

## PhD Studentship: Future-proofing the sustainability of pasture-based dairy-beef production system

<b>University</b>	University College Dublin (UCD)
<b>University School / Unit</b>	School of Agriculture and Food Science
<b>Post type</b>	PhD
<b>Post duration</b>	48 months
<b>Salary</b>	€22,000 tax-free per annum (+ university fees)
<b>Supervisors / Mentors</b>	Dr. Alan Kelly, Prof. Tommy Boland, Dr. Stafford Vigors and Prof Karina Pierce
<b>Main location for project</b>	UCD Research Farm Lyons Estate
<b>Provisional start date</b>	Sept 2024
<b>Funding source</b>	Science Foundation Ireland (SFI), BiOrbic, and Industry Partners
<b>Industry Partners</b>	UCD Long term Grazing Platform (LTGP), UCD Dairy Calf Research and Innovation Facility, BiOrbic Research Programme, ABP Food Group, Slaney Meats, FBD, Dairy Industry Ireland, MSD, Sensehub, JFC, Ornuia and SFI.
<b>BiOrbic Challenge Alignment</b>	Climate Neutral Animal Agriculture

### Summary

**Objective:** Development of new and innovative approaches to reduce greenhouse gas emissions from a dairy to beef production system

**Description:** Ireland is committed through international agreements and protocols to achieve a climate neutral economy by 2050. Methane, a short-lived potent greenhouse gas (GHG), is produced from enteric fermentation and is a significant contributor to anthropogenic GHG emissions, and thus needs immediate attention. The cattle herd is an important source of GHG emissions. Novel strategies are required immediately to mitigate enteric methane emissions, and to increase the economic and environmental sustainability of beef farming. Furthermore, there is a crucial need to directly measure GHG emissions from beef cattle such that national inventories are based on actual measurements under diverse pasture-based systems, the cornerstone of ruminant production in Ireland. Using a three-pronged approach incorporating animal genetics, diverse pasture types and novel anti-methanogenic feed, overall, this challenge is tasked with substantially reducing GHG output from beef production systems in Ireland.

With this in mind we have designed a series of carefully planned experiments in consultation with industry partners to synthesise implementable GHG mitigation strategies to reduce the environmental footprint of dairy beef farming systems. The overall aim of this project is to utilise novel strategies in relation to animal breeding, alternative forage use and supplementation of novel feed additives and strategic early life nutritional management to improve the environmental sustainability of Irish

pasture-based dairy-calf to beef production with the overall goal of formulate a route towards net carbon zero emissions.

### **Requirements**

Applications are invited from graduates holding or expecting a primary degree (First or Upper Second Class Honours) in a biological science (e.g., Agricultural Science, Animal Science, Genetics, Biology, Veterinary Science) or a M.Sc. in an appropriate discipline (Animal or Agricultural Science, Biology, Veterinary Science etc.). The successful candidate will be expected to register with the School of Agriculture and Food Science, University College Dublin for a 4-year Ph.D. degree. The successful candidate should be highly self-motivated and be prepared for field and laboratory work and engage in training courses. Proficiency in the English language is required. Please see the following link with regard to English Language requirements

<https://www.ucd.ie/registry/prospectivestudents/admissions/policiesandgeneralregulations/generalrequirements/minimumenglishlanguagerequirements/>

### **Further Information/Applications**

Dr. Alan Kelly, School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4. Phone +353 (0) 1 7167775, email: [alan.kelly@ucd.ie](mailto:alan.kelly@ucd.ie).

Prof. Karina Pierce, School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4. Phone +353 (0) 1 7167775, email: [karina.pierce@ucd.ie](mailto:karina.pierce@ucd.ie).

### **Application Procedure**

A letter of interest together with a curriculum vitae and the names and contact details of two referees should be sent by email to [alan.kelly@ucd.ie](mailto:alan.kelly@ucd.ie) and [karina.pierce@ucd.ie](mailto:karina.pierce@ucd.ie)

**Closing date for receipt of applications: 28th June, 2024**

### **BiOrbic**

This project is funded by BiOrbic, Ireland's National Bioeconomy Research Centre. BiOrbic is a national collaboration of researchers, focused on the development of a sustainable, circular economy. Encompassing 100+ researchers from twelve institutions in Ireland, along with International collaborators, BiOrbic is focused on training and developing the next generation of Bioeconomy leaders.