties assigned commensurate to this level of post.

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- PhD in Microbiology, Bioinformatics, Environmental Biotechnology, or a closely related field.
- Demonstrated expertise in rumen microbiology, anaerobic microbial systems, or microbial community analysis, evidenced by peer-reviewed publications.
- Strong experience with metagenomic and/or metatranscriptomic data analysis and bioinformatic workflow development.
- Practical experience with anaerobic cultivation, including handling of strict anaerobes and maintenance of pure cultures and/or defined co-cultures.
- Proven ability to develop and implement research independently, with a strong publication record appropriate to career stage.
- Strong analytical and critical-thinking skills, particularly in biological interpretation of complex datasets.
- Excellent organisational, writing, and report/paper drafting skills.
- Excellent written and spoken English communication skills.

Desirable Requirements:

- Experience integrating computational analyses with culture-based or experimental microbiology.
- Familiarity with electron transfer processes, syntrophic interactions, or methane-cycling microbiology.
- Experience with microscopy-based techniques (e.g. FISH, SEM, TEM).
- Evidence of student supervision or mentoring.
- Willingness to work collaboratively within a multidisciplinary research environment.
- Willingness to travel for research dissemination and collaborative activities.

CONTINUING PROFESSIONAL DEVELOPMENT

Continuing Professional Development/Training:

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see [HERE](#) for further information.

FURTHER INFORMATION/LINKS



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- **TO APPLY:** [Search Current University of Galway vacancies](#). Applications must be submitted online.
 - [How to apply guide](#)
- For informal enquiries, please contact Dr Sinead Waters, School of Biological and Chemical Sciences on Sinead.Waters@universityofgalway.ie.
- [University's Strategic Plan](#)
- [Working in Research at University of Galway](#)
- [Moving to Ireland \(Euraxess\)](#)
- [Applicant Information](#)
- We reserve the right to re-advertise or extend the closing date for this post.
- University of Galway is an equal opportunities employer.
- All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment.

