



UCD School of Medicine  
Scoil an Leighis UCD

UCD SCHOOL OF MEDICINE

# RESEARCH REPORT 2023/24





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# 2023/24

## IN NUMBERS

**€34,439,125**

Value of New  
Research Grants

**222**

Total Number of  
Grants Registered

**1195**

Total Number of  
Journal Articles

**2.29**

Field Weighted  
Citation Impact

**520**

Total Number of  
Research Projects

**76.26%**

Research Active  
Staff

**232**

Total Research  
Students  
Registered

**73**

New Students  
Registered

**72**

Number of  
Graduates

**12**

Research Centres



# INTRODUCTION

It is a great pleasure to introduce the annual UCD School of Medicine Research Report for the 2023-2024 academic year. Our faculty, researchers and students continue to flourish. As we report there were several noteworthy developments including research outputs of immediate impact on patient care, knowledge of disease mechanisms and translation and technology transfer. The profile of the School's research activities has been enhanced by high-quality publications, significant grant income and the recruitment of new faculty and their teams across the career continuum.

We continue to enhance our research environment through investment in technologies and support staff. Central to our priorities are the high-quality education and training of our students and research fellows in a supportive and inclusive environment. Our ambition to enhance the impact of our research has again been supported by a specific School of Medicine Seed Fund which aims to enhance translational research through collaboration between investigators at clinical sites and those engaged in lab-based research.

The publication of this report collates many of these activities and affords an opportunity to reflect on achievements and to further our ambitions for the future. We are indebted to Elaine Byrne, Niamh McCarthy and Ed Moore in the Medicine Research Office for their support.

**Professor Cormac Taylor**

Associate Dean for Research, Innovation and Impact  
UCD School of Medicine

# 2 RESEARCH HIGHLIGHTS 2023/24



Research led by Dr Evelyn Lynn, an MD candidate in the School of Medicine under the supervision of Associate Professor Cormac McCarthy, which demonstrates that the rare lung disease Lymphangioleiomyomatosis is more prevalent than previously reported, was published in the *American Journal of Respiratory and Critical Care Medicine*. Data was collected in Ireland, Denmark, Norway and The Netherlands.



Dr John McCabe, Professor Peter Kelly and PhD candidate Dr Sarah Gorey from the Mater Misericordiae University Hospital were part of a team who published research in the *European Stroke Journal* which investigated the association between plasma fibrinogen and post-stroke vascular recurrence. 11 studies were included in the analysis, encompassing 14,002 patients. The same three researchers also contributed to the paper *Targeting inflammation to reduce recurrent stroke* which was published in the *International Journal of Stroke*. Their research shows that there is a potential benefit of anti-inflammatory targets in secondary stroke prevention and epigenetics for the therapy of MYCN-driven neuroblastoma'.

Two UCD School of Medicine researchers were awarded almost €2.5M each by the Health Research Board in 2024:



Professor Brian O'Donoghue was awarded for his project, *Achieving Recovery in Psychotic Disorders with Comprehensive Clinical Guidelines*. The findings from this research will lead to the development of Irish clinical guidelines for the treatment of psychosis.



Professor Alistair Nichol was awarded for his project *PRIME-Ireland Pandemic Resilience Ireland Clinical Platform: Refining, Performing, Predicting and Applying a globally integrated clinical research response for future pandemics in Ireland*. Professor Nichol was awarded additional funding from the HRB for his research project titled *PRECISION-ABI: Developing a precision medicine approach to improve acquired brain injury patient outcomes*.

Professor Amanda McCann and Dr Eadaoin McKiernan were both awarded funding from the SFI Discover Programme:

- Professor McCann was awarded approximately €220,000 for her project *Cut from the Same Cloth: Engaging Minority Communities in STEM*.



- Dr McKiernan was awarded over €110,000 for her project *Let's chat medicine: An innovative PEI cycle in health-related research*.





Professor Jonathan Dodd was part of a team who published a paper in *Radiology* entitled *Coronary Artery Calcium Score Predicts Major Adverse Cardiovascular Events in Stable Chest Pain*. Participants with higher Coronary Artery Calcium scores showed increasing risk of obstructive coronary artery disease and major adverse cardiovascular events.



Professor Carel Le Roux published research on new drug therapy innovations to treat obesity in *The Lancet*. Results from a phase 2 clinical trial of survodutide showed up to 18.7% weight loss in overweight or obese individuals through a 46-week timeframe. 387 participants were involved in the study. Professor Le Roux also led the study on tirzepatide in a phase 3 clinical trial involving 938 adult participants with obesity or overweight and type 2 diabetes where 15% weight loss was achieved in a 72-week timeframe.



Professor Donal Brennan and colleagues published an article *Managing Menopause after Cancer* in *The Lancet*. The paper investigated the long-term effects of premature ovarian insufficiency and early menopause as a result of cancer treatment.

Professor Carel Le Roux was part of a research group including UCD, Ulster University and Imperial College London who found that bariatric surgery is likely to improve fertility in women with polycystic ovary syndrome and obesity. The research has been published in *The Lancet*. An additional paper published in *The Lancet* by Professor Carel Le Roux focused on Obesity in Adults and recommends that obesity treatments should aim for health gains rather than weight loss.



The *Atherosclerosis* Journal published an article by a team of researchers from the School of Medicine which showed combining statin therapy with let-7d-5p RNA therapy, leads to a more pronounced anti-inflammatory effect. This suggests that combining therapies may greatly benefit patients with cardiovascular disease. PhD candidates Tanwi Vartak and Elena Giardini are the first named authors, Dr Eoin Brennan and Professor Catherine Godson supervise their research.



Associate Professor Tomas Barry was the lead author on a paper published in *Resuscitation Plus* which demonstrated that survival rates for out-of-hospital cardiac arrests are increasing. The research also suggests that the chances of survival are 40% higher in urban areas than rural areas.



MD candidate Dr Lucy Geraghty is the lead author on a paper published in *The New England Journal of Medicine* entitled *Video versus Direct Laryngoscopy for Urgent Intubation of Newborn Infants*. The paper outlines that videolaryngoscopy had greater success than direct laryngoscopy at first attempt. Dr Geraghty's research was supervised by Professor Colm O'Donnell, Consultant Neonatologist at the National Maternity Hospital.



A team of UCD researchers, with Professor Donal O'Shea and Professor Silke Ryan as the joint senior authors, published the results of a randomized controlled trial in *Obesity: A Research Journal*. The results indicate that Glucagon-like-peptide-1 medications increase metabolic activity. It was previously thought that the medications worked by promoting satiety.



Professor Fionnuala McAuliffe and the team at UCD Perinatal Research Centre published a paper in *The American Journal of Clinical Nutrition* which outlined the findings of a longitudinal birth cohort study. The study explored associations of early feeding practices and childhood dietary quality and inflammatory scores on preteen cardiometabolic outcomes. Professor Fionnuala McAuliffe also published the following paper in *Scientific Reports*, *Impact of previous pregnancy and BMI on cellular and serum immune activity from early to late pregnancy*. The study investigated changes to maternal inflammatory biomarkers during pregnancy. A third paper by Professor Fionnuala McAuliffe was published in *Gut Microbes*. This paper highlighted the potential application of Pseudocin 196 as a probiotic to treat and prevent bacterial infections.



Dr Carlos Matellan was awarded the Thomas Mitchell Medal of Excellence by the Irish Research Council. Dr Matellan was the top ranked postgraduate researcher in the science, technology, engineering and mathematics category. Dr Matellan is a postdoctoral researcher in UCD's Conway Institute who is researching rising mortality from chronic liver diseases in Europe.



The results of the CONVINCe trial were presented at the European Stroke Organisation Conference on 15 May 2024 in Basel. The outcomes of the study support the hypothesis that long-term anti-inflammatory therapy with colchicine may reduce recurrent stroke and cardiovascular events specifically in stroke patients with atherosclerosis. The trial took place over a period of almost 6 years with UCD School of Medicine Professor Peter Kelly as the principal investigator.

In order to encourage collaboration between scientists and clinicians over €73,000 of funding was allocated to the following 7 projects via the School of Medicine's Translational Medicine Seed Fund:

1. Dr Dana Alawan & Professor Jane O'Halloran  
*Navigating the Inflammatory Landscape: Advanced Immune Profiling in People with HIV.*
2. Professor Walter Cullen, Professor Brian O'Donoghue, Dr Joseph Gallagher, Professor Ken McDonald, John Broughan  
*Cardiovascular risk among patients with mental health disorders: pilot feasibility study in general practice.*
3. Dr Stephen Fitzsimons, Professor Niall Tubridy, Professor Keith Murphy & Professor Catherine Godson  
*Investigation of mural cell-oligodendrocyte cross-talk and synthetic lipoxin intervention in white matter diseases, CADASIL and MS.*
4. Dr Andrew Malone & Professor Denis Shields.  
*Predicting anti-HLA antibody-antigen binding using AlphaFold to assess donor specific antibody significance in transplantation.*
5. Dr Carlos Matellan, Dr Stephen Thorpe, Professor Ronan Cahill, Dr Aisling Coughlan & Dr Darrell Andrews  
*Switching Off – Immunosuppressive rewiring of neutrophils in colorectal cancer.*
6. Professor Kirsten Schaffer & Dr Guerrino Macori  
*Environmental Screening and Whole Genome Sequence Analysis of Healthcare Associated Pseudomonas aeruginosa.*
7. Dr Julie Worrell & Associate Professor Cormac McCarthy  
*Investigating the molecular mechanisms of fibroblast trained immunity in pulmonary fibrosis.*





The School of Medicine Research Retreat took place on Monday 24 June 2024 in Belfield. The Retreat highlighted translational research activity that is ongoing in UCD, across campus and at our clinical sites. Talks were scheduled to provide scientists and clinicians with an opportunity to describe their research needs and facilitate collaboration.



Professor Michaela Higgins's research on the treatment of people with advanced HER 2-positive breast cancer was published in *Nature*. The study demonstrated good clinical outcomes provided by Trastuzumab deruxtecan.



Dr Luke Jones, a research fellow in the School of Medicine, was recognised as the Senior Researcher of the Year by the Irish Cancer Society. Dr Jones' research is focused on acute myeloid leukaemia.



Professor Adam Byrne and Associate Professor Cormac McCarthy were among a team of researchers who published a paper in *the American Journal of Respiratory and Critical Care Medicine*. Their research focused on the role of invariant natural killer cells (iNKT) in idiopathic pulmonary fibrosis (IPF). The results indicate that numbers of iNKT cells are increased in IPF airways and that these cells may be a potential therapeutic target.



Professor Ken Wolfe, Full Professor of Genomic Evolution, was awarded an *Advanced Laureate Award* by the Irish Research Council for his project *Meiotic drive and evolution of pericentromeric genome organisation in budding yeasts*.

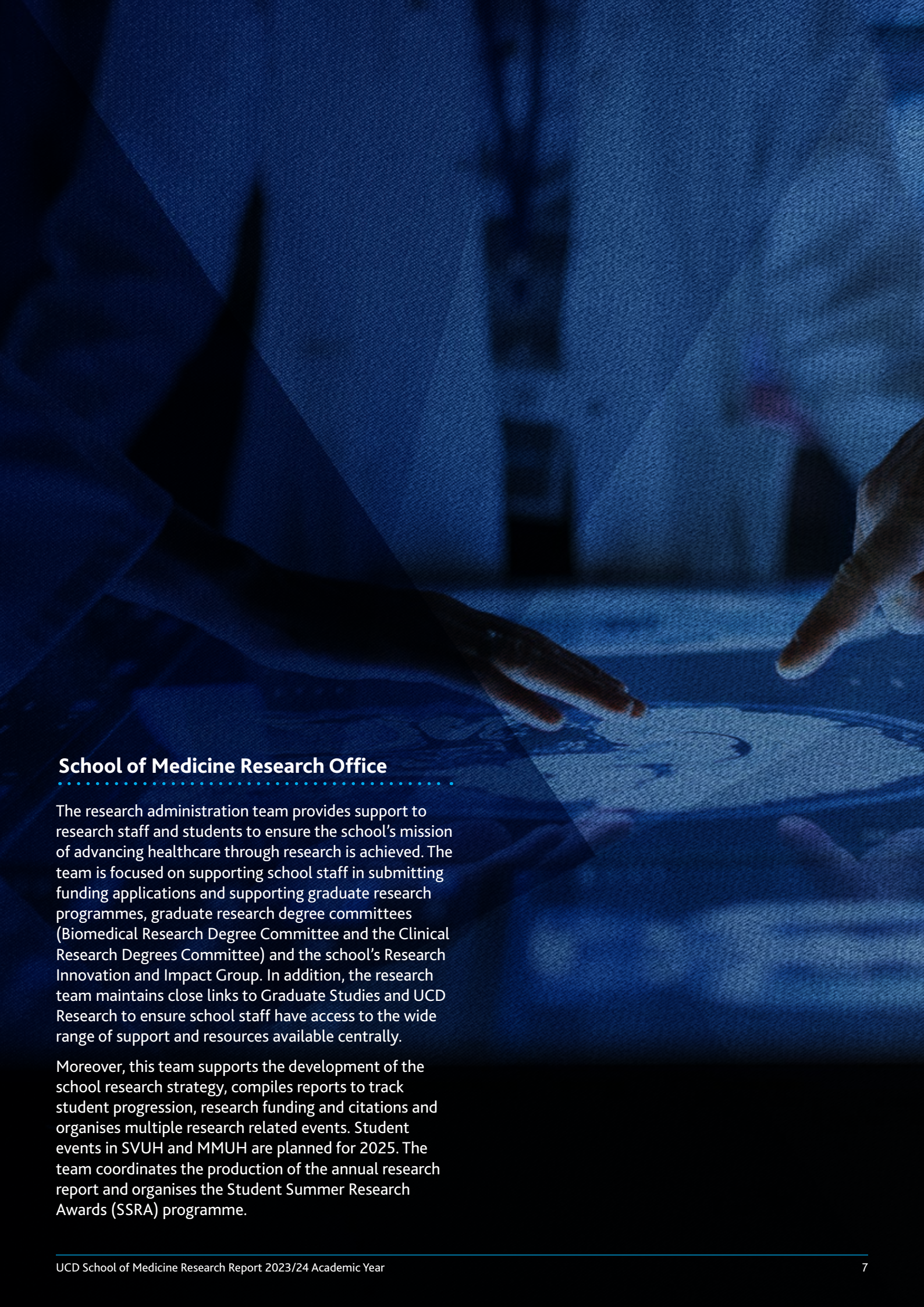


Dr Qian Xu was awarded €593,186.70 from the SFI-IRC Pathway Programme, for her research titled *A multi-therapeutic strategy for diabetic wound healing based on the injectable ECM-Mimetic hydrogel delivery of tailored ADSC-derived exosomes*. Dr Xu works in the UCD Diabetes Complications Research Centre.

A close-up, low-angle shot of a person's face in profile, looking through the eyepiece of a microscope. The scene is dimly lit with a strong blue color cast. The person's eyes are focused on the instrument. The background is dark and out of focus.

# 3

RESEARCH  
SUPPORT UPDATES



## School of Medicine Research Office

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The research administration team provides support to research staff and students to ensure the school's mission of advancing healthcare through research is achieved. The team is focused on supporting school staff in submitting funding applications and supporting graduate research programmes, graduate research degree committees (Biomedical Research Degree Committee and the Clinical Research Degrees Committee) and the school's Research Innovation and Impact Group. In addition, the research team maintains close links to Graduate Studies and UCD Research to ensure school staff have access to the wide range of support and resources available centrally.

Moreover, this team supports the development of the school research strategy, compiles reports to track student progression, research funding and citations and organises multiple research related events. Student events in SVUH and MMUH are planned for 2025. The team coordinates the production of the annual research report and organises the Student Summer Research Awards (SSRA) programme.



## School of Medicine Marketing and Communications Team

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The School of Medicine Marketing and Communications team's Mission:

Through strategic, engaging and collaborative marketing and communication activities, help build the successful growth of the UCD School of Medicine brand for positive recruitment and reputation outcomes.

Marketing and Communication Team (M&C Team) Goals:

- Successfully market the School's full suite of programmes
- Collaboratively build the School's brand and reputation
- Facilitate initiatives that foster a strong School community

The M&C Team provides communication and multi-channel support to help raise awareness of the School's research activities and achievements, building brand and reputation equity.

Identified focus research areas include:

- Metabolic Medicine (obesity, diabetic complications)
- Inflammation
- Precision Oncology
- Cellular Physiology
- Clinical Research



Listed below are a range of the activities supported and/or driven by the M&C Team:

- **School of Medicine Research Newsletters**  
Research Newsletters are sent bi-monthly. The content is collated by the Medicine Research Team and then checked, built and deployed by the M&C Team. The newsletter covers: News; Opportunities; Upcoming Events; Research Q&A Series; and Information regarding research promotion and maintaining research profiles, etc.
- **Internal communication emails**  
The M&C Team facilitates internal communication as requested.
- **News Stories / Press Releases / Media Liaison**  
The M&C Team coordinates and generates press releases and news stories. The team collaborates with UCD Research, UCD News Desk, Faculty staff, external medical media contacts, funding bodies and partners.  
  
Between 4 January 2024 – 2 December 2024 the M&C Team generated 73 news stories relating to School of Medicine Research. The news stories are accessible on the School of Medicine News webpages and are also pushed out via the School's social media channels – primarily X, LinkedIn and Facebook.  
  
Key research stories are also shared with the School's Alumni in the Alumni e-zines sent out every three months.  
  
The M&C Team facilitates research photography/ videography opportunities as needed.
- **Clinical Research Centre website**  
The M&C Team are working with the Clinical Research Centre to overhaul their website and add Ireland's first clinical trials directory.
- **SoM Corporate Presentation**  
The M&C Team produced an animated SoM Corporate PowerPoint presentation that contains a comprehensive Research section outlining the latest statistics/data. This presentation will be updated on a regular basis.
- **Research Videos**  
The M&C Team is liaising with Professor Cormac Taylor (Associate Dean for Research, Innovation and Innovation) to plan and produce research video content highlighting some of our impactful research. This content would be for multi-platform use and the hope is that it would have broad audience appeal and be shared by UCD Research.
- **Branding**  
The M&C Team also provides advice and guidance regarding brand research considerations – from marketing materials to sub-brands.
- **MGA Clinical Influencers Podcast Series**  
This podcast series is managed by the M&C Team and features the School's medical alumni, many of whom have carved out successful medical research careers. Now in its 4th series, episodes are shared on the School's website and social channels, in the Alumni e-zines and the Staff newsletters.



## Graduate Research Association of Medicine (GRAM)

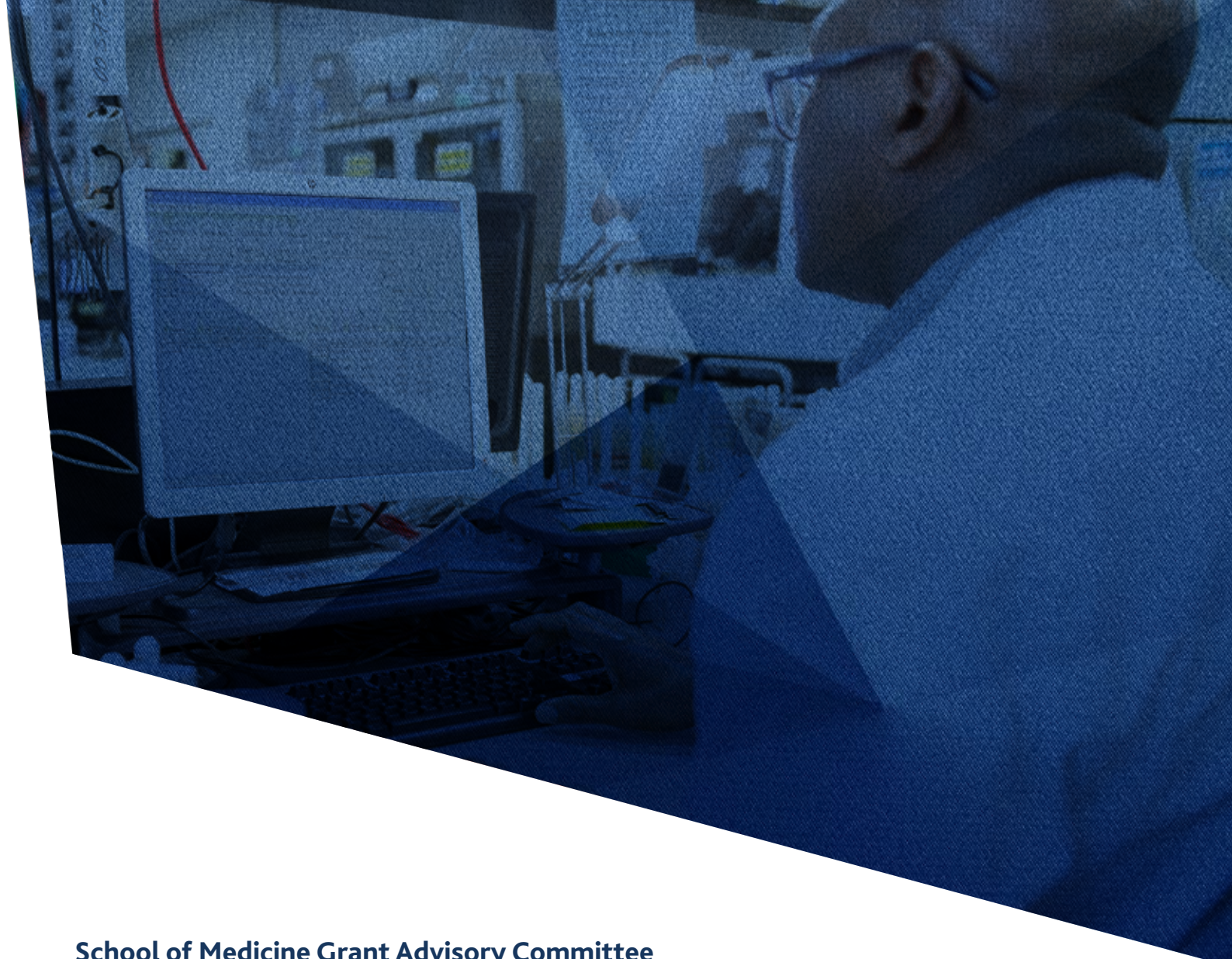
The Graduate Research Association of Medicine (GRAM) works to foster a sense of community amongst graduate researchers in the School of Medicine. Researchers include PhD, MD, MSc, MCh & MAO students based at research institutes in UCD Belfield and at the School's major teaching hospitals, St. Vincent's University Hospital and the Mater Misericordiae University Hospital.

GRAM is run by graduate researchers for graduate researchers and is made possible through funding by the School of Medicine. GRAM aims to recognise and celebrate milestones of its members, including publication of papers, thesis submission and graduation. It aims to relay information about academic support and career opportunities. Through these actions, GRAM wishes to promote wellbeing and community amongst researchers in the School of Medicine.

In the last year GRAM has hosted a Christmas Staff and Student Bingo event. This event was held in the UCD Clubhouse Bar and had a great turnout from both staff and students. On the day, participants wore their best Christmas jumper to raise money for Médecins Sans Frontières /Doctors Without Borders Ireland (MSF).

At the beginning of term in September 2024, GRAM organized a 'Welcome Back Pizza & Wine Night'. This event, held in the UCD Charles Institute of Dermatology, aimed to welcome back returning students and extend a warm welcome to new ones. Students were able to socialize and network with other postgraduates based in the School of Medicine. This event brought together students from various institutes and centres within the School of Medicine, offering an opportunity for those based both on and off campus to connect—a goal GRAM has been working toward for some time.

GRAM looks forward to the year ahead and organising more events for postgraduate research students in the School of Medicine.



## School of Medicine Grant Advisory Committee

UCD School of Medicine Grant Advisory Committee provides information and feedback to staff, including Post Doctoral Researchers, who are preparing research grant proposals. This committee was established to specifically provide support at the stage of proposal development. The objective of the committee is to offer independent, constructive advice on scientific merit and proposal development through recruitment of expert reviewers. This process is designed to complement existing support provided by UCD Research.

Applicants may engage with the committee at any stage of proposal development, and it is not necessary to submit a complete proposal to the committee for review. Feedback is provided in a transparent manner and open dialogue between applicants and reviewers is encouraged.

While the committee recommends submission dates based around known grant deadlines proposals may be submitted to the committee for consideration at any time. Early engagement with this process is encouraged to facilitate a timely and constructive review process. We are supported in this endeavour by the UCD Medicine Research Office.

To date we have facilitated reviews of grants submitted to Science Foundation Ireland, the Health Research Board and the Irish Research Council. However, we will consider grants aimed at any funding call.

Further information on how staff can participate in this process may be found at

**[www.ucd.ie/medicine/research/researchers/grantadvisorycommittee](http://www.ucd.ie/medicine/research/researchers/grantadvisorycommittee)**

### Committee Members

- Dr Carol Aherne
- Dr Darrell Andrews
- Dr Eoin Brennan
- Dr Jayne Carberry
- Dr Laura Gorman
- Dr Claire Robinson
- Dr Chris Shannon



## School of Medicine Research Ethics Committee

The UCD School of Medicine Undergraduate and Taught Masters Research Ethics Committee (UTMREC-SM) is constituted as a committee of the UCD School of Medicine and as a sub-committee of the UCD Human Research Ethics Committee - Sciences (UCD-HREC-LS).

The Committee reviews applications for ethical approval, or exemption from full ethical review, for research conducted by registered undergraduate and graduate taught students on behalf of UCD-HREC-LS.

In the academic year of 2023/2024, there were 139 low risk applications reviewed.

### Committee Members

- **Assoc Professor John Baugh** | Chair
- **Associate Professor Tomás Barry** | Taught Graduate Programmes – Primary Care & General Practice
- **Dr Christine Costello** | Physiology
- **Dr Michaela Davis** | Diagnostic Imaging
- **Dr Marina Everri** | Social Psychology
- **Associate Professor Valerie O'Brien** | Director of Family Therapy Programme
- **Dr Barry O'Donnell** | Director of Psychotherapy Programmes
- **Dr Mark Pickering** | Anatomy
- **Dr Marie-Louise Ryan** | Diagnostic Imaging
- **Dr Noreen Sheehy** | SSRA programme
- **Dr Rachel Toomey** | Diagnostic Imaging
- **Dr Dearbhaile Dooley** | Clinical Research
- **Professor William Watson** | Programme Director - BHLS





## Research Integrity & Culture

Research integrity and culture have always been important facets of research within the School of Medicine. Good research culture is key to ensuring the highest standards of research integrity. Research culture relates to how we do our research, our behaviours and attitudes to each other in our work, how we value the contributions of others to our research, and how our research is communicated. As an institution, UCD has recently identified the advancement of research culture as a central component of its strategy, *Shaping the Future*. This aims to ensure that all those involved in research within UCD encounter a culture of integrity, dignity, respect, and inclusion.

UCD's Research Culture Initiative aims to promote a supportive and positive research culture across the university. One aspect of the implementation of this strategy is the creation of Research Integrity Champions. Within the School of Medicine, these are Dr Carol Aherne, Dr Sergio Rey, Dr Stephen Thorpe and Dr Deborah Wallace.

Research Integrity Champions provide a point of contact for any research integrity queries within the school and are tasked with promoting a positive research culture. Research integrity activities focus on the engagement of future researchers, providing an awareness from the outset of what they should expect in a positive research environment. Student groups targeted include students of Radiography, the Biomedical Health and Life Sciences programme, medical students partaking in the Student Summer Research Award scheme, enrolling research degree students, and graduate research students more broadly via the UCD Graduate Research Association of Medicine.

Furthermore, the School Research Integrity Champions sit on the College of Health and Agricultural Sciences (CHAS) Responsible Conduct of Research Committee. Activities of the Schools' Research Integrity Champions as part of the Responsible Conduct of Research Committee have included the delivery of seminars, workshops and the organisation of two responsible conduct of research-based sessions in the Conway Institute seminar series each year.

In 2024, the School of Medicine Research Integrity team was successful in a grant application to the ReCLAIM UCD Research Culture - Local Actions, Initiatives and Measures Fund. This award supports the design of a tailored advanced communications workshop accessible to both students and all levels of staff within the school. Its purpose is to provide facilitated communication training, with the goal of promoting an open and positive research culture. The team will seek input on the design of this initiative and look forward to contributions from any interested student or staff member.

Overall, the research culture within the School of Medicine is in a good place, and as Research Integrity Champions, we hope to promote excellence, not only in what we do, but how we do it.

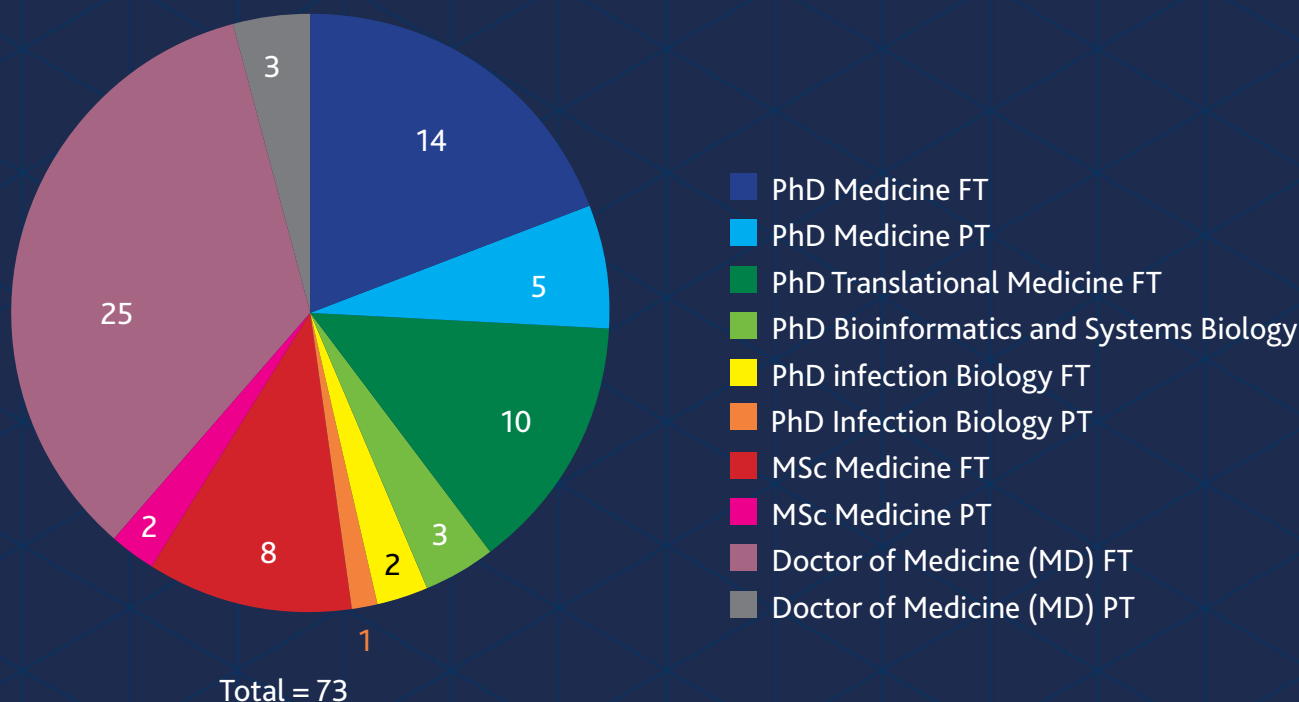
If you have any comments or queries relating to research integrity or culture, the School of Medicine Research Integrity Champions can be contacted at [medicine.ri@ucd.ie](mailto:medicine.ri@ucd.ie)



# 4 RESEARCH STUDENTS

# New Graduate Research Student Registrations

2023/24



# Active Graduate Research Students (PhD, MSc, MD & MCh)

2023/24

Programme Description	Major Description	Year								Total
		1	2	3	4	5	6	7	8	
Doctor of Philosophy	PhD Medicine Full-Time	14	12	11	8	2				47
Doctor of Philosophy	PhD Medicine Part-Time	5	2	1	6	2			1	17
Doctor of Philosophy	PhD Translational Medicine FT	10	9	7	10	3				39
Doctor of Philosophy	PhD Translational Med PT				1	2	1			4
Doctor of Philosophy	PhD Bioinformatics and Systems Biology FT	3	6	3	7					19
Doctor of Philosophy	PhD Infection Biology FT	2		1	2		1			6
Doctor of Philosophy	PhD Infection Biology PT	1								1
Master of Science	MSc Medicine FT	8	5	1						14
Master of Science	MSc Medicine PT	2	1	1						4
Doctor of Medicine (MD)	MD Doctor of Medicine FT	25	34	8						67
Doctor of Medicine (MD)	MD Doctor of Medicine PT	3	2	6	3					14
		<b>73</b>	<b>71</b>	<b>39</b>	<b>37</b>	<b>9</b>	<b>2</b>		<b>1</b>	<b>232</b>

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
PhD	Charlene Bennett	Genetic investigations provide insights into Hepatitis E virus and other potential foodborne viral pathogens in Ireland (2016-2019)	Assoc Prof Suzie Coughlan <b>Co-Supervisor:</b> Dr Joanne O'Gorman	Dr Luke Meredith	University of Cambridge
	Stephanie Bollard	Investigation of Extracellular Vesicles Melanoma: Insights into Biomarkers from the Tumour Microenvironment and Circulation	Prof Shirley Potter <b>Co-Supervisors:</b> Dr Pamela Kelly & Prof Amanda McCann	Prof Marc Moncrieff	Norfolk and Norwich University Hospital
	Tara Brady	The Impact of a High-Fibre Diet and Gut Microbiota on Lung Injury and Fibrosis	Assoc Prof John Baugh	Prof Philip Molyneax	Imperial College London
	Jeffrey Dalli	Advancing Fluorescence Angiography	Prof Ronan Cahill	Dr Michael Achiam	University of Copenhagen
	Julie Drieu La Rochelle	Role of p21-activated kinase in Tumorigenesis and Inflammation	Prof Ulla Knaus	Professor Mary Dinauer	Washington University-St Louis
	Kwong Soon Fong	ADP-dependent glucokinase regulates epithelial-to-mesenchymal transition under hypoxia in cancer cells	Dr Sergio Rey <b>Co-Supervisor:</b> Dr Luana Schito	Dr Matias Mosqueira	Heidelberg University
	Jennifer Grehan	A study of the evolution of mandated continuing professional development for diagnostic radiographers in the Republic of Ireland	Dr Marie-Louise Ryan <b>Co-Supervisor:</b> Prof Louise Rainford	Prof Maryann Hardy & Dr Marcus Thomas Jackson	University of Bradford & University of London
	Niall Hardy	A Biophysics and Fluorescence Guided Surgery Inspired Artificial Intelligence Classifier for the Identification and Classification of Colorectal Cancer	Professor Ronan Cahill	Dr Antonello Forgione	IRCAD, France
	Therese Herlihy	Ultrasound and quality of life investigations of people with chronic Hepatitis C undergoing direct acting antiviral treatment	Dr Mary Moran	Professor Carmel Moran & Professor William Powderly	University of Edinburgh & Washington University- St Louis
	Sean Kearns	Navigating access to gender care: a multi-method study on the experiences of gender-diverse youth in Ireland	Professor Thilo Kroll <b>Co-Supervisor:</b> Dr Karl Neff	Professor Michael Brown	Queen's University Belfast
	Grace Kenny	Host immune responses to SARS-CoV-2	Professor Patrick Mallon	Professor Roger Paredes	IrsiCaixa AIDS Research Institute, Barcelona
Sarah Kierans	Investigations into the non-transcriptional regulation of glycolysis by hypoxia	Professor Cormac Taylor	Professor Ben Wielockx	TU Dresden	

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
PhD	Martina Kreileder	Mapping PD-1 Immune Checkpoint Receptor Signalling Networks in T-Cells	Professor Walter Kolch	Dr Alan Serrels	University of Edinburgh
	Zishan Li	Mechanism Study of Cu-Based Reversible Deactivation Radical Polymerization (RDRP) and Its Application in Controlled Polymerization of Multivinyl Monomers	Professor Wenxin Wang	Associate Professor Marco Fantin	University of Padova
	Catherine Mahoney	Discovering Genomic Regions Enriched for De Novo Recombination in Autism Spectrum Disorder	Prof Denis Shields <b>Co-Supervisor:</b> Dr Michael Salter-Townshend	Professor Andrew Collins	University of Southampton
	Mykyta Malkov	Non-canonical regulation of HIF-1 $\alpha$ by TNF- $\alpha$ and IL-1 $\beta$ in intestinal epithelial cells	Professor Cormac Taylor	Professor Andy Clarke	University of Birmingham
	Essraa Metwali	Application of a targeted proteomics strategy for the development of a blood protein signature for breast cancer stratification and prognostication	Professor Stephen Pennington	Dr Sarah Hart	University of Liverpool
	Cameron Milne	Design and Development of Functionalised Hyaluronic Acid Biopolymers Towards Biomedical Engineering Applications	Professor Wenxin Wang	Dr Paul Thornton	University of Leeds
	Carmel Maria Moore	Neonatal Platelet and Blood Transfusions: Unanswered Questions	Prof Colm O'Donnell <b>Co-Supervisor:</b> Dr Anna Curley	Professor Irene Roberts	Oxford University
	Svea Deppe Morup	Optimising radiation dose and image quality of a newly developed CT system for cardiac and oncologic imaging	Associate Professor Shane Foley	Dr Andrew England	University College Cork
	Caoimhe Neville	The effects of cervical and endometrial cancer on the morphology, function and immune response of the human fallopian tube	Professor Sabine Koelle	Associate Professor Ravinder Anand-Ivell	University of Nottingham
Cliona O'Donnell	The benefit of a liraglutide-based weight loss regimen alone or in addition to standard CPAP therapy on metabolic function, atherosclerosis and inflammation in patients with obstructive sleep apnoea - a proof of concept study	Prof Silke Ryan	Prof Yuksel Peker	Koc University, Istanbul	

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
PhD	Lorna O'Donoghue	Modulation of platelet signalling by exercise, protein interaction and protein oxidation	Associate Prof Albert Smolenski	Prof Ylva Hellsten	University of Copenhagen
	Maurice O'Mara	Role of NADPH oxidase DUOX2 in cytoskeletal dynamics and host defence	Prof Ulla Knaus	Prof Miklós Geiszt	Semmelweis Medical University
	Bei Qiu	Polymer-Based Gene Therapy for Lung Cystic Fibrosis Disease	Prof Wenxin Wang <b>Co-Supervisors:</b> Dr Dario Sandoval & Dr Irene Lara-Sáez	Professor Eric Alton	Imperial College London
	Asif Rafee	Clinical, genetic and neurophysiological features of psychiatric and cognitive symptoms in cervical dystonia and the role of the superior colliculus	Prof Michael Hutchinson	Prof Douglas P. Munoz	Queen's University, Canada
	Irene Regan	Aspirin in children with congenital and acquired cardiac disease. Subtitle: Paediatric study of Aspirin Efficacy using Diagnostic and Monitoring Tools (PAED-M)	Professor Colin McMahon	Associate Prof Georges Jourdi	Université Paris Cité
	Anwasha Sarkar	An investigation into the cellular uptake of indocyanine green in colorectal cancer	Prof Ronan Cahill <b>Co-Supervisor:</b> Dr Stephen Thorpe	Dr Kenneth Rankin	University of Newcastle
	Stefano Savinelli	Metabolic complications in people living with HIV: the role of obesity, inflammation, lipid metabolism, and directions for future interventions.	Prof Eoin Feeney <b>Co-Supervisor:</b> Professor Patrick Mallon	Prof Dominic Reeds	Washington University-St Louis
	Rijian Song	Tough Injectable Hydrogels by Combining Elastic and Energy Dissipation	Prof Wenxin Wang	Associate Prof Louis Pitet	Hasselt University, Belgium
	Xiaoyu Wang	Aldehyde Functionalised Chitosan-based Novel Biomaterials for Addressing Biomedical Challenges	Prof Cormac Taylor	Prof Brian Amsden	Queen's University, Canada
	Mark Walsh	Delineating the role of malate dehydrogenase 2 in the hypoxia-driven metabolic reprogramming of metastatic cancers	Dr Luana Schito <b>Co-Supervisor:</b> Dr Sergio Rey	Dr Marco Tafani	University of Rome
Josie Ward	NADPH oxidase 1: mutation analysis and function	Prof Ulla Knaus	Dr Marie Jose Stasia	University Grenoble Alpes	

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
<b>PhD</b>	Martin Weber Kusk	Ultra-low radiation dose CT protocol for the measurement of left ventricular ejection fraction (LVEF)	Associate Prof Shane Foley	Prof Ricardo Budde	Erasmus Medical Centre, Rotterdam
	James White	Characterisation of Changes in the Adipose Tissue Proteome in Pre-clinical and Clinical Studies of Surgical and Medical Approaches to Obesity Therapy	Associate Prof Neil Docherty	Dr Maria Gema Medina Gomez	Universidad Rey Juan Carlos
<b>MD</b>	Thomas Campbell	Characterisation of Flower-Spray Endings of the Cardiac Atria of the Rat using a robotic system	Prof James Jones	Prof Joshua Pearse & Dr Guy Bewick	Western University Canada & University of Aberdeen
	Stephen Connolly	The SARS-CoV-2 Pandemic: Experience of an Urban, Tertiary Referral Teaching Hospital	Associate Professor Aoife Cotter	Prof Rebecca Cox	Haukeland University Hospital
	Heather Cronin	The Clinical and Genetic Spectrum of Hypertrophic Cardiomyopathy in an Irish Population	Dr Catherine McGorrian <b>Co-Supervisor:</b> Dr Joseph Galvin	Prof Ross Murphy	Trinity College Dublin
	Jane Cudmore	Designing a Model to Implement a Cost Effective High Risk Cancer Strategy within the National BowelScreen Programme	Associate Prof Jan Leyden	Dr Kevin Monahan	Imperial College London
	Sarah Cullivan	Pulmonary vascular disease in Ireland and the burden of haematological abnormalities: from molecular mechanisms to clinical outcomes	Professor Sean Gaine	Prof Guy MacGowan	Newcastle University
	Recie Davern	Thyroid Function Testing in Pregnancy	Associate Prof Mensud Hatunic	Dr Ruth Casey	University of Cambridge
	Jayne Doherty	Response to COVID-19 Vaccines in Patients with Inflammatory Bowel Disease and the Impact of Tumour Necrosis Factor Inhibitor therapy on Vaccine Response	Prof Glen Doherty	Dr Shaji Sebastian	Hull University Teaching Hospitals
	Fionan Donohoe	The menopause after cancer study (MACS) - A multimodal technology assisted intervention for the management of menopausal symptoms after cancer	Prof Donal Brennan	Dr Haitham Hamoda	King's College Hospital, London

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
MD	Somaia Elsayed	Medical Management of First Trimester Miscarriage Predictors of Efficacy and Assessment of Women's Experience	Assoc Prof Amy O'Higgins <b>Co-Supervisor:</b> Prof Michael Turner	Prof William Ledger	University of New South Wales
	Kate Glennon	Assessment of the role of the Tumour microenvironment and the checkpoint TIGIT in Metastatic high grade serous ovarian cancer	Prof Donal Brennan	Dr Dearbhaile Collins	University College Cork
	Susan Harvey	Determining the prevalence and clinical characteristics of paediatric paroxysmal movement disorders in Ireland	Dr Kathleen Gorman	Prof Emmanuel Flamand-Roze	Sorbonne University
	Daire Hurley	Analysis of Metformin's effect on Human Glaucomatous Lamina Cribrosa cells	Prof Colm O'Brien <b>Co-Supervisor:</b> Dr Mustapha Irnaten	Dr Neeru Vallabh	University of Liverpool
	Fiona Jones	The impact of inflammation on determinants of mucosal disease in Inflammatory Bowel Disease	Prof Glen Doherty <b>Co-Supervisor:</b> Prof Cormac Taylor	Prof Anthony Segal	University College London
	Niamh Kearney	Co-morbidities in hidradenitis suppurativa - cardiovascular disease and inflammatory bowel disease	Prof Brian Kirby <b>Co-Supervisor:</b> Dr Donal O'Kane	Prof Barbara Horvath	University of Groningen
	Niamh Keating	Exercise for women with Gestational Diabetes Mellitus and the impact of the COVID-19 pandemic on pregnancy and the postnatal period	Dr Mary Higgins <b>Co-Supervisors:</b> Prof Fionnuala McAuliffe & Assoc Prof Sharleen O'Reilly	Professor Howard Berger	University of Toronto
	Jeffrey Lambe	In vivo investigation of the modulation of retinal atrophy by ocrelizumab in multiple sclerosis: a prospective study	Prof Niall Tubridy	Dr Axel Petzold	University College London
	Kealan McElhinney	Investigating the apoptotic signature of lamina cribrosa cells and pulmonary fibroblasts	Prof Colm O'Brien <b>Co-Supervisor:</b> Dr Deborah Wallace	Dr Sarah Atkinson	Ulster University
	Catherine McNestry	Breastfeeding and its impact on womens' health	Prof Fionnuala McAuliffe <b>Co-Supervisor:</b> Dr Rachel Crowley	Prof Dharmindra Pasupathy	University of Sydney
Catherine McNestry	Breastfeeding and its impact on womens' health	Prof Fionnuala McAuliffe <b>Co-Supervisor:</b> Dr Rachel Crowley	Prof Dharmindra Pasupathy	University of Sydney	



## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
MD	Nicholas Ng	Genotype phenotype relationship in subjects with HNF-1 beta MODY and mitochondrial diabetes and deafness: Study of optimal diabetes treatment and establishment of biomarkers of disease	Associate Prof Maria Byrne <b>Co-Supervisor:</b> Prof Jochen Prehn	Prof Louis Philipson	University of Chicago
	Niamh O'Cathain	Randomised Placebo-controlled Trial of Early Targeted Treatment of Patent Ductus Arteriosus with Paracetamol in Extremely Low birth Weight Infants - A Pilot Study (ETAPA Phase 1)	Prof Jan Miletin	Prof Samir Gupta	Durham University
	Ross O'Carroll	Investigating microglial inflammatory responses during traumatic spinal cord injury using novel cellular imaging approaches	Dr Dearbhaile Dooley	Prof Susan Barnett	University of Glasgow
	Brendan O'Kelly	A study of the clinical facets of COVID-19 in the context of an acute hospital	Associate Prof Jack Lambert <b>Co-Supervisor:</b> Prof Walter Cullen	Prof Susanne Dam Poulsen	University of Copenhagen
	Sarah Powell	The role of AMPK related kinase 5 (ARK5/NUAK1) in lamina cribrosa fibrosis in glaucoma	Dr Deborah Wallace	Professor Donna M Peters	University of Wisconsin
	Najiha Rahman	Biomechanical properties of the cornea - understanding its relationship with collagen cross-linkers in normal and glaucoma population	Prof Colm O'Brien	Prof Rupert Bourne	Anglia Ruskin University
	Darragh Storan	Improving Physical and Psychological Disability in Crohn's and Colitis	Prof Hugh Mulcahy <b>Co-Supervisor:</b> Prof Louise McHugh	Associate Prof Ignacio Marin-Jimenez	Universidad Complutense de Madrid
	Attila Szigeti	Antecedents and predictors of aggression and violence in first-episode psychosis disorders - is there a relationship with substance use?	Prof Mary Clarke	Prof Erika Szily	Semmelweis Medical University
	Richard Tanner	Clinical studies in Transcatheter Aortic Valve Implantation: a) Prospective assessment of central blood response to TAVI using 24-hour ambulatory blood pressure monitoring b) Trends in TAVI practice and clinical outcomes in Ireland	Prof Ivan Casserly <b>Co-Supervisor:</b> Dr Marcus Butler	Prof Rodney Stables	University of Liverpool

## Research Student Graduates 2024

Programme	Student	Thesis title	Supervisor(s)	Special Extern Examiner	Examiner's Institution
MSc	Muhammad Adil	Development of Tools and Proteomic Strategy to Elucidate the Role of SUMOylation at the Intersection of SARS-CoV-2 Replication and Host Cellular Pathways	Associate Prof Virginie Gautier	Dr Gareth Brady	Trinity College Dublin
	Mariam Alketbi	Impact of cannabinoid type 1 receptor (CB1R) signalling on intestinal inflammation and motility	Dr Colm Collins <b>Co-Supervisor:</b> Prof Desmond Winter	Prof Stephen Alexander	University of Nottingham
	Shin Mei Chuah	Investigating Epigenetic Vulnerabilities in MYCN-Amplified Neuroblastoma	Dr Melinda Halasz	Dr Kyle Matchett	University of Ulster
	Lian Dahlan	Effect of High Fibre Diet and Short Chain Fatty Acids on Macrophage Function	Associate Prof John Baugh	Dr Fred Sheedy	Trinity College Dublin
	David Greaney	An isolated atrial preparation to study the molecular mechanisms of vagal volume receptors	Prof James Jones <b>Co-Supervisor:</b> Dr Thomas Campbell	Dr Farouk Markos	University College Cork
	Wen Chun Huang	Ocular toxicity secondary to hydroxychloroquine: Prevalence in an Irish patient cohort	Professor Colm O'Brien	Prof Giuliana Silvestri	Queen's University Belfast
	Nesa Karunadhas	Histological evaluation of endometrial cancer in bdi/hans rats and a pilot study of the impact of liraglutide and calorie restriction on tumour incidence and type	Associate Prof Neil Docherty	Dr Sine Phelan	University of Galway
	Martin Tze Wah Kueh	Interrogating biomarkers for, and the pathophysiological mechanisms of, obesity-related complications	Dr Fiona McGillicuddy	Dr Alexander Miras	University of Ulster
	Brendan Moran	Examining the efficacy of a home sleep apnoea testing kit and the effect of liraglutide 3.0mg on parameters of sleep apnoea and metrics of health and obesity	Professor Carel Le Roux	Professor Owen Lyons	University of Toronto

The School of Medicine extends its warmest congratulations to students and their supervisors who have graduated over the last year.



5  
STUDENT SUMMER  
RESEARCH AWARDS  
PROGRAMME 2024



## Student Summer Research Awards (SSRA) Programme 2024

The Student Summer Research Awards (SSRA) programme, coordinated by Dr Noreen Sheehy, is a research based initiative to support and showcase undergraduate research affiliated with the UCD School of Medicine.

The overarching aim of this eight-week programme is to provide undergraduate healthcare students with opportunities to undertake research at an early stage in their degrees, with a view to fostering a passion for enquiry, discovery, innovative and potentially translational research. These 8-week Summer research projects result in published conference proceedings and in many cases full peer reviewed publications.

In 2024, the SSRA programme continued to instil in our undergraduates an appreciation for the importance and relevance of research to medicine and indeed inspire some of them to consider a career as a clinical scientist.

130 students undertook SSRA projects in 2024, including students who were hosted in International Institutes across the United States, Canada, the United Kingdom, Africa and Europe. This is testament not only to the support of UCD alumni around the world but also to the incredible links that our students have made with international hosts.

The School of Medicine awarded nine Dean's Scholarship positions in 2024. Thanks also to the generosity of the benefactors of the Myles Smith family, the SSRA programme was able to continue to offer the Award for Research Excellence for the last time in 2024 in the areas of cardiology and vascular disease and rare cancers. The Clare O'Connor Summer Student Scholarship in Respiratory Research was also awarded in 2024. This award has been created thanks to generous donations by a number of individuals via Professor Muiris X FitzGerald, former Dean of Medicine and founder of the SVUH Cystic Fibrosis Unit.

The Martin Gaensler Scholarship was also awarded in 2024 as well as the Artificial Intelligence (AI) in Medicine Scholarship.

e: [ssra@ucd.ie](mailto:ssra@ucd.ie)

Ph: 716 6589



## SSRA Awardees 2024



Research Excellence **Gold Medal**

Patrick Morris

Quantifying the financial and healthcare impact of respiratory syncytial virus; a review of all cases admitted to Children's Health Ireland over a 3-month period during 2023

Children's Health Ireland at Crumlin

**Supervisors:** Dr Martina Healy

UCD School of Medicine Research Report 2023/24 Academic Year



Research Excellence **Silver Medal**

Razan Alborhan

The effects of mitoq on sperm quality

UCD School of Medicine & University of Munich, Germany

**Supervisors:** Prof Sabine Koelle



Research Excellence **Bronze Medal**

Róisín Sheehy

Profiles, needs and survival of women diagnosed with cervical cancer on the road to care programme at Hospice Africa Uganda

Institute of Hospice and Palliative Care in Africa, (Hospice Africa Uganda), Kampala, Uganda

**Supervisor:** Dr Jeffrey Glennon

## SSRA Awardees 2024 (cont.)



### Poster prize 1st Place

Eoin McCoy

Development of a gene-activated scaffold for spinal cord injury repair applications

Royal College of Surgeons in Ireland

Supervisor: Dr Adrian Dervan



### Poster prize 2nd Place

Ka Yan Alison Chao

Why do patients seek emergency care for problems that could be managed in primary care? A scoping review

UCD School of Medicine

Supervisor: Dr Geoff McCombe



### Poster prize 3rd Place

Beryl Arnould

A study investigating search and rescue dogs' ability to detect human odor in historical graves pre-1919 and unmarked burials

Wexford Human Remains Detection Services Ireland

Supervisor: Dr Michaela Davis



### Alfred Myles Smith Bursary 2023

Cyril Kazan

Lipid nanoparticle-encapsulated antisense oligonucleotides targeting a non-coding rna for atherosclerosis treatment: first characterisation of their effect on reverse cholesterol transport

University of Pennsylvania  
Perelman School of Medicine

Supervisor: Dr Elizabeth Hennessy



### Clare O'Connor Summer Student Scholarship

Kaya Stasiewicz

AFSC-CM improves alveolarization and dampens lung inflammation in an experimental model of Bronchopulmonary Dysplasia

The Hospital for Sick Children,  
Toronto, Canada

Supervisor: Dr Augusto Zani



### AI in Medicine Scholarship

Caoimhe Provost

Artificial intelligence (AI) models for cardiovascular disease risk prediction in primary and ambulatory care: a scoping review

UCD School of Medicine

Supervisor: Dr Joesph Gallagher



### Martin Gaensler Scholarship

Peter Benson

Platelet function in diet-induced obesity: a longitudinal study in mice

Medical University of Vienna, Austria

Supervisor: Prof Alice Assinger



### Kathleen Lynn Summer Student Scholarship

Anna Fitzgerald

The empathy study – excess mortality in pituitary adenoma patients treated with radiotherapy

UCD School of Medicine

Supervisor: Dr Joesph Gallagher

# 6 ACADEMIC CENTRES

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[www.ucd.ie/medicine/ourresearch/researchcentres](http://www.ucd.ie/medicine/ourresearch/researchcentres)

## UCD Academic Centre on Rare Diseases

[www.ucd.ie/medicine/research/researchcentres/ucdacademiccentreonrare diseases](http://www.ucd.ie/medicine/research/researchcentres/ucdacademiccentreonrare diseases)

The UCD Academic Centre on Rare Diseases (ACoRD) investigates rare genetic diseases, particularly those affecting the Irish population and the Irish Traveller population, with a view to the identification of the mutation(s) causing the diseases. Once a causal mutation(s) is established, the objective is to develop diagnostic tests for translation back into a clinical setting. Once a gene is implicated, our Principal Investigators work to further investigate the gene function and biological pathways involved in the condition. The ultimate aim is to investigate those conditions/genes which might be amenable to drug targeting or gene therapy.

## UCD Centre for Arthritis Research (CAR)

[www.ucd.ie/medicine/research/researchcentres/ucdcentreforarthritisresearch](http://www.ucd.ie/medicine/research/researchcentres/ucdcentreforarthritisresearch)



**Director**  
Professor Gerry Wilson

UCD Centre for Arthritis Research (CAR) is based at UCD Conway Institute and comprises researchers in UCD, St Vincent University Hospital and Mater Misericordiae University Hospital. Our interdisciplinary research covers proteomics, computational biology, genetics, stratified medicines, sports and exercise, immunology mechanisms of disease and animal models of rheumatoid arthritis. Our Centre has proven highly successful in developing translational experimental approaches including training and performance of mini arthroscopy and tissue biopsy. The programme based across the UCD Clinical Research Centre (CRC), provides whole tissue biopsy explant cultures for research that is an entirely unique resource. Our teams' ability to perform this research has led to both academic and industry collaborations attracting significant non-exchequer funding from both the EU and the US. The expertise for this highly developed research programme has led to novel translational research outputs including presentations at the highest quality international research meetings and publication in high impact factor peer-review journals. The Centre has major Patient and Public Involvement (PPI) at all stages of the research process including PPI panels in individual projects and an annual PPI conference. We also work closely with the UCD PPI Ignite staff.

The research output of the Centre was reviewed favourably by the Academic Council Committee on Academic Centres and was recommended for continuance for a further 5 years.

## Key Publications 2023/24

- C. F. Yap *et al.*, HLA-DRB1 and HLA-DQA1 associated with immunogenicity to adalimumab therapy in patients with rheumatoid arthritis. *Ann Rheum Dis* 83, 263-265 (2024).
- A. Sepriano *et al.*, Adding ultrasound to treat-to-target shows no benefit in achieving clinical remission nor in slowing radiographic progression in rheumatoid arthritis: results from a multicenter prospective cohort. *Clin Rheumatol* 43, 1833-1844 (2024).
- H. Schwerdt, G. Christe, J. W. Pate, C. Blake, K. M. Smart, The prevalence of chronic pain in adolescents in Central Switzerland: A cross-sectional school-based study protocol. *PLoS One* 19, e0297088 (2024).
- R. Pryce *et al.*, Patients' experiences following total knee arthroplasty: a qualitative evidence synthesis. *Disabil Rehabil* 46, 214-231 (2024).
- T. Pascart *et al.*, Features Associated With Different Inflammatory Phenotypes of Calcium Pyrophosphate Deposition Disease: Study Using Data From the International American College of Rheumatology/EULAR Calcium Pyrophosphate Deposition Classification Criteria Cohort. *Arthritis Rheumatol* 10.1002/art.42962 (2024).



## Key Publications

2023/24

(cont.)

G. M. McCarthy, J. Stack, Osteoarthritis and basic calcium phosphate crystals - The enemy lurks within! *Osteoarthritis Cartilage* 10.1016/j.joca.2024.07.015 (2024).

O. M. M, M. B. Casey, K. M. Smart, A survey of physiotherapist managers in Ireland and their views on the role of Advanced Practice Physiotherapists. *Physiother Res Int* 29, e2064 (2024)

S. F. Ling *et al.*, A proteomics study of rheumatoid arthritis patients on etanercept identifies putative biomarkers associated with clinical outcome measures. *Rheumatology (Oxford)* 63, 1015-1021 (2024).

S. F. Ling *et al.*, Population Pharmacokinetic Analysis and Simulation of Alternative Dosing Regimens for Biosimilars to Adalimumab and Etanercept in Patients with Rheumatoid Arthritis. *Pharmaceutics* 16 (2024).

N. S. Hinwood *et al.*, The experiences of people living with obesity and chronic pain: A Qualitative Evidence Synthesis (QES) protocol. *PLoS One* 19, e0302051 (2024).

O. FitzGerald *et al.*, Phase 2 Trial of Deucravacitinib in Psoriatic Arthritis: Biomarkers Associated With Disease Activity, Pharmacodynamics, and Clinical Responses. *Arthritis Rheumatol* 76, 1397-1407 (2024).

C. Charles-Schoeman *et al.*, Impact of Upadacitinib on Laboratory Parameters and Related Adverse Events in Patients with RA: Integrated Data Up to 6.5 Years. *Rheumatol Ther* 11, 157-175 (2024).

T. J. Major *et al.*, A genome-wide association analysis reveals new pathogenic pathways in gout. *Nat Genet* 56, 2392-2406 (2024).

D. D. Gladman, O. FitzGerald, A. W. Armstrong, N. Goel, A. B. Gottlieb, Prologue: Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) 2023 Annual Meeting. *J Rheumatol* 51, 1-5 (2024).

## Key Grants

2023/24

Hippocrates Innovative Medicines Initiative (IMI)-funded European consortium which is focusing on addressing unmet needs in Psoriatic Arthritis (PsA) (<https://www.hippocrates-imi.eu/>). (Prof Stephen Pennington & Prof Oliver Fitzgerald).

HRB Investigator Led grant: Discovering and modulating mechanisms by which Peptidylglycine alpha-Amidating Monooxygenase (PAM) influences the risk of genetically inherited tissue damage in Rheumatoid Arthritis. (Prof Gerry Wilson).

## Centre News

2023/24

We held our annual Patient and Public Involvement (PPI) meeting on 6 November 2023. Over 80 registrants attended via zoom on the topic of 'Rare Rheumatology; niche conditions and future directions'. It involved 8 national and international speakers and also a range of recorded patient stories. This is viewable on the UCD CAR website:

[www.ucd.ie/medicine/research/researchcentres/ucdcentreforarthritisresearch/events/pastevents](http://www.ucd.ie/medicine/research/researchcentres/ucdcentreforarthritisresearch/events/pastevents)



## Director

Dr Vadim Zhernovkov

There is an amazing diversity and quantity of information (with increasingly complex linkages) emerging in the biological and medical sciences. Bioinformatics is the use of computational approaches to make sense of biology, especially to analyse molecular sequences of DNA, RNA and protein.

The UCD Centre for Bioinformatics is focused on advancing the quality of bioinformatics science. It supports academic researchers working in the areas of bioinformatics, genomics and molecular evolution. It encourages interdisciplinary collaborations inside and outside UCD through PhD programmes, teaching and software provision. Key areas include sequence alignment, molecular evolution, short peptides, protein structure prediction, cancer and pathogens.

## Key Publications

2023/24

Machine learning and deep learning for classifying the justification of brain CT referrals. Potočník J, Thomas E, Lawlor A, Kearney D, Heffernan EJ, Killeen RP, Foley SJ. *Eur Radiol.* 2024 Dec;34(12):7944-7952. doi: 10.1007/s00330-024-10851-z

Spatial proteomics and transcriptomics of the maternal-fetal interface in placenta accreta spectrum. Bartels HC, Hameed S, Young C, Nabhan M, Downey P, Curran KM, McCormack J, Fabre A, Kolch W, Zhernovkov V, Brennan DJ. *Transl Res.* 2024 Sep 28;274:67-80. doi: 10.1016/j.trsl.2024.09.004.

Cell-specific models reveal conformation-specific RAF inhibitor combinations that synergistically inhibit ERK signalling in pancreatic cancer cells. Sevrin T, Imoto H, Robertson S, Rauch N, Dyn'ko U, Koubova K, Wynne K, Kolch W, Rukhlenko OS, Kholodenko BN. *Cell Rep.* 2024 Sep 24;43(9):114710. doi: 10.1016/j.celrep.2024.114710.

AutoPeptideML: a study on how to build more trustworthy peptide bioactivity predictors. Fernández-Díaz R, Cossio-Pérez R, Agoni C, Lam HT, Lopez V, Shields DC. *Bioinformatics.* 2024 Sep 2;40(9):btae555. doi: 10.1093/bioinformatics/btae555.

BTLA and PD-1 signals attenuate TCR-mediated transcriptomic changes. Arifin MZ, Leitner J, Egan D, Waidhofer-Söllner P, Kolch W, Zhernovkov V, Steinberger P. *iScience.* 2024 Jun 12;27(7):110253. doi: 10.1016/j.isci.2024.110253.

Cell State Transition Models Stratify Breast Cancer Cell Phenotypes and Reveal New Therapeutic Targets. Rukhlenko OS, Imoto H, Tambde A, McGillicuddy A, Junk P, Tuliakova A, Kolch W, Kholodenko BN. *Cancers (Basel).* 2024 Jun 27;16(13):2354. doi: 10.3390/cancers16132354.

A Systems Biology Approach to Understand the Racial Disparities in Colorectal Cancer. Nwaokorie A, Kolch W, Fey D. *Cancer Res Commun.* 2024 Jan 12;4(1):103-117. doi: 10.1158/2767-9764.CRC-22-0464.

## Key Awards

2023/24

The UCD Conway Institute and the Systems Biology Ireland have won the Best Education Outreach award at the 2024 Education Awards ceremony for a suite of joint initiatives including the Amgen Biotech Experience and the CuriosiTY work experience programme. These awards recognise and celebrate excellence in the third level education sector on the island of Ireland among other public and private institutions.

## Key Grants

2023/24

Precision Oncology Ireland. This is a consortium of 5 Irish Universities, 6 Irish Cancer Research Charities, and 7 international companies aiming to develop new diagnostics and therapeutics for personalised cancer treatment. The Consortium is part-funded by Science Foundation Ireland under their Strategic Partnership Programme and is co-ordinated by Systems Biology Ireland.

Science Foundation Ireland (SFI) Centre for Research Training (CRT) PhD programme. The SFI CRT PhD programme now has 25 PhD students funded in UCD across multiple schools (Medicine, SBES, SBBS, Agriculture and Food Science, Veterinary Medicine, Computer Science, Mathematics and Statistics). The programme has run cloud computing resources for the PhD students in collaboration with the CloudCIX company.

The SFI Frontiers for the Future awards 2024:

- Prof Cormac Taylor, UCD School of Medicine, UCD Conway Institute, "GLYCOPLEX: A New Entity Regulating Glucose Metabolism in Hypoxic Cells".
- Prof Fionnuala McAuliffe, UCD School of Medicine, UCD Conway Institute, "Preterm birth Prevention with Oral Probiotics: A Double-Blinded Placebo Controlled Randomized Controlled Trial on Lactobacillus-Crispatus-Containing Probiotic Therapy in Women at Risk of Preterm Birth (The PrePOP Study)".
- Prof Ulla Knaus, UCD School of Medicine, UCD Conway Institute, "Raising Oxidants for Immune Protection in Infectious Disease".
- Prof Walter Kolch, UCD School of Medicine, UCD Conway Institute, "The Role of Dynamic Protein-Protein Interaction Changes in Adaptive Drug Resistance."
- Systems Biology Ireland (SBI) at University College Dublin (UCD) and The Quantitative Biosciences Institute (QBI) at the University of California, San Francisco (UCSF), announced the 2024 winners of the joint Research Fellowship Awards (RFAs) in the areas of network biology and drug/drug target discovery:
  - "Overcoming Resistance to HER2-Targeted Therapies in Breast Cancer," from Oleksii Rukhlenko (SBI/UCD), Natalia Jura (QBI-UCSF) and Kliment Verba (QBI-UCSF);
  - "Targeting the lysosomal proteome in Huntington's Disease," from Danielle Swaney (QBI-UCSF) and Jeffrey Glennon (UCD); and
  - "Overcoming Resistance to MAPK Pathway Inhibitors in Pancreatic Ductal Adenocarcinoma," from Nevan Krogan (QBI-UCSF), Boris Kholodenko (SBI/UCD) and Nadia Arang (QBI-UCSF).

## Centre News

2023/24

MSc in Artificial Intelligence for Medicine and Medical Research. Key achievements and improvements from 2024:

- Our graduates work in the biopharmaceutical industry, healthcare sector or biomedical research. We are proud of our 2024 graduates who have secured prestigious PhD positions at top research centres such as the Icahn School of Medicine at Mount Sinai and Harvard Medical School/Dana-Farber Cancer Institute.
- We fully launched our new module, Research Internship. The aim of this module is to provide hands-on experience in data analysis using real-life problem-solving projects in collaboration with our academic and clinical partners. Students use machine learning methods provided in the core curriculum of the MSc programme to solve biological or medical challenges together with mentors from academia, hospitals and industry. This year our students worked with supervisors from research laboratories (UCD, Systems Biology Ireland, Conway Institute, School of Computer Science UCD, School of Mathematics and Statistics UCD, RCSI), clinical laboratories (St. Vincent's University Hospital) and industry (Novartis Ireland, TK Analytics).
- As part of the Research Internship modules, we launched a collaboration with University of California San Francisco (UCSF, USA). We offered a two-stage internship: 6-month online mentoring of the project and an in person follow up internship at UCSF after completion of our programme.
- New Part-time programme. Aimed at working professionals, the new part-time option spans two years and offers a mix of face-to-face and online modules, ensuring flexibility for working students.



**Director**  
Associate Professor  
Eoin O'Cearbhaill

The UCD Centre for Biomedical Engineering (CBME) creates a focal point for Biomedical Engineering, a key research strength for UCD.

The aim of the UCD Centre for Biomedical Engineering (CBME) is to:

- Conduct strong interdisciplinary research and education in important areas of national and global need, representing a major contribution to the field of Biomedical Engineering and associated fields. Many of the publications are based on collaborative projects and co-authored by multiple centre Principal Investigators.
- Attract and retain an excellent and diverse cohort of students, faculty and staff and increase our affiliated academic and support staff.
- Build our engagement locally, nationally and internationally
- Develop and strengthen our University community.
- Further develop world-class facilities to support the vision.



**Director**  
Professor Catherine  
Godson

The UCD Diabetes Complications Research Centre (DCRC) focuses on the macro and microvascular complications of diabetes and obesity.

We comprise a multidisciplinary research group with expertise in molecular cell biology, genetics, bioinformatics, pharmacology, systems biology, chemical pathology and clinical medicine. Investigators are based in the UCD Conway Institute, Mater Misericordiae University Hospital and St Vincent's University Hospital and work closely with international collaborators in academia and industry.

Research programmes are funded by national and international sources including Science Foundation Ireland (SFI), The European Union, Wellcome Trust, the National Institutes of Health (NIH), the Juvenile Diabetes Research Foundation (JDRF), European Renal Association (ERA), European Association for the Study of Diabetes (EASD) and bio pharma industry. The DCRC is primarily associated with the UCD School of Medicine and also the School of Biomolecular and Biomedical Sciences (SBBS), School of Agriculture and Food Science and School of Public Health, Physiotherapy and Sports Science (SPPSS). We are based in the UCD Conway Institute of Biomolecular and Biomedical Research.

### Mission Statement

The Mission of the UCD Diabetes Complications Research Centre is to advance our knowledge of the initiation, progression and regression of vascular complications of diabetes and obesity.

## Key Publications

2023/24

Acevedo, A., Jones, A. E., Danna, B. T., Turner, R., Montales, K. P., Benincá, C., Reue, K., Shirihai, O. S., Stiles, L., Wallace, M., Wang, Y., Bertholet, A. M., & Divakaruni, A. S. (2024). The BCKDK inhibitor BT2 is a chemical uncoupler that lowers mitochondrial ROS production and de novo lipogenesis. *J Biol Chem*, *300*(3), 105702. <https://pubmed.ncbi.nlm.nih.gov/37645724/>

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## Key Awards

2023/24

Professor Catherine Godson presented the prestigious Barry M. Brenner, MD, Endowed Lectureship on "*Toward Solutions! Pro-Resolving Lipid Mediators of Metabolism and Inflammation*" at the American Society of Nephrology (ASN) Kidney Week Conference in Philadelphia.

Professor Carel Le Roux was presented with the Irish Research Council Researcher of the Year Award 2023 for his research work in the management of the disease of obesity.

## Key Grants

2023/24

UCD Ad Astra Fellowship: Dr Christopher Shannon was awarded an Ad Astra Fellowship in the School of Medicine. Christopher was previously a DevelopMed MSCA Postdoctoral Fellow in Professor Helen Roche's team.

UCD Conway Directors Fund: Dr Darrell Andrews received €3,000 for the project "*Developing and characterising a novel kidney organoid-immune cell co-culture system for the study of inflammatory renal disease*".

UCD Sustainability Challenge Fund; Dr Eoin Brennan received €12,000 for the project "*Micro/nanoplastics: novel risk factor for atherosclerosis*".

## Centre News

2023/24

Dr Antonino Cacace (Godson lab) defended his PhD thesis "*Investigation of Biological Responses to Synthetic Lipoxin Mimetics*".

Prof Carel Le Roux was named an inaugural Highly Ranked Scholar by ScholarGPS for his work in obesity [https://scholargps.com/scholars/94361047483980/carel-w-le-roux?tracking\\_id=239a78672d8a5b7e2633](https://scholargps.com/scholars/94361047483980/carel-w-le-roux?tracking_id=239a78672d8a5b7e2633).

Ms Sara Knezevic (Crean lab) was Showcase Talk Winner at the UCD School of Biomolecular and Biomedical Science Research Day for her presentation "*How to Build a Kidney*".

Ms Sara Knezevic (Crean lab) was awarded the Best Moderated Poster Award at the Irish Nephrology Society Summer Meeting for her poster "*Generating Induced Pluripotent Stem Cells from Urine-derived Epithelial Cells*".



**Director**  
Professor Walter Cullen

UCD Centre for Emergency Medical Science (UCD CEMS) engages in research, development, education and training in pre-hospital emergency care. The Centre is located in the Health Sciences Centre at the UCD School of Medicine, Belfield, Dublin 4.

The principal activities of UCD CEMS are:

- Provision of graduate and undergraduate education and training in pre-hospital emergency care,
- Provision of short courses in immediate care - including cardiac, trauma and paediatrics,
- Management and delivery of the MERIT Project (Medical Emergency Responders: Integration & Training).

## Key Publications

2023/24

Assoc Prof Tomás Barry, Alice Kasemiire, Martin Quinn, Conor Deasy, Gerard Bury, Siobhan Masterson, Ricardo Segurado, Andrew W Murphy, "Health systems developments and predictors of bystander CPR in Ireland", *Resuscitation Plus*, Volume 19, 2024,

Assoc Prof Tomás Barry, Doctoral Researcher Alice Kasemiire, Dr Martin Quinn, Prof Conor Deasy, Prof Gerard Bury, Dr Siobhan Masterson, Dr Ricardo Segurado, Prof Andrew W Murphy, "Resuscitation for out-of-hospital cardiac arrest in Ireland 2012–2020: Modelling national temporal developments and survival predictors", *Resuscitation Plus*, Volume 18, 2024, Assoc Prof Tomás Barry, Doctoral Researcher Alice Kasemiire, Dr Martin Quinn, Prof Conor Deasy, Prof Gerard Bury, Dr Siobhan Masterson, Dr Ricardo Segurado, Prof Andrew W. Murphy, Bystander defibrillation for out-of-hospital cardiac arrest in Ireland, *Resuscitation Plus*, Volume 19, 2024, 100712, ISSN 2666-5204, <https://doi.org/10.1016/j.resplu.2024.100712>. ([www.sciencedirect.com/science/article/pii/S2666520424001632](http://www.sciencedirect.com/science/article/pii/S2666520424001632))

## Key Grants

2023/24

- HSE Voluntary / Non-Statutory Agencies - €200,000
- Irish Red Cross - €250,000
- UCD Foundation (philanthropy) - €6,916.39

## Centre Updates

2023/24

Ukraine Trauma Project (UTP)

- The UTP team continued to train and equip medics in performing emergency, life-saving interventions.
- On 25 June 2024 the Joint Committee on Foreign Affairs and Defence met to discuss the work of the UCD Ukraine Trauma Project organisation.
- On 3 July 2024, Ukrainian Members of Parliament visited UCD, attending an event regarding the UCD Ukraine Trauma Project. UCD President Professor Orla Feely attended, as did many who have provided medical expertise, training and equipment for the Project.

UCD CEMS trained 303 GPs, Physiotherapists, Nurses, and other healthcare providers in Immediate Care Cardiac and Trauma courses and Immediate Care Pitchside courses.

UCD CEMS worked with the FAI in securing UEFA Doctor Education Funding to provide training for their medics in Pitchside Emergencies.



**Director**  
Professor Patrick Mallon

CEPHR brings together researchers and research groups from across UCD who focus on infection-related research.

CEPHR comprises state-of-the-art, secure, clinical and laboratory research facilities with specialized core research infrastructure all integrated under a single governance structure.

CEPHR is physically located in three principal UCD hubs: the Belfield Hub, the MMUH Hub (based at the Mater Misericordiae University Hospital) and the SVUH Hub (located in the Education & Research Centre at St Vincent's University Hospital).

CEPHR facilities at Belfield are specifically designed for research on the pathogenesis of a range of infectious diseases and comprise Biosafety level 2 (BL2) and BL3 containment facilities for safety manipulation of pathogens and dedicated fully equipped laboratories for molecular virology, cellular biology and immunology, including tissue culture labs, -80°C freezers and a vapour-phase liquid nitrogen system for PBMC cryopreservation, all linked within a continuous, remotely monitored biobanking facility.

CEPHR members comprise clinical, translational, statistical and biomedical researchers working interactively on aspects of host and pathogen research from the UCD School of Medicine, the UCD School of Veterinary Medicine, the UCD School of Biology and Biological Sciences, and the UCD School of Politics and International Relations.

At present, CEPHR includes 16 full-time academic research staff, 5 Infectious Diseases Consultants, 12 Infectious Diseases Specialist Registrars, 1 Senior Project Manager (PhD, Research Fellow), 3 Project Managers, 1 Research administrator, 1 Data Manager, 1 Senior Laboratory attendant, 10 FTE PhD students (including both clinical and laboratory expertise), 3 FTE post-doctoral researchers and 8 Research Assistant positions (data, site coordination and lab support).

CEPHR provides UCD with a platform to further develop its international reputation in pathogenesis-driven research in Infectious Diseases. Since 2019, CEPHR has continued to expand beyond human-focused research to incorporate a broad range of infections and hosts – including non-human host research in keeping with the 'One Health' university strategy within the College of Health and Agricultural Sciences.

Through national and international collaborations, CEPHR has exploited emerging funding opportunities in clinical trials, personalised medicine and stratification of infectious diseases. CEPHR has received funding from the major national research funders (Health Research Board, Science Foundation Ireland, Enterprise Ireland), the European Union (HORIZON) and the United States' National Institutes of Health (NIH).

## Key Publications

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## Key Grants

2023/24

Expanding a prospective, clinical trial examining the immune response of participants receiving Modified Vaccinia Ankara vaccine to Africa (MPOXVAX AFRIVAC). Funder: GH - EDCTP3, EU H2020. Funding: € 1.3M. Duration: 30 months. Start date: 1 Oct 2024. CI: P. Mallon; PI: E. Feeney. Coordinator: UCD.

European PROactive Adaptive Clinical Trials network (EU-PROACT). Funder: Horizon Europe. Funding: € 17M (941K to UCD). Duration: 60 months. Start date: Jan 2025. PI: P. Mallon. Coordinator: INSERM (France).

One Health – ALL Ireland for European Surveillance (OH-ALLIES). Funder: EU4 Health. Total amount € 700K. Duration: 2024 - 2026. PIs: Virginie Gautier, Paddy Mallon. Coordinator: DAFM; Partners: UCD, UoG, AFBI, IEC.

Pathophysiology Analysis Towards a Healthier Global Reduction of Chronic Lyme Disease (PATHLYME). Funder: Horizon Europe. Funding: 6,6M. Start date: Jan 2024. PI: Prof John Lambert.

Building Pandemic-Preparedness Through The Application Of Novel Wet Lab And Bioinformatic Methods Using An Agnostic Sampling Approach. Funding: Irish Research Council Postdoctoral Award (PI). PI: Professor Nicola Fletcher.

Implementation of the St. Vincent's OPAT Program quality management system project. Funder: HSE's Spark Innovation Programme. Funds: € 13,284. PI: C. Mejia Chew.

Trustworthiness in Global Health study. Bill and Melinda Gates Foundation. Funding: \$105. PI: Prof Conrad Keating

CARES-1 Ambulatory antibiotic therapies for congenital syphilis project. Funder: Bill and Melinda Gates Foundation. Funding: \$2,5M. PI: B. Freyne. (pre-approval stage with funder)

## Centre News

2023/24

### CEPHR Structure:

CEPHR has developed a new Strategy (2024-2027) arising from a Strategy Development meeting on 20 June 2024 with the purpose of reviewing and defining the vision, mission and centre strategy for the next 3 years. In addition, a revised governance structure is being implemented, including a CEPHR Executive Committee and subcommittees who will implement CEPHR strategy. As part of CEPHR strategic development, both CEPHR Community Advisory Board (CAB) and CEPHR International Advisory Board (IAB) provide advice on the proposed strategy. The CAB, established in 2022, meets at least twice a year while the IAB, established in 2023, meets annually, with the 2024 meeting scheduled in Nov 2024.

CEPHR has recently expanded its infrastructure by establishing a Project Management Office, located at the Belfield Hub, with over 6 staff focused on managing projects from a logistical, regulatory and scientific perspective. A new Data Management Office has also been developed to oversee the data our group generates/handles.

CEPHR laboratory infrastructure was expanded by adding a newly built virus isolation room, equipped with incubators and Biological Safety Cabinets. Additionally, CEPHR has obtained state-of-the-art instrumentation, incorporating the Olink technology for advanced proteomics work, a Seahorse Real-Time Cell Metabolic Analysis system, and a Cell Sorter (Cytotflex), significantly increasing our scientific output. Our group is committed to continuously increasing our biobanking capacity, incorporating 2 new Ultra Low-Temperature Freezers and 1 new Liquid Nitrogen Dewar over the past 6 months. To ensure all the laboratory infrastructure is managed properly, our group has acquired a new Laboratory Information Management System through a national tender process (MBioLims).

### CEPHR Personnel:

Professor Patrick Mallon continues on the Board of the European AIDS Clinical Society where he is Head of Education. He was also invited as a member of the International Scientific Evaluation Committee on Cohorts, led by The ANRS emerging infectious diseases (ANRS MIE) is an autonomous agency of Inserm. Professor Mallon also coordinated a national Expression of Interest at the request of Research Ireland related to Ireland's participation in the upcoming European Partnership for Pandemic Preparedness - HORIZON-HLTH-2024-DISEASE-12-01.

Professor Mary Horgan was named interim Chief Medical Officer (CMO) at the Department of Health in June 2024 by the Government of Ireland. The Chief Medical Officer plays a critical role in developing policy and legislation regarding patient safety, quality in health care, and in developing strategies to support and improve population health.

Professor Stephen Gordon completed a 4-year term as External Examiner of the Senior Sophister Microbiology degree in Trinity College Dublin, and One Health Models of Disease Wellcome PhD programme at University of Edinburgh.

Professor Jane O'Halloran was appointed as a member of the editorial board of the American Society of Microbiology (ASM) Case Reports Journal and as an editor of the 2nd Edition of Comprehensive Review in Infectious Diseases and the Self-Assessment in Infectious Diseases: Questions and Answers Quarter 1 2025.

Professor Eoin Feeny was appointed as the National Specialty Director, Infectious Diseases Higher Specialist Training Programme and as a member EACS European HIV Diploma Question writing committee.

Associate Professor Aoife Cotter was appointed as Member of the Standard Setting panel for the European Diploma in HIV Medicine (EACS).

## Centre News

2023/24

Associate Professor Aoife Cotter is the National Co-ordinator WAVE project - European Survey on Healthcare Perception in Older Women with HIV.

### **Education, dissemination and outreach:**

Professor Patrick Mallon visited the University of Texas Medical Branch (UTMB) in March 2024. The UTMB houses one of only two BCL4 facilities in the US (National Laboratory Galveston). UCD and UTMB are working on a memorandum of understanding (MOU) to increase educational and research activities in Infectious Diseases between the two universities.

CEPHR European HIV Seminars ran its 6th Annual meeting on 21-22 June 2024 in Dublin. The meeting focused on 'Syndemics' brought together an exciting panel of international key opinion leaders in the field coupled with distinguished local speakers covering HIV, MPOX, COVID, climatic change and emergent infections and attracted over 130 participants.

Professor Stephen Gordon provided a microbiology mini-tutorial for the 'Typhoidland' exhibition at the Royal College of Physicians on the 13th and 16th June 2024.

Professor Eoin Feeney organised and chaired RCPI webinar on Mpox, 24 September 2024.



**Director**  
Associate Professor Amy  
O'Higgins

## Key Publications 2023/24

The UCD Centre for Human Reproduction at The Coombe Women & Infants University Hospital is focussed on improving outcomes in women's health and for parents and newborns through advancing clinical research and novel technology with multi-professional, multi-disciplinary collaboration. The research outputs from the Centre have provided guidance on maternity services development.

The team comprises of Neonatologists, Obstetricians, Gynaecologists and Anaesthesiologists with collaborative projects spanning areas of Epidemiology, Public Health, Human Performance, Computing, Dietetics, Midwifery, Haematology, Medical Science, Medical Education and Engineering.

1. Germaine MA, O'Higgins AC, Healy G, Egan B. 1968-LB: Early Prediction of Gestational Diabetes Mellitus Using Electronic Health Records and Machine Learning. *Diabetes* 73 (Supplement\_1) 2024 Jun 14  
[https://diabetesjournals.org/diabetes/article/73/Supplement\\_1/1968-LB/156371](https://diabetesjournals.org/diabetes/article/73/Supplement_1/1968-LB/156371)
2. Tarafdar A, Xie J, Gowen A, O'Higgins AC, Xu JL. Advanced optical photothermal infrared spectroscopy for comprehensive characterization of microplastics from intravenous fluid delivery systems. *Sci Total Environ*. 2024 Jun 15;929:172648. doi: 10.1016/j.scitotenv.2024.172648. Epub 2024 Apr 20. PMID:38649036.
3. Kennedy C, Al-Tikriti S, Abu Bakr K, Cooney N, Donnelly S, McNulty J, O'Higgins AC, Higgins M. Exploring patient involvement in obstetrics and gynaecology education for medical students: a scoping review protocol. *BMJ Open*. 2024. In press.
4. Brady A, Hughes E, Besharatian Y, Tan T, Popivanov P. Postnatal recall of epidural information compared between patients who attended an anaesthesiologist-led virtual antenatal epidural class and those who did not: A single-centre, cross-sectional survey. *Eur J Anaesthesiol*. 2024 Feb 1;41(2):148-150. doi: 10.1097/EJA.0000000000001878.
5. Harnett C, Connors J, Kelly S, Tan T, Howle R. Evaluation of the 'Sip Til Send' regimen before elective caesarean delivery using bedside gastric ultrasound: A paired cohort pragmatic study. *Eur J Anaesthesiol*. 2024 Feb 1;41(2):129-135. doi: 10.1097/EJA.0000000000001926. Epub 2023 Nov 20. PMID:37982593.
6. Kinoshita M, Chacko I, Conboy L, O'Sullivan A, White MJ, Doolan A. Impact of a dedicated NICU lactation specialist for VLBW infants. *Ir Med J*; July-August 2024; Vol 117; No. 7; P989. 2024 Aug 22.
7. Kinoshita M, White MJ, Doolan A. Clinical assessment of breastfeeding in preterm infants. *Eur J Clin Nutr*. 2024 Oct;78(10):825-829. Doi: 10.1038/s41430-024-01471-3. Epub 2024 Jul 9. PMID: 38982131; PMCID: PMC11458479.
8. Kinoshita M, White MJ, Doolan A. Test Weight Validation in Preterm Infants. *Breastfeeding Medicine*. In press
9. McGarrigle C, Hartigan S, Duffy O, Tan T. Perspectives on sustainable practices in the use of nitrous oxide for labour analgesia: A patient and staff survey. *Eur J Anaesthesiol*. 2024 Jul 1;41(7):473-479. doi: 10.1097/EJA.0000000000002005. Epub 2024 May 16. PMID: 38757157.
10. Turner MJ. Delivery after a previous cesarean section reviewed. *Int J Gynaecol Obstet*. 2023 Dec;163(3):757-762. doi: 10.1002/ijgo.14854. Epub 2023 May 17. PMID: 37194553.
11. Turner MJ. Plasma glucose measurement and preanalytical glycolysis. *The Lancet*, 2024 Oct, Volume 404, Issue 10462, P1640.  
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## Key Awards

2023/24

Ka Yuet ES, Kileen S, Murphy L, McAuliffe FM, O'Higgins AC. Trends in prevalence and pregnancy outcomes in those attending for antenatal care following bariatric surgery. The Coombe Hospital, Master's Medal, 2nd place prize. Oct 2024.

## Key Grants

2023/24

1. Understanding the socio-economic drivers of maternal obesity and cardiovascular disease risk to improve long-term population health. HRB/Secondary Data Analysis Project. O'Higgins AC. €240,764.
2. Randomised Placebo-Controlled Trial of Early Targeted Treatment of Patent Ductus Arteriosus with Paracetamol in Extremely Low Birth Weight Infants (ETAPA). HRB/Definitive Intervention and Feasibility Awards. Miletin J. €718,576.00
3. Safeguarding the Brain Of Our Smallest Children – an open-label phase-III randomised trial of cerebral oximetry combined with a treatment guideline versus treatment as usual in premature infants. HRB/Definitive Intervention and Feasibility Awards. Miletin J. € 982,647.
4. Individualized mask for infants requiring nasal Continuous Positive Airway Pressure – tailored Mask (tMASK) feasibility study. SFI/Frontiers for Future Project. Miletin J. €374,911.

## Centre Updates

2023/24

Doctor of Medicine degrees were awarded to Dr Syeda Farah Nazir for work on 'The role of continuous glucose monitoring in early pregnancy in predicting the development of gestational diabetes mellitus and pregnancy outcomes' and to Dr Somaia Elsayed for work on 'Medical management of first trimester miscarriage: predictors of efficacy and assessment of women's experience'.

The Centre joined the AI\_PREMie project, a trans-disciplinary multi-institutional project using artificial intelligence to disrupt diagnostic practices in pre-eclampsia and save lives of mothers and their newborns.

The Centre has teamed up with the Irish Heart Foundation to begin research investigating the impact of health promotion interventions in the post-partum period for those at risk of cardiovascular disease.

The Centre continues to lead in innovative advances in healthcare technology and engineering research with ongoing projects in the areas of microplastics and human health, novel 3D printing of individualised airway masks, nipple shields to measure breast-milk flow, the use of cerebral oximetry in premature infant and machine learning to develop novel tools for prediction of gestational diabetes mellitus.

The Centre's role in producing research to guide public health and national policy also continues with ongoing work in the area of maternal obesity, bariatric surgery and cardiovascular disease assessment.



**Director**  
Professor Fionnuala  
McAuliffe

UCD Perinatal Research Centre, based at the National Maternity Hospital, Dublin, coordinates national and international collaborative research in maternal health and its impact on maternal and infant outcomes. Led by Centre Director Professor Fionnuala McAuliffe, the UCD Perinatal Research Centre is internationally recognised for its research in maternal and foetal health, diabetes and nutrition in pregnancy, and the impact of maternal health on long-term health of Mum and infant.

The Centre comprises researchers with backgrounds ranging from clinical obstetrics, paediatrics, nutrition, public health, biomedical engineering, computer science, basic science to health economics. The research is funded by grants from Health Research Board Ireland, Science Foundation Ireland, the European Union, and the National Maternity Hospital Medical Fund.

## Key Publications

2023/24

Delahunt A, Callanan S, O'Brien EC, Geraghty AA, O'Reilly SL, McDonnell CM, Hokey E, McAuliffe FM. Sensory processing and child appetitive traits: findings from the ROLO longitudinal birth cohort study. *Nutr J*. 2024 Nov 1;23(1):136. doi: 10.1186/s12937-024-01040-1.

Callanan S, Talaei M, Delahunt A, Shaheen SO, McAuliffe FM. Low glycaemic index diet in pregnancy and child asthma: follow-up of the ROLO trial. *Br J Nutr*. 2024 Oct 28:1-11. doi: 10.1017/S0007114524001612.

MacSharry J, Kovács Z, Xie Y, Adamczyk B, Walsh C, Reidy F, McAuliffe FM, Kilbane MT, Twomey PJ, Rudd PM, Wingfield M, Butler M, van Sinderen D, Glover L, Saldova R. Endometriosis specific vaginal microbiota links to urine and serum N-glycome. *Sci Rep*. 2024 Oct 25;14(1):25372. doi: 10.1038/s41598-024-76125-2.

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## Key Publications

2023/24

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2023/24

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FIGO Preconception Checklist: Preconception care for mother and baby.

Benedetto C, Borella F, Divakar H, O'Riordan SL, Mazzoli M, Hanson M, O'Reilly S, Jacobsson B, Conry JA, McAuliffe FM; FIGO Committee on Well Woman Healthcare, FIGO Committee on the Impact of Pregnancy on Long-Term Health. *Int J Gynaecol Obstet*. 2024 Mar 1. doi: 10.1002/ijgo.15446. Online ahead of print. PMID: 38426290.

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## Key Awards

2023/24

- National Maternity Hospital Research Innovation Symposium
- Best student Innovation Presentation Lucy Murphy 'dietary intakes of FIGO nutrition checklist amongst pregnant women'.
- Best medical student Research Presentation Saoirse Kennedy & Orla Breen.

## Key Grants

2023/24

Science Foundation Ireland Frontiers for Future 2024-2028 F McAuliffe PI €978,000

- PrePop A randomised controlled trial of probiotics to improve vaginal microbiome in women at risk of preterm birth 22/FFP-A/10302.

EU Transforming health and Care systems 2024-2028 Sharleen O'Reilly PI/F McAuliffe Co PI €613.832,00

- Bump2Baby and Me plus: Implementing a personalised, integrated remote system of care for women at high risk of gestational diabetes within routine maternity services in Ireland, Norway, Spain and Poland (B2B&Me+).

Health Research Board Ireland 2024-2027 F McAuliffe collaborator €329,818

- The role of protein glycosylation in the pathogenesis of endometriosis and association with microbiome.

Welcome Leap 2022-2025 Niamh Nowlan PI / F McAuliffe co PI €3,000,000

- 'Fetal movement monitor' - development and evaluation of a novel fetal movement monitor in pregnancy, with a view to reducing stillbirth.

Other grants include: National Children's Research Centre, Science Foundation Ireland, Tallaght Hospital Fund, The National Maternity Hospital (NMH) Medical Fund, EU Horizon.

## Centre Updates

2023/24

- Professor Fionnuala McAuliffe was appointed Gynaecology and Obstetrics (FIGO) Division Director Elect for maternal and newborn health.
- Dr Kristyn Dunlop, Dr Clare Kennedy, Dr S Al-Tikriti and Dr Karima Okaelderhobi joined Dr Gillian Corbett and Dr Fiona O'Toole as Academic Clinical Fellows and PhD/MD students.
- FeMo: Welcome Leap funded clinical trial of a novel fetal movement monitor completed first device clinical trial in pregnancy, PI Niamh Nowlan.
- Dr Gillian Corbett and Dr Siobhan Corcoran established the first Irish Preterm Birth Advisory Council for PPI engagement in our service and research.
- Bump 2 Baby and me RCT finished recruitment of 800 patients worldwide and follow up to 1 year postpartum is in progress.
- Ai Premie recruiting women to a prospective study examining the ability of AI to predict the later development of pre-eclampsia (M Higgins).
- Latch-on Study RCT completed study recruitment – a multicentre RCT to improve breastfeeding in women with BMI>25 and primary outcome paper published in BJOG high impact journal.
- PrePop RCT actively recruiting women at risk of preterm birth, which is an RCT of probiotics vs placebo to improve vaginal microbiome (G Corbett, S Corcoran, F McAuliffe).
- IronMother RCT recruiting, UCD CRC supported RCT of treatment of iron deficiency anaemia in pregnancy (F O'Toole, J Walsh, J Fitzgerald, B Soldati, F McAuliffe).
- Alcohol screening in pregnancy study completed in collaboration with A McCormick, C McCormick and G Mealy.
- National Maternity Cardiac database (A Smyth, C Canniffe, F McAuliffe, NPEC) established the first national cardiac in pregnancy database.

## Centre Updates

2023/24

(cont.)

- VR to augment learning for medical students and O+G trainees (A McEvoy, D Kane, E Mangina, F McAuliffe) developed virtual reality teaching tool for insertion of bakri balloon and performed RCT on its use for undergraduate and postgraduate teaching.



**Director**  
Professor Ronan Cahill

UCD Centre for Precision Surgery is an applied research, education and training facility dedicated to excellence in surgical practice and the future of surgical care. Research and training are focused on the fusion of technology and real-time data analytics in the operating theatre. The centre is led by Professor Ronan Cahill, Colorectal Surgeon and UCD-Mater Full Professor of Surgery and includes a team of surgical researchers, engineers, biomolecular scientists, data analysts and domain experts. The Centre comprises the Digital Surgery Unit and the Clinical Anatomy Centre.

The Digital Surgery Unit was established at the Mater Misericordiae University Hospital in 2019 to facilitate engagement in impactful research in response to global healthcare challenges including cancer care and, as events unfolded, Covid-19. The Clinical Anatomy Centre, established in 2017 is located in the original Mater operating theatres and offers an advanced skills training and simulation facility where new technologies, systems and procedures can be introduced, perfected and embedded. The combined capability of the Digital Surgery Unit and the Clinical Anatomy Centre offer an unrivalled national resource for consolidating & scaling surgical training, skills development, simulation and research on a clinical site.

#### Key personnel & affiliates 2024:

- Professor Ronan Cahill - Director, UCD Centre for Precision Surgery; Consultant Colorectal Surgeon; UCD-MMUH Professor of Surgery.
- Professor James Jones - Professor of Anatomy, UCD.
- Dr Kevin Nolan - Assistant Professor of Mechanical and Materials Engineering, UCD.
- Dr Pól Mac Aonghusa - Senior Research Project Manager, UCD School of Medicine.
- Debbie Killeen - Research Project Manager, UCD School of Medicine.
- Dr Cathleen McCarrick - Special Lecturer/Clinical Tutor UCD; PhD Candidate "Exploring the impact of Simulation Training on undergraduate surgical education".
- Mr Patrick Boland - SpR; MD Candidate "Artificial Intelligence Enhanced Rectal Cancer Surgery".
- Mr Philip McEntee - SpR, MD Candidate "The Expansion of Fluorescence-guided and Digital Surgery".
- Mr Edward Murphy - SpR, MD Candidate "Robotic Surgery Education and Skill Acquisition".
- Dr Ruth Walsh - SHO; MCh Candidate "Anastomotic leak after Rectal Cancer Resection: A national perspective".
- Dr Caitlyn Loo - Special Lecturer/Clinical Tutor UCD.
- Christian Myles - Senior Technical Officer, UCD Anatomy; PhD Candidate.
- Ashokkumar Singaravelu - Stage 5 Medical Student; Intercalated MSc candidate "Indocyanine green fluorescence angiography in plastic and colorectal surgery".
- Conor Delaney - Research Engineer, UCD.
- Joseph Greevy - Internship, ME in Biomedical Engineering, UCD.

## Key Publications

2023/24

1. Clinical and Cost-Effectiveness of Intraoperative Flap Perfusion Assessment With Indocyanine Green Fluorescence Angiography in Breast and Head and Neck Reconstructions: A Systematic Review and Meta-Analysis. Singaravelu A, McCarrick C, Potter S, Cahill RA. *Microsurgery*. 2024 Nov;44(8):e31250. Doi: 10.1002/micr.31250. PMID: 39449167.
2. Clinical validation of 3D virtual modelling for laparoscopic complete mesocolic excision with central vascular ligation for proximal colon cancer. Kearns EC, Moynihan A, Dalli J, Khan MF, Singh S, McDonald K, O'Reilly J, Moynagh N, Myles C, Brannigan A, Mulsow J, Shields C, Jones J, Fenlon H, Lawler L, Cahill RA. *Eur J Surg Oncol*. 2024 Nov;50(11):108597. doi: 10.1016/j.ejso.2024.108597. Epub 2024 Aug 10. PMID: 39173461.
3. Patient public perspectives on digital colorectal cancer surgery (DALLAS). Nally DM, Kearns EC, Dalli J, Moynagh N, Hanley K, Neary P, Cahill RA. *Eur J Surg Oncol*. 2024 Oct 20:108705. doi: 10.1016/j.ejso.2024.108705. Online ahead of print. PMID: 39532576.
4. Parathyroid gland identification and angiography classification using simple machine learning methods. McEntee PD, Greevy JE, Triponez F, Demarchi MS, Cahill RA. *BJS Open*. 2024 Sep 3;8(5):zrae122. doi: 10.1093/bjsopen/zrae122. PMID: 39468722.
5. Artificial intelligence for optimum tissue excision with indocyanine green fluorescence angiography for flap reconstructions: Proof of concept.
6. Singaravelu A, Dalli J, Potter S, Cahill RA. *JPRAS Open*. 2024 Jul 31;41:389-393. doi: 10.1016/j.jptra.2024.07.014. eCollection 2024 Sep. PMID: 39252988. A novel smart insufflation system for transanal anal minimally invasive surgery-A video vignette. Moynihan A, Cahill RA. *Colorectal Dis*. 2024 Sep;26(9):1778-1779. doi: 10.1111/codi.17121. Epub 2024 Aug 6. PMID: 39107880.
7. Impact of Simulation Training on Core Skill Competency of Undergraduate Medical Students. McCarrick CA, Moynihan A, Khan MF, Lennon F, Stokes M, Donnelly S, Heneghan H, Cahill RA. *J Surg Educ*. 2024 Sep;81(9):1222-1228. doi: 10.1016/j.jsurg.2024.06.006. Epub 2024 Jul 8. PMID: 38981819.
8. Cognitive vision: AI automation of the surgical eye in fluorescence angiography - correspondence. Cahill RA. *Int J Surg*. 2024 Aug 1;110(8):5218-5219. doi: 10.1097/JIS9.0000000000001496. PMID: 39143713.
9. Perceptions of surgeons on the efficacy of intraoperative indocyanine green fluorescence angiography for plastic and reconstructive procedures. Singaravelu A, Quinlan C, Potter S, Cahill RA. *J Plast Reconstr Aesthet Surg*. 2024 Aug;95:239-241. doi: 10.1016/j.bjps.2024.06.007. Epub 2024 Jun 12. PMID: 38936335.
10. Twenty First Century Technological Toolbox Innovation for Transanal Minimally Invasive Surgery (TAMIS). Moynihan A, Boland P, Cahill RA. *Surg Technol Int*. 2024 Jul 15;44:91-98. doi: 10.52198/24.STI.44.GS1760. PMID: 38629713.
11. Surgeon assessment of significant rectal polyps using white light endoscopy alone and in comparison to fluorescence-augmented AI lesion classification. Hardy NP, Moynihan A, Dalli J, Epperlein JP, McEntee PD, Boland PA, Neary PM, Cahill RA. *Langenbecks Arch Surg*. 2024 Jun 1;409(1):170. doi: 10.1007/s00423-024-03364-2. PMID: 38822883.
12. Clinical and computational development of a patient-calibrated ICGFA bowel transection recommender. Dalli J, Epperlein JP, Hardy NP, Khan MF, Mac Aonghusa P, Cahill RA. *Surg Endosc*. 2024 Jun;38(6):3212-3222. doi: 10.1007/s00464-024-10827-6. Epub 2024 Apr 18. PMID: 38637339.



## Key Publications

2023/24

(cont.)

13. Surgical Video Data - "In," "Out," or "Shake It All About" the Medical Record. Cahill RA, Duffourc M, Gerke S. *Ann Surg*. 2024 May 8. doi: 10.1097/SLA.0000000000006336. Online ahead of print. PMID: 38716642.
14. Impact of standardising indocyanine green fluorescence angiography technique for visual and quantitative interpretation on interuser variability in colorectal surgery. Dalli J, Joosten JJ, Jindal A, Hardy NP, Camilleri-Brennan J, Andrejevic P, Hompes R, Cahill RA. *Surg Endosc*. 2024 Mar;38(3):1306-1315. doi: 10.1007/s00464-023-10564-2. Epub 2023 Dec 18. PMID: 38110792.
15. Geotemporal Fluorophore Biodistribution Mapping of Colorectal Cancer: Micro and Macroscopic Insights. Hardy NP, Mulligan N, Dalli J, Epperlein JP, Neary PM, Robertson W, Liddy R, Thorpe SD, Aird JJ, Cahill RA. *Curr Oncol*. 2024 Feb 2;31(2):849-861. doi: 10.3390/curroncol31020063. PMID: 38392057.
16. Characterisation and mitigation of gas leaks at laparoscopy: an international prospective, multi-center cohort clinical trial. Nolan K, Khan MF, Riva P, Kearns E, Reitano E, Irving H, Perretta S, Dallemagne B, Cahill RA. *Surg Endosc*. 2024 Jan;38(1):426-436. doi: 10.1007/s00464-023-10536-6. Epub 2023 Nov 20. PMID: 37985488.

## Key Grants

2023/24

- 2022 - 2026 Horizon Europe P2-C1 Health\_2022; Validating AI in classifying cancer in real-time surgery (CLASSICA); €5,978,716; Principal Investigator Professor Ronan Cahill.
- 2023 - 2024 Health Research Board (HRB); Conference and event sponsorship\_2023; Digital Surgery - Building a National Ecosystem; €5000; Principal Investigator Professor Ronan Cahill.
- 2024 - 2028 National Institute For Health Research UK (NIHR); SarcoSight- A Randomised Controlled Trial of Fluorescence Guided Sarcoma Surgery versus Standard of Care; €80,000; Principal Investigator Professor Ronan Cahill.

## Centre Updates

2023/24

- More than 40 post-graduate training events held at the Clinical Anatomy Centre in 2023 included wet labs, specialty-specific skills workshops and study days.
- Culture Night, September 2024 - public event welcoming visitors to the old theatres to try out some surgical skills, engage with on-going research and learn about the past, present and future of surgery.
- Conference on Computer Aided Surgery & Artificial Intelligence (AI), November 2024 - focussing on AI, computer vision and the digital platforms revolutionising surgical practice.



**Director**  
Professor Amanda McCann

The UCD Centre in Translational Oncology (UCTO) consolidates and gives a unified identity to cancer researchers among UCD affiliated staff (~100) who are dedicated to foster excellence in cancer research with the ultimate goal of improving personalised patient treatment and care.

UCTO membership spans across two UCD Colleges (College of Health and Agricultural Sciences (CHAS) and the College of Science) and five UCD Schools (School of Medicine, School of Veterinary Science, School of Public Health, Physiotherapy and Sports Science, School of Nursing, Midwifery and Health Systems and the School of Biomolecular and Biomedical Science). Its primary membership is from the School of Medicine (47/69 aligned colleagues), representing a collective of academic staff with a passionate clinical and research commitment to delivering basic and translational/precision oncology for our patients.

Affiliated institutes include UCD Conway Institute and Systems Biology Ireland. UCD Hospital Cancer Centres of Excellence/affiliated teaching Hospital sites include St Vincent's University Hospital (SVUH), the Mater Misericordiae University Hospital (MMUH) and Our Lady's Children's Hospital Crumlin (OLCHC). These hospitals represent 3 of the 9 designated cancer centres of excellence in Ireland. The amalgamation of this critical mass of clinical and research expertise in the UCTO continues to foster multidisciplinary research and collaboration into the future, to the benefit of increasing knowledge about cancer and enhancing patient care across all ages and cancer types.

The UCTO has established channels of communication with patients, through clinical members and through the Director, Professor Amanda McCann's additional role as Chair of the Patient Voice in Cancer Research (PVCR) committee for which she was awarded a UCD Values in Action (VIA) award in 2019. These links give UCTO colleagues unprecedented possibilities to implicitly involve patients in the research journey from hypothesis inception to grant application and project implementation, through to public/scientific/funder dissemination. Patient involvement is a key strategic vision for UCTO.

## Key Publications 2023/24

Harbeck N, Ciruelos E, Jerusalem G, Müller V, Niikura N, Viale G, Bartsch R, Kurzeder C, Higgins MJ, Connolly RM, Baron-Hay S, Gión M, Guarneri V, Bianchini G, Wildiers H, Escrivá-de-Romaní S, Prahlanan M, Bridge H, Kuptsova-Clarkson N, Scotto N, Verma S, Lin NU; DESTINY-Breast12 study group. Trastuzumab deruxtecan in HER2-positive advanced breast cancer with or without brain metastases: a phase 3b/4 trial. *Nat Med*. 2024 Sep 13. doi: 10.1038/s41591-024-03261-7. Epub ahead of print. PMID: 39271844.

NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in underweight and obesity from 1990 to 2022: a pooled analysis of 3663 population-representative studies with 222 million children, adolescents, and adults. *Lancet*. 2024 Mar 16;403(10431):1027-1050. doi: 10.1016/S0140-6736(23)02750-2. Epub 2024 Feb 29. PMID: 38432237; PMCID: PMC7615769.

Llovet JM, Kudo M, Merle P, Meyer T, Qin S, Ikeda M, Xu R, Edeline J, Ryoo BY, Ren Z, Masi G, Kwiatkowski M, Lim HY, Kim JH, Breder V, Kumada H, Cheng AL, Galle PR, Kaneko S, Wang A, Mody K, Dutcus C, Dubrovsky L, Siegel AB, Finn RS; LEAP-002 Investigators. Lenvatinib plus pembrolizumab versus lenvatinib plus placebo for advanced hepatocellular carcinoma (LEAP-002): a randomised, double-blind, phase 3 trial. *Lancet Oncol*. 2023 Dec;24(12):1399-1410. doi: 10.1016/S1470-2045(23)00469-2. Erratum in: *Lancet Oncol*. 2024 Apr;25(4):e137. doi: 10.1016/S1470-2045(24)00078-0. PMID: 38039993.

**Key Publications**

2023/24

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Amaral P, Carbonell-Sala S, De La Vega FM, Faial T, Frankish A, Gingeras T, Guigo R, Harrow JL, Hatzigeorgiou AG, Johnson R, Murphy TD, Perteu M, Pruitt KD, Pujar S, Takahashi H, Ulitsky I, Varabyou A, Wells CA, Yandell M, Carninci P, Salzberg SL. The status of the human gene catalogue. *Nature*. 2023 Oct;622(7981):41-47. doi: 10.1038/s41586-023-06490-x. Epub 2023 Oct 4. PMID: 37794265; PMCID: PMC10575709.

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**Key Awards**

2023/24

CHAS Teaching Excellence Award 2023: Professor Patricia Fitzpatrick.

SFI Research Image of the Year 2023: Professor Breandan Kennedy.

Total Funding:- €10,979,209

Development of a lung METAstasis-on-a-CHIP model for osteosarcoma as a biomimetic testing platform for drug discovery and therapeutic innovation (META-CHIP). Assoc Professor Fiona Freeman. Horizon Europe - €1,499,884.

Government of Ireland PhD Stipend Fund. Professor Helen Roche. Science Foundation Ireland (SFI) - €1,402,668.

## Key Awards

2023/24

MULTi-Tumour based prediction and manipulation of Immune Response. Professor Boris Kholodenko. European Health and Digital Executive Agency (Hadea) - €941,004.

Extramedullary disease in Multiple Myeloma - Finding new therapeutic targets by dissecting the cell heterogeneity with an integrated transcriptomic and proteomic analysis. Assoc Professor Margaret Mcgee. Science Foundation Ireland (SFI) - €591,660.

Conjugated STING-agonist nanoparticles as novel therapeutic add-on to enhance the therapeutic response of chemotherapy for the treatment of osteosarcoma. Assoc Professor Fiona Freeman. Science Foundation Ireland (SFI)- €506,303.

A Phase 2 Study of Tremelimumab (Day 1 only) Durvalumab (MEDI4736) and Trans-arterial catheter chemoembolization (TACE) in patients with advanced Hepatocellular Carcinoma (HCC). Dr Austin Duffy. AstraZeneca Pharmaceuticals (Ireland) DAC - €430,563.

Understanding the regulation of melanin distribution in human skin: a crucial process to protect our skin from damaging ultraviolet radiation. Professor Desmond Tobin. The City of Dublin Skin and Cancer Hospital Charity - €126,231.

Investigation of IRE1 $\alpha$ 's contribution to stromal-natural killer cell crosstalk to enhance natural killer cell mediated pancreatic ductal adenocarcinoma (PDAC) cell death. Dr Claire Robinson. Breakthrough Cancer Research - €300,000.



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