UCD School of Veterinary Medicine
Scoil an Leighis Tréidliachta UCD

UCD School of Mathematics and Statistics
Scoil na Matamaitice agus na Staitisticí
UCD

Post: PhD position (4-years full-time)

Project Title:
Individual bovine variation in the transmission and diagnosis of *Mycobacterium bovis*

Supervisors:
Dr Miriam Casey (School of Veterinary Medicine) and Dr Michael Fop (School of Mathematics and Statistics) of University College Dublin.

Starting date:
May 2026

Funding:
Annual tax-free stipend of €25,000 and an extra allowance for tuition fees, training, travel, and equipment.

Project description:

Tuberculosis is responsible for the greatest number of infection related deaths and disabilities worldwide, and bovine tuberculosis has devastating impacts on the livestock industry and wildlife conservation in many countries. In cattle, tuberculosis exhibits variable disease progression and heterogeneity in individual infectiousness. Variation in the individual response to diagnostic testing is also recognised as a constraint to eradication. Lack of clear understanding about these heterogeneities in infectiousness and diagnosis can affect insights from epidemiological models and reduce the effectiveness of control policies.

The aims of the PhD are to apply statistical and mechanistic modelling in an inter-disciplinary context to better understand animal-level variation in transmission and diagnosis of *Mycobacterium bovis* infection, and subsequently to inform targeting of interventions to control bovine tuberculosis.

The project offers an opportunity to advance understanding of the infection biology and diagnosis of a globally significant pathogen, capitalising on large and detailed data, diverse expertise and a direct interface with control programme managers and policy makers. During the PhD, inter-disciplinary skills will be developed to maximise the impact of quantitative expertise in infectious disease control.

Eligibility and entry requirements:

We welcome applications from graduates in the biological sciences with strong quantitative and programming skills, as well as from graduates in quantitative or computational disciplines with an interest in engaging with and learning about One Health challenges.

Applicants should have (or expect to obtain) at least a 2:1 honours degree. A Master's degree relevant to infectious disease epidemiology or biostatistics is desirable.

Applicants from the biological sciences should hold a degree in veterinary medicine, medicine, ecology, agricultural science, or a related discipline, with demonstrated quantitative skills and a willingness to further develop programming expertise. Applicants from quantitative or computational disciplines should hold a degree in statistics, mathematics, applied mathematics, computer science, or a related STEM discipline, and have a strong interest in engaging with biological sciences and solving applied problems.

Applicants must demonstrate some proficiency in statistical modelling and have experience with computing through R / Python, or similar programming language. Applicants for whom English is a second language will be required to demonstrate their competence in the English language in line with University College Dublin requirements.

How to apply:

Applicants should email Dr. Miriam Casey (miriam.casey@ucd.ie) to apply.

The application should include a comprehensive CV, academic transcripts of the degree/ degrees, and a short cover letter/statement of purpose (2-pages max) indicating how their skills align with the project and their motivation for applying. The application CV should, at minimum, include the applicant's name, educational institution, qualification stating overall grade (predicted grades are acceptable for those still studying) and contact details of two academic referees.

Please include "PhD application - bTB modeling" followed by your name in the subject line.

Applications not in this form will not be considered.

The closing date for applications is the 26th of January 2026. Only shortlisted candidates will be contacted.

Informal queries can be directed to miriam.casey@ucd.ie.

Equality, diversity and inclusion:

UCD believes in equality, diversity and inclusion and embeds these fairness principles into all aspects of University life. UCD's mottos, "Ad Astra" and "Cothrom na Féinne" reflecting both excellence and fairness, remind our community that fair play is integral to our mission and informs our policy development, behaviours and decision-making so that the UCD community embraces equality, diversity and inclusion. As such, we warmly welcome applicants from all sections of the community.

About UCD:

UCD is one of Europe's leading research-intensive universities; an environment where undergraduate education, masters and PhD training, research, innovation and community engagement form a dynamic spectrum of activity. Since its foundation, the University has made a unique contribution to the creation of modern Ireland, based on successful engagement with Irish society on every level and across every sphere of activity. The international standing of UCD has grown in recent years; it is currently ranked within the top 1% of higher education institutions world-wide. UCD is also Ireland's most globally engaged university with over 38,000 students drawn from 152 countries, including over 5,000 students based at locations outside of Ireland. The University's main Dublin campus occupies an extensive parkland estate of 133 hectares and offers world-leading facilities including the UCD O'Brien Centre for Science, UCD Sutherland School of Law, UCD Lochlan Quinn School of Business, UCD Moore Centre for Business, and the UCD Student Centre.

As Ireland's largest university, with its great strength and diversity of disciplines, UCD embraces its role to contribute to the flourishing of Ireland through the study of people, society, business, economy, culture, languages and the creative arts, as well as through research and innovation. The University's Strategy to 2030 outlines the objectives and major strategic initiatives set in place in order to accomplish UCD's vision for this era.