

SPOTLIGHT ON University College Dublin Veterinary Medicine

Advancing animal health and welfare through research

Advancing national animal health and welfare policy

Helen A. Graham, BA, PhD*; Michael L. Doherty, BVM&S, PhD; Simon J. More, BVSc, PhD; Stephen V. Gordon, BSc, PhD; Eamonn P. Gormley, BA (Mod), PhD; Carmel T. Mooney, MVB, PhD; Alison J. Hanlon, BSc, PhD; Siobhan M. Mullan, BVMS, PhD; Finola C. Leonard, MVB, PhD; Conor G. McAloon, MVB, PhD

School of Veterinary Medicine, University College Dublin, Dublin, Ireland

*Corresponding author: Dr. Graham (helen.a.graham@ucd.ie)

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The University College Dublin (UCD) School of Veterinary Medicine has a broad research agenda covering areas such as veterinary public health, epidemiology and national disease control, herd health management, drug delivery, pharmacology, parasitology, and One Health research. We work with national and international collaborators and, with the support of Zoetis, have a longstanding “UCD Squared” partnership with the University of California-Davis, which has established an ambitious program of research, drawing on expertise from a diverse community of veterinary and medical scientists and clinicians.

Our School occupies a unique position in terms of its relationship with national government with its ability to conduct research in support of national animal health and welfare policy in the following areas:

The School provides scientific evidence that underpins much of the national strategy to eradicate **Bovine Tuberculosis**. The Tuberculosis Diagnostics and Immunology Research Laboratory engages in IFN- γ diagnostic testing of blood samples with a focus on analyzing the data to gauge test performance and improve its accuracy. The laboratory also supports the Department of Agriculture, Food and the Marine (DAFM) badger vaccine program and provided scientific direction to the County Kilkenny badger vaccine field trial, the largest wildlife tuberculosis vaccine trial ever conducted worldwide. School research also supports DAFM activities through whole genome sequencing and analysis of pathogen genomes. This is proving transformational in our ability to understand pathogen evolution and track pathogen transmission. A collaboration with the Central Veterinary Research Laboratory has revealed the power of such research to provide new insight into transmission dynamics and persistence of infection within livestock and wildlife populations.

The OneWelPig project is undertaking a “**One Welfare**” assessment of alternative pig production systems in Ireland, from the perspectives of the pigs, farmers, and society. The project aligns with Ireland’s Animal Welfare Strategy, with UCD responsible for Task 1 “Promoting Real World Change: Implementation of the Knowledge Transfer Plan,” which brings together key industry stakeholders in a participatory policy-making approach to develop a roadmap toward One Welfare pig farming.

The **Irish Clinical Academic Training Program** is an integrated pathway for clinical academic training in human medicine, veterinary medicine, and dentistry. It is an all-Ireland partnership comprising 6 universities, training authorities and health services, the Health Research Board, and DAFM. The program provides a structured inclusive infrastructure for training the next generation of clinical academic leaders and aims to recruit veterinarians who have completed residency training to undertake a PhD in the areas of One Health, Comparative Medicine, and animal-sparing research.

The School makes a substantial contribution to research on **antimicrobial resistance** in the farm animal and environmental sectors. The recently completed collaborative project on Antimicrobial Use and Resistance in Animal Production generated representative data on antimicrobial use in the Irish pig and poultry industries for the first time. This has been invaluable to DAFM in building an online database in which farmers and veterinarians can enter antimicrobial use (AMU) and benchmark their farm against the national average, this being an essential tool in helping to reduce AMU and maintain reductions. UCD researchers also played a part in an Environmental Protection Agency-funded project looking at sources, drivers, and risk management of antimicrobial resistance in the environment.

The School is engaged in the provision of technical expertise for national programs of animal disease eradication and control (with a particular focus on bovine viral diarrhoea, paratuberculosis, and udder health) coordinated by **Animal Health Ireland**. These programs are underpinned by international best practices and ongoing research to inform decision-making and enhance program effectiveness. In practical terms, this takes the form of studies optimizing diagnostic testing strategies, filling specific local and international knowledge gaps, investigating the disease and control impacts on animal health and welfare, and using sociological means to explore barriers and facilitators of farmer adoption.

Further information on research in the UCD School of Veterinary Medicine is available here: www.ucd.ie/vetmed/research/.

