

# Animal and Bioscience Department

## Title

Global cooperation to develop next generation whole genome SEQuence SELECTION tools for novel traits

## Abstract

The objective of this project, SEQSEL, is to build upon, solidify, formalise and condense the recently initiated, but as yet informal, relationships between several world-leading research partners in the EU (Ireland, The UK, and the Netherlands) and Oceania (i.e., Australia and New Zealand) in order to conduct joint research and participate in knowledge exchange and to identify regions of the bovine genome associated with feed intake and efficiency. The study will be undertaken in dairy cattle. To satisfy the required 70% greater food demand of the growing world food population from a shrinking agricultural land base there must be greater efficiencies of production in both plants and animal production. SEQSEL, through the exchange of both knowledge on different pertinent scientific disciplines, but also through sharing of datasets, will 1) define a pertinent phenotype for feed intake and efficiency in dairy cattle, 2) quantify the contribution of genetics to differences among animals in feed intake and efficiency, and 3) identify using the different approaches the regions of the bovine genome associated with feed intake and efficiency that can subsequently be used to increase genetic gain in these (and associated) traits. An IRSES is required because: 1) few if any organisations in the world have sufficient skills to individually undertake the proposed project, and 2) no single organisation has sufficient data on feed intake to make such a proposal successful. This project contains many of the world experts on feed intake and efficiency, genetics and genomics. The structure of the project is such to ensure that collaboration among the project team persists even after SEQSEL officially finishes.

**Project Leader:** Donagh Berry

## **Programme/Subprogramme/RMIS Number:**

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