**PhD Scholarship Advertisement**

Fully Funded PhD Scholarship in Soil Molecular Microbial Ecology

College of Science and Engineering, School of Biological and Chemical Sciences, Ryan Institute

Application(s) are invited from suitably qualified candidates for full-time fully funded PhD scholarship starting in September 2024 affiliated to the College of Science and Engineering, School of Biological and Chemical Sciences, Ryan Institute at the University of Galway.

**University of Galway**

Located in the vibrant cultural city of Galway in the west of Ireland, the University of Galway has a distinguished reputation for teaching and [research excellence](https://www.universityofgalway.ie/our-research/). The University of Galway is a publicly funded university in the top 1% in the world (QS rankings) and has earned international recognition as a research-led university with a commitment to highest-quality teaching and research.

For information on moving to Ireland please see [www.euraxess.ie](http://www.euraxess.ie)

**A fully-funded** 4-year PhD scholarship is available in the group of Dr Alexandre de Menezes (molecular microbial ecology and soil microbiology) in collaboration with Dr Aaron Golden (data science, bioinformatics, machine learning), and Prof. Piet Lens (environmental biotechnology) at the University of Galway. As part of this project, microbial processes that influence nitrous oxide emissions from soils will be analysed. This project will include molecular ecological techniques, DNA and RNA sequencing, analytical chemistry (gas chromatography and mass spectrometry) and machine learning methodologies.

**Detailed Project Description.** Agricultural soils are important sources of greenhouse gas (GHG) emissions. To control agricultural GHG emissions, it is essential to understand the biological processes that generate them. This project will investigate an overlooked process that influence soil microbial nitrogen cycling, which is one of the main sources of the potent GHG nitrous oxide. By characterising this process, the project aims to offer novel ways to predict and control nitrous oxide emissions from soil. Our long-term vision is to harness the soil’s natural nitrification-inhibition processes for soil nitrous oxide mitigation and support low emissions, sustainable agriculture. The successful candidate will carry out soil microcosm experiments and use molecular biology, microbiome sequencing and shot-gun metagenomics and metatranscriptomics to characterize the relationships between soil gases and soil carbon and nitrogen cycling. The PhD student will work closely with a postdoctoral researcher and a research assistant.

**Living allowance (Stipend):** €22,000 tax-exempt per annum

**University fees**: Tuition will be paid for 4 years.

**Start date**: September – October 2024 (negotiable).S

**Academic Entry Requirements:** a BSc and/or MSc in biology, microbiology, biochemistry, environmental science, ecology or related fields. Candidates must have good academic English writing and speaking proficiency. Strong interest in metagenomics, bioinformatics, machine learning and environmental sustainability will be an advantage.

**To Apply for the Scholarship:** please send your CV, a statement of interest including a summary of previous research experience (maximum 1 page), copies of transcripts and contact details for at least two referees to [alexandre.demenezes@universityofgalway.ie](mailto:alexandre.demenezes@universityofgalway.ie).

**Contact Name:** Dr Alexandre de Menezes.

**Contact Email:** [alexandre.demenezes@universityofgalway.ie](mailto:alexandre.demenezes@universityofgalway.ie).

**Application Deadline:** 12/07/2024 at23:59 (Irish time 24hr format)

**Primary Supervisor name** : Dr Alexandre de Menezes.