PROJECT PROPOSAL FORM

Making the Most of Masters aims to improve collaboration between employers and universities by providing opportunities for masters students to undertake work based projects as an alternative to a traditional university dissertation. Projects should address a real need within the host organisation and be beneficial to both host and student.

The Marine Alliance for Science and Technology for Scotland (MASTS), pools the majority of Scotland's marine research capacity. MASTS members provide Masters courses in a range of marine related disciplines and many of their students are keen to undertake applied projects outside of academia.

Notes on Topic Selection

A relevant academic will work with your organisation to refine your proposed topic and ensure it meets both your needs and the academic requirements of the student. Projects should typically be achievable within a 12–16 week timeframe (including writing the final report).

Your proposed project could be:

- A specific project title or topic for the student to deliver;
- A general idea of a business need which requires further development;
- A core research theme to be developed by the student into a bespoke project;
- An intended outcome for the organisation.

The level of detail you provide will determine the extent to which further discussion may be required with the relevant programme director to ensure suitability.

desk-based/data studies that will easily facilitate remote working and remote supervision are welcome, as well as in person and/or experimental based projects where appropriate.

What's Next?

Please send your completed form to the MASTS Programme Coordinator & Deputy Dean of Grad School, Dr Emma Defew (masts@st-andrews.ac.uk) before **16:00 on Friday 27th October 2023**.

Following submission of the form, it will be channeled to the leaders of the various Masters programmes that operate within the MASTS community and a representative from the most relevant programme or department will get in touch to discuss the project scope, delivery and the selection of an appropriate student. If more than one student expresses an interest in your project, you will need to ensure discussions take place to enable the most suitable student to be matched with your project. The projects themselves usually won't start until May or June.

MASTS - Making the Most of Masters – Project Proposal Form

Name and address of Organisation: Mowi Scotland Ltd, Farms Office, Glen Nevis Business Park, Fort William, PH33 6RX
Name of the key contact in Organisation: Dr Philip Gillibrand
Contact e-mail and phone number: Philip.gillibrand@mowi.com 07825 618922
Title of proposed project: Modelling the Dispersal of Sea Lice from Salmon Farms: Sensitivity of Results to Parameter Specification
Project outline and intended outcomes: Computer modelling of the dispersal of sea lice larvae from salmon farms is becoming an increasingly important tool in the regulation and management of the Scottish salmon farming industry. Modelling the dispersal of lice larvae is challenging because of the subtleties of the interactions between the swimming behaviour of the larvae and the complex hydrodynamics of stratified coastal waters. Considerable progress has been made recently to improve and assess the performance of the models (e.g. through the Scottish SPILLS project, Salmon Parasite In Linnhe, Lorn, and Shuna (SPILLS) | Marine Scotland Information) but much work remains to be done to ensure that the models are fit for purpose for regulation. A great detail of uncertainty remains surrounding the choice of some critical model parameters. Using one of the test cases from the SPILLS project, this project will explore how sensitive the model results are to a number of key parameters in the dispersal model. The intended outcome is to improve understanding, and potentially provide some guidelines, regarding the specification of the models to produce robust results that will help ensure model predictions are as accurate and reliable as possible.

Any additional comments e.g. details of specific disciplines required, methods to be used, travel involved, where the work would take place (i.e. at the host site or at the University), whether you foresee any Intellectual Property or confidentiality issues (and if so, what form might these take?):

The student will need good numerical ability and computing skills. Experience with MATLAB for processing and analysing results is definitely preferred. The project will suit a student interested in applying mathematical models to ecological problems, with a specific interest in the interaction between the biology and behaviour of organisms and the physical environment.

The work would take place at the University, but some time could be spent at the Mowi offices in Fort William. Although this is a desk-based study, there should be opportunities for the student to get out in the field, whether visiting a salmon farm or helping out with field measurements.

The data that would be used in the project have already been published on the SPILLS project website, so no confidentiality or IP issues are anticipated.