VistaMilk

MAKING AN IMPACT

Targeted Project - Carbon Sequestration
By Gary Lanigan and James Healy

With the recent publication of the Climate Action and Low Carbon Development Bill the agricultural sector will face legally binding targets for GHG emissions reduction with the first of two 5-year target to be set later this summer. VistaMilk believes that there is an opportunity to enhance the ability of the agricultural sector to achieve the new ambitious GHG targets for 2030, and the goal of Carbon Neutrality for 2050, by exploring the true carbon sequestration potential of a variety of Irish grassland and soil types.

Dairy Research Ireland have committed to supporting a new and collaborative €1.4 million Carbon Sequestration research project. The project will leverage the new Department of Agriculture funded National Agricultural Soil Carbon Observatory network These carbon dioxide monitoring towers are one of the most comprehensive in Europe and places Ireland at the forefront of ecosystem carbon research. VistaMilk scientists will use this network to explore the impacts of farm management practices on a variety of soil types. The project is led by Dr Karl Richards (Head of Environment, Soils and Land Use Research Department, Teagasc) and Professor Gary Lanigan (principal scientist, Teagasc) in collaboration with INSIGHT at UCD and Teagasc Moorepark.

This programme of research will consist of a dual measurement approach whereby the impact of pasture management will be measured on both the net CO_2 fluxes as well as changes in the soil organic carbon pools associated with pasture management. These measurements will be used to calibrate and validate process models, which simulate ecosystem and soil carbon cycling. This will provide a pathway for the inclusion of pasture management into national GHG inventories. The management options assessed will include variations in stocking rate, sward diversity and soil nutrient balance. https://www.youtube.com/watch?v=TG1NpnA0z-4

NEW STAFF

Name: Anna Flynn

Position: PhD Student

Project: Animal Health

Email: Anna.Flynn@teagasc.ie

MEET THE RESEARCHER

Name: Eoin Kenny

Host: UCD, Insight Centre for Data Analytics

Education: BMus, Masters in Music, Masters in Computer Science.

Hobbies: Playing cello and guitar, weightlifting, painting

Role in VistaMilk: Eoin is a Ph.D. candidate at University College Dublin. He joined the Insight Centre for Data Analytics last year and has been working on developing machine learning (ML) systems for VistaMilk. Specifically, Eoin has published research which expands the current PastureBase Ireland decision support system into an ML system which offers farmers accurate estimates for grass growth prediction whilst providing explanations for the system's processes. Other work has also included designing a framework for explainable AI to allow humans to trust AI decisions more in SmartAg and indeed all areas.

Contact: eoin.kenny@insight-centre.org

OTHER NEWS

Congratulations to Academic Collaborator Dr Han Shao (Tyndall) on her successful application to IRC's Enterprise Partnership Scheme. For the next two years, in collaboration with PepsiCo, she will develop novel electrochemical sensors for beverage quality control.

FUNDING OPPORTUNITIES

Horizon Europe Work Programmes will open on 18th May. First submission deadline remains 1st September. Get in touch with Guillaume Le Palud to discuss opportunities and support.

EIT Food Innovator Fellowship programme for talents with creative and innovative potential to expand their skills through advanced training to develop an entrepreneurial idea impacting food systems. Deadline May 14th. Call details here.

ERA-NETs SusAn, FACCE ERA-GAS, ICT AGRI-FOOD and SusCrop joint call on "Circularity in mixed crop and livestock farming systems (incl. grassland), with emphasis on greenhouse gas mitigation". Full application May 26th 2021. Call details here.

New SFI's Frontiers for Partnership. Programme will support partnerships led by Technological Universities/Institutes of Technology with Universities and other RPOs, to deliver excellent research. Deadline May 26th 2021. Call details here.

SFI-IRC Pathway Programme. Up to four-year funding for postdoctoral researchers to develop their track record and transition to independent research leaders. Liaise with your Research Support Office before May 28th. Call details here.

AGROBOFOOD's Innovation Experiments Open Call for SMEs to develop innovative solutions for the application of robotic technologies in agri-food industry. Deadline May 31st 2021. Call details here.

L'Oréal-UNESCO UK and Ireland For Women in Science Rising Talent Programme. £15k endowment to promote, enhance and encourage the contribution of women pursuing their research careers in Ireland. Deadline May 31st 2021.

SFI Industry RD&I Fellowship Programme. Up to €100k for academic researchers to work on a research project in industry worldwide, through a temporary placement with an industry partner. Deadline July 21st 2021. Call details here.

EJP SOIL "Towards climate smart sustainable agricultural soils" first external call open to all Irish RPOs. Deadline September 7th 2021. Call topics and details here. Applicant webinar May 25th.

Events: Webinar: The EU funding & tenders portal for beginners. 27th May 2021. Details here.

2021 European Research and Innovation Days. Online event on 23rd and 24th June 2021. Details here.

PUBLICATIONS

On-body Edge Computing through E-Textile Programmable Logic Array
Frances Cleary, David Henshall, Sasitharan Balasubramaniam
https://arxiv.org/ftp/arxiv/papers/2103/2103.16443.pdf

Post-Hoc Explanation Options for XAI in Deep Learning: The Insight Centre for Data Analytics Perspective
Eoin M. Kenny, Eoin D. Delaney, Derek Greene and Mark T. Keane
http://www.derekgreene.com/papers/kenny21xai.pdf

Co-clustering of time-dependent data via Shape Invariant Model
Alessandro Casa, Charles Bouveyron, Elena Erosheva and Giovanna Menardi
https://arxiv.org/pdf/2104.03083.pdf

Handling Climate Change Using Counterfactuals: Using Counterfactuals in Data Augmentation to Predict Crop Growth in an Uncertain Climate Future
Mohammed Temraz, Eoin M. Kenny, Elodie Ruelle, Laurence Shalloo, Barry Smyth and Mark T. Keane
https://arxiv.org/ftp/arxiv/papers/2104/2104.04008.pdf

Microfluidic-based Bacterial Molecular Computing on a Chip
Daniel P. Martins, Michael Taynnan Barros, Benjamin O'Sullivan, Ian Seymour, Alan O'Riordan, Lee Coffey, Joseph Sweeney, and Sasitharan Balasubramaniam
https://arxiv.org/pdf/2104.07341.pdf

Assessment of the biological activity of fish muscle protein hydrolysates using in vitro model systems
ShaunaHeffernan, LindaGiblin and NoraO'Brien
https://www.sciencedirect.com/science/article/pii/S030881462100858X

Digestive System Dynamics in Molecular Communication Perspectives
Dixon Vimalajeewa and Sasitharan Balasubramaniam
https://arxiv.org/pdf/2104.11082.pdf

Cross-sectional analyses of a national database to determine if superior genetic merit translates to superior dairy cow performance
S.C.Ring, R.D.Evans, A.R.Cromie and D.P.Berry
https://www.sciencedirect.com/science/article/pii/S002203022100549X