

TEAGASC PHD WALSH SCHOLARSHIP OPPORTUNITY

“Improving the MoSt grass growth model to predict environmental impact and improve on farm grass growth prediction”

Walsh Scholarships Ref Number 2021017

Background

Ireland’s competitive advantage in milk and meat production is based on the efficient production and utilisation of grazed pasture. Being able to predict the future grass growth can help the farmer to improve grazing management. The MoSt grass growth (MoSt GG) model is a dynamic, mechanistic model capable of predicting grass growth for different farms with varying soil types, weather and grazing management. It has been tested on several sites across Ireland and is now being used as a grass growth predictor on approximately 57 commercial and research farms. The MoSt model is a management tool for commercial farmers, but also a state-of-the-art research tool for the exploration of new pasture management techniques and modelling methodologies.

The PhD project will involve, amongst other tasks, improving the environmental sub model (mainly N leaching) of the MoSt model, evaluating and improving the model ability to predict soil moisture (surplus and deficits) depending on soil type and highlighting the weakness of the model when compared to farm data from Pasturebase Ireland. It is envisaged that the model will be used to assist in answering major industry questions such as the interaction between management soil type and N leaching or the prediction of drought and management interactions during these periods.

This PhD will also involve data management, collaboration with international partner, reporting and publishing findings at (inter)national conferences and industry meetings; participation in dissemination activities; preparation of papers for publication in peer-reviewed journals; preparation of a thesis, visiting farm to install/interact with weather stations, and being part of the team generating grass growth predictions twice weekly for farmers as well as Met Éireann for the Sunday farming forecast on RTE One.

Requirements

Applications are invited from graduates holding or expecting a First Class Honours (1.1) or a Second Class Honours (2.1) degree in Agricultural Science, Plant Science, Agricultural Engineering, Computer Science or a similar discipline. A good knowledge of a programming language such as C++, Python or R is highly desirable. Knowledge in modelling biological systems is desirable. The candidate should have good communication skills in the English language (oral and written). A full EU drivers licence is highly desirable. For applicants whose first language is not English, the English language requirements are available on <https://international.cit.ie/english-language-requirements>

Award

The scholarship funding is €24,000 per annum and includes University fees of up to a maximum of €6,000 per annum and is tenable for 4 years. It is envisaged that the successful applicant will begin on 1st October 2021 but an earlier starting date is possible and will be based at Animal & Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Co. Cork, under the supervision of Dr. Elodie Ruelle and Dr. Michael O’Donovan (Moorepark), Luc Delaby (INRAE) and Dr. Michael D. Murphy (Munster Technological University).

Further Information/Applications

Dr. Elodie Ruelle, Animal & Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Co. Cork. Email: elodie.ruelle@teagasc.ie. Phone: +353 25 42686

Application Procedure

Applicants should submit a curriculum vitae (including contact details for at least one academic referee) and cover letter detailing qualifications and experience by email to:

Dr. Elodie Ruelle – Email: elodie.ruelle@teagasc.ie

Closing date: Friday 26 March 2021