



NUI Galway
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epaResearch

EPA funded PhD studentship in Environment & Health (Microbiology and Environmental Science)

Antimicrobial Resistance and Microbial Ecology Group, School of Medicine, NUI Galway

Closing date for applications: 24th June 2022

Discipline: Bacteriology

School: School of Medicine

College: College of Medicine, Nursing and Health Sciences

Post duration: 4 years (full time)

Available from: 1st September 2022

Studentship award: €24,250 per annum (€18,500 stipend and €5750 fees per annum)

Applications are invited from suitably qualified candidates for a full-time 4 year funded PhD studentship for a Structured PhD in the Discipline of Bacteriology, School of Medicine at NUI Galway on the EPA-funded [DERIVE](#) project (Detection and Risk management of Verotoxigenic *E. coli* in the water Environment, 2022-2026).

PhD Project Description:

This will be a multi-disciplinary PhD in Environment and Health. The successful candidate will undergo training in microbiology, epidemiology, environmental science and research methods. S/he will complete a dissertation on understanding the fate and transport pathways of verotoxigenic *E. coli* (VTEC) in the aquatic environment from point and diffuse contamination sources. On completion of the PhD the candidate will be uniquely qualified for a career in microbiology and environmental health research, with skills to investigate the complex public health challenges that arise through the impact of human activities on our natural environment.

The PhD candidate will be based in the Discipline of Bacteriology, School of Medicine, NUI Galway and will be supervised by [Dr Liam Burke](#) (Lecturer in Bacteriology, School of Medicine, NUI Galway) and [Dr Jean O'Dwyer](#) (Deputy Head of Environmental Science, School of Biological, Earth and Environmental Science, UCC).

The successful PhD candidate will join the multidisciplinary EPA funded DERIVE project team, which includes experts in microbiology, molecular diagnostics, environmental science, epidemiology, statistical modelling and public health.

Information on the DERIVE project:

Ireland has the highest incidence of human infection with the zoonotic pathogen Verotoxigenic *E. coli* (VTEC) in Europe, typically 10 times the EU average. Exposure to water from a private supply is the top risk factor for VTEC enteritis (41% cases), a serious illness that frequently requires hospitalisation, and in up to 10% of cases results in life-threatening



NUI Galway
OÉ Gaillimh



haemolytic uremic syndrome (HUS). The new Drinking Water Directive calls for a complete risk-based approach to water safety that assesses and manages the main risks in the catchment area and takes into account the impact of climate change. The DERIVE Project (Detection and Risk management of Verotoxigenic *E. coli* in the water Environment) will answer this call by developing a novel suite of complementary VTEC detection and risk assessment tools that can be applied at national level in catchments for the monitoring and risk-based management of VTEC.

Role of the PhD candidate:

- Organise and manage longitudinal field studies to collect surface, ground and private drinking water samples by liaising with project participants to arrange sample collection
- Collect and process water samples to enumerate *E. coli* and VTEC using classical microbiology and molecular methods
- Extract nucleic acid for molecular testing and whole genome sequencing
- Analyse and compare waterborne VTEC genomes to those from animals and humans using bioinformatics to understand the One Health epidemiology of VTEC
- Contribute to the development of hydrodynamic catchment and environmental fate models to predict the transport of VTEC in the catchments and the presence and magnitude of VTEC in private water supplies
- Participate in stakeholder engagement, communication and recruitment workshops and other outreach activities to promote the DERIVE project
- Contribute to project progress reports for the EPA
- Prepare manuscripts for publication in scientific journals
- Disseminate project results and findings at scientific conferences
- Communicate project findings via social media and the project website
- Act as lab supervisor for undergraduate and masters research students
- Carry out additional duties as may reasonably be required within the general scope and level of the post.

Qualifications/Skills required:

Essential Requirements:

- 1st class or upper 2nd class honours (NFQ level 8) degree (or equivalent) in Microbiology, Environmental Science, or relevant alternative
- Experience in basic microbiology techniques such as culture, DNA extraction
- Highly motivated and passionate about environment and health research
- Excellent oral and written communication skills (English - C1 Cambridge or equivalent)
- Excellent organisation skills
- Excellent interpersonal skills and a high level of discretion
- A can-do attitude and willingness to learn
- Full driving licence valid for Ireland



NUI Galway
OÉ Gaillimh



Desirable Requirements:

- Master's degree or research experience in microbiology and/or environmental science
- Experience in quantitative and qualitative data analysis
- Training in statistics
- Experience of public engagement
- Experience of writing a scientific manuscript and/or report for publication

Stipend: €18,500 per annum plus contribution of €5,750 per annum towards PhD tuition fees (covers full tuition fees for EU students).

Start date: Position is available from 1st September 2022

Further information on research and working at NUI Galway is available on [Research at NUI Galway](#). Researchers at NUI Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. NUI 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 www.nuigalway.ie/rdc for further information.

For information on moving to Ireland please see www.euraxess.ie

NB: Garda Vetting is required for this post

Further information about Antimicrobial Resistance and Microbial Ecology Group is available at <https://www.nuigalway.ie/medicine-nursing-and-health-sciences/medicine/disciplines/bacteriology/research/>

Informal enquiries concerning the post may be made to Dr Liam Burke,
liam.burke@nuigalway.ie

To Apply:

Applications to include a CV, a covering letter outlining suitability and motivation for the role, and the contact details of two referees should be sent, via e-mail (in word or PDF only) to Ms Debbie Monroe: [e-mail: debbie.monroe@nuigalway.ie](mailto:debbie.monroe@nuigalway.ie)

Please put reference **DERIVE PhD** in subject line of e-mail application.

Closing date for receipt of applications is 5.00 pm 24th June 2022

Interviews expected to take place on July 6th 2022 in person or online via Zoom