

Host organisation: Marine & Freshwater Research Centre, Atlantic Technological University

Title: Ecological parasitology: exploring hidden biodiversity

Responsible scientist: Katie O'Dwyer

katie.odwyer@atu.ie

Link with the Sustainable Development Goal(s) and the global EU GREEN vision

The ecological parasitology internship provides an opportunity to work towards SDG 4, 14, and 15 through sharing quality education in parasitology, and contributing to biodiversity assessments. EU Green's nine universities are united by their peripheral regions and a focus on responsible growth, inclusive education and environment. Similarly, the internship will focus on a peripheral area of biodiversity, parasites, with parasites also an important but overlooked consideration in plans for growth in areas such as fishery, aquaculture, and agriculture, activities.

The ecological parasitology internship offers a valuable opportunity to contribute to Sustainable Development Goals (SDGs) 4, 14, and 15 by promoting quality education in parasitology and supporting biodiversity assessments. EU Green's nine partner universities are united by their location in peripheral regions and their shared commitment to responsible growth, inclusive education, and environmental stewardship. Reflecting this ethos, the internship centres on a similarly overlooked yet vital area of biodiversity: parasites. Often neglected in sustainable development planning, parasites play a crucial role in ecosystems and should be considered in key sectors such as fisheries, aquaculture, and agriculture. At the same time, and along with global biodiversity of free-living organisms, parasites are facing a major biodiversity crisis. Current estimates suggest that up to 30% of parasite species in each major group could go extinct by 2070—and this risk increases when their close relationships with host species are considered. Unfortunately, parasites are often misunderstood and unfairly labelled as harmful, even though most pose no major threat to humans or other animals. The negative perception of parasites means they are frequently left out of conservation efforts and biodiversity planning, especially when compared to more charismatic free-living species. What's more, long-term monitoring programmes rarely track parasite populations, despite their potential effects at ecosystem level. For students interested in ecology, evolution, and conservation, parasitology offers a unique opportunity to explore a vital but often overlooked dimension of biodiversity.

Missions of the students (with links to both research and training)

Short description of the nature of the work that the student will have the opportunity to complete:

Parasites are estimated to comprise up to 50% of all living organisms. They can alter host behaviour and even function as ecosystem engineers. Despite their ecological importance, parasites remain one of the most underexplored and overlooked components of biodiversity. Greater research is needed to fully understand their diversity, abundance, and roles within ecosystems.

As part of this internship, the successful candidate will contribute to this effort by identifying parasites in host species from a range of habitats across Ireland. The work will include both field sampling and laboratory dissections to collect tissue samples, assess infection status, and document the parasites present. The primary focus will be on macroparasites, identified mainly through stereoscopic microscopy. Therefore, students with an interest in microscopy and hands-on biological research will find this work especially rewarding.

All parasite records will be added to a growing national database and will support several ongoing European and international research initiatives. Comprehensive training will be provided in parasite ecology, taxonomy, microscopy, and a variety of parasitological techniques.

Conditions of the internship (location, potential compensation or advantages)

Language requirements: Working use of English.

Specific competencies required: There are no specific requirements. However, the following will be beneficial: A desire to carry out both field work and laboratory work; Careful dissection techniques; Attentive microscopy work; Accuracy in record keeping; Experimental design skills; Data analysis skills.

Safety considerations: Students will complete a risk assessment upon arrival, and this will be approved by their supervisor before work can commence. Students will work with low-risk chemicals only (e.g. ethanol) and will review the relevant Material Safety Data Sheets prior to exposure.

Language requirements: Working use of English.

Accommodation possibilities: Please contact the Students' Union at ATU <https://atusugalwaymayo.ie/>, check www.daft.ie, or send me a description of your requirements for circulation within the Marine and Freshwater Research Centre at ATU.

Financial information: Subsistence costs for a student in Galway are estimated to be €400-800 per month, with accommodation costing an additional ~€600 per month.