



UCD School of Medicine

UCD School of Medicine Research Report 2020/21 Academic Year





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Year in Numbers

Total Grant Value

€112,560,269

Total # Grants Registered

175

New Research Grants

€ 20,283,294

Field-Weighted Citation Impact*

1.87

Total No of Publications

1,176

Citations*

99,579

New Students registered

60

Total Research Students registered

199

Number Students Graduated

46

Research Centres

10

Introduction

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

It is a pleasure to introduce the UCD School of Medicine Research report for the 2020/21 academic year which highlights the achievements from what has been a successful our school overall. Our faculty, researchers and students have continued to explore research questions of fundamental importance to human health and disease. Despite the impact of the Covid-19 pandemic, our schools research profile has continued to expand with noticeable increases in funding success across the school. In particular, the strong performance of our investigators in securing prestigious European funding and major infrastructural awards, puts us on a strong footing for the coming years. The growing impact of our research is evidenced by the increasing trend towards very high impact publications with 65% of papers from our school being in top 20% journals. Our impact is also extending with our outputs reaching a wider audience as over 60% of our publications are in open access journals. We are also seeing significant growth in the School's research team with a 25% increase in research staff employed. These additional colleagues are supporting our ambitions to be a leading research focused medical school. We have also continued work to enhance our research environment, by updating equipment and core services and by focusing on initiatives that enable a supportive research culture.

The publication of this annual report, coupled to our school research symposium provides us with an opportunity to reflect and reenergise for the coming year as we continue to embark on meaningful programmes of research of the highest scientific value.



Prof Peter Doran

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



Research Highlights 2021

The UCD Centre for Precision Surgery working in partnership with RCSI's Department of Chemistry and IBM Research in Europe, delivered a new fluorescence guidance technique. Artificial Intelligence (AI) which was used to enhance decision making during colorectal cancer surgery for first time.

The UCD Perinatal Research Centre and National Maternity Hospital launched a new, freely available app, Holleistic, that combines nutritional advice, pregnancy advice, and meal suggestions/recipes.

European Commission launched an EU-wide network to accelerate COVID vaccine trials - VACCELERATE, the European Corona Vaccine Trial Accelerator Platform, will be the pan-European backbone accelerating Phase 2 and 3 COVID-19 vaccine trials, connecting all stakeholders involved in vaccine development and providing a platform for clinical trial design and conduct. The network now constitutes a rapid response single entry-point for all stakeholders from public health authorities to vaccine developers, to address respective needs and kick-start Phase 2 and 3 vaccine trial. VACCELERATE will be an established pandemic preparedness network, ready to face emerging future pandemics, as well as a pivot in Europe's capacity to develop vaccines.

Study across four Irish hospitals highlights importance of C-19 genomic surveillance to inform where virus has originated, how it changes over time and how it impacts on health

Professor Donal Brennan, UCD Professor of Gynaecological Oncology and Consultant Obstetrician and Gynaecological Oncologist at the Mater and St Vincent's University Hospitals published in the Annals of Surgical Oncology Journal a study which shows that Multidisciplinary Surgical Teams at Mater & St Vincent's University Hospitals have increased complete resection rates from 49 – 77% over last four years by pursuing aggressive surgery techniques for ovarian cancer to prevent potential for residual disease and improve survival rates.

Systems Biology Ireland researchers lead innovative collaboration, pave the way for treating childhood Leukaemia in Tanzania using 'next-generation' gene sequencing An award of £78,303.03 (approximately €90,390) was granted to Professor Jonathan Bond, UCD Brendan McGonnell Professor of Paediatric Molecular Haemato-Oncology at SBI,

Austin Duffy, Associate Professor of Translational Oncology, Mater University Hospital and UCD, published in Journal of Oncology and Haematology a reflection on an experimental treatment (immune checkpoint inhibitor) his patient with advanced liver cancer received at the NIH (National Institute of Health) when Prof Duffy was working there in 2013.

Global study published in NEJM shows significantly improved survival rates in critically ill C-19 patients treated with Tocilizumab. The trials led in Ireland at St Vincent's University Hospital in partnership with UCD School of Medicine showed that in a study of 2,000 critically ill patients with COVID-19 in 260 hospitals across the world has shown that treatment with the immune modulator, Tocilizumab, was 99 per cent more likely to reduce deaths and time spent in intensive care, compared to patients who did not receive the treatment.

Dr William Martin (DCRC PhD ICAT Fellow) and UCD DCRC colleagues (Dr E. Brennan, Prof. C Godson) and supervisors (Assoc. Prof. N Docherty, Prof. Carel le Roux) presented Mechanisms underpinning reductions in diabetic renal injury following intentional weight loss at May 2021 EDNSG meeting. Their presentation on mechanisms underpinning reductions in diabetic renal injury following intentional weight loss which was awarded best oral presentation on omics and DKD at the 33rd European Diabetic Nephropathy Study Group (EDNSG) meeting in May 2021. The data points to synergism between weight loss and drug treatments which may improve outcomes for people with diabetic kidney disease.

Extracellular vesicles from monocyte/platelet aggregates modulate human atherosclerotic plaque reactivity. Through a collaborative study between the Godson/Brennan's lab (UCD DCRC), the Perretti's lab (QMUL) and other international colleagues, the work from Silvia Oggero et al., was published, as an Open-Access primary research article, on the prestigious Journal of Extracellular Vesicle .

UCD Perinatal Research Centre study shows high acceptability of mHealth (mobile health technology) to support positive interventions in overweight and obese women during pregnancy Fionnuala McAuliffe, Prof of Obstetrics and Gynaecology, NMH, Director, UCD Perinatal Research Centre & JMIR Mhealth paper author

SBI Researchers combat cancer drug resistance with novel signaling analysis, Prof Boris Kholodenko, corresponding author of the study and Deputy Director, SBI paper titled A systematic analysis of signalling reactivation and drug resistance the SBI researchers dispel the myths about the development of drug resistances and, through experimental validation, show ways to overcome emerging resistances. The team used a systems theory, modular response analysis (MRA) and mechanistic modelling of signalling pathways to systematically investigate and quantify the changing responses of a cell's networks related to drug interference.

UCD DCRC (Diabetes Complications Research Centre) Researchers took part in exciting public engagement activity with transition year students. Early career researchers from the UCD DCRC helped deliver a weeklong schedule of exciting activities with transition year students on a work experience week in April 2021.

Dr Monica De Gatenao, as Lead Author and Anontino Caca, Eoin Bennan, Mariam Marai, Andrew Gaffney and Catherine Godson from the DCRC as co-authors. Published 'Asymmetric Synthesis and Biological Screening of Quinoxaline-Containing Synthetic Lipoxin A4 Mimetics' in JMED (Journal of Medicinal Chemistry). This work reported the synthesis and characterization of novel bioactive molecules, supporting their therapeutic potential in acute inflammation. A lead compound based on its anti-inflammatory and pro-resolving profile, including in vitro inhibition of key inflammatory pathways, as well as attenuation of acute inflammation in mice models has been successfully identified through this work.

Ronan Cahill, Professor of Surgery at UCD and the Mater Misericordiae University Hospital (MMUH) and Nature Scientific Report paper author shows how dynamic visual appearances obtainable during surgery, using innovative digital processing, can provide more comprehensive information on the extent and type of malignant tissue, especially in colon-rectal cancer, to surgeons in moments. This discovery has the potential to exploit already established microscopic principles in medical oncology and histopathology but principles which have never before, been revealed and understood in real-time, in living tissue. Application of digital visualisation technology can fully determine malignant tissue in real-time and inform immediate individualised cancer treatment

Researchers at the UCD Charles Institute of Dermatology are developing a new therapy which could potentially transform lives of people with painful skin disease, epidermolysis bullosa (EB). Dr. Irene Lara-Sáez, explained that their work focused on finding a 'smart scissors' that would cut the damaged gene which causes the condition and thereby allow patients to heal.

Funding of €1.57 million as part of the overall Disruptive Technologies Innovation Fund (DTIF), was awarded for the Development of first innovative plasma sampling device to detect inflammatory disease and offer new diagnostic pathway will be led by Prof Peter Doran from the UCD Clinical Research Centre UCD and Atturos Ltd, a UCD spin out company, founded by Prof Stephen Pennington, UCD School of Medicine.

Professor Alistair Nichol, Chair of Critical Care Medicine at UCD School of Medicine, Director of the Health Research Board-funded Irish Critical Care Clinical Trials Network (ICC-CTN) and Consultant in St Vincent's University Hospital, contributed to the Major international trial which found that cooling critical patients' body temperature after cardiac arrest does not improve survival.

Professor Stephen Pennington, Professor of Proteomics, and Professor Oliver FitzGerald, Newman Clinical Research Professor, launched HIPPOCRATES a new €21 million EU and Industry funded Psoriatic Arthritis Research Project led by University College Dublin. It will have an International team of research partners, pharmaceutical companies, SMEs and patient organisations to develop innovative personalised treatment options for people affected by psoriatic arthritis.

Eoin Brennan, Assistant Professor, UCD published in Nature Reviews Nephrology Pro-resolving lipid mediators: regulators of inflammation, metabolism and kidney function which explored the role of SPMs in the resolution of inflammation and how they might be used as novel therapies in metabolic disease and complications such as CKD.

Dr Eoin Cummins, Assistant Professor in Physiology, UCD School of Medicine and researchers at UCD School of Medicine advance understanding of how CO₂ is sensed by cells and impacts on body function findings presented in a collection of PAPERS published in the Royal Society Journal.

In July 2021, 2 million was for the National Irish COVID-19 Biobank (NICB). Prof Paddy Mallon, UCD, highlighted the advancement of high impact research into COVID-19 and inform future biobanking initiatives in other important health areas.

Dr Cormac McCarthy, Consultant Respiratory Physician, SVUH, Associate Professor of Medicine, UCD, published Lymphangioleiomyomatosis: pathogenesis, clinical features, diagnosis, and management in Lancet Respiratory Medicine.

International study published in NEJM show full-dose blood thinners benefit moderately ill COVID-19 patients with patients in Irish ICUs contributing to findings. In Ireland, the trials were supported by the Health Research Board under its Irish Critical Care-Clinical Trails Network at UCD; trial management and data coordination in Ireland was led by Alistair Nichol, Prof of Critical Care at UCD and Intensivist at St Vincent's University Hospital.

UCD Clinical Research Centre (CRC) was awarded €5.3 million by HRB to grow clinical research and increase access to clinical trials.

UniCoV, a pilot scheme designed to assist the safe and sustainable re-opening of Higher Education Institute campuses across Ireland was launched in September. It is using rapid antigen and saliva-based nucleic acid testing to explore if an 'early warning system' can be developed to prevent and limit future outbreaks at third level institutions.

Prof Fionnuala Ni Ainle, Clinical Professor UCD showed that RAPID trial results published in BMJ showed high doses of blood thinner reduced risk of death for moderately ill C-10 patients.

Prof Owen Smith, Prof of Paediatrics and Adolescent Medicine, UCD & EWOG-MDS National Coordinator for Ireland published Learning from 'natural gene therapy' study in Nature Medicine.

Prof Aiden McCormick, Consultant Hepatologist, SVUH, Clinical Professor, UCD School of Medicine published a study in BJOG, conducted in National Maternity and Rotunda Hospitals, Dublin which showed universal screening, rather than risk based antenatal screening for Hepatitis C, was more efficient and cost-effective.

Professor Peter Kelly, Clinical Professor, Neurology, UCD, Co-Director, Stroke Service, Mater Misericordiae University Hospital, and Lead Investigator for HRB SCTNI (Stroke Clinical Trials Network Ireland) and Dr Pol Camps Renom, Consultant Neurologist, St Pau Hospital, Barcelona published in NEUROLOGY a study which showed that carotid plaque inflammation, identified by PET imaging is associated with late (5-year) recurrent stroke after adjustment for age, gender, carotid revascularization, stenosis severity, NIH Stroke Scale, and diabetes mellitus.

Amy Hassett Neuroscience PhD Student was announced as a new presenter for Let's Find Out produced for RTE Jr with SFI support for Science Week 2021.

Ciara Walsh PhD candidate in Dr Dearbhaile Dooleys lab, received an IRC postgraduate Scholarship for her work : Investigating the use of responsive hydrogel as therapeutic delivery vehicles for spinal cord injury and also published this study in Pharmacology & Therapeutics.

UCD Chair of Critical Care Medicine, Professor Alistair Nichol received a special commendation for his 'exceptional contribution' in the field of medical research, specifically in critical care clinical trials and especially in the global fight against the COVID-19 pandemic by IRC (Irish Research Council).

Navin Hyder was the Artist-in-Residence at the Mater Hospital for the last two years, during which time she has captured through her digital drawings in real-time, the intimate 'shared space' of the operating theatre and the skill, dedication, and care shown by the staff towards their patients. Her ART OF SURGERY was on display on external walls of Whitty Building at Mater Hospital.



Research Support Initiatives

Updates 2021

Maximising the Impact of Published Research via Structured Communications Support



NOTIFICATION OF PUBLICATION

Upon acceptance of a manuscript notify ucdmr@ucd.ie & comms.medicine@ucd.ie advising of anticipated date of pub. and Journal Impact Factor (JIF)



PRELIMINARY REVIEW

Associate Dean for Research will review and advise on comms support in consultation with SoM Comms



COMMUNICATIONS SUPPORT APPROVED

SoM Comms will review manuscript, consider news hooks & draft key messages



PREPARATION OF COLLATERAL MATERIAL

As Lead Author, you may be asked to prepare visuals illustrating findings & video (x two mins approx.) to showcase findings



PRESS RELEASE

SoM Comms will draft press release to announce pub. for approval by Associate Dean for Research & you as Lead Author & draw up media list



ANALYTICS

SoM Comms will prepare report after pub. analysing media coverage & social media outreach for you, as Lead Author & Associate Dean for Research



WIDER WEB SUPPORT & SEO

Research abstract will be posted on <https://www.ucd.ie/medicine/ourresearch/> ensuring metatags, title and description are clear and 'keywords heavy' for SEO ranking



SOCIAL MEDIA OUTREACH

SoM Comms will share link to pub via SoM social media channels tagging appropriate orgs & ask you and your team to use your channels to do same



PUBLICATION DAY

SoM Comms will issue press release & contact you with media queries



UCD School of Medicine
Scoil an Leighis UCD

Help ensure that **YOUR RESEARCH WORK** gets seen, read and cited

Progressing Dedicated SoM Research Communications Strategy

The UCD School of Medicine M&C (Marketing and Communications) function was re-established in April 2020 and since then the function has been providing dedicated communications support to project and profile the sustainable, referenced and reputed research status that is held by the School, on both a national and international basis.

In tandem the M&C Team is also devising a three-year research communications strategy which sets out to build on this, continue to improve upon the School's research reputation and distinguish the School's research from its peers in Ireland by becoming higher placed in life science and medicine rankings and become one of the top 150 universities in the WUR.

This communications strategy outlines the course of action for communications support to research activities. The objectives of this strategy are as follows;

- Broaden public understanding of a School with a strong tradition of research-based enquiry
- Develop the School's distinctive and competitive research reputation amongst external researchers, industry partners, policy makers and the School's staff base
- Promote further engagement with state and community leaders, alumni and non-alumni donors, prospective PhD students by driving the research

reputation

- Drive awareness of the School's wealth of research activity and output on a national and global scale, focusing on both academic and clinical activities

The key messages that will be projected via this strategy will focus on research profile, activity and performance, research related media coverage and subsequent 'conversations' and public and patient involvement in research using intelligence from the SciVal and Altmetric platforms.

There will be two core components in this Strategy. The first will focus on profiling the entire research function and illustrating and projecting the extent, breath and success across the function. The second will focus on profiling activity and outputs in the top five School of Medicine Research Clusters. This will drill down and examine activity across these clusters (Obesity, C-19, Exercise, Pregnancy and RA) and develop dedicated comms campaign to illustrate and project each cluster.

The Research Comms Strategy will be based on the six principles of effective communications; Relevant, Timely, Accessible, Actionable, Credible/ Trusted and Understandable.

For further information, please contact Jane Curtin, M&C Manager, UCD School of Medicine (jane.curtin@ucd.ie)



School of Medicine Grant Advisory Committee

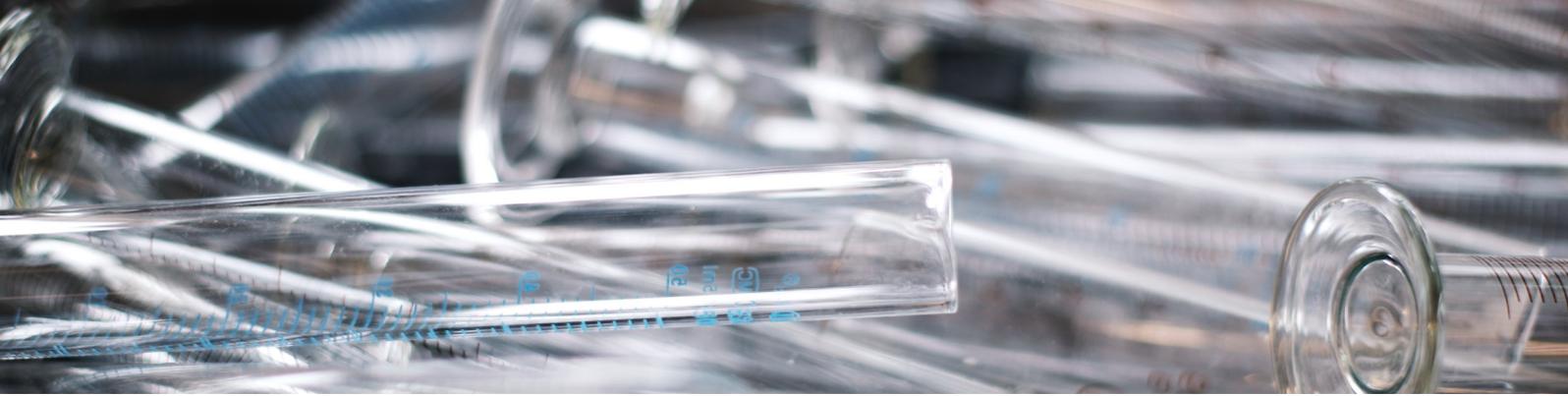
Piloted in August 2020 the UCD School of Medicine Grant Advisory Committee is a mechanism designed to provide information and feedback to staff who are preparing research grant proposals. This committee was established to specifically provide supports at the stage of proposal development. The objective of the committee is to offer independent, constructive advice on scientific merit and proposal development through recruitment of reviewers from within the School of Medicine. This process is designed to complement existing supports provided by UCD Research. Applicants may engage with the committee at any stage of proposal development and it is not necessary to submit a completed 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, this is a rolling process and 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. We are supported in this endeavor by 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/aboutus/equalitydiversityinclusion/personalandprofessionaldevelopment/grantadvisorycommittee.



Dr Eoin Brennan
Lecturer/Assistant Professor (Ad Astra Fellow)
School of Medicine, University College Dublin.



Dr Carol Ahearne
Lecturer/Assistant Professor
School of Medicine, University College Dublin.



Return to Research Funding

The School of Medicine is committed to supporting members of Academic Staff who are returning from an extended period of leave connected with caring or illness to reactivate their research and launched an initiative this year to support these staff. The Research Grant for Returning Academic Staff can be drawn down on return from leave and is available to staff returning from maternity / adoptive leave, and to any research active academic returning from unpaid carer's/parental leave or sick leave. The grant will be allocated on the basis of a short application, supported by the Head of School, the Associate Dean for Research, Innovation and Impact and the chair of the School EDI committee. We encourage all eligible staff to apply.

School of Medicine Research Office

The School provides considerable financial and organisational support to our investigators and their teams to allow them to compete for external research funding.

As part of the current School of Medicine Research Strategy, the School has assembled and continues to develop a coherent set of supports to assist high calibre groups of investigators to achieve their full potential.

The UCD School of Medicine Research office has been developed to act as a central hub to connect our dispersed group of investigators to practical University support for grant writing, programme management, industry liaison and international collaborations. It also offers support to graduate students and to research-Graduate committees such as the School of Medicine Clinical and Biomedical Research Degree committees, and the Summer Student Research (SSRA) Programme.

The UCD School of Medicine Research office is staffed by experienced research administrators, led by Ms Yvonne Barry, Research Administration Manager, and supported by Ms Niamh McCarthy, Senior Administrator - Admin Support Team and Mr Edward Moore, Senior Administrator - Admin Support Team. Central to the functions of the office is rapid and effective communication with our investigators and students.

This function is supported by the School of Medicine communications team, who have worked closely with the research office to support initiatives across the school.

Graduate Research Association of Medicine

The Graduate Research Association of Medicine (GRAM) was founded in July 2020, with the intention of fostering a sense of community amongst graduate researchers in the School of Medicine. Researchers in the School of Medicine include PhD, MD, MSc students and post-doctoral researchers. They are based at research institutes in UCD Belfield and at the School's major teaching hospitals such as St. Vincent's and Mater Misericordia.

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

Following a virtual launch event in October 2020, GRAM sent welcome packs by post to its members. At the beginning of 2021, GRAM distributed a newsletter, highlighting student supports and congratulating recent graduates from the School on their thesis defences and publications. A weekly virtual meet up, titled Rant&Rave was held, where members discussed all things research related, from thesis writing to laboratory techniques. A virtual St. Patrick's Day themed bingo night was held, where prizes were awarded and lots of fun was had.

In late 2021 GRAM successfully held its first in-person event, an orientation held at UCD Belfield. As we look towards 2022, GRAM hopes to continue to organize social, academic and career orientated events for researchers in the School of Medicine, and to grow its community.

Research Integrity Update

Dr Stephen Thorpe
Ad Astra Fellow, Assistant Professor,
UCD School of Medicine
School of Medicine Research Integrity Champion



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.

One aspect of the implementation of this strategy is the recent creation of Research Integrity Champions. Within the School of Medicine, these are 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. To date, research integrity activities have focussed 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 the Biomedical Health and Life Sciences programme, medical students partaking in the Summer Student Research Award scheme, enrolling research degree students, and graduate research students more broadly via the UCD Graduate Research Association of Medicine. It is intended to explicitly engage colleagues at the clinical sites with in-person events in the coming year.

This summer saw the launch of UCD's Research Culture Initiative. This aims to promote a supportive and positive research culture across the university. The first activity of which was a survey which recently closed. The aim of this is to generate a snapshot of the health of UCD's research culture from which to identify areas for improvement. The results of this survey as they relate to the School of Medicine will be communicated next year.

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.

School Research Ethics Committee



- **Assoc Prof John Baugh**
Chair, UCD School of Medicine
Undergraduate and Taught Masters
Research Ethics Committee (UTMREC-SM)
- **Dr Christine Costello**
BSc Physiology
- **Dr Dearbhaile Dooley**
Anatomy subject
- **Dr Sean Ennis**
Biomedical Sciences
- **Dr Rachel Toomey**
Radiography
- **Dr Michaela Davis**
Radiography
- **Dr Noreen Sheehy**
SSRA programme
- **Prof William Watson**
Programme Director - BHLS
- **Prof Walter Cullen**
Taught Graduate Programmes – Primary Care & General Practice
- **Dr Marie-Louise Ryan**
Taught Graduate Programmes - Radiography
- **Mr Asim Sheikh**
Taught Graduate Programmes - Legal Medicine
- **Dr Valerie O'Brien**
Taught Graduate Programmes - Psychotherapy
- **Dr Marina Everri**
Taught Graduate Programmes - Psychotherapy
- **Dr Barry O'Donnell**
Taught Graduate Programmes - Psychotherapy

In 2021, the committee has reviewed 120 low risk projects. These are projects that are exempt from full committee review and are just reviewed by the Chair of the committee. The committee also had 12 applications for full review.

School Research Innovation and Impact Group (RIIG)

The RIIG has been established to provide strategic oversight of activities, systems and supports for Research in the School of Medicine and to support our ambition to be an international leader in biomedical and clinical research. The RIIG has a major role in promoting the school's research community and in developing a culture and environment conducive to conducting research within the school



Chair
Prof Peter Doran



Prof Paul McLoughlin



Prof Gerard Bury



Prof Louise Rainford



Prof Yvonne O'Meara



Prof Ronan Cahill



Prof Fionnuala McAuliffe



Prof Patrick Murray



Prof Des Tobin



Prof Walter Kolch



Prof Catherine Godson



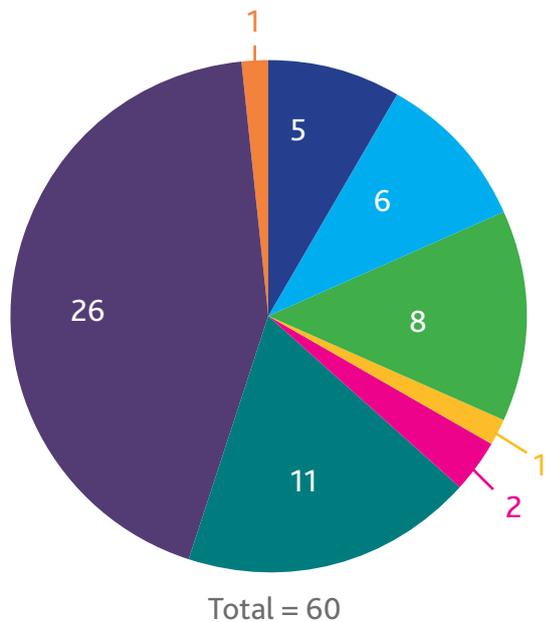
Prof Cormac Taylor



Mr Paul Harkin

Research Students





New Graduate Research Student Registrations 2020/21

- Medicine PhD FT
- Medicine PhD PT
- Translational Med PhD FT
- Translational Med PhD FT
- PhD B&SB Prog Medicine FT
- Medicine MSc FT
- MD Doctor of Medicine FT
- MD Doctor of Medicine PT
- Medicine MCh FT

Active Graduate Research Students 2020/21 PhD, MSc & MD

Programme Code	Programme Description	Major Code	Major Description	Year							Total	
				1	2	3	4	5	6	7		
DRLSC001	Doctor of Philosophy (Post 06)	X237	Medicine PhD FT	5	12	15	5					37
DRLSC001	Doctor of Philosophy (Post 06)	X238	Medicine PhD PT	6	2	2				2	2	14
DRLSC001	Doctor of Philosophy (Post 06)	X253	Translational Med PhD FT	8	13	12	9	2	1			45
DRLSC001	Doctor of Philosophy (Post 06)	X254	Translational Med PhD PT	1		2	1	1	1			6
DRLSC001	Doctor of Philosophy (Post 06)	X849	PhD B&SB Prog Medicine FT	2	6	5	2					15
DRLSC001	Doctor of Philosophy (Post 06)	X810	PhD Infection Biology(SMMS) FT		2	2	2					6
MRLSC013	Master of Science	X218	Medicine MSc FT	11	4							15
DRLSC004	Doctor of Medicine	X134	MD Doctor of Medicine FT	26	21	4	1					52
DRLSC004	Doctor of Medicine	X650	MD Doctor of Medicine PT			1	1					2
MRLSC015	Master of Surgery	X224	Medicine MCh FT	1								1
											TOTAL	193

Research Students Graduated December 2020 | June 2021 | December 2021

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

Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
MSc	Amirah Adlina Binti Abdul Aziz	Investigating the anti tumour effects of diphenyleiodonium chloride (DPI) in MYCN amplified Neuroblastoma	Dr Melinda Halasz	Dr Susan Turner	University of Cambridge, United Kingdom
MSc	Hanieh Bokharaie	Investigating Alternative Splicing in the Vemurafenib-resistant Melanoma cell line SKMEL-239 using RNA Sequencing Analysis	Professor Walter Kolch	Professor Pasha Baranov	University College Cork, Ireland
MSc	Katie Breen	Study of PD-L1 Expression in an Irish Cohort of Non-Small Cell Lung Carcinomas	Assoc Professor Neil Gerard Docherty	Dr Jacqueline James	Queen's University Belfast, United Kingdom (GB & NI)
MSc	Leah Ennis Mc Loughlin	The SARS-CoV-2 Nucleocapsid Protein: A Target for SUMOylation	Associate Professor Virginie Gautier	Dr Guillaume Bossis	The Centre National de la Recherche Scientifique (CNRS), France
MSc	Eunice Lim Yuying	The role of viscosity in determining performance of perfusate	Professor Paul McLoughlin	Professor Keith Thornbury	Dundalk IT, Ireland
MSc	Kealan McElhinney	Investigating the apoptotic signature of lamina cribrosa cells and pulmonary fibroblasts	Dr Deirdre Brennan	Professor James Edwards Morgan	Cardiff University, United Kingdom
MSc	Colette Morris	Gabapentinoid Use in Patients with Diabetes Mellitus in the Irish Primary Care Setting	Assoc Professor Helen Gallagher	Dr Richard Pinder Professor Darren Ashcroft	Imperial College London, United Kingdom University of Manchester, United Kingdom
MSc	Ross Murtagh	Rational Design of Triple Drug Combinations for HIV-1 Latency Reversal and Development of a Multiplex Assay for Detection of SARS-CoV-2	Dr Virginie Gautier	Dr Anna Kula Pacurar	Jagiellonian University, Poland
MSc	Eileen O'Connor	Exploring the experiences of an at-risk population with chronic hepatitis C infection (HCV) and their perceptions of accessing treatment through an integrated model of care.	Assoc Professor Jack Lambert	Professor Cliona Ni Cheallaigh/ Professor Meredith Temple-Smith	Trinity College Dublin, Ireland Monash University, Australia

Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
MSc	Niamh Walsh	Promoting Patient and Public Involvement in research and analysing Low Calorie Sweetener intakes during pregnancy: Findings from the ROLO study	Professor Fionnuala McAuliffe	Dr Alyson Hill	University of Ulster, Coleraine, Northern Ireland
MSc	Hayden Wilkinson	Method Development for O-glycan Analysis and its Application to Parkinson's Disease	Radka Fahey	Dr Gavin Davey	Trinity College Dublin, Ireland
MSc	Chia Yin Goh	Longitudinal profiling of extracellular vesicles derived from the plasma of women with a diagnosis of metastatic triple negative breast cancer (mTNBC) informs on treatment response and location of distant metastases.	Professor Amanda McCann	Dr Pat Kiely	University of Limerick, Ireland
PhD	Paula Cornally	Elucidating the effect of follicular environment, ex-vivo culture, and cryopreservation on ovarian cell quality	Dr Lynne O'Shea	Dr Rita Vassena	University of Barcelona, Spain
PhD	Ross Doyle	Gene expression and biomarkers in progressive Chronic Kidney Disease	Professor Catherine Godson	Professor Cathy Quinlan	University of Melbourne, Australia
PhD	Andrew Grannell	The role of fat free mass in appetite regulation in people with severe obesity and the implications for obesity as a disease	Professor Carel Le Roux	Professor John Blundell	University of Leeds, United Kingdom
PhD	Owen Humpreys	Development of in vitro and ex vivo urethral models to investigate the performance of urinary intermittent catheters	Dr Tom Flanagan	Professor Colin Mc Coy	Queen's University Belfast, United Kingdom (GB & NI)
PhD	Emily J. Stenke	The role of NADPH oxidase 4 in Intestinal Fibrosis and Inflammation	Professor Ulla Knaus	Dr Isabel Fabregat	University of Barcelona, Spain
PhD	Sofia Kivotidi	TPU-based polymers synthesis via novel "green" process and their application as advanced medical device hydrogels for chronic skin wounds	Professor Wenxin Wang	Dr Georgia Charalambopoulou	National Centre of Scientific Research "Demokritos", Athens, Greece
PhD	Patrick Leydon	Deep Learning for Assessment of Plasma Cell Disorders in 18F-FDG PET-CT	Dr Kathleen Curran	Dr Jim O' Doherty	National University of Singapore, Singapore
PhD	Xiaolin Li	Functionalised ECM Based Injectable Hydrogel Integrate with Stem Cell for Cartilage Regeneration	Professor Wenxin Wang	Dr Catherine Le Visage	University of Nantes, France

Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
PhD	May Mohammed S. Almestehi	Assessment of a Transvaginal Ultrasound Simulator as an Educational Tool in an MSc Ultrasound Programme	Dr Mary Moran	Professor Peter Hogg	University of Salford, United Kingdom
PhD	Conor Murphy	Personalising the approach to unintentional weight loss after oesophagectomy by exploring the role of gut-brain signalling	Professor Carel Le Roux	Professor George Hanna	Imperial College London, United Kingdom
PhD	Kieran Murray	Outcomes in Inflammatory Arthritis: Therapeutic Response, Reproductive Health and Infection Risk	Professor Douglas Veale	Dr Grainne Murphy	Cork University Hospital, Cork, Ireland
PhD	Eimer O'Malley	The diagnosis of Gestational Diabetes Mellitus	Professor Michael Turner	Professor Helen Murphy	University of East Anglia, United Kingdom.
MD	Breannin Anglim	The Effect of Local Estrogen Therapy on the microbiome composition and relative abundance in the urinary postmenopausal women with/without urinary tract infections	Prof Declan Keane/Prof May Alarab	Dr Christian Phillips	University of Winchester, United Kingdom
MD	David Columb	Behavioural Addictions in an Irish Population	Dr Colin O'Gara	Mr Daniel King	University of Flinders, Australia
MD	Eileen Crowley	Towards Personalised Care in Paediatric Inflammatory Bowel Disease	Professor Billy Bourke	Dr Lissy de Ridder	Erasmus MC-Sophia Children's Hospital, Rotterdam, The Netherlands.
MD	Katherine Cunningham	Temperature Management of Outborn Preterm Infants During Inter-hospital Transfer After Birth	Dr Colm O'Donnell	Professor Benjamin Stenson	University of Edinburgh, Scotland, United Kingdom.
MD	Alison Greene	Epigenetics in the Pathogenesis of Pseudoexfoliation Glaucoma	Dr Deborah Wallace	Professor Ursula Schlotzer-Schrehardt	University of Erlangen-Nürnberg, The Netherlands
MD	Faheem Khan	The Influence of smoking status on Circulating Fibrocytes in Health and in Smoking-related Fibrogenic Lung Diseases States	Dr Marcus Butler	Professor Martin Kolb	McMaster University, Canada
MD	David Kinlen	Childhood obesity is associated with dysregulation of MAIT cells and monocytes, driving production of cytokines linked to insulin resistance	Professor Donal O'Shea	Mr Gerald Denis	Boston University, Unites States of America

Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
MD	Nuala McNicholas	A clinical study on diagnostic, cognitive and sleep-related issues in Multiple Sclerosis	Dr Christopher McGuigan	Dr Jonathan O'Riordan	Ninewells Hospital and Medical School, Scotland, United Kingdom
MD	Imran Meurling	Respiratory Characteristics of an Irish Bariatric Population	Professor Donal O'Shea	Professor J Alberto Neder	Queen's University Belfast, United Kingdom (GB & NI)
MD	Rebecca Moore	A Microbe Mom study: Insights into metabolic health and the microbiome in early pregnancy	Professor Fionnuala McAuliffe	Professor Juha Rasanen	University of Helsinki, Finland
MD	Olwen Murphy	Clinical and imaging biomarkers in inflammatory myelopathies and multiple sclerosis	Dr Christopher McGuigan	Professor Eoin P. Flanagan	Mayo Clinic, United States.
MD	Parthiban Nadarajan	Role of Exosomes in Non-Small Cell Lung Cancer	Professor Michael Keane	Professor Doug Arenberg	University of Michigan, United States of America
MD	Trevor Nicholson	Pathophysiology and treatment of acute exacerbations of Cystic Fibrosis	Professor Charles Gallagher	Professor Andrew Jones	University of Manchester, United Kingdom
MD	Susanne O'Reilly	Endoscopic, Psychosocial and Histological Features of a Faecal Immunochemical Test Based National Colorectal Cancer Screening Programme	Dr Garret Cullen	Professor Mark Hull	University of Leeds, United Kingdom
MD	Rajiv Pandey	RetinaScreen: Diabetic Retinopathy Screening and Treatment of People Living with Diabetes in Ireland	Professor David Keegan	Professor Tunde Peto	Queen's University Belfast, United Kingdom (GB & NI)
MD	Catherine Rowan	Emerging pathways and evolving therapeutics in IBD.	Dr Glen Doherty	Professor Alexander Moschen	Medical University Innsbruck, Austria
MD	Gillian Ryan	Myometrial Contractility and Labour in Women with One Previous Caesarean Section	Professor Fionnuala McAuliffe	Professor Asma Khalil	St George's University of London, United Kingdom
MD	Piriyah Sinclair	Modelling The Impact Of High Fat Diet Feeding And Intentional Weight Loss On Type 1 Endometrial Cancer In The BDII/Han Rat	Professor Carel Le Roux	Professor Anne Jorns	Hanover Medical School, Germany
MD	Thomas Wall	In vitro, in vivo and clinical translational studies of the effects of perioperative amide local anaesthetic drugs and techniques on breast cancer recurrence	Professor Donal Buggy	Professor David Lambert	University of Leicester, United Kingdom
MD	Michael Wilkinson	Molecular Determinants of Obesity Related Endometrial Cancer	Professor Donal Brennan	Professor Emma Crosbie	University of Manchester, United Kingdom



Student Summer Research Award (SSRA) programme 2021

The Student Summer Research Award (SSRA) programme, established in 2006 under the direction of Professor Amanda McCann, 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 publication.

This year, the UCD School of Medicine had a particularly challenging environment with the ongoing COVID-19 pandemic. Despite these challenges, a strong research ethos triumphed, and we have 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.

148 students undertook SSRA projects in 2021, including students who were hosted virtually and in person in International institutes and Universities including twenty-three students hosted in institutes across Canada, twelve institutes across the Unites States, two within Japan, two in Thailand as well as the Arumeru District Hospital Tanzania and the Cachamsi Medical Spanish Program in Ecuador South America.

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 and the great flexibility explored to host UCD students in remote working capacities.

This year, the SSRA International Dean's Scholarships were also available to successful students and were hosted at Washington University, Hospice Africa Uganda and the University of British Columbia, Canada.

Thanks to the generosity of the benefactors of the Myles Smith family, the UCD School of Medicine SSRA programme was able to continue to offer the Alfred Myles Smith Bursary Award for Research Excellence in 2021 in the areas of cardiology and vascular disease and rare cancers.

In addition to the Alfred Myles Smith Bursary, 2021 saw the introduction of two new scholarships for SSRA Students.

The "Clare O'Connor Summer Student Scholarship in Respiratory Research". This award has been created thanks to generous donations by a number of individuals via Prof Muiris X FitzGerald, former Dean of Medicine and founder of the SVUH Cystic Fibrosis Unit.

The "Kathleen Lynn Summer Student Scholarship in the History of Medicine/Humanities in Medicine". This annual award is in memory of Dr. Kathleen Lynn (b. 1874-d.1955). This award is sponsored conjointly by the UCD School of Medicine and the UCD Centre for the History of Medicine in Ireland, UCD School of History.

Awardees 2021

Award	Awardee	Project Title	Location	Supervisor
Alfred Myles Smith Bursary 2021	Neil Wu	Outcomes Following Minimally-Invasive Valve Surgery: A Retrospective Single-Centre Chart Review To Determine Safety And Durability.	Division of Cardiovascular Surgery, University of British Columbia, Vancouver, British Columbia, Canada.	Dr Richard Cook
Gold Medal	Anna Lawless	Targeting Mutant P53 For the Treatment of Triple Negative Breast Cancer: A Pre-Clinical Study	UCD Clinical Research Centre, St. Vincent's University Hospital, Dublin, Ireland.	Professor Michael Joe Duffy
Silver Medal	Ella Flaherty	Retrospective Case Series of Primary Spinal Tumours at The National Spinal Injuries Unit	National Spinal Injuries Unit, Mater Misericordiae University Hospital, Dublin, Ireland.	Dr Cathleen O'Neill
Bronze Medal	Lily Farrell	Monitoring Long Term Disease Progression And Vision Loss In Birdshot Chorioretinopathy (BCR): Multimodal Imaging And Clinical Correlates As Well As Quality Of Life Assessment	Department of Ophthalmology, Royal Victoria Eye & Ear Hospital, Dublin, Ireland	Mr Dara Kilmartin
Poster Prize 1st Place	Sean Kerr	Optimizing Ipsc Loaded Hyaluronic Acid Scaffold Properties For Spinal Cord And Dorsal Root Ganglia Culture	Tissue Engineering Research Group, Department of Anatomy, Royal College of Surgeons in Ireland, Dublin, Ireland	Dr Adrian Dervan
Poster Prize 2nd Place	Shin Mei Chuah	The Effect of Chemotherapy, Immunotherapy, And Vaccines In The Survival Of Canine Melanoma: A Systematic Review	UCD Conway Institute of Biomolecular & Biomedical Research, University College Dublin, Ireland.	Professor Amanda McCann, Associate Professor Shirley Potter
Poster Prize 3rd Place	Ned Quirke	Quantitative Indocyanine Green Fluorescence Angiography Flap Perfusions Analysis	Department of Plastic & Reconstructive Surgery, Mater Misericordiae University Hospital, Dublin, Ireland.	Associate Professor Shirley Potter
Clare O'Connor Summer Student Scholarship	Iulia Marinescu	Proteomic Analysis of The Nanoparticle Biomolecular Corona Formed In The Plasma Of Lung Cancer Patients And Healthy Controls	Department of Respiratory Medicine, St. Vincent's University Hospital, Dublin, Ireland.	Assoc Prof Cormac McCarthy
Kathleen Lynn Summer Student Scholarship	Anouchka Lewis	Disability and healthcare Inequalities in 19th and 20th Century Ireland: A Medical and Socio-Cultural history	UCD School of Medicine, Centre for the History of Medicine in Ireland, UCD School of History, University College Dublin, Dublin, Ireland.	Assoc Prof Catherine Cox

Academic Centre Updates 2021

www.ucd.ie/medicine/ourresearch/researchcentres

- UCD Centre for Arthritis Research
- UCD Bioinformatics Centre
- UCD Diabetes Complications Research Centre
- UCD Centre for Emergency Medical Science
- UCD Centre for Experimental Pathogen Host Research
- UCD Centre for Human Reproduction
- UCD Perinatal Research Centre
- UCD Centre for Precision Surgery
- UCD Academic Centre on Rare Diseases
- UCD Centre in Translational Oncology
- UCD Clinical Research Centre



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 CRC (Clinical Research Centre), 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.

Key Publications in 2021	<p>Psoriatic arthritis. <i>Nat Rev Dis Primers</i> 7, 59 (2021).</p> <p>Identification and Evaluation of Serum Protein Biomarkers that differentiate Psoriatic Arthritis from Rheumatoid Arthritis. <i>Arthritis Rheumatol</i> (2021) doi: 10.1002/art.41899.</p> <p>Flare Rate Thresholds for Patient Assessment of Disease Activity States in Gout. <i>J Rheumatol</i> 48, 293-298 (2021).</p> <p>A Novel RELA Truncating Mutation in a Familial Behcet's Disease-like Mucocutaneous Ulcerative Condition. <i>Arthritis Rheumatol</i> 73, 490-497 (2021).</p> <p>(In)Visible illness: A photovoice study of the lived experience of self-managing rheumatoid arthritis. <i>PLoS One</i> 16, e0248151 (2021).</p>
Key Awards in 2021	<p>The Bryan Alton Medal was awarded to Prof Geraldine McCarthy MD, FRCPI Consultant Rheumatologist Mater Misericordiae University Hospital Dublin and Professor of Medicine, in recognition of her contribution to clinical and academic medicine.</p>
Key Grants in 2021	<p>Profs Oliver Fitzgerald and Steve Pennington are leaders of the €21m EU funded 'HIPPOCRATES' collaborative partnership. The 5-year project will examine the clinical, genetic and environmental factors that lead to psoriatic arthritis. This is a chronic immune-mediated inflammatory disease affecting the musculoskeletal system. The aim is to discover novel biomarker signatures that could identify those at risk of developing the disease, and those in the early stage.</p>
Centre news in 2021	<p>The centre has very active public and patient involvement. It holds an annual half day conference. The theme of the November 2021 event was 'New treatments' and involved a range of national and international speakers. It was again a virtual event with over 160 registrants. Full details, including recordings of speakers, will shortly be available on the CAR website.</p>



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 Bioinformatics Centre 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, pathogens.

Key Publications in 2021

410354 Short linear motif candidates in the cell entry system used by SARS-CoV-2 and their potential therapeutic implications Journal article Mészáros B; Sámano-Sánchez H; Alvarado-Valverde J; Čalyševa J; Martínez-Pérez E; Alves R; Shields DC; Kumar M; Rippmann F; Chemes LB Science Signaling 01/2021

425342 Predictive modelling of hypoxic ischaemic encephalopathy risk following perinatal asphyxia. Journal article Mooney C; O’Boyle D; Finder M; Hallberg B; Walsh BH; Henshall DC; Boylan GB; Murray DM Heliyon 07/2021 e07411

421195 SCLpred-MEM: Subcellular localization prediction of membrane proteins by deep N-to-1 convolutional neural networks Journal article Kaleel M; Ellinger L; Lalor C; Pollastri G; Mooney C Proteins: Structure Function and Bioinformatics 10/2021 1233 1239

416953 Population genomics of the pathogenic yeast Candida tropicalis identifies hybrid isolates in environmental samples Journal article O’Brien CE; Oliveira-Pacheco J; Cinnéide E; Haase MAB; Hittinger CT; Rogers TR; Zaragoza O; Bond U; Butler G PLoS Pathogens 03/2021

439756 Comprehensive prediction of robust synthetic lethality between paralog pairs in cancer cell lines. Journal article De Kegel B; Quinn N; Thompson NA; Adams DJ; Ryan CJ Cell systems 09/2021

407654 The Clustal Omega Multiple Alignment Package Journal article Sievers F; Higgins DG Multiple Sequence Alignment, 01/2021 3 16

402323 DOME: recommendations for supervised machine learning validation in biology Journal article Walsh I; Fishman D; Garcia-Gasulla D; Titma T; Pollastri G; Capriotti E; Casadio R; Capella-Gutierrez S; Cirillo D; Del Conte A Nature Methods 10/2021 1122 1127

Key Grants in 2021

Kenneth Wolfe: Molecular arms race between a yeast homing genetic element and its genomic target
SFI €1,279,805

Colm Ryan: Understanding and predicting context-specific synthetic lethality in cancer
SFI €545,044

Catherine Mooney: AI-Based Digital Pathology & Molecular Profiling to Improve Treatment Decisions for Cancer Patients
Enterprise Ireland €293,604

Centre News in 2021

Six more students have recently chosen UCD for their PhD as part of the Genomics Data Science SFI CRT, bringing the total number of UCD PhD students funded through this programme to 14, across a number of schools, helping to advance highly interdisciplinary research.



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, the Mater Misericordiae University and St Vincent's University Hospitals 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), the European Union (EU), Innovations Medicine Initiative (IMI) and bio pharma industry.

The DCRC is primary associated with the UCD School of Medicine and also associated with the School of Biomolecular and Biomedical Sciences (SBBS), and School of Public Health, Physiotherapy and Sport Science (SPPSS). We are based in the UCD Conway Institute of Biomolecular and Biomedical Research.

Key Publications 2021

- Metabolic surgery versus conventional therapy in type 2 diabetes. Miras AD & le Roux CW. *Lancet*. 2021 Jan 23;397(10271):256-257.
- COVID-19 alters thinking and management in metabolic diseases. le Roux CW. *Nat Rev Endocrinol*. 2021 Feb;17(2):71-72.
- Pro-resolving lipid mediators: regulators of inflammation, metabolism and kidney function. Brennan E et al., *Nat Rev Nephrol*. 2021 Nov;17(11):725-739. doi: 10.1038/s41581-021-00454-y. Epub 2021 Jul 19. PMID: 34282342 Free PMC article. Review.
- Asymmetric Synthesis and Biological Screening of Quinoxaline-Containing Synthetic Lipoxin A4 Mimetics (QNX-sLXms). de Gaetano M et al., *J Med Chem*. 2021 Jul 8;64(13):9193-9216
- Extracellular vesicles from monocyte/platelet aggregates modulate human atherosclerotic plaque reactivity. Oggero S, et al., *J Extracell Vesicles*. 2021 Apr;10(6):12084.
- Assessment of differentially methylated loci in individuals with end-stage kidney disease attributed to diabetic kidney disease: an exploratory study. Smyth LJ et al., *Clin Epigenetics*. 2021 May 1;13(1):99. doi: 10.1186/s13148-021-01081-x. PMID: 33933144 Free PMC article.
- Lipoxins and synthetic lipoxin mimetics: Therapeutic potential in renal diseases. Andrews D & Godson C. *Biochim Biophys Acta Mol Cell Biol Lipids*. 2021 Aug;1866(8):158940.
- Therapeutic potential of the FPR2/ALX agonist AT-01-KG in the resolution of articular inflammation. Galvão I, et al., *Pharmacol Res*. 2021 Mar;165:105445.
- Early experience with a nutrition and survivorship clinic in esophageal cancer. Murphy CF et al., *Dis Esophagus*. 2021 Feb 10;34(2):doaa061. doi: 10.1093/dote/doaa061. PMID: 32566939.
- A Pilot Study of Gut-Brain Signaling After Octreotide Therapy for Unintentional Weight Loss After Esophagectomy. Murphy CF et al., *J Clin Endocrinol Metab*. 2021 Jan 1;106(1):e204-e216.
- Therapeutic potential of pro-resolving mediators in diabetic kidney disease. Vartak et al., *Adv Drug Deliv Rev*. 2021 Nov;178:113965. doi: 10.1016/j.addr.2021.113965. Epub 2021 Sep 8. PMID: 34508793 Free article. Review.
- Therapeutic potential of the FPR2/ALX agonist AT-01-KG in the resolution of articular inflammation. Galvão I, et al., *Pharmacol Res*. 2021 Mar;165:105445.
- Recent advances in the design and development of formyl peptide receptor 2 (FPR2/ALX) agonists as pro-resolving agents with diverse therapeutic potential. Maciuszek M et al., *Eur J Med Chem*. 2021 Mar 5;213:113167.
- Clinical Impact of Liraglutide as a Treatment of Obesity. Alruwaili H, et al., *Clin Pharmacol*. 2021 Mar 11;13:53-60.

**Key
Publications
2021**

- Management of Obesity in Adults with CKD. Friedman AN J Am Soc Nephrol. 2021 Feb 18;ASN.2020101472. doi: 10.1681/ASN.2020101472. Epub ahead of print. MID: 33602674.
- Murphy CF, Fanning M, Raftery N, Elliott JA, Docherty NG, Donohoe CL, Ravi N, le Roux CW, Reynolds JV. Early experience with a nutrition and survivorship clinic in esophageal cancer. Dis Esophagus. 2021 Feb 10;34(2):doaa061. doi: 10.1093/dote/doaa061. PMID: 32566939.
- The Role of Bariatric Surgery in Prevention of Kidney Disease Progression in Moderately Obese Patients With Type 2 Diabetes-Reply. Cohen RV et al., JAMA Surg. 2021 Feb 1;156(2):206-207. doi.
- A Pilot Study of Gut-Brain Signaling After Octreotide Therapy for Unintentional Weight Loss After Esophagectomy. Murphy CF et al., J Clin Endocrinol Metab. 2021 Jan 1;106(1):e204-e216
- Methodological issues in assessing change in dietary intake and appetite following gastric bypass surgery: A systematic review. Redpath TL Obes Rev. 2021 Feb 1..
- le Roux CW. Do Gut Hormones Contribute to Weight Loss and Glycaemic Outcomes after Bariatric Surgery? Papamargaritis D et al., Nutrients. 2021 Feb 26;13(3):762.
- Liraglutide Does Not Adversely Impact Fat-Free Mass Loss. Grannell A, Obesity (Silver Spring). 2021 Mar;29(3):529-534.
- Bariatric surgery in the treatment of patients with obesity and type 1 diabetes: A retrospective study of clinical data. Mohammed N et al., Diabetes Obes Metab. 2021 Mar 9.
- Factors Associated with Favorable Changes in Food Preferences After Bariatric Surgery. Nielsen MS, et al., Obes Surg. 2021 Mar 30. doi: 10.1007/s11695-021-05374-1. Epub ahead of print. PMID: 33786744.
- Gastric emptying of solutions containing the natural sweetener erythritol and effects on gut hormone secretion in humans: A pilot dose-ranging study. Wölnerhanssen BK Diabetes Obes Metab. 2021 Feb 10. doi: 10.1111/dom.14342. Epub ahead of print. PMID: 33565706.
- Therapeutic potential of pro-resolving mediators in diabetic kidney disease Adv Drug Deliv Rev. 2021 Nov;178:113965.
- Pro-resolving lipid mediators: regulators of inflammation, metabolism and kidney function. Brennan E, et al., Nat Rev Nephrol. 2021 Nov;17(11):725-739.
- Asymmetric Synthesis and Biological Screening of Quinoxaline-Containing Synthetic Lipoxin A4 Mimetics (QNX-sLXms). de Gaetano M, et al., J Med Chem. 2021 Jul 8;64(13):9193-9216
- Assessment of differentially methylated loci in individuals with end-stage kidney disease attributed to diabetic kidney disease: an exploratory study. Smyth LJ, et al., Clin Epigenetics. 2021 May 1;13(1):99. doi: 10.1186/s13148-021-01081-x.
- Therapeutic potential of the FPR2/ALX agonist AT-01-KG in the resolution of articular inflammation. Galvão I et al., Pharmacol Res. 2021 Mar;165:105445.
- Recent advances in the design and development of formyl peptide receptor 2 (FPR2/ALX) agonists as pro-resolving agents with diverse therapeutic potential. Maciuszek M et al., Eur J Med Chem. 2021 Mar 5;213:11316
- HDL particle size is increased and HDL-cholesterol efflux is enhanced in type 1 diabetes: a cross-sectional study. Ahmed MO, et al., Diabetologia. 2021 Mar;64(3):656-667.
- Metabolic Inflammation in Obesity-At the Crossroads between Fatty Acid and Cholesterol Metabolism. Curley S, et al., Mol Nutr Food Res. 2021 Jan;65(1):e1900482.
- Microbiome Transfer Partly Overrides Lack of IL-1RI Signaling to Alter Hepatic but not Adipose Tissue Phenotype and Lipid Handling following a High-Fat Diet Challenge. Ralston JC, et al., Mol Nutr Food Res. 2021 Jan;65(1):e2000202.

Key Awards in 2021**Catherine Godson**

Graves Medal of the Royal Academy of Medicine in Ireland, December 2021. Outstanding Achievement Award of the Eicosanoid Research Foundation to be awarded 2022.

Dr William Martin

European Diabetic Nephropathy Study Group Annual Meeting Best Presentation. Mechanisms underpinning reductions in diabetic renal injury following intentional weight loss presented May 2021 www.ucd.ie/medicine/news/2021/newsstories/may2021ednsgmeeting

Centre news in 2021**Catherine Godson**

- American Society of Nephrology, Annual Meeting Program Co-Chair, 2022
- American Society of Nephrology, Annual Meeting Program Committee Member, 2021
- Elected Science Secretary, Royal Irish Academy, 2020 & 2021
- Patent Award: Dubloxins – new stable Lipoxin analogues possessing anti-inflammatory and anti- atherosclerotic activities. Inventors: Guiry, P Godson, C deGaetano, M. ,Butler, D Wilson, C and Tighe, C Composition of Matter Patent granted Europe, USA, Japan October 2021
- Diabetes Ireland Research Alliance (DIRA) Webinar: Research in Diabetes: Improving Treatments and Finding a Cure. October 2021
- <https://www.irishtimes.com/special-reports/r-d-ireland/conducting-research-on-what-has-been-a-stop-start-basis-1.4638897>

Tani Vartek

Tanwi Vartak, 2nd Year PhD Candidate at the DRCC (Diabetes Complications Research Centre), UCD Conway Institute, presents her personal video 'My Day as Researcher' compiled as part of the TY Student Outreach Programme. During the video Tanwi introduces us to her Tissue Culture related work and her work in the Conway Geonomics Facility all aided by lots of coffee. https://drive.google.com/file/d/1wpoPxjF_D2eBnTDZ-pQD6qYcooYkc4hc/view?usp=sharing

James White

UCD DCRC (Diabetes Complications Research Centre) Researchers take part in exciting public engagement activity with transition year students

(18th June 2021) Early career researchers from the UCD DCRC helped deliver a weeklong schedule of exciting activities with transition year students on a work experience week in April 2021. www.ucd.ie/medicine/news/2021/newsstories/dcrcpublicengagementactivity



UCD CEMS continues to support Irish emergency services and general practice in the provision of high quality pre-hospital emergency care. Since the emergence of Covid-19, UCD CEMS has worked intensively with HSE, NAS, DFB and Irish Defence Forces as well as large numbers of GPs and other primary care team members to train, evaluate and support key elements of care in high risk environments. In particular, the continued provision of resuscitation in local communities by volunteer MERIT3 GPs has contributed essential care in a setting where many other service providers have been unable to continue to work.

Our main teaching programmes include:

1. Advanced Paramedic Training Programme (GradDipEMS) – a one-year programme with 48 graduates per year, for the National Ambulance Service, Dublin Fire Brigade, DAA and Irish Defence Forces.
2. Immediate Care CPD courses – Cardiac, Trauma and Paediatric course are taken by 500-600 GPs each year, at many sites around the country
3. Combat Medical Technician Programme (DipMilMed) – a one-year programme with 24 graduates per year, for the Irish Defence Forces.
4. MScEMS programmes – two programmes enrol around a dozen students annually.
5. EMS Skills Courses – all 180 medical students undertaking final year PCM, take a 2-day skills course, taught in small groups – the highlight of PCM (besides graduating)!
6. Emergencies in Sports & Exercise Medicine programme – Diploma (Lead Dr. MDoheny)
7. Primary Care Technician programme – CPD award, for up to 40 staff / year.

Our main research programmes include:

1. MERIT: 520 general practices in our network report data on all OHCA's they deal with.
2. MERIT3: 200 volunteer doctors (mainly GPs) are alerted to OHCA's in their communities by the Ambulance Service Operations Centre.
3. MERIT4/ICRR: 12 volunteer doctors (mainly GPs and Emergency Medicine consultants) respond to a broad range of life-threatening emergencies, using Rapid Response Vehicles.
4. HRB APA (PI SMasterson/TBarry) – Community First Response to OHCA.
5. HRB Clinician Scientist (TBarry) – predictors of OHCA survival
6. HRB APA (PI EMcAuliffe) – CUPID (Children's Unscheduled Primary and Emergency Care in Ireland).

Also, PhD and MD candidates are conducting work on neonatal resuscitation, treat and referral by ambulance services and community-based response to OHCA.



Established in 2019, CEPHR brings together researchers and research groups from across UCD who focus on infection-related research. 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 Biology and Biological Sciences, and the UCD School of Politics and International Relations.

**Key Publications
in 2021**

Mallon PWG, Tinago W, Leon AG, McCann K, Kenny G, McGettrick P, Green S, Inzitari R, Cottare AG, Feeney ER, Savinelli S, Doran P; All Ireland Infectious Diseases Cohort Study Group. Dynamic Change and Clinical Relevance of Postinfectious SARS-CoV-2 Antibody Responses. *Open Forum Infect Dis.* 2021 Mar 26;8(8):ofab122. doi: 10.1093/ofid/ofab122. PMID: 34377721; PMCID: PMC8083770.

Kenny G, Mallon PWG. Tocilizumab for the treatment of non-critical COVID-19 pneumonia: an overview of the rationale and clinical evidence to date. *Expert Rev Clin Pharmacol.* 2021 Oct;14(10):1279-1287. doi: 10.1080/17512433.2021.1949286. Epub 2021 Jul 26. PMID: 34187281; PMCID: PMC8330014.

Alvarez-Barco E, Mallon PWG. What's new in bone disease and fractures in HIV? *Curr Opin HIV AIDS.* 2021 May 1;16(3):186-191. PMID: 33843807.

Kelly C, Gurung R, Kamng'ona R et al. Circulating microparticles are increased amongst people presenting with HIV and advanced immune suppression in Malawi and correlate closely with arterial stiffness: a nested case control study [version 1; peer review: 1 approved with reservations]. *Wellcome Open Res* 2021, 6:264

Kelly C, Tinago W, Alber D, Hunter P, Luckhurst N, Connolly J, Arrigoni F, Garcia Abner A, Kamng'ona R, Sheha I, Chammudzi M, Jambo K, Mallewa J, Rapala A, Mallon PWG, Mwandumba H, Klein N, Khoo S. Inflammatory pathways amongst people living with HIV in Malawi differ according to socioeconomic status. *PLoS One.* 2021 Aug 25;16(8):e0256576. doi: 10.1371/journal.pone.0256576. PMID: 34432828; PMCID: PMC8386842.

Staunton S, Rajendran D, Maher P, McCann J, McNicholas S, Feeney E, O'Broin C, Savinelli S, Mallon P, Watson A, Waqas S. Discharge-delaying factors for patients suitable for outpatient parenteral antimicrobial therapy (OPAT) in an Irish tertiary hospital during COVID-19. *JAC Antimicrob Resist.* 2021 Oct 14;3(4):dlab163. doi: 10.1093/jacamr/dlab163. PMID: 34661108; PMCID: PMC8516592.

Kearns EC, Callanan I, O'Reilly A, Purcell A, Tuohy N, Bulfin S, Smyth A, Bairead E, Fitzgerald S, Feeney E, Waqas S. Changing attitudes towards annual influenza vaccination amongst staff in a Tertiary Care Irish University Hospital. *Ir J Med Sci.* 2021 May 13:1-8. doi: 10.1007/s11845-021-02636-w. Epub ahead of print. PMID: 33987799; PMCID: PMC8118105.

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L. Smith, L Smyth, E. Feeney, K. Schaffer and J. Hassan (2021) Case Report: Discordant RT-PCR results in a COVID-19 patient challenges clinical decisions. *J Infect Dis & Preventive Medicine.* Vol. 9 Iss. 2 No: 219; 1-4.

O'Reilly S, Angeliadis M, Murtagh R, Gautier Virginie W. Drug repurposing and other strategies for the rapid development of antiviral therapeutics: lessons from the early stage of the COVID-19 pandemic. In: Fabre A, Hurst JR, Ramjug S, eds. *COVID-19 (ERS Monograph)*. Sheffield, European Respiratory Society, 2021

Amina Ait-Ammar, Maxime Bellefroid, Fadoua Daouad, Valerie Martinelli, Jeanne Van Assche, Clementine Wallet, Marco De Rovere, Birthe Fahrenkrog, Christian Schwartz, Carine Van Lint, Virginie Gautier, ROHR Olivier. (2021) Title: "Inhibition of HIV-1 gene transcription by KAP1 in myeloid lineage". *Scientific Reports*

**Key Publications
in 2021 (cont.)**

- Verdikt R, Bouchat S, Pasternak A, Avettand-Fenoel V, Darcis G, Nestola L, Le Douce V, Vanhulle C, Delacourt N, Plant E, Bendoumou M, Van Driessche B, Necsoi C, Corazza F, Schwartz C, Sáez-Ciri3n A, Berkhout B, Rouzioux C, De Wit S, Gautier VW, Rohr O and Van Lint C. Title: "Novel Role of UHRF1 in DNA methylation-mediated repression of latent HIV-1". (2021) bioRxiv
- Y. Zhou, N. Fletcher, N. Zhang, J. Hassan, M. Gilchrist. (2021, in press). Enhancement of antiviral effect of plastic film against SARS-CoV-2: Combining nanomaterials and nanopatterns with scalability for mass manufacturing. *Nano Letters*
- Mallon PW, Brunet L, Hsu RK, Fusco JS, Mounzer KC, Prajapati G, Beyer AP, Wohlfeiler MB, Fusco GP. Weight gain before and after switch from TDF to TAF in a U.S. cohort study. *J Int AIDS Soc.* 2021 Apr;24(4):e25702. doi: 10.1002/jia2.25702. PMID: 33838004; PMCID: PMC8035674.
- Roe M, Wall P, Mallon P, Sundaram D, Kumawat J, Horgan M. Quantifying the impact of regional variations in COVID-19 infections and hospitalisations across Ireland. *Eur J Public Health.* 2021 Sep 16:ckab173. doi: 10.1093/eurpub/ckab173. Epub ahead of print. PMID: 34528067
- De Santi C, Jacob B, Kroich P, Doyle S, Ward R, Li B, Donnelly O, Dykes A, Neelakant T, Neary D, McGuinness R, Cafferkey J, Ryan K, Quadu V, McGrogan K, Garcia Leon A, Mallon P, Fitzpatrick F, Humphreys H, De Barra E, Kerrigan SW, Cavalleri GL. Concordance between PCR-based extraction-free saliva and nasopharyngeal swabs for SARS-CoV-2 testing. *HRB Open Res.* 2021 Oct 15;4:85. doi: 10.12688/hrbopenres.13353.2. PMID: 34522839; PMCID: PMC8408542.
- Brunet L, Mallon P, Fusco JS, Wohlfeiler MB, Prajapati G, Beyer A, Fusco GP. Switch from Tenofovir Disoproxil Fumarate to Tenofovir Alafenamide in People Living with HIV: Lipid Changes and Statin Underutilization. *Clin Drug Investig.* 2021 Nov;41(11):955-965. doi: 10.1007/s40261-021-01081-y. Epub 2021 Sep 21. PMID: 34546533; PMCID: PMC8556204.
- Guaraldi G, Milic J, Martinez E, Kamarulzaman A, Mussini C, Waters L, Pozniak A, Mallon P, Rockstroh JK, Lazarus JV. Human Immunodeficiency Virus (HIV) Care Models During the Coronavirus Disease 2019 (COVID-19) Era. *Clin Infect Dis.* 2021 Sep 7;73(5):e1222-e1227. doi: 10.1093/cid/ciaa1864. PMID: 34492689.
- Fogarty H, Townsend L, Morrin H, Ahmad A, Comerford C, Karampini E, Englert H, Byrne M, Bergin C, O'Sullivan JM, Martin-Loeches I, Nadarajan P, Bannan C, Mallon PW, Curley GF, Preston RJS, Rehill AM, McGonagle D, Ni Cheallaigh C, Baker RI, Renn3e T, Ward SE, O'Donnell JS; Irish COVID-19 Vasculopathy Study (iCVS) investigators. Persistent endotheliopathy in the pathogenesis of long COVID syndrome. *J Thromb Haemost.* 2021 Oct;19(10):2546-2553. doi: 10.1111/jth.15490. Epub 2021 Sep 12. PMID: 34375505; PMCID: PMC8420256.
- De Francesco D, Wang X, Dickinson L, Underwood J, Bagkeris E, Babalis DS, Mallon PWG, Post FA, Vera JH, Sachikonye M, Williams I, Khoo S, Sabin CA, Winston A, Boffito M; Pharmacokinetic and Clinical Observations in People Over fifty (POPPY) study. Associations between plasma nucleoside reverse transcriptase inhibitors concentrations and cognitive function in people with HIV. *PLoS One.* 2021 Jul 21;16(7):e0253861. doi: 10.1371/journal.pone.0253861. PMID: 34288920; PMCID: PMC8294567.
- Ogbuagu O, Ruane PJ, Podzamczek D, Salazar LC, Henry K, Asmuth DM, Wohl D, Gilson R, Shao Y, Ebrahimi R, Cox S, Kintu A, Carter C, Das M, Baeten JM, Brainard DM, Whitlock G, Brunetta JM, Kronborg G, Spinner CD; DISCOVER study team. Long-term safety and efficacy of emtricitabine and tenofovir alafenamide vs emtricitabine and tenofovir disoproxil fumarate for HIV-1 pre-exposure prophylaxis: week 96 results from a randomised, double-blind, placebo-controlled, phase 3 trial. *Lancet HIV.* 2021 Jul;8(7):e397-e407. doi: 10.1016/S2352-3018(21)00071-0. Erratum in: *Lancet HIV.* 2021 Sep 24;: PMID: 34197772.
- Ward SE, Fogarty H, Karampini E, Lavin M, Schneppenheim S, Dittmer R, Morrin H, Glavey S, Ni Cheallaigh C, Bergin C, Martin-Loeches I, Mallon PW, Curley GF, Baker RI, Budde U, O'Sullivan JM, O'Donnell JS; Irish COVID-19 Vasculopathy Study (iCVS) investigators. ADAMTS13 regulation of VWF multimer distribution in severe COVID-19. *J Thromb Haemost.* 2021 Aug;19(8):1914-1921. doi: 10.1111/jth.15409. Epub 2021 Jun 20. PMID: 34053187; PMCID: PMC8237059.

Key Publications in 2021 (cont.)

De Francesco D, Sabin CA, Winston A, Rueschman MN, Doyle ND, Anderson J, Vera JH, Boffito M, Sachikonye M, Mallon PWG, Haddow L, Post FA, Redline S, Kunisaki KM. Sleep health and cognitive function among people with and without HIV: the use of different machine learning approaches. *Sleep*. 2021 Aug 13;44(8):zsab035. doi: 10.1093/sleep/zsab035. PMID: 33592094; PMCID: PMC8361343.

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Glaspy S, Cosmaro L, Botsi C, Stamou M, Giannopoulou M, Isari AM, Downey C, Hugh TM, Avramovic G, Lambert JS. Integrating partner notification and contact tracing services across Europe: findings from the Integrate project. *BMC Infect Dis*. 2021 Sep 13;21(Suppl 2):796. doi: 10.1186/s12879-021-06445-5. PMID: 34517838; PMCID: PMC8438812.

Raben D, Casabona J, Cosmaro L, Gasbarrini N, Lambert JS, Glapsy S, Kakalou C, Maffeo M, Mommi M, Corradini G, Klavs I, Kurbatova A, Wawer I, Wysocki P, Raahauge A, Jakobsen SF, Lazarus JV, Sullivan A, Kall M, Hedrich D, Johnson CC, Seguy NS, Simões D, Delpech V. Lessons learned from the first European project on the integration of infectious diseases in testing services, data collection and country responses. *BMC Infect Dis*. 2021 Sep 13;21(Suppl 2):690. doi: 10.1186/s12879-021-06362-7. PMID: 34517824; PMCID: PMC8436854.

Brehony C, Eogan M, Lambert JS, Drew RJ. Evaluation of molecular testing for *Mycoplasma genitalium* for symptomatic women. *Ir J Med Sci*. 2021 Sep 21. doi: 10.1007/s11845-021-02782-1. Epub ahead of print. PMID: 34546502.

O'Kelly B, McLaughlin R, O'Doherty R, Carroll H, Murray R, Dilworth R, Corkery L, Cotter AG, McGinty T, Muldoon EG, Cullen W, Avramovic G, Sheehan G, Sadlier D, Higgins M, O'Gorman P, Doran P, Inzitari R, Holden S, O'Meara Y, Ennis S, Lambert JS. Rapid and Laboratory SARS-CoV-2 Antibody Testing in High-Risk Hospital Associated Cohorts of Unknown COVID-19 Exposure, a Validation and Epidemiological Study After the First Wave of the Pandemic. *Front Med (Lausanne)*. 2021 Aug 26;8:642318. doi: 10.3389/fmed.2021.642318. PMID: 34513853; PMCID: PMC8427142

Ward Z, Mafirakureva N, Stone J, Keevans M, Betts-Symonds G, Crowley D, McHugh T, Avramovic G, Lambert JS, Vickerman P. Cost-effectiveness of mass screening for Hepatitis C virus among all inmates in an Irish prison. *Int J Drug Policy*. 2021 Aug 16:103394. doi: 10.1016/j.drugpo.2021.103394. Epub ahead of print. PMID: 34412938.

Abstracts presented at Scientific Meetings 2021

Short Course Alendronate for The Prevention of Art-Associated Bone Loss.

Tara McGinty, Elena Alvarez-Barco, Willard Tinago, Cathal O'Broin, Alan Macken, Aoife Cotter¹, Eoin Feeney, Geraldine McCarthy, Eoin Kavanagh, Alan Landay, Peter Doran, Sam McConkey, Patrick W. G. Mallon, on behalf of the APART Study group

Biological profiles predict coronary artery disease in people with HIV and risk matched controls. Padraig McGettrick, Willard Tinago, Alejandro Garcia-Leon, Julie O'Brien, Niall Mahon, Leo Lawler, Aoife G. Cotter, John S. Lambert, Gerard Sheehan, Alan Landay, Caroline Sabin, Patrick Mallon

Effect of rituximab treatment on plasma EBV miRNAs: Longitudinal profiling in three paediatric kidney transplant recipients. Jaythoon Hassan, Maria Stack, Niamh Dolan, Clodagh Sweeney, Michael Riordan, Cillian De Gascun, Jeff Connell, Atif Awan. Presented at the European Society for Clinical Virology meeting (virtual) September 2021.

Effect of rituximab treatment on plasma EBV miRNAs: Longitudinal profiling in three paediatric kidney transplant recipients. Jaythoon Hassan, Maria Stack, Niamh Dolan, Clodagh Sweeney, Michael Riordan, Cillian De Gascun, Jeff Connell, Atif Awan. Presented at the European Society for Clinical Virology meeting (virtual) September 2021.

Pro-atherogenic apolipoproteins and lipids are not increased in a contemporary cohort of PLWH, but increased body fat percentage is associated with lower HDL. Savinelli S, Heeney A, Tinago W, Garcia Leon AA, Cotter AG, Walsh I, Fitzgibbon M, Mallon PWG, Feeney ER. Presented at EACS. October 2021.

Incidence and characteristics of skin reactions to intravenous antibiotics in a tertiary care OPAT service. LA O'Higgins, S Savinelli, D Rajendran, C Soliman, S Waqas, E Feeney. Presented at ECCMID (virtual) 9-12 July 2021.

Key Awards in 2021

Distinction Awarded to Laura McCullagh for MSc submitted September 2021. Supervisor Dr. J. Hassan

Key Grants in 2021

EU H2020 – Vaccelerate Network. A Multinational, Phase 2, Randomised, Evaluator-Blinded, Adaptive Master Protocol to Evaluate the Impact of Different COVID-19 Vaccine Booster Strategies in Adults Already Vaccinated Against SARS-CoV-2. UCD is the Sponsor for this protocol (CI: Prof Mallon). October 2021 – €2,437,000

HEA Covid Funding Consumables Award – €52,000. October 2021. PI: Prof Mallon.

EU H2020 – VACCCELERATE – European Corona Vaccine Trial Accelerator Platform. 26,5M. Includes 1 clinical trial sponsored by UCD (3,19M) and another 2 clinical trials in which UCD has a key role as central lab within the EU network. CI: Prof Mallon

9 SFI COVID Rapid Response Call – Total funding €4,37M. Includes UniCoV (May 2021, €2,19M) Co-I: Prof Mallon.

3 HRB COVID-19 Pandemic Rapid Response Funding Call – Total funding €558K Co-I: Prof Mallon.

National Irish Covid Biobank. Apr 2021. €2M over 2 years. Co-lead applicants: Prof Mallon (UCD) and Prof Bergin (TCD).

HRB - Clinical Trials Network. Mar 2021. €913,000 over 5 years. Lead Applicant: Prof Mallon. Co-lead: Prof Doran

2021-2025. 2021 IRC Government of Ireland Postgraduate Scholarship Programme-. €110,000 Applicant Ms Leah Ennis. PI: Virginie Gautier.

2019-2023. 2019 IRC Government of Ireland Postgraduate Scholarship Programme- €96,000 Applicant Ms Sophie O'Reilly PI: Virginie Gautier.

2019-2023. HRB ILP-2019 "Switching on the light: Reprogramming T cell metabolism for novel HIV Cure interventions" €368,772 PI: Virginie Gautier.

New grants from March 2021 to date

IRC Government of Ireland Postgraduate Scholarship - Development and validation of Vibrational Spectroscopic Techniques for detection and characterisation of Virus genotypes- September 2021 - €96,000 (Collaborator: Dr. J. Hassan)

Enterprise Ireland Commercialisation Feasibility grant awarded September 2021- €15,000 (Co-PI: Dr. J. Hassan)

Ongoing grants:

- HRB Investigator-Led Project (ILP) – €368,774.50
- HRB Knowledge Exchange Dissemination Scheme – €59K
- UCD WELLCOME TRUST ISSF – €52K
- UCD Foundation – €300K
- Smurfit Kappa – €200K
- 2019 Government of Ireland Postgraduate Scholarship Programme
- Gilead Sciences Educational Grant – €1M over three years. Year 1 funding secured.
- DAFM (Dec 2019) – €538K
- SRSS (Structural Reform Support Service) of the European Commission – €443K
- Health Service Executive – €125K
- 2019 Temple Street Foundation Children's University Hospital – €261K

Research proposals submitted:

- Horizon Europe - Development Of Eco-Friendly Anti-Microbial And Anti-Viral Plastic Films (ECO-ANTIBV): Combining Bio-Based Functional Coatings And Nano Patterns For Effectively Preventing Transmission Of Infectious Disease Beyond Covid-19 – Participant: Dr J Hassan. Requested funding €5,614,693. Submitted September 2021.
- SFI Partnership Funding Call - Developing label free spectroscopic techniques for virology - a novel analytical approach through multidisciplinary partnership (ViroSPEC). Lead applicant Prof High Byrne TU Dublin; Co-applicant Dr Noreen Sheehy. Collaborator = Dr. J. Hassan. Requested funding €999,698. Submitted May 2021.
- SFI INFRASTRUCTURE CALL: "UCD Enhanced Containment Level 3 (CL3) Laboratory Suite for human and animal Risk Group 3 Biological Agents a National resource for Translational Research and Infectious Diseases Preparedness." Requested Funding €2.2M PI: Virginie Gautier.
- Wellcome Trust Clinical Research Career Development Fellowship. Characterising HIV specific risk factors for cardiovascular disease among People Living with HIV in Malawi. PI: Christine Kelly.
- HORIZON-HLTH-2021-CORONA-01 Call. SolidAct TAILOR: Targeted Immunotherapy in early COVID-19 patients at Risk. Lead Partner UCD (PIs: Prof Mallon and Prof Doran). Total partners:12. Requested funding: €8,8 M (UCD €2,47M).

Centre news in 2021

Mr Ross Murtagh, MSc completed (Thesis submitted and approved)

Ms Leah Ennis McLoughlin, MSc completed (Thesis submitted and approved)

Tara McGinty PhD. Submitted May 2021. VIVA Completed July 2021. Supervisor: Prof Mallon.



Established in 2007, the UCD Centre for Human Reproduction at the Coombe Women and Infants University Hospital was recognised in 2015 by the Academic Council as one of the university's designated research centres. In 2018, the Academic Council in UCD renewed its approval for the UCD Centre for Human Reproduction to continue as one of the University's designated research centres. The Director is Professor Michael Turner and the Centre's Advisory Board include: Dr Brendan Egan, Prof Chris Fitzpatrick, Prof Mairead Kennelly, Prof Richard Layte, Prof Aisling Martin, Prof Jan Miletin, Prof Ann Molloy and Prof Carel le Roux.

The main research focus of the Centre is on modifiable pregnancy risk factors including maternal obesity, gestational diabetes mellitus, aberrant fetal growth, inadequate maternal diet, inadequate folic acid supplementation, cigarette smoking, infection and physical inactivity. In the decade 2010-20, Professor Turner served as the National Director for the HSE Clinical Programme in Obstetrics and Gynaecology and, as a result, the Centre has also provided leadership on maternity services implementation science projects.

Key Publications in 2021

1. Reynolds CME, McMahon LE, O'Malley EG, O'Connell MP, Sheehan SR, Turner MJ. Trends in private maternity care in Ireland's capital during and after the Great Economic Recession 2009-2017. *Ir J Med Sci* 2021;933-40. PMID: 33111250.
2. Tuthill EH, Reynolds CME, McKeating A, O'Malley EG, Kennelly MM, Turner MJ. **Maternal obesity and depression reported at the first antenatal visit.** *Ir J Med Sci* 2021 [E-pub ahead of print] PMID: 34131811
3. Ismail KI, Burke N, Burke G, Breathnach F, McAuliffe FM, Morrison JJ, Turner MJ, Dornan S, Higgins JR, Cotter A, Geary M, McParland P, Daly S, Cody F, Mulcahy C, Dicker P, Tully E, Malone FD; Perinatal Ireland Research Consortium. **The prediction of morbidity related to vaginal delivery in nulliparous women - A secondary analysis from the genesis multicenter trial.** *Eur J Obstet Gynecol Reprod Biol* 2021;264:276-280. PMID: 34343773
4. O'Malley EG, Reynolds CME, Killalea A, O'Kelly R, Sheehan SR, Turner MJ. Comparison of ultrasound with biomarkers to identify large-for-gestational age in women screened for gestational diabetes mellitus. *J Matern Fetal Neonatal Med.* 2021 Apr 28:1-6. PMID: 33910459



The UCD Perinatal Research Centre based at the National Maternity Hospital, was established since 2012 aiming to improve outcomes for mothers and their infants.

Key Publications in 2021

McCormick CA, Domegan L, Carty P, Drew R, McAuliffe F, O'Donohoe O, White N, Garvey P, O'Grady M, De Gascun C, McCormick PA. Routine screening for Hepatitis C in pregnancy is cost effective in a large urban population in Ireland: a retrospective study. *BJOG*. 2021 Oct 27. doi: 10.1111/1471-0528.16984.

Kennelly MA, Killeen SL, Phillips CM, Alberdi G, Lindsay KL, Mehegan J, Cronin M, McAuliffe FM. Maternal C3 complement and C-reactive protein and pregnancy and fetal outcomes: A secondary analysis of the PEARS RCT-An mHealth-supported, lifestyle intervention among pregnant women with overweight and obesity. *Cytokine*. 2021 Oct 23;149:155748. doi: 10.1016/j.cyto.2021.155748

Glennon K, Donnelly J, Knowles S, McAuliffe FM, O'Reilly A, Corcoran S, Walsh J, McMorrow R, Higgins T, Bolger L, Clinton S, O'Riordan S, Start A, Roche D, Bartels H, Malone C, McAuley K, McDermott A, Inzitari R, O'Donnell CPF, Malone F, Higgins S, De Gascun C, Doran P, Brennan DJ. Immunological assessment of SARS-CoV-2 infection in pregnancy from diagnosis to delivery: A multicentre prospective study.

.*PLoS One*. 2021 Sep 20;16(9):e0253090. doi: 10.1371/journal.pone.0253090. eCollection 2021

Sarah Louise Killeen, Catherine M. Phillips, Anna Delahunt, Cara A. Yelverton, Nitin Shivappa, James R. Hébert, Maria A. Kennelly, Martina Cronin, John Mehegan, Fionnuala M. McAuliffe. Effect of an Antenatal Lifestyle Intervention on Dietary Inflammatory Index and Its Associations with Maternal and Fetal Outcomes: A Secondary Analysis of the PEARS Trial. *Nutrients*. 2021 Aug; 13(8): 2798. Published online 2021 Aug 15. doi: 10.3390/nu13082798

Mone F, Mulcahy C, Navaratnam K, Phelan MM, Breathnach F, Alfirevic A, McAuliffe Frcog FM. Assessing measures of aspirin adherence in pregnancy: Secondary analysis of the TEST randomized controlled trial..*Eur J Obstet Gynecol Reprod Biol*. 2021 Apr;259:222-223. doi: 10.1016/j.ejogrb.2020.11.058. Epub 2020 Nov 20.

Allotey J, Whittle R, Snell KIE, Smuk M, Townsend R, von Dadelszen P, Heazell AEP, Magee L, Smith GCS, Sandall J, Thilaganathan B, Zamora J, Riley RD, Khalil A, Thangaratinam S; IPPIC Collaborative Network. External validation of prognostic models to predict stillbirth using the International Prediction of Pregnancy Complications (IPPIC) Network database: an individual participant data meta-analysis. *Ultrasound Obstet Gynecol*. 2021 Aug 18. doi: 10.1002/uog.23757

Hayes-Ryan D, Khashan AS, Hemming K, Easter C, Devane D, Murphy DJ, Hunter A, Cotter A, McAuliffe FM, Morrison JJ, Breathnach FM, Dempsey E, Kenny LC, O'Donoghue K; PARROT Ireland trial group. Placental growth factor in assessment of women with suspected pre-eclampsia to reduce maternal morbidity: a stepped wedge cluster randomised control trial (PARROT Ireland). *.BMJ*. 2021 Aug 13;374:n1857. doi: 10.1136/bmj.n1857.

Delahunt A, Conway MC, McDonnell C, Reilly SLO, Keeffe LMO, Kearney PM, Mehegan J, McAuliffe FM. Sleep duration and eating behaviours are associated with body composition in 5-year-old children: Findings from the ROLO longitudinal birth cohort study. *Br J Nutr*. 2021 Jul 21:1-30. doi: 10.1017/S0007114521002725

Forde H, Crowley RK, McKenna MJ, Kilbane MT, Conway M, McDonnell CM, Twomey PJ, McAuliffe FM. No effect of calcium and vitamin D intake on maternal blood pressure in a healthy pregnant population. *Eur J Obstet Gynecol Reprod Biol*. 2021 Jul 7;264:8-14. doi: 10.1016/j.ejogrb.2021.07.005.

O'Reilly SL, O'Brien EC, McGuinness D, Mehegan J, Coughlan B, O'Brien D, Szafranska M, Callanan S, Hughes S, Conway MC, Brosnan M, Sheehy L, Murtagh R, O'Hagan L, Murray S, Scallan C, Dunn E, Power P, Woodcock M, Carroll A, Corbett M, Walsh M, Keogh R, McAuliffe FM. Latch On: A protocol for a multi-centre, randomised controlled trial of perinatal support to improve breastfeeding outcomes in women with a raised BMI. *Contemp Clin Trials Commun*. 2021 Apr 8;22:100767. doi: 10.1016/j.conctc.2021.10076

Key Publications in 2021 (cont.)	<p>Callanan S, Yelverton CA, Geraghty AA, O'Brien EC, Donnelly JM, Larkin E, Horan MK, Mehegan J, McAuliffe FM. The association of a low glycaemic index diet in pregnancy with child body composition at 5 years of age: A secondary analysis of the ROLO study. <i>Pediatr Obes.</i> 2021 Jun 2:e12820. doi: 10.1111/ijpo.1282</p> <p>Conway MC, Cawley S, Geraghty AA, Walsh NM, O'Brien EC, McAuliffe FM. The consumption of low-calorie sweetener containing foods during pregnancy: results from the ROLO study. <i>Eur J Clin Nutr.</i> 2021 May 26. doi: 10.1038/s41430-021-00935-0</p> <p>Greene EM, O'Brien EC, Kennelly MA, O'Brien OA, Lindsay KL, McAuliffe FM. Acceptability of the Pregnancy, Exercise, and Nutrition Research Study With Smartphone App Support (PEARS) and the Use of Mobile Health in a Mixed Lifestyle Intervention by Pregnant Obese and Overweight Women: Secondary Analysis of a Randomized Controlled Trial. <i>JMIR Mhealth Uhealth.</i> 2021 May 12;9(5):e17189. doi: 10.2196/17189</p> <p>Sheil O, McAuliffe FM. Reorganisation of obstetric services during the COVID pandemic - Experience from National Maternity Hospital Dublin Ireland. <i>Best Pract Res Clin Obstet Gynaecol.</i> 2021 Apr 9:51521-6934(21)00054-7. doi: 10.1016/j.bpobgyn.2021.03.013. Online ahead of print. PMID: 33966980</p> <p>O'Brien EC, Geraghty AA, Kilbane MT, McKenna MJ, McAuliffe FM. Bone resorption and dietary calcium in pregnancy-a window to future maternal bone health. <i>Osteoporos Int.</i> 2021 Mar 4. doi: 10.1007/s00198-021-05891-w.</p> <p>Chen LW, Aubert AM, Shivappa N, Bernard JY, Mensink-Bout SM, Geraghty AA, Mehegan J, Suderman M, Polanska K, Hanke W, Jankowska A, Relton CL, Crozier SR, Harvey NC, Cooper C, Hanson M, Godfrey KM, Gaillard R, Duijts L, Heude B, Hébert JR, McAuliffe FM, Kelleher CC, Phillips CM. Maternal dietary quality, inflammatory potential and childhood adiposity: an individual participant data pooled analysis of seven European cohorts in the ALPHABET consortium. <i>BMC Med.</i> 2021 Feb 22;19(1):33. doi: 10.1186/s12916-021-01908-7</p> <p>Crosby DA, Glover LE, Downey P, Mooney EE, McAuliffe FM, O'Farrelly C, Brennan DJ, Wingfield M. Mid-luteal uterine artery Doppler indices in the prediction of pregnancy outcome in nulliparous women undergoing assisted reproduction. <i>Hum Fertil (Camb).</i> 2021 Jan 13:1-11. doi: 10.1080/14647273.2021.1872111.</p>
Key Awards in 2021	<p>International Federation of Gynaecology and Obstetrics (FIGO) Women's Award: Fionnuala McAuliffe received prestigious award for her contribution to women's health worldwide.</p> <p>HSE Spark Ignite Award: Sarah Louise Killeen & Fionnuala McAuliffe were regional winners for digitalisation of FIGO Nutrition Checklist.</p> <p>British Maternal and Fetal Medicine Society: Cara Yelverton received best student award at meeting for paper on fetal growth trajectories.</p>
Key Grants in 2021	<p>NCRC, SFI, Tallaght Hospital Fund, NMH Medical Fund, EU Horizon</p>
Centre news in 2021	<ul style="list-style-type: none"> • Dr Grace Ryan was awarded her MD on VR in medical education • Grace Mealy was appointed as research assistant • Sophie Callanan commenced as Masters student • Dr Cathy McNestry and Dr Fiona O'Toole joined team as Academic Clinical Fellows and MD students. • Sharleen O'Reilly PI was promoted to Associate Professor in UCD • We completed 390 mother and child in person visits at 10 years of age in ROLO study • PrePop study commenced – RCT of probiotics vs placebo to improve vaginal microbiome • Latch-on Study completed study recruitment – a multicentre RCT to improve breastfeeding in women with BMI >25 • B2B RCT commenced and > 600 patients recruited worldwide

UCD Centre for Precision Surgery

Director Prof Ronan Cahill

www.ucd.ie/medicine/research/researchcentres/ucdcentreforprecisionsurgery



The UCD Centre for Precision Surgery, established 2019, is an applied research, education and training facility dedicated to excellence in surgery and the future of healthcare. The Centre's purpose is to respond to the global imperative to optimise patient safety and clinical outcomes through tangible advancements in surgical research and in the training of the current and next generation of surgeons.

The Centre incorporates:

- The UCD-MMUH Clinical Anatomy Centre, an advanced skills training and simulation facility located in the original theatres of the Mater Hospital.
- The Digital Surgery Unit, a platform for world-class research into future modes of human-machine collaboration in the surgical theatre through interdisciplinary collaboration across surgery, engineering, computer science, chemistry and mathematics.

UCD Centre in Translational Oncology

Director Prof Amanda McCann

www.ucd.ie/medicine/research/researchcentres/ucdcentreintranslationaloncology



The UCD Centre in Translational Oncology (UCTO) consolidates and gives a unified identity to cancer research across basic and clinical academic staff affiliated to UCD (~80) 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), 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, School of Biomolecular and Biomedical Science), affiliated institutes (for example UCD Conway Institute, Systems Biology Ireland and UCD Hospital Cancer Centres of Excellence/affiliated teaching Hospital sites (including Saint 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 enhance patient care across all ages and cancer types.

The UCTO has established channels of communication with patients, through clinical members, and through the director's (AMcC) 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.

UCTO was approved in February 2017 and officially launched by Professor Cecily Kelleher (CHAS Principal) and UCTO Director 21st September 2018.

Academic Centre on Rare Diseases

Director Dr Sean Ennis

www.ucd.ie/medicine/research/researchcentres/ucdacademiccentreonrare diseases



The UCD Academic Centre on Rare Diseases (ACoRD) was awarded formal centre status in June 2013. The focus of the centre is to investigate rare genetic diseases, particularly those affecting the Irish population and the Irish Traveller population.

The Centre's aims are focused on the study of rare genetic diseases, with a view to the identification of the mutation(s) causing the disease. 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 PIs 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.

Rarely in a lifetime does a scientific or medical field of research 'come of age'. The revolution that was the 'Human Genome Project', coupled with the latest technological advances in genomics is set to transform the field of rare genetic diseases. An ad hoc group of UCD based clinicians, scientists, specialists in bioinformatics and cell biologists have long since recognised these developments, and the rare disease group – prior to its establishment as a centre – has achieved considerable national and international recognition.



The UCD Clinical Research Centre (UCD CRC) is an academic led, multi-site centre supporting clinical and translational research. It operates under a single governance structure within the UCD School of Medicine and the College of Health and Agricultural Sciences. The UCD CRC is at the core of the Health research and innovation strategy and provides a focal point for collaborative, multidisciplinary patient-focused research. The centre links the clinical community to core university research institutes including the UCD Conway Institute, Systems Biology Ireland and the UCD Charles Institute of Dermatology.

The UCD CRC has a significant track record of supporting both investigator and industry-initiated clinical research projects. Full study supports are available; from experimental design to study analysis and reporting. Throughout the life cycle of a research project, the CRC provides quality oversight from initiating all staff under the CRC's SOPs and quality management system, providing GCP training and risk assessment of our trials, monitoring and consultation through the maintenance of the study.

UCD CRC supports research staff with collection of high-quality, reliable data throughout their clinical research project. Assistance is provided with development of clinical trial protocols, biostatistics, advice on data protection issues, efficient data collection and CRF design, and establishment of electronic databases.

The UCD CRC has developed significant infrastructure to enable the collection, processing and storage of biological samples from patients with a range of diseases. We provide both the support and facilities that investigators need to establish high quality sample collections. The UCD CRC bio-banking service currently houses over 40 major ongoing collections and registries. Our biomarker validation laboratory, developed in partnership with Abbott, provides state of the art equipment and for high throughput, high fidelity biomarker analysis.

Over the last years, the UCD CRC has developed a comprehensive taught graduate programme including an MSc in Clinical and Translational Research and a Graduate Certificate in Clinical Trials. This exciting education initiative is training the next generation of investigators and research professionals.

Support available to investigators:

Proposal Phase	Pre-Initiation Phase	Study Contract Phase	Reporting Phase
<ul style="list-style-type: none"> Grant Application Budget Review UCD Sponsorship EudraCT Number Study Design Review Statistical Planning Protocol Finalisation PIL & Consent Form Insurance Contracts 	<ul style="list-style-type: none"> HPRA & Ethics submission Investigator Site File GCP Training Trial Registration Monitoring Plan Randomisation and Blinding Procedures Site Initiation 	<ul style="list-style-type: none"> First Patient In ISF Maintenance Study Monitoring Amendments Data Collection & Cleaning Pharmacovigilance DSMB/Interim Analysis DSUR Submission Audits/Inspections 	<ul style="list-style-type: none"> Last Patient Last Visit Study Close-out Visit End of Trial Notification Archiving Data Lock and Cleaning Data Transfer Statistical Analysis Budget Close Review Clinical Study Report Submission

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