PhD position: Expert system modelling of cattle disease management in modern livestock populations and in the context of an Irish IBR eradication programme

The position will be embedded in an existing international collaboration between the UCD Centre for Veterinary Epidemiology and Risk Analysis (CVERA; www.ucd.ie/cvera/) and Animal Health Ireland (AHI; www.animalhealthireland.ie) in Ireland and the Helmholtz Centre for Environmental Research (UFZ; www.ufz.de) in Leipzig, Germany. The PhD will deliver improved animal health decisions using quantitative epidemiology and substantial animal production data. The studentship provides an interdisciplinary doctoral project, addressing and linking the epidemiological, economic and social aspects of animal health research. Doctoral students attend lectures, courses and workshops on a broad range of interdisciplinary topics in and beyond the field of animal health research and conduct their project in an international and integrated working environment.

Mechanistic or process-based dynamic models representing social interaction networks will be developed to better understand how farm level management characteristics and interaction via trade and market networks affect the local and regional resilience of potential animal health programmes. The successful applicant will join a multidisciplinary team of researchers and practitioners who are completing the staged development of a sustainable programme to eliminate IBR from the Irish cattle industry. The PhD project will contribute the epidemiological expert system to allow alternative assumptions and strategy options to be tested for their impact on overall programme success. Hence the project is expected to have a facilitating role both during the programme implementation phase and beyond.

The PhD studentship will be registered with the University of Leipzig and based at the UFZ in Leipzig in Germany, and the candidate will join a vibrant team of about 50 modellers in life science, including the EcoEpi lab which specialises in modelling for animal health. The candidate will develop the Irish IBR model from basic farm level towards a regional complex system model with fine-scale network interactions and social decision components. The candidate will be expected to use existing modelling tools and approaches but also integrate innovative programming solutions. Access to comprehensive data on the Irish cattle industry, including IBR results (historical and generated through the programme) will provide an ideal working environment in which to develop and validate modelling outputs. An interest in modern high-level coding and clear dedication to advanced software implementation is required and the working environment will provide multiple opportunities to upgrade personal skills and experiences in this regard. Personal supervision and guaranteed stakeholder interaction will provide soft skills at the interface between theory and application.

REQUIREMENTS:

- Excellent Master's Degree or equivalent university degree in life science, geography, physics, social sciences, computer science or related fields

- Autonomous use of programming language(s)

- Skills in computer science or dynamic modelling as an advantage

- Experience in statistical analysis (a working knowledge of R will be an asset)

- Strong interest in life-science problems and in the interface between theory and application

- Combination of organizational skills and strong personal responsibility

- Fluency in spoken and written English (the working language of the studentship) and the ability to work, communicate and interact in an international collaborative consortium.

- Willingness to travel to Ireland to meetings, including those of the technical and implementation bodies, on an ongoing basis.

WE OFFER:

- A fixed term full-time contract (4 years), subject to a satisfactory probationary period, funded by the Department of Agriculture, Food and the Marine (DAFM).

- An annual stipend of €18,000 in year 1, rising by €500 per annum to €20,000 in year 4, plus registration fees in the University of Leipzig and project-related travel expenses

- Top level interdisciplinary research at research centres that enjoy an excellent international reputation

- Responsibility and involvement in the development of national animal health strategies

- Support and optimal training courses by the UFZ graduate school (HIGRADE)

- Excellent technical facilities

- The opportunity to work in inter-disciplinary and multinational teams and to interact with senior officials of the Department of Agriculture, Food and the Marine and representatives of the Irish agri-food industry.

- Excellent links to national and international research networks

- Future employment prospects

For further information, please contact: nmorgan@animalhealthireland.ie

Interested candidates should submit:

(i) a covering letter detailing their interest and reasons for applying for this position

(ii) a CV (including contact details of 2 referees)

(iii) a summary of any relevant research experience

Please reference 'PhD Studentship IBR' on the subject line of your application.

Closing date for applications: there is no formal closing date for applications; the call will remain open until a candidate is appointed.