



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
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The Faculty
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30 May 2024

The Inaugural Lecture
of Professor

Lorraine O'Driscoll



Lessons Learned from Pharmacology: People & Opportunities are the Best Medicine

Professor Lorraine O'Driscoll

Lorraine O'Driscoll is Professor of Pharmacology and Biomedicine in the School of Pharmacy and Pharmaceutical Sciences at Trinity College Dublin. Lorraine is a Principal Investigator in Trinity Biomedical Sciences Institute (TBSI), and the Research Lead of the Trinity St James's Cancer Institute (TSJCI). Lorraine is an elected Fellow of both TCD (FTCD), and of the Royal Society for Biology UK (FRSB), and Vice-President of the Royal Irish Academy (RIA).

Aged 14, the death of a friend's mother sparked Lorraine's interest in understanding why cancer occurs and what might be done to treat it and save lives. She credits Ms Brid Mc Nulty, her physics and chemistry teacher, with helping her decide that pharmacology -the science of drugs and medicine- should form the basis of her career. Lorraine completed a BSc(Hons) in Pharmacology at University College Dublin (UCD); an MSc(Res) in Clinical Pharmacology, jointly between UCD and McMaster University Canada; and a PhD in Biotechnology at Dublin City University (DCU). Lorraine, as a Clinical Pharmacologist, was a member of the team credited by the Irish Medicines Board (now HPRA) with initiating the first investigator-led cancer clinical trial on the island of Ireland. She has since been a Principal Investigator on five cancer clinical trials

A core component of Lorraine's research is on extracellular vesicles (EVs), a niche area she has championed in Ireland while ably aided by her great research team. Lorraine's team made the original discovery that EVs from cancer cells ("bad cells") can spread anti-cancer drug-resistance. EVs are also involved in immune suppression and cancer metastasis. But those detected in the blood may help in cancer diagnosis and choosing the best treatment option for a cancer patient. The O'Driscoll team has also shown that EVs from healthy mesenchymal stem cells ("good cells") hold promise for better hip replacements and may also have use as a therapy in rheumatoid arthritis. Milk EVs are credited with passing immune protection from mother to infant and the team has generated evidence that EVs may be suitable as natural drug or vaccine oral delivery vehicles. However, they have also found that EVs are destroyed in the processing of milk in infant milk formula and so corrections to this may be valuable.

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To support this research, Lorraine was P.I. and Chair on the largest international EVs research consortium established to date, the H2020-supported ME-HaD. This initiative focussed on Extracellular Vesicles in Health and Disease and involved universities and clinics in 31 European countries, 4 universities in the US and Australia, and 7 industry partners. In addition, Lorraine was Director of a H2020-funded Consortium, TRAIN-EV, training 15 PhD students in EVs in health and disease; TCD's Principal Investigator on SFI-supported Molecular Therapeutics for Cancer Ireland; and Strand Leader of Irish Cancer Society-supported Breast-PREDICT. Lorraine holds an IRC Advanced Laureate Award; is Founder and Lead Investigator of the All-Ireland Cancer Liquid Biopsies Consortium; TCD PI on the All-Island Cancer Research Institute (AICRI)Start; and Lead PI on the Depart of Agric, Food & Marine Award, MilkEV. Lorraine served several years on the Board of Directors of the International Society for Extracellular Vesicles and Chaired its International Annual Conferences in 2021 and 2022. She is Founding Chair of the Irish Society for Extracellular Vesicles and is Invited Member of the Board of Directors of the American Society for Extracellular Vesicles. Lorraine is grateful for awards and honours she has received including International Society for Extracellular Vesicles' Special Contribution Award, 2024; Eurolife Distinguished Lecture Medal, 2019; DCU Teaching Award, 2008; Innovation Award, Invent 2007; Albert College Fellowship Award, 2004; Royal College of Physicians Scientific & Medical Award, 1996; and Pfizer Young Investigator Award 1991.

Lorraine lives near Dundrum in Dublin with her husband Donnacha, dog Newton, tortoise Kepler (and Chester, the neighbour's cat!).

Inaugural lectures provide newly appointed professors with the opportunity to showcase their academic activity to the College community and members of the public. An inaugural lecture is a significant event in an academic staff member's career. At Trinity College, inaugural lectures are a ceremonial occasion, which is why academic robes are worn by the inaugural professor and the rest of the platform party.