PhD Scholarship in Microbiology

Funded PhD Scholarship to study

**“Phytate-utilising bacteria for soil health and plant growth”**

School of Biological & Chemical Science, College of Science and Engineering

University of Galway, Ireland

Applications are invited from suitably qualified candidates for a full-time funded PhD scholarship starting in September 2025 affiliated to the College of Science and Engineering, at the University of Galway.

**University of Galway:**

Located in the vibrant cultural city of Galway in the west of Ireland, with over 18,000 students and more than 2,400 staff, the University of Galway has a distinguished reputation for teaching and research excellence (<https://www.universityofgalway.ie/our-research/>)

**Project Description:**

Modern agriculture relies heavily on rock phosphate-based fertilizers. However, the European Commission considers rock phosphate a "high supply risk" due to Europe’s limited reserves and reliance on imports, primarily from Morocco and Russia, which hold much of the world’s supply. This dependency poses a significant threat to European food security. Phytate, a naturally occurring phosphorus compound in soils, is not directly usable by plants. However, certain microbes can degrade phytate into plant-available forms. This project will determine the mechanisms of microbial phytate degradation in soil and develop microbe-enhanced biofertilizers to reduce dependence on rock phosphate.

The successful candidate will undertake training and research using a combination of genomics, DNA sequencing technologies, microbiology and molecular biology techniques to understand the mechanisms of bacterial phytate utilisation in soils.

**Project Objectives**

1. Investigate the genetic mechanisms of phytate utilisation in soils
2. Identify the importance of different phytate utilisation systems in different ecosystems
3. Develop bacterial phytate-utilising biofertizers that reduce dependence on rock phosphates in agricultural

The project’s supervisor, Dr Paul Sheridan, leads the Microbial Genomics Laboratory and has produced world-leading research in genomics, physiology and genetics of microbes.

**Living allowance (Stipend):** €25,000 per annum (tax exempt)

**University fees:** Covered by scholarship

**Start date**: 1st September 2025

**Academic Entry Requirements:** Applicants should have, or expected to obtain by September 2025, a minimum of an upper 2nd class (2-1) honours BSc degree, or equivalent, in Microbiology or a related discipline.

**To Apply for the Scholarship:** Applications should include a cover letter explaining your motivation to pursue a PhD in this area and highlighting the reasons for your suitability, as well as short CV summarising your qualifications and relevant experience. Please also include the contact details of two referees. Applications, or requests for further information, to be submitted via e-mail to:

**Contact Name:** Dr Paul Sheridan

**Contact Email:** sheridanlabrecruit@gmail.com

**Application Deadline:** 30th May 2025 and time 17:00 (Irish time)

**Primary Supervisor name:** Dr Paul Sheridan