**Teagasc PhD Walsh Scholarship Opportunity**

“Soil fertility underpinning nutrient use efficiency for sustainability”

*Exploiting data for agri-environmental sustainability*

Walsh Scholarship Ref Number 2020028

**Background**

Extensive data and soil fertility research now exists, along with new opportunities for knowledge discovery and data mining however, few data driven modeling techniques have been developed to model the interconnections between influencing factors and nutrient uptake in Irish agriculture. We seek a highly motivated candidate to model these interconnections to understand the indicators/variables and influence (weight) in relation to characteristics and processes that affect vulnerability to nutrient losses.  Outputs will be integrated into a spatial platform at multiple scales and performance tested with existing nutrient management planning tools. This PhD represents an exciting opportunity to support a more sustainable agriculture for Ireland with scope to provide improved nutrient advice for farmers. Current advice is driven by management factors but through this work would also integrate soil and environmental factors. This will enhance production while reduced nutrient losses will support improved water quality, climate change mitigation and reduce agricultural impacts on biodiversity.

The PhD student will have the opportunity to work within the dynamic research teams at Environment, Soil and Land use Department at Teagasc Johnstown Castle in collaboration with the Irish Climate Analysis and Research Units (ICARUS), Department of Geography, Maynooth University. Throughout the PhD, the student will receive graduate training and will complete a number of courses tailored towards their area such as project management, mathematical modeling, statistical analysis, spatial analysis, scientific writing etc. which will be beneficial to their future career.

**Requirements**

Applications are invited from graduates with at least a 2.1 class honours degree or M.Sc. focused in data science and/or GIS. Prior experience of these skills in the context of soil/environmental sciences or other related discipline is advantageous. The successful candidate should be highly self-motivated and be prepared for laboratory and/or field work with modern analytical equipment. An ability and interest in cooperation with colleagues in other sciences is vital.

**Award**

The PhD scholarship is a joint research project between Maynooth University (MU) and Teagasc. The student will be co-located between Johnstown Castle (Wexford) and Maynooth University (Kildare) and will be registered at Maynooth University, working under the supervision of Dr. Rowan Fealy (MU) and Lilian O’Sullivan, Dr. David Wall and Reamonn Fealy (Teagasc – Ashtown and Johnstown Castle). Periods of field work may also be required at various locations around the country.

The successful candidate will also be expected to participate in Walsh Scholarship events organised by Teagasc.

The scholarship funding is €22,000 per annum including University fees, up to a maximum of €6,000 per annum, and is tenable for 4 years.

**Further Information/Applications**

Rowan Fealy Phone + (01) 708 4562; email: [rowan.fealy@mu.ie](mailto:rowan.fealy@mu.ie).

Lilian O’Sullivan Phone + (053) 917 1333; email Lilian.OSullivan@teagasc.ie

**Application Procedure**

Submit an electronic copy of Curriculum Vitae and a letter of interest simultaneously to:

Rowan Fealy email: [rowan.fealy@mu.ie](mailto:rowan.fealy@mu.ie) **and**

Lilian O’Sullivan email: [Lilian.OSullivan@teagasc.ie](mailto:Lilian.OSullivan@teagasc.ie)

Please quote **Walsh Scholarship Ref 2020028** in the email subject line.

**Closing date**

15 June 2020