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an Atlantaigh
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Science Foundation Ireland
For what's next



PhD Postgraduate Research Opportunities

PhD Project Titles:	Investigating the epidemiology of complex gill disease in Irish Atlantic salmon.
Project Duration:	48 months funded PhD position
Organisation:	Atlantic Technological University
Location:	ATU Galway City, Old Dublin Road, Galway H91 T8NW
Stipend:	€19,000 per annum
Responsible To:	Project supervisors: Dr Katie O'Dwyer, Dr Orla Slattery

Funding: The PhD position is funded through a Science Foundation Ireland Frontiers for Partnership grant 21/FFP-A/9170.

Overall project description: An exciting opportunity has arisen for the recruitment of suitably qualified and strongly motivated graduate to undertake a PhD in ATU as part of a 5-year large scale interdisciplinary research project: "GIDAS - Gill Disease of Atlantic Salmon".

Aquaculture provides an important food source worldwide and increasingly contributes to the global economy, as well as national research priorities. Complex gill disease (CGD) is a major challenge in finfish aquaculture, leading to substantial reductions in production annually. Treatment using freshwater baths only provides a temporary solution and a better understanding of CGD is needed. CGD involves a range of organisms including parasites, bacteria and viruses, and can be influenced by production practices, such as net washing. Due to this complexity, CGD remains a major obstacle to successful aquaculture production and requires further research. Furthermore, gill-associated diseases in Atlantic salmon (*Salmo salar*) lead to considerable annual losses the Irish aquaculture sector. The overall aim of the GIDAS project is to increase knowledge of CGD, including one of the leading pathogens involved, *Neoparamoeba perurans*, which itself leads to amoebic gill disease but is also a key player in CGD. Key objectives include: reviewing the current epidemiology of CGD in Ireland; testing a CGD model; identifying potential biomarkers and developing preventative and curative measures to minimise disease occurrence. Led by ATU, the project's consortium includes University College Dublin and a diverse team of collaborators from academia and industry to support the project's main aim and objectives.

PhD1: Investigating the epidemiology of complex gill disease in Irish Atlantic salmon.

Project description:

The main objectives are to:

- Review the current state of gill disease in the Irish salmon aquaculture industry.
- Establish a complex gill disease model and measure disease progression.
- Elucidate the microbiological profile of the salmon gill surface in disease and control samples.

The first component of the PhD aims to better understand the current situation regarding gill-associated diseases in Atlantic salmon through an epidemiological study in collaboration with fish veterinarian and industry colleagues. The second component involves development of a model system for assessing

complex gill disease in Atlantic salmon. During this part of the project the successful candidate will be tasked with culturing organisms in the laboratory and setting up CGD challenge experiments. The third component will require sampling from gill tissue during CGD progression and the microbiota present will be profiled using 16S microbiome sequencing. The candidate will work closely with the wider research team, including a second PhD candidate on the GIDAS project. The PhD project outlined here will generate knowledge on the current status of gill-associated diseases in Irish Atlantic salmon and provide a model system for testing CGD while also measuring any potential changes in gill microbiota linked to disease progression.

Requirements/Qualifications: The successful candidate will hold a Bachelor of Science with Honours Degree (minimum 2:2, but 2:1 or higher is desirable) in Marine/Freshwater Biology, Disease Ecology, Parasitology, Veterinary Medicine, Genetics, or equivalent. The candidate will have excellent field and laboratory skills. Previous experience in fish parasitology, fish physiology and relevant culturing and molecular techniques would be advantageous although training will be provided. A demonstrated ability to communicate scientific research by means of peer-reviewed scientific articles and conference presentations will be viewed favourably. Experience in dealing with industry collaborators and running experiments as well as a full clean driver's licence are desirable. The candidate will be expected to work on their own initiative as part of a dynamic team, liaise with project collaborators and relevant industry partners and be willing to acquire the broader skills necessary for the successful completion of a PhD project.

Project Duration: 48 months

Conditions:

- €19,000 stipend per annum.
- Postgraduate fees for EU students (€5,750 per annum) will be covered by the project.
- Any necessary national and international travel, and material costs incurred during the project, will be covered by the project.

Please Note: Candidates from outside the EU are eligible to apply but will be expected to provide evidence of sources of additional funds to cover excesses associated with non-EU fees.

If either English or Irish is not the applicant's first language, evidence of English language proficiency is required for registration. Please refer to web link [English Language Requirements | ATU - Atlantic Technological University \(gmit.ie\)](#) view the minimum English language proficiency standards for entry to ATU

Project Start Date: Currently planned for October 2023.

Application Closing Date: 12 noon Friday May 19th 2023.

Applicants should submit their:

- Curriculum Vitae (to include contact details of two referees)
- Copy of transcript of results
- Personal Statement

The Personal Statement should not exceed one A4 page and must include an outline of:

- How you meet the requirements of the specific position associated with this PhD
- Your personal motivation for pursuing this PhD

Applications must be submitted to researchoffice.galwaymayo@atu.ie e-mail address only. Please ensure all documents are emailed as a single MS Word or PDF file.

For further information on the project, please contact: Dr Orla Slattery orla.slattery@atu.ie or Dr Katie O'Dwyer katie.odwyer@atu.ie

Data Protection Statement

ATU takes very seriously its legal obligations as set out in the General Data Protection Regulation 2016/679 (GDPR) and the Irish Data Protection Act 2018 to safeguard and protect your personal information in our possession. The personal information which you disclose to us in this form will only be used to assess your suitability; administer and register you for this scholarship. We will not keep your personal information for any longer than is necessary for those stated purposes. **For more details, please refer to ATU's Student Privacy Statement:** <http://www.gmit.ie/general/student-privacy-statement>