



College Management Unit:	UCD College of Health and Agriculture
School Unit:	School of Agriculture & Food Science
Post Title & Subject Area (if relevant)	UCD Post-doctoral Research Fellow Level 1
Project:	Neonatal dietary interventions to reduce enteric methane emissions (NeoDREMES)
Post Duration:	24 months
Line Manager	Stafford Vigors
Competition Ref. N^o	017242
HR Administrator	<i>Martyna Wojcik</i>
Relocation Expenses	<i>No</i>
Garda Vetting	<i>No</i>

Position Summary

Applications are invited for a post-doctoral research fellow position in the UCD School of Agriculture & Food Science. The position aims to evaluate the effectiveness of maternal dietary interventions in ewes to alter early life microbial development in the lambs. In early life there is a period of plasticity while the microbial profile is unstable providing an opportunity for long-term manipulation. Therefore, the approach proposed in this study is to alter the microbial profile in early life by dietary intervention of the dam that will subsequently reduce lifetime methane emissions of the offspring, as the dam is the initial source of inoculation for the progeny. The project will also evaluate the impact of direct provision of the feed additive (linseed oil) in later life to evaluate the impact of direct provision. In Ireland agriculture is the primary contributor to greenhouse gas emissions and contributes 34% of total emissions. Methane accounts for 65% of agricultural emissions and is therefore, a key target for reductions. Intervention strategies to modify the rumen microbiome to reduce methane emissions have generally focused on the mature animal. However, altering the microbiome at this juncture is difficult, as the rumen microbial community begins to stabilize at 3-4 weeks of age. This has led to persistency issues with the microbial profile returning to the pre-treatment composition once treatment is stopped and direct provision is also difficult in Irish pasture-based production systems. This project will potentially provide a solution that can be applied widely throughout multiple production systems.

The primary responsibilities of the successful candidate are to evaluate the impact of the various feeding strategies employed on the microbiome of multiple regions of the dam and the lamb. Assessment will take place of rumen, oral, faecal and colostrum microbiomes of the ewe with subsequent assessment on the microbiome and transcriptome of the lamb in later life. This analysis will be conducted using 16s rRNA sequencing and shotgun metagenomics in concert during multiple stages of development.

This is a research focused role, where you will conduct a specified programme of research supported by research training and development under the supervision and direction of a Principal Investigator.

The primary purpose of the role is to further develop your research skills and competences, including the processes of publication in peer-reviewed academic publications, the development of funding proposals, the mentorship of graduate students along with the opportunity to develop your skills in research led teaching.

Principal Duties and Responsibilities:

- Conduct a specified programme of research and scholarship under the supervision and direction of your Principal Investigator.
- Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.
- Engage in the dissemination of the results of the research in which you are engaged as directed by and with the support of and under the supervision of your Principal Investigator.
- Engage in the wider research and scholarly activities of your research group, School and Institute.
- Mentor and assist, as appropriate and as directed, the research graduate students in your group, School and Institute.
- Carry out administrative work associated with your programme of research.

Particular to this position:

- Analysis of 16s rRNA profiles of rumen, oral, faecal and colostrum microbiomes
- In depth analysis of samples using shotgun metagenomics
- Transcriptional analysis of collected tissues using RNA-sequencing
- Association of rumen epithelial gene expression with rumen microbial profiles
- Associate both ewe and lamb microbial profiles with methane collected using GreenFeed Technology

1. Salary: € €42,783- € €49,177

Appointment on the above range will be dependent on qualifications and experience

Details on eligibility to compete and pension information is available at

<https://www.ucd.ie/hr/resourcing/eligibilitytocompete/>

UCD welcomes applications from everyone. We are committed to creating an environment where diversity is celebrated and everyone is afforded equality of opportunity. Learn more about Diversity at

<https://www.ucd.ie/workatucd/diversity/>

Selection Criteria

Selection criteria outline the qualifications, skills, knowledge and/or experience that the successful candidate would need to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on the basis of how well candidates satisfy these criteria.

Mandatory:

Additional mandatory criteria can be included by the PI as required

- PhD in Agricultural Science, Microbiology, Bioinformatics, Computational biology
- Experience in the analysis of 16s rRNA data
- Proven experience in the use of programming languages (R, Python, Perl, Bash etc)
- A demonstrated commitment to research and publications
- An understanding of the operational requirements for a successful research project
- Evidence of research activity (publications, conference presentations, awards) and future scholarly output (working papers, research proposals, and ability to outline a research project).
- Excellent Communication Skills (Oral, Written , Presentation etc).
- Excellent Organisational and Administrative skills including a proven ability to work to deadlines.
- Candidates must demonstrate an awareness of equality, diversity and inclusion agenda.

The PD1 position is intended for early stage researchers, either just after completion of a PhD or for someone entering a new area for the first time. If you have already completed your PD1 stage in UCD or will soon complete a

PD1, or you are an external applicant whose total Postdoctoral experience, inclusive of the duration of the advertised post, would exceed 4 years, you should not apply and should refer to PD2 posts instead.

Desirable:

Additional desirable criteria can be included by the PI as required

- Experience in the analysis of shotgun metagenomic data
- Experience in the analysis of RNA-sequencing data
- Experience in setting own research agenda

Supplementary information:

The University:	https://www.ucd.ie/
UCD Strategy 2020-2024: Rising to the Future	https://strategy.ucd.ie/
The College/Management Unit:	https://www.ucd.ie/chas/
The School/Programme Office/Unit:	https://www.ucd.ie/agfood/
Equality Diversity and Inclusion at UCD	https://www.ucd.ie/workatucd/diversity/
Other (Please specify):	https://www.sfi.ie/

UCD offers a comprehensive **Research Careers Framework** in line with the Advisory Science Council Report '*Towards a Framework for Researcher Careers*'. This model provides a structured and supportive **Career and Skills Development** system designed to ensure that Post-docs in UCD are able to plan their careers and prepare for future opportunities in academia, industry or the public sector. For more information, please [click here](#)

Informal Enquiries ONLY to:

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