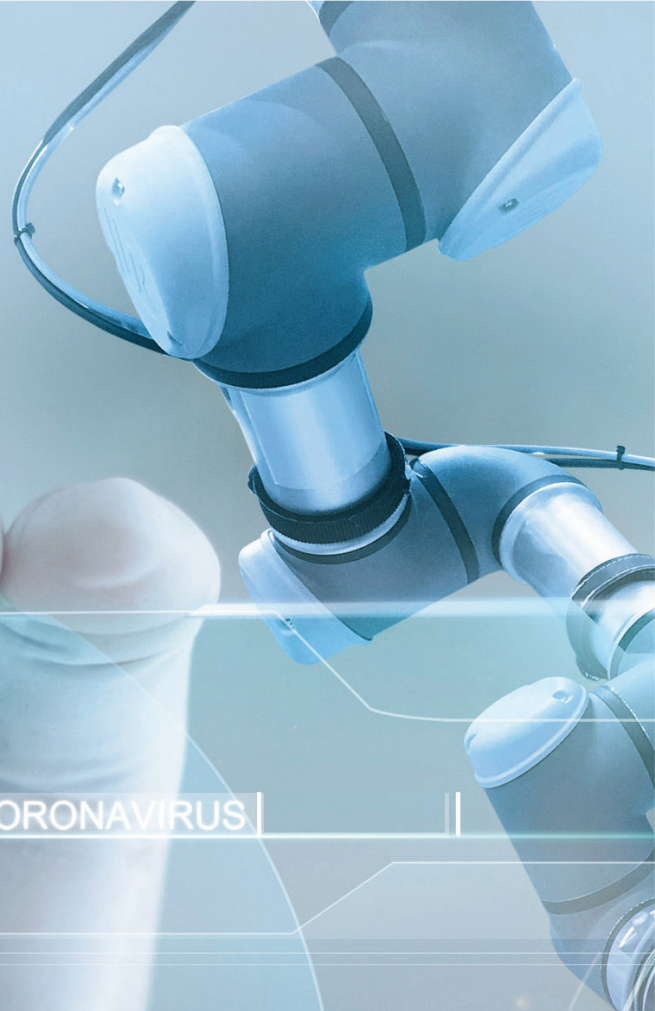
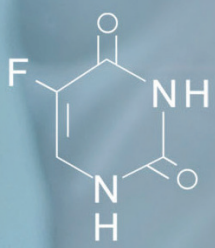




University College Dublin  
Ireland's Global University



CORONAVIRUS



# UCD School of Medicine Research Report

2019/20 Academic Year



**Athena  
SWAN**  
Bronze Award





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# Year in Numbers

Total Grant Value

**€115,197,155**

Total # Grants Registered

**190**

New Research Grants

**€29,071,694**

Field-Weighted Citation Impact\*

**1.78**

Total No of Papers published

**895**

Citations\*

**29,809**

New Students registered

**76**

Total Research Students registered

**200**

Number Students Graduated

**43**

Research Centres

**10**

# Introduction

It is a pleasure to introduce the UCD School of Medicine Research report for the 2019/20 academic year which highlights the achievements from what has been a challenging year for our school. 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. The growing impact of our research is evidenced by the high quality publications arising, which have enabled strong growth in our Field Weighted Citation Index to 1.78.

The investigator base at the School has also grown significantly this year, mainly through the Ad Astra programme, adding additional research focus which will impact our students, our school and our community for many years to come.

This report also details some of the research support initiatives commenced this year and plans for the future, that are aimed at enabling our investigators, creating a supportive research culture and maximising the impact of our research.

Despite the challenges of the past academic year, our research teams have risen to the challenge and have continued to conduct high quality research that is impacting patients and society. I look forward to continuing to work with our school, to maximise our research impact.



**Prof Peter Doran**

Associate Dean Research, Innovation and Impact  
UCD School of Medicine



# Research Highlights

Prof Catherine Godson was honoured by the International Association of Inflammation Societies (IAIS) in recognition of 'outstanding research and leadership contributions' and was presented with the Women in Science award at the 14th World Congress on Inflammation.

Under the leadership of Prof Owen Smith, a group of haematology experts from across Europe meet in Dublin on 7th and 8th October 2019 to finalise a new clinical protocol for the treatment of acute lymphoblastic leukaemia, the commonest cancer in children.

In the largest ever study of the genetics of diabetic kidney disease (DKD), Researchers in the UCD Diabetes Complications Research Centre and their international collaborators identified 16 regions of the human genome linked with DKD, the leading cause of kidney disease that can end in organ failure.

Prof Ed McKone was co-author of two major publications in the New England Journal of Medicine reporting two Phase III clinical trials evaluating a triple-drug combination therapy in the treatment of patients with cystic fibrosis.

Together with international colleagues the UCD Centre for Arthritis Research characterised and named a gene. The team demonstrated that MACIR, the macrophage immunometabolism regulator gene was important in balancing inflammatory response and the resolution of inflammation.

Prof Walter Kolch and Dr David Gomez led the UCD Systems Biology Ireland participation in the €80 million 4-year 3TR initiative which is a large Innovative Medicine Initiative 2 Immunology projects that aims to improve disease management of non-responders to therapy across seven immune-mediated diseases.

Dr Eoin Cummins organised a successful international conference on carbon dioxide signalling. The meeting on 'Carbon Dioxide Detection in Biological Systems' explored common themes of carbon dioxide sensing between plant and animal kingdoms as well as clinical challenges posed by hypercapnia.

Researchers at the UCD Centre for Human Reproduction published the results of a large longitudinal observational study examining changes in body mass index (BMI) of mothers between successive pregnancies.

Prof Catherine Godson was elected Science Secretary of the Royal Irish Academy in April 2020

Prof Oliver Fitzgerald, was recognised by rheumatology peers internationally and awarded the Verna Wright Prize 2020.

An international research consortium, including Prof Alistair Nichol published a major study comparing different stress ulcer prophylaxis strategies in mechanically ventilated patients within intensive care units.

Researchers at the School, including Dr Eoin Cummins and Prof Cormac Taylor published a review article in the leading physiology journal on oxygen and carbon dioxide sensing in mammals. The review was further highlighted for attention on the cover of the prestigious Physiological Reviews journal.

Led by Prof Donal Brennan, a ground-breaking initiative to support women who are struggling with the life-changing side effects of cancer treatment was launched with nurse-led pilot clinics in Dublin and Cork. The Irish Cancer Society-funded project is part of the Women's Health Initiative focus on cancer survivorship.

UCD School of Medicine investigators, researchers and students respond to the Covid-19 crisis by supporting testing, delivering training, providing PPE and reagents and Leading major research programmes, including clinical trials.

Prof Walter Cullen and colleagues highlighted the wider implications for mental health of the covid-19 pandemic in the Quarterly Journal of Medicine.

Dr Jaythoon Hassan (UCD National Virus Reference Laboratory) who was the Winner of this year's Laboratory Scientist of the Year Award at the Irish Laboratory Awards. This award recognised her contribution to innovation, leadership and research, at both a national and international level.

Prof Carel le Roux led the SOPHIA (Stratification of Obese Phenotypes to Optimize Future Obesity Therapy), a new €16 million EU and industry supported international research consortium which was launched in early summer 2020.

A research team at the School of Medicine, led by Prof Cormac McCarthy and Prof Paddy Mallon demonstrated that sub-set of critically unwell COVID-19 patients in St Vincent's University Hospital (SVUH) responded to treatment with tocilizumab and avoided need for mechanical ventilation.

Led by Prof Kirsten Shaffer, a UCD School of Medicine Research Team used genome sequencing approaches to demonstrate the dynamics of COVID-19 transmission occurs between Healthcare Workers (HCWs) and patients.



# Research Support Initiatives

2019/20





Throughout the last academic year, the school has implemented out a number of initiative aimed at supporting our kep objectives of developing a supportive research environment and enhancing our research activity.

### Maximising the impact of published research via structured communications support

In September 2020, Prof Peter Doran, Prof Cormac Taylor and the Schools Marketing and Communications team, Jane Curtin and Stephen Pigott developed a route for communicating the research success of the school. Through the provision of targeted communications support, we are ensuring that our highest impact research is receiving the internal and external; attention it merits. This programme has led to a number of high profile print and broadcast medica outputs, which showcase the research strength of our school.

### School grant advisory

In August 2020, the School launched a new Grant Advisory function which has been established to provide information and feedback to School staff who are preparing grant proposals. This initiative, developed by Dr Eoin Brennan and Dr Carol Aherne, is designed to complement existing UCD Research supports and is chaired by Prof Walter Kolch. The School is confident that the establishment of this function will be a significant resource for School staff and we encourage all applicants to engage with the process.

### Graduate Research Association of Medicine (GRAM)



The Graduate Research Association of Medicine (GRAM) launched on Zoom on the 27th of October 2020, where students were welcomed to the School by the Associate Dean for Research, Innovation and Impact, Professor Peter Doran, and our Postgraduate Research Advisor, Ms. Carita Bramhill.

GRAM is for graduate researchers who are linked to the School of Medicine whether they be completing a M.Sc., Ph.D., or M.D. The association is run by graduate researchers and made possible through funding by UCD, School of Medicine.

The aim of GRAM is to provide a supportive network and improve the experience of graduate researchers throughout their years in UCD. To do this, GRAM will be hosting various events throughout the year including orientation, academic careers day, social lunches and the sharing of graduate research news through a monthly newsletter.



## 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 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 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 led by Yvonne Barry, Research Administration Manager, and supported by Niamh McCarthy, Senior Administrator-Admin Support Team and 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.



## Translational Research Advisors

To support the development of the schools strategy, the Associate Dean for Research Innovation and Impact has created a number of Translational Research Advisors roles. This group is charged with advising on the research supports at the school.

- Dr Kathleen Curran
- Dr Neil Docherty
- Dr Jeffrey Glennon
- Dr Marie-Louise Ryan
- Dr Deborah Wallace

## Research Integrity Champion

- Dr Steven Thorpe

## School Research Ethics Committee

- Assoc Prof John Baugh (Chair, Taught Graduate Programmes - Physiology, BSc Physiology)
- 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)

## 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**

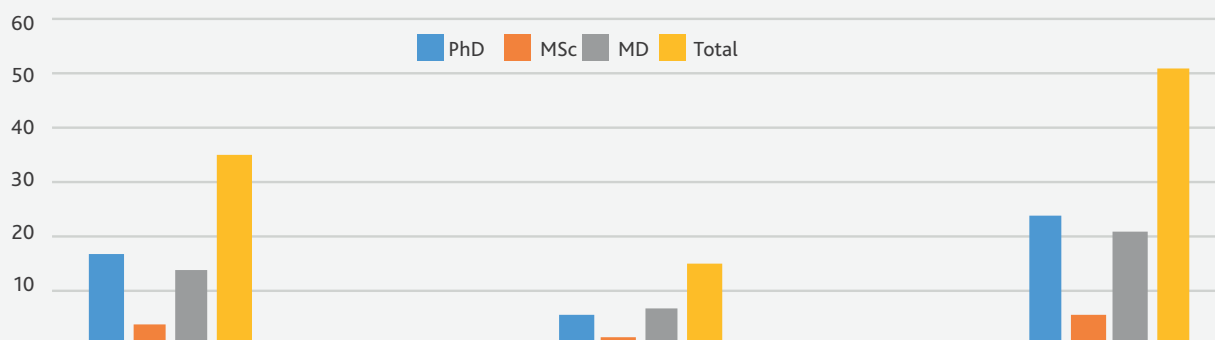


**Prof Cormac Taylor**



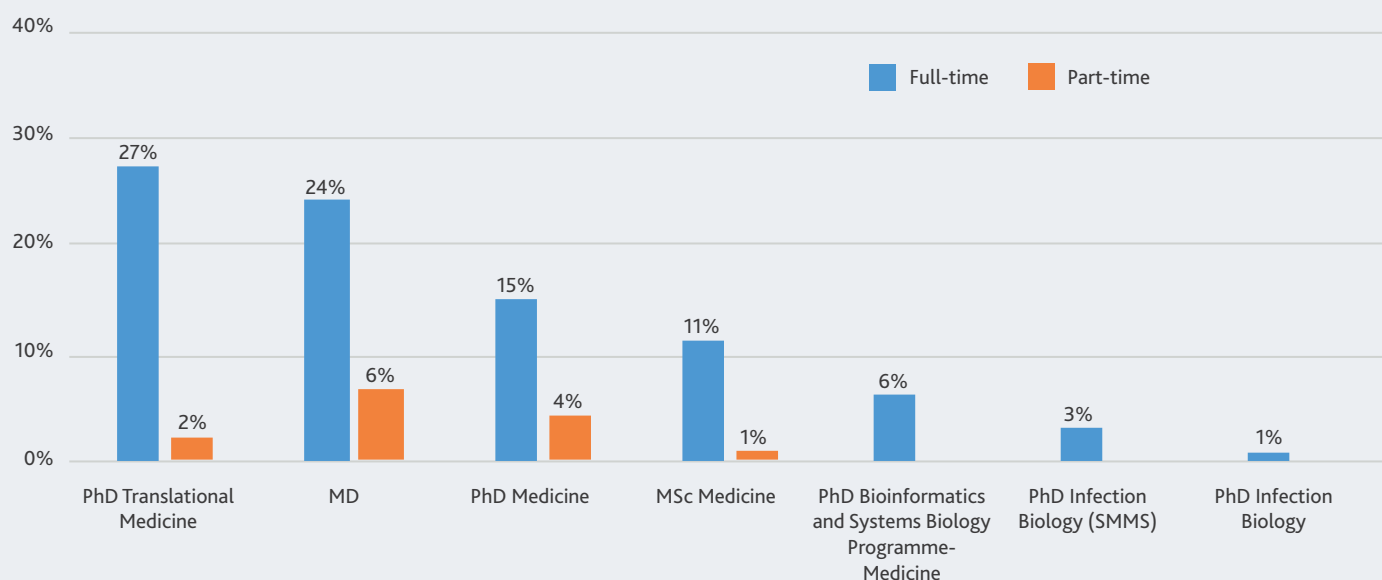
**Mr Paul Harkin**

## September Registrations 2019



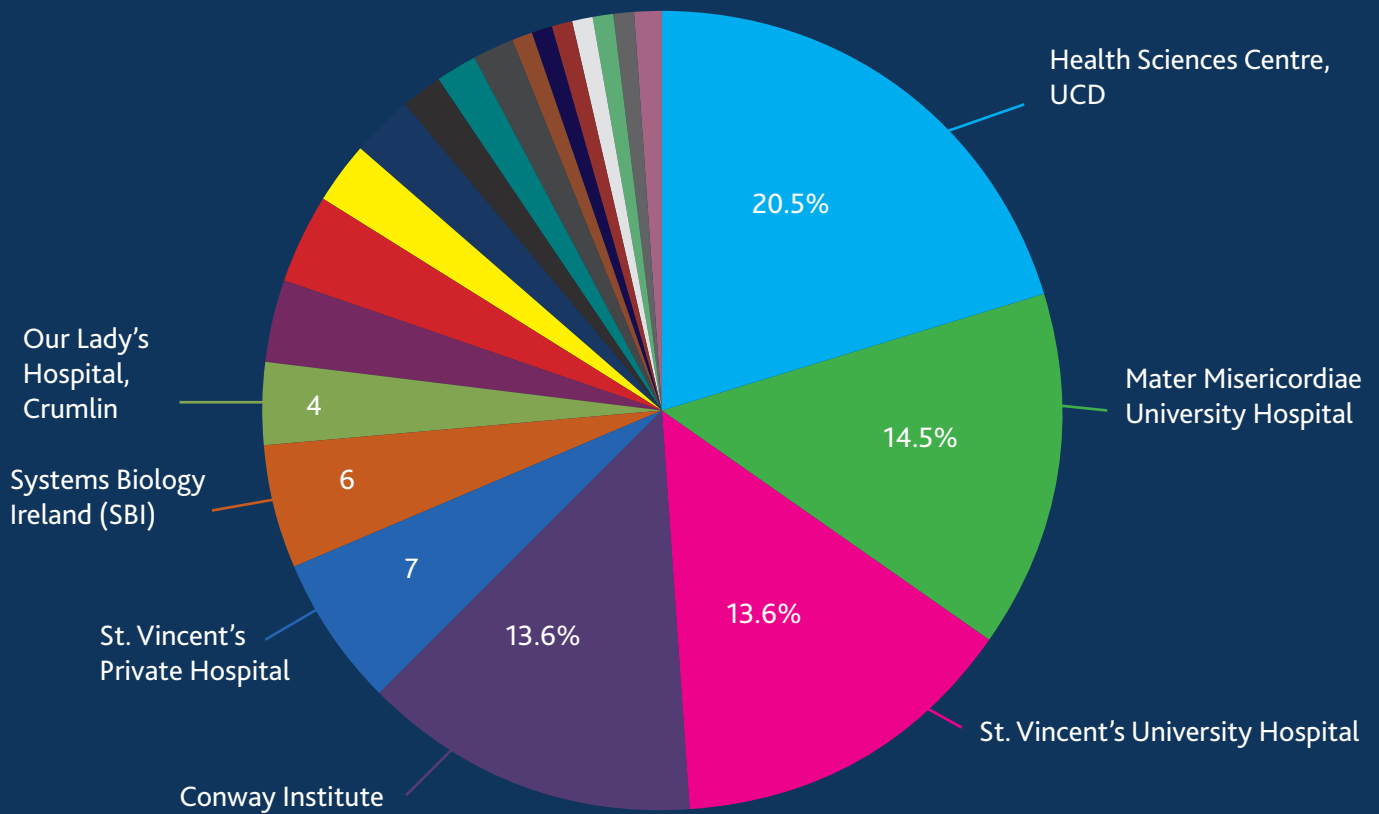
	EU FT	EU PT	Non-EU FT	Non-EU PT	Total
PhD	17	1	6	0	24
MSc	4	0	2	0	6
MD	14	0	7	0	21
<b>Total</b>	<b>35</b>	<b>1</b>	<b>15</b>	<b>0</b>	<b>51</b>

## Active Students 2019-2020 PhD, MSc & MD



Title	No of Students					Total
	- Awaiting Approval	- Not Registered - For Assessment Only	- Provisionally Registered Only	- Registered but no Research Subject	- Registered including Research Subject	
MD FT	3	4	8	-	33	48
MSc Medicine FT	2	6	1	4	10	23
PhD Medicine FT	-	5	2	2	21	30
PhD Medicine PT	-	1	3	-	4	8
PhD Infection Biology FT	1	-	2	-	-	3
PhD Translational Medicine FT	4	8	4	7	32	55
PhD Translational Medicine PT	-	-	1	-	3	4
MSc Medicine PT	-	-	1	1	-	2
MD PT	-	1	3	2	6	12
PhD Infection Biology (SMMS) FT	-	1	1	-	5	7
PhD Bioinformatics and Systems Biology Programme-Medicine FT	-	-	1	1	6	8
<b>TOTAL</b>	<b>10</b>	<b>26</b>	<b>27</b>	<b>17</b>	<b>120</b>	<b>200</b>

## Active Supervisors by Location 2019-2020



1.	Health Sciences Centre, UCD	24
2.	Mater Misericordiae University Hospital	17
3.	St. Vincent's University Hospital	16
4.	Conway Institute	16
5.	St. Vincent's Private Hospital	7
6.	Systems Biology Ireland (SBI)	6
7.	Our Lady's Hospital, Crumlin	4
8.	Centre for Research in Infectious Diseases (CRID)	4
9.	National Maternity Hospital (Holles St.)	4
10.	Charles Institute	3
11.	Veterinary Science Centre	3
12.	National Virus Reference Laboratory (NVRU)	2
13.	O'Brien Centre for Science	2
14.	Coombe's Women's & Infants' University Hospital	2
15.	Agricultural and Food Science Centre	1
16.	Rotunda Hospital	1
17.	Lucena Clinic, Dublin	1
18.	Engineering and Materials Science Centre	1
19.	Centre for Biomedical Engineering	1
20.	St. John of God Hospital	1
21.	Temple St. Children's University Hospital	1
		<b>117</b>



# Research Students

Graduated December 2019 | June 2020

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	Teonh Huei Desmond Chueh	NGAL As a Biomarker of Disease Progression and Treatment Response Following Roux-En-Y Gastric Bypass Surgery In Experimental Diabetic Kidney Disease	Assoc Prof Neil Doherty	Prof Patrick D'Haese	University of Antwerp, Laboratory of Pathophysiology, Belgium
MSc	Aisling Mangan	Factors Associated with Weight Loss Response to GLP-1 Receptor Agonist Treatment in Individuals with Obesity	Prof Carel Le Roux	Prof Peter Flatt	Ulster University, Biomedical Sciences, Northern Ireland, UK
MSc	Al-Najim Rand Tariq	The Effect of Daily Liraglutide 3.0mg together with Diet and Exercise Advice as Standard Care on Eating Behaviour in patients with Obesity	Prof Carel Le Roux	Prof Victor Preedy	Kings College London, Genomics Centre, UK
PhD	Fatma Alshehri	Design and development of Minicircle Vectors with Human Promoters for Non-viral Gene Therapy for Recessive Dystrophic Epidermolysis Bullosa	Prof Wenxin Wang	Prof Edel O'Toole	Queen Mary University of London, Molecular Dermatology, UK
PhD	Dr Thomas Barry	Community First Responders for Out-of-Hospital Cardiac Arrest in Ireland	Prof Gerard Bury	Prof Laurie Morrison	University of Toronto, Canada
PhD	Dr Una Buckley	Neuromodulation of the cardiac autonomic nervous system for the control of ventricular arrhythmias	Prof David Keane	Prof Neil Herring	Exeter College, UK
PhD	Shane Comer	New regulatory mechanism of the small G-protein RhoA in platelets	Assoc Prof Albert Smolenski	Prof Yotis Senis	University of Birmingham, UK
PhD	Amy Courtney	Establishing the Ctenophore Pleurobrachia pileus as a model organism for systems Neuroscience	Dr Mark Pickering	Prof Gáspár Jékely	University of Exeter, UK
PhD	Des Crowley	Optimising HCV screening and Treatment in Irish Prisons A mixed methods study	Prof Walter Cullen	Dr Roy Robertson	The University of Edinburgh, Scotland, UK
PhD	Sean Curley	Modulation of high density lipoprotein (HDL) composition and functionality within cardiometabolic diseases and the therapeutic potential of GLP-1	Dr Fiona Mc Gillicuddy	Prof Amalia Gastaldelli	University of Texas Health Science Centre, USA
PhD	Leah Ewart	Molecular mechanisms underlying BMP-7 renoprotection	Dr Debra Higgins	Prof Aristidis Charonis	Academy of Athens, Biomedical Research Foundation, Greece



Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
PhD	Dr Blanaid Gavin	The design, development and preliminary evaluation of HOPE* in ADHD: A group intervention for teaching homework skills to parents of children with ADHD * Homework Oriented Parent Education	Prof Fiona Mc Nicholas	Dr Declan Quinn Prof Margaret Thompson	Kingsbridge Private Hospital, UK University of Southampton, UK
PhD	Nicola Giannotti	Structural and Metabolic imaging of carotid atherosclerotic plaques associated with stroke	Assoc Prof Jonathan McNulty	Prof Aad van der Lugt	Erasmus University MC, Rotterdam, Netherlands
PhD	Matthew Ho Zhi Guang	A Multifaceted Exploration of Novel Therapeutic Options in Multiple Myeloma (MM)	Dr Peter O'Gorman	Prof Torben Plesner	University of Southern Denmark
PhD	Douglas Halligan	HIF-hydroxylase inhibition enhances the protective effects of cyclosporine in colitis	Prof Cormac Taylor	Prof Joachim Fandrey	Universitat Duisberg Essen, Germany
PhD	Natasha Kapoor	An assessment of the impact of Surgical and Pharmacological treatment of obesity on direct measures of eating behaviour	Prof Carel Le Roux	Dr Matthias Lannoo	UZ Leuven, Belgium
PhD	Izabella Krystowiak	Proteome-wide discovery and annotation of protein motif specificity determinants	Prof Des Higgins	Prof Miguel Andrade	Universität Mainz, Rhineland-Palatinate, Germany
PhD	Zhi Liu	NMFunctional analysis of the MAPK scaffold KSR1 in malignant melanoma	Prof Walter Kolch	Dr Jürgen Müller	Leibniz, University of Hanover, Germany
PhD	Fanny Florine Martini	Characterisation of interactions between the HTLV-2 antisense protein APH-2 and the cellular ESCRT pathway: Implications for the viral lifecycle and protein trafficking	Dr Noreen Sheehy	Prof Maria Grazia Romanelli	University of Verona, Verona, Italy
PhD	Allison McGee	Investigation of novel imaging applications for the exploration of organ-based fibrotic change in individuals with Cystic Fibrosis	Prof Louise Rainford	Dr Nick Woznitza Prof Julie Nightingale	British Institute of Radiology, UK Sheffield Hallam University, Sheffield, UK
PhD	Fabiola Honorio Neto	The power balance: A grounded theory study about the experience of clinicians, parents and children regarding ADHD assessment and treatment	Prof Fiona Mc Nicholas	Dr Ilina Singh	University of Oxford, UK
PhD	Dr Eoin O'Curraín	Face mask ventilation of the newborn, equipment and training techniques	Prof Colm O'Donnell	Prof Hege Langli Ersdal	Universitete Stavanger, Norway

Programme	Student	Thesis title	Supervisor	Special Extern Examiner	Examiner's Institution
PhD	Jonathan O'Keeffe Ahern	CRISPR/Cas9 based COL7A1 genomic editing in recessive dystrophic epidermolysis bullosa (RDEB) via non-viral polymer delivery system	Prof Wenxin Wang	Prof Alain Hovnanian	Institut Imagine, France
PhD	James O'Reilly	The Role of Proteomics in Uncovering Novel Serum Biomarkers and Disease Mechanisms in At-Risk Populations for the Development of Heart Failure	Assoc Prof John Baugh	Prof Barbara McDermott	Queen's University Belfast, Northern Ireland, UK
PhD	Elisa Panada	The role of RAF dimerisation in therapy resistant malignant Melanoma	Prof Walter Kolch	Prof Manuela Baccarini	University of Vienna, Austria
PhD	Deirdre Scully	Effect of cystic ovary disease on microarchitecture, function and gamete-maternal interactions in the bovine oviduct - new concepts	Prof Sabine Koelle	Dr Nicolas Orsi	University of Leeds, UK
PhD	Leilia Smith	Characterisation and assessment of the preclinical viability of a novel Murine Model of atopic dermatitis	Prof Guenther Eissner	Dr Miriam Wittmann	University of Leeds, UK
PhD	Ming Zeng	Design and Synthesis of Highly Branched Poly (B - Amino Ester)s for COL7A1 Gene Delivery to Human Skin Cells	Prof Wenxin Wang	Prof Jun Wang	University College London, UK
MD	Dr Lauren Alexander	Attitudes Towards Electroconvulsive Therapy: Assessing the impact of knowledge and experience on attitudes towards ECT in patients, relatives and members of the public	Prof Kevin Malone	Prof George Kirov	Cardiff University, Wales, UK
MD	Dr Rozana Abdul Rahman	Neoadjuvant Therapy for Pancreatic Adenocarcinoma and Biomarker Study	Prof Ray McDermott	Dr Mairead McNamara	University of Manchester, UK
MD	Dr Lynn Redahan	Acute Kidney Injury in the Intensive Care Unit: An analysis of the short- and long-term outcomes of Acute Kidney Injury in critically ill adults and the role of novel kidney injury biomarkers for prediction and prognostication	Prof Patrick Murray	Dr Andrew Lewington	Leeds Teaching Hospitals NHS Trust, UK
MD	Dr Margaret Walshe	Immune phenotype of patients with Crohns Disease treated with anti-TNF; Implications for primary non-response and efficacy of Influenza vaccination	Prof Glen Doherty	Prof Andreas Sturm	DRK Kliniken, DKR Schwesternschaft, Berlin, Germany

<b>Programme</b>	<b>Student</b>	<b>Thesis title</b>	<b>Supervisor</b>	<b>Special Extern Examiner</b>	<b>Examiner's Institution</b>
MD	Dr Sy Giin Chong	Fibrocyte-Derived Exosomes May Facilitate Epithelial to Mesenchymal Transition During The Pathogenesis of Idiopathic Pulmonary Fibrosis	Prof Michael Keane	Dr Marc Peters-Golden	University of Michigan, USA
MD	Dr Colla Cunneen	The role of the receptor for advanced glycation endproducts in the progression and treatment failure of prostate cancer	Prof Bill Watson	Dr Niall Corcoran	Limerick Institute of Technology, Ireland
MD	Dr Stephanie Dowling	How can small group CME best address the needs of GPs in rural communities?	Prof Walter Cullen	Prof Stewart Mercer	The University of Edinburgh, Scotland, UK
MD	Dr Eva Forman	A Gentye- Phenotype Whole Genome Study of Progressive Motor Disorders of Childhood	Prof Mary King	Dr Meriel McEntagart	St George's University Hospital, UK
MD	Dr Karen Hartery	Treatments in inflammatory bowel disease: Past, present and future	Dr Elizabeth Ryan	Dr Shaji Sebastian	Hull and East Yorkshire Hospitals NHS Trust, UK
MD	Dr Khalid Kamel	Mitochondrial Dysfunction in Glaucoma	Prof Colm O'Brien	Mr Gerassimos Lascaratos	King's College Hospital, London, UK
MD	Dr Amin Lakhani	Proteomics and Genomics of Friedreich's Ataxia	Prof Dolores Cahill	Prof Paola Giunti	University College London, UK
MD	Dr Candice Low	Rheumatoid Arthritis: Predictors, Biometrics, and B-Cell Depletion	Prof Douglas Veale	Prof Ann Morgan	University of Leeds, UK
MD	Dr Karen Mc Call	Optimisation of sustained inflation delivery by the use of novel techniques to individualize delivery	Prof Colm O'Donnell	Prof Noah Hillman	Sheffield Hallam University, Sheffield, South Yorkshire, United Kingdom
MD	Dr Niamh McGrath	Outcomes of national newborn bloodspot screening programme for congenital hypothyroidism in the Republic of Ireland	Dr Nuala Murphy	Profr Peter Hindmarsh	University College London
MD	Dr Donal O'Connor	The role of invariant natural killer T cells and Adipose Type 1 innate lymphoid cells in visceral fat associated immunity in obesity and colorectal cancer	Dr Lydia Lynch	Prof Peter Kuppen	Leiden University Medical Centre, Leiden, Netherlands

# IN FOCUS...

## Systems Biology Ireland (SBI)

[www.ucd.ie/sbi](http://www.ucd.ie/sbi)

Systems Biology Ireland was founded in 2009 through a Science Foundation Ireland (SFI) CSET grant, and has been consistently ranked amongst the top five systems biology research centres in the world by international review panels in 2014, 2016, and 2018. The purpose built SBI facility on the UCD Belfield campus sits between the UCD Health Sciences Centre and the UCD Conway Institute providing easy access to modern omics technology platforms. It combines dry and wet experimentation under one roof, and houses a multidisciplinary team of some 60 researchers from over 20 nations including computational scientists and modellers, biologists, biochemists and clinician-scientists. Together these researchers have published 3-4 papers per month since the centre's inception in 2009. SBI uses mathematical and computational modelling approaches in combination with cutting edge experimental technologies to acquire a systems level, mechanistic understanding of cellular signal transduction networks. In recent years SBI has focused on applying the computational modelling tools it generates to develop precision medicine approaches.

## Key appointments

SBI principal investigator, Professor Owen Smith was appointed National Clinical Lead for Child, Adolescent & Young Adult Cancers for the National Cancer Control Programme based on his contribution to formulating the policy for this group in the current Cancer Strategy.

## Publication highlights

- Forde S, ... **Smith O**, ... Turner SD. Paediatric Burkitt lymphoma patient-derived xenografts capture disease characteristics over time and are a model for therapy. *Br J Haematol*. 03 Sept 2020
- Cordonnier G, ... **Bond J**. CBF $\beta$ -SMMHC Affects Genome-wide Polycomb Repressive Complex 1 Activity in Acute Myeloid Leukemia. *Cell Reports*. 2020 Jan 14;30(2):299-307.e3.
- Lord, C.J., **Quinn, N.**, **Ryan, C.J.** "Integrative analysis of large-scale loss-of-function screens identifies robust cancer-associated genetic interactions" *Elife* (2020)
- **Kennedy SA**, ... Charitou T, Herrera-Montavez C, Krstic A, Matallanas D, Kiel C, Rauch N, Rukhlenko O, Kholodenko BN, Iglesias-Martinez LF, Ryan CJ, Pilkington R, ... **Kolch W**. "Extensive rewiring of the EGFR network in colorectal cancer cells expressing transforming levels of KRAS G13D." *Nature Commun*. 2020 Jan 24;11(1):499.
- Bolado-Carrancio A, Rukhlenko O, Nikonova E, ..., **Garcia-Munoz A**, **Kolch W**, von Kriegsheim A, Kholodenko BN, "Periodic propagating waves coordinate RhoGTPase network dynamics at the leading and trailing edges during cell migration." *Elife* 2020 Jul 24;9:e58165.
- **Bond J**, ... Macintyre E. "A transcriptomic continuum of differentiation arrest identifies myeloid interface acute leukemias with poor prognosis." *Leukemia*. 2020 Jul 13.
- Lord, C.J., **Quinn, N.**, **Ryan, C.J.** "Integrative analysis of large-scale loss-of-function screens identifies robust cancer-associated genetic interactions" *Elife* 2020 May 28;9:e58925.

# IN FOCUS...

## Charles Institute of Dermatology

[www.ucd.ie/charles](http://www.ucd.ie/charles)

### Education

The Institute established the bi-weekly *Charles Seminar Series* by skin/dermatology research leaders in Ireland and abroad. Aided by unrestricted educational grant from A Menarini. Audience as in-house and online streaming via Adobe Connect (to Irish Dermatologists). Seminars written up by medical journalist as short synopses in *Medical Independent*, under 'Charles Institute' banner. 23 talks in 1st session; Ire (8); UK (12); Ger (1); Swiss (1); Spain (1).

The institute launched and enrolled over 100 students on the *UCD Professional Certificate in Clinical Dermatology*, supported by over twenty of Ireland's leading consultant dermatologists from all four provinces (emphasizes CI's all-island resource).

### Research Highlights

- Full-time core PIs (Wenxin Wang/Des Tobin); associated PIs (Frank Powell, Christina Kiel/SBI, Brian Kirby).
- 1 Technical Officer and 1 SEA (latter post recently confirmed for 5 years)
- At highest during this academic year there were PhD students (17) with 8 graduations; Postdocs (14).
- Honorary Visiting Staff (Prof. Alan Irvine) and alignment of UCD Clinical Pathway dermatologists with CI.
- Externally-funded grants in 2019/2020 from HEA, EU, IRC, SFI, EI (DTIF), Industry, CDSCHC, Newman Fellowships. Projects attracted >€4.8M.
- Separate 5-year award (€3M) from CDSCHC to form an Irish skin disease patient registry (called NISR; board of directors Alan Irvine, Des Tobin, Fiona Browne). Recently obtained charity status (#420205667). Operational address UCD Charles Institute.
- Publication highlights: >40 papers. 21 papers in Journals with impact factor >6 [incl. *Lancet* 59.01; *Nat Rev Chem* 30.63; *J Pineal Res* 15.2; *Mater Horiz* 13.1; *Nat Comm* 11.88; *Biol Rev Camb Phil Soc* 10.71; *ACS Appl Mat Interf* 8.75; *JID* 7.14; *JAAD* x3, 7.1; *BJD* x7 6.7; *GigaSci* 6.95; *Acta Biomateria* 6.64.



# Student Summer Research Award (SSRA) programme 2020

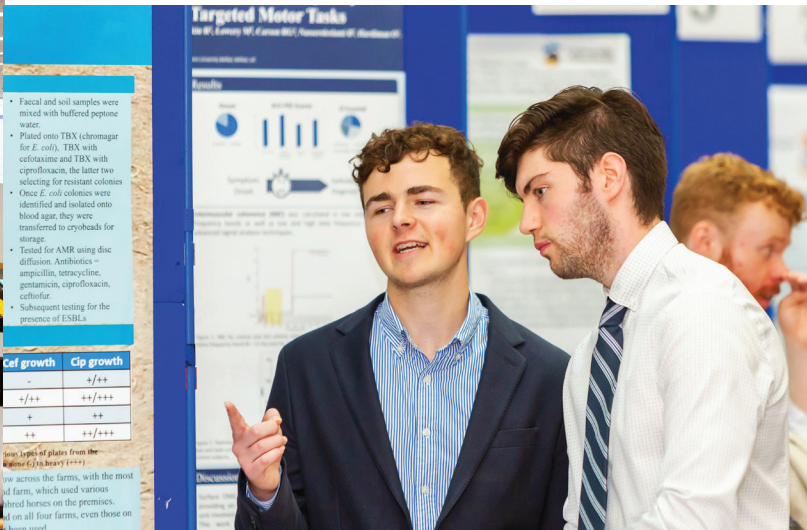
The Student Summer Research Award (SSRA) programme, established in 2006 under the direction of Professor Amanda McCann, is a research based initiative to support and showcase undergraduate research affiliated with the UCD School of Medicine.

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 setbacks, a strong research ethos triumphed and we have continued to instil in our undergraduate 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.

103 students undertook SSRA projects in 2020, including a number of students who were hosted virtually in International Institutes including the University of Texas, nine institutes across Canada, the University of Minnesota, Dana-Farber Cancer Institute, The Cancer Institute of Japanese Foundation for Cancer Research and the Institute of Biology Valrose (iBV), Université Côte d'Azur, Nice France. 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.

SSRA Scholarships in 2020 were limited due to travel restrictions. However 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 Award for Research Excellence in 2020 in the areas of cardiology and vascular disease and rare cancers.



## Awards

### Alfred Myles Smith Bursary 2020: Kathryn L Hong

**Project Title:** Transforming the assessment of cardiac fibrosis in patients with atrial fibrillation

**Location:** Division of Cardiology, Schulich Heart Centre, Sunnybrook Health Sciences Centre, Toronto ON, Canada

**Supervisor:** Dr Benedict M Glover

### Gold Medal - Katherine Ketchum

**Project Title:** Pain detectives: optimizing the management of pain and irritability in children with severe neurological impairment

**Location:** British Columbia Children's Hospital Research Institute, Vancouver, Canada

**Supervisor:** Dr Hal Siden

### Silver Medal - Brigid Kemerer

**Project Title:** The Impact of Covid-19 on mental health presentations to Temple Street Children's University Hospital Emergency Department

**Location:** Department of Liaison Psychiatry, Children's University Hospital, Temple Street, Dublin, Ireland

**Supervisor:** Dr Ian McClelland

### Bronze Medal - Kai Ning Chiam

**Project Title:** Analysis of retinoic acid receptor gene regulation in ametastatic pancreatic cancer cell line

**Location:** Systems Biology Ireland, University College Dublin

**Supervisor:** Dr Stephen Thorpe

### Poster 1st Place - Marianna Nachef

**Project Title:** Enhancing anti-tumor immunotherapy by targeting the amino acid transporters slc1a5 and slc3a2/slc7a5

**Location:** Department of Biochemistry, Microbiology, and Immunology, Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada

**Supervisor:** Dr Seung-Hwan Lee

### Poster 2nd Place - Marcelina Szewc

**Project Title:** Biological methods for the control of gastrointestinal nematodes

**Location:** UCD Veterinary Sciences, University College Dublin

**Supervisor:** Dr Annetta Zintl

### Poster 3rd Place - Halin Buruno

**Project Title:** Can the collapse of the scalp hair follicle pigmentary unit with age (canities) provide insights into how melanocyte death could be induced in melanoma?

**Location:** UCD Charles Institute of Dermatology, University College Dublin

**Supervisor:** Prof Desmond Tobin



# Academic Centres

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

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



## UCD Centre for Emergency Medical Science

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



**Director**  
Prof Gerard Bury

The UCD Centre for Emergency Medical Science (CEMS) was established in 2001 to provide a national centre of excellence for research, development, education and training in pre-hospital emergency care. The principal activities of UCD-CEMS are provision of graduate and undergraduate education and training in pre-hospital immediate care. Provision of short courses in immediate care - including cardiac, trauma and paediatrics. Management and delivery of the MERIT Project (Medical Emergency Responders: Integration & Training). The work of statutory ambulance services and GPs in caring for acute, serious illness and injury in the community is the principal focus of UCD CEMS.

### Centre news in 2020

In response to a request from the HSE, UCD CEMS delivered 600 training places to GPs and GP Registrars in Clinical PPE Emergency Care in April-September 2020

## UCD Centre for Arthritis Research

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



**Director**  
Prof Gerry Wilson

Our centre has proven highly successful in developing translational experimental approaches including training and performance of mini-arthroscopy and tissue biopsy. The programme based across the UCD Clinical Research Centre, 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 Grants in 2020

- Daire O'Leary awarded a Newman Fellowship in Paediatric Rheumatology

## UCD Centre for Precision Surgery

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



**Director**  
Prof Ronan Cahill

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.

### Key Awards in 2020

- Shortlisted at the 2020 Irish Healthcare Awards for:
  - UCD Centre for Precision Surgery (Surgical Advancement of the Year category)
  - AEROSOLVE (Best Response to COVID-19 category)
- UCD Research Awards Shortlist: Dr Kevin Nolan.

### Key Grants in 2020

- PORSAV: industry partnership in development and testing of powered air respiratory protection systems in the operating theatre, and better surgical tools. A Horizon 2020 award, total project €2.6M

## UCD Bioinformatics Centre

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



**Director**  
Prof Denis Shields

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 Awards in 2020

- Key grants to researchers include SFI Frontiers awards to Geraldine Butler and Emma Teeling, and a Careerfit EI/Marie Curie fellowship to Denis Shields group.

### Centre news in 2020

6 PhD students have joined UCD this year to start Jan 2021 as part of the SFI CRT in Genomics Data Science (2 in Medicine (Bond and Shields groups), 2 in SBES (Hughes and Johnston groups), 2 in computer science (Ryan and Pollastri groups), joining the three who joined last year (SBBS, SBES, SAFS).

UCD (also representing affiliates NUIG and UCC) signed the final agreement with Elixir to formalise Elixir Ireland centred in UCD as a bioinformatics node linking in to the Elixir organisation across Europe to support bioinformatics services. This is supported by an EU consortium grant (CONVERGE, local PI Colm Ryan, computer science, Deputy Director of Elixir Ireland).

## UCD Academic Centre on Rare Diseases

[www.ucd.ie/medicine/ourresearch/researchcentre/academiccentreonrare diseases](http://www.ucd.ie/medicine/ourresearch/researchcentre/academiccentreonrare diseases)



**Director**  
Dr Sean Ennis

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.



**Director**  
Prof Catherine Godson

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

We comprise a multidisciplinary research group with expertise in molecular cell biology, genetics, bioinformatics, pharmacology, systems biology, chemical pathology and clinical medicine. Investigators are based in the UCD Conway Institute, 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.

#### **Achievements of UCD DCRC PIs within the SoM**

Prof Catherine Godson

- Elected as Science Secretary for the Royal Irish Academy, 2020.
- The Academy is an all-island independent forum of peer-elected experts, which draws on Members' expertise to contribute to public debate and policy formation on issues in the sciences and humanities and promotes awareness of how science and the humanities enrich our lives and benefit society.
- Appointed by Minister for Education to Irish Research Council, 2020.
- Appointed a Trustee of Barts Charity London, 2020.
- Barts Charity is one of the biggest medical charities in the UK. It supports the staff and researchers at The Barts Health group, serving a population of 2.5 m; and the allied London School of Medicine and Dentistry, Queen Mary University of London.
- Featured Researcher in RCSI SMJ 2020
- [http://www.rcsismj.com/wp-content/uploads/RCSIsmj\\_2020\\_web1.pdf](http://www.rcsismj.com/wp-content/uploads/RCSIsmj_2020_web1.pdf)
- Chair RIA Webinar, 2020
- We are all virologists now: The Science of COVID-19
- [<https://www.youtube.com/watch?v=CGdIMSu4lz4>] Speaker, EASD Annual Meeting; Australasian Soc Pharmacol & Exp Therapeutics Annual Meeting, 2020.
- Appointed Adjunct/Visiting Professor at Monash University, Melbourne, Australia, 2020.
- The Atlas of Inflammation Resolution (AIR). Serhan CN, Gupta SK, Perretti M, Godson C, Brennan E, Li Y, Soehnlein O, Shimizu T, Werz O, Chiurchiù V, Azzi A, Dubourdeau M, Gupta SS, Schopohl P, Hoch M, Gjorgevikj D, Khan FM, Brauer D, Tripathi A, Cesnulevicius K, Lescheid D, Schultz M, Särndahl E, Repsilber D, Kruse R, Sala A, Haeggström JZ, Levy BD, Filep JG, Wolkenhauer O. Mol Aspects Med. 2020 Aug;74:100894. doi: 10.1016/j.mam.2020.100894. Epub 2020 Sep 3. PMID: 32893032 Free article. Review.

The Atlas of Inflammation Resolution (AIR) is a web-based resource capturing the state-of-the-art in acute inflammation and inflammation resolution research. The AIR provides an interface for users to search thousands of interactions, arranged in interconnected multi-layers of process diagrams, covering a wide range of clinically relevant phenotypes. The AIR serves as an open access knowledgebase, including a gateway to numerous public databases. It is furthermore possible for the user to map experimental data onto the molecular interaction maps of the AIR, providing the basis

for bioinformatics analyses and systems biology approaches. By mapping experimental data onto the Atlas, it can be used to elucidate drug action as well as molecular mechanisms underlying different disease phenotypes. Altmetric Impact score 14. High Attention Score compared to outputs of the same age (85<sup>th</sup> percentile).

- Genome-Wide Association Study of Diabetic Kidney Disease Highlights Biology Involved in Glomerular Basement Membrane Collagen. *J Am Soc Nephrol*. 2019 Oct;30(10):2000-2016. doi: 10.1681/ASN.2019030218. Epub 2019 Sep 19. PMID: 31537649 Free PMC article.

This is a major contribution as it identifies a mutant in Col4a3 protein whose expression is associated with altered susceptibility to DKD. Impact Factor 9.27, Citations 23, Altmetric Impact Score 92. High Attention Score compared to outputs of the same age (97<sup>th</sup> percentile).

### Prof Carel le Roux

- Carel explained on BBC World News the latest scientific findings linking obesity with type 2 diabetes and risk of COVID-19 complications, May 2020.

This impacted on new guidelines to prioritize patients with obesity and diabetes for treatments such as metabolic surgery.

[www.youtube.com/watch?v=sodbAtmb9D4&feature=youtu.be](https://www.youtube.com/watch?v=sodbAtmb9D4&feature=youtu.be)

- Innovative Medicine Initiative (European Union). 2020-2025. Stratification of Obese Phenotypes to Optimize Future Obesity Therapy. €16,000,000 (Lead Coordinator)

Twenty-nine leading international players from academia, industry and civil society have joined forces to find better solutions to alleviate the burden and consequences of obesity. The project is supported with funding of € 16 million from the Innovative Medicines Initiative (IMI), a joint undertaking of the European Commission and the European Federation of Pharmaceutical Industries and Associations (EFPIA), T1D Exchange, JDRF, International Diabetes Federation (IDF), and Obesity Action Coalition.

- Carel was ranked by Expertscape.com as the world's top clinician scientist in the field of "bariatric surgery" as well as for "morbid obesity".
- The journal "Obesity Surgery" featured the biography of Carel le Roux in their June 2020 edition as one of the thought leaders who have moved the field forward.

- Rubino F, Cohen RV, Mingrone G, **le Roux CW**, Mechanick JI, Arterburn DE, Vidal J, Alberti G, Amiel SA, Batterham RL, Bornstein S, Chamseddine G, Del Prato S, Dixon JB, Eckel RH, Hopkins D, McGowan BM, Pan A, Patel A, Pattou F, Schauer PR, Zimmet PZ, Cummings DE. Bariatric and metabolic surgery during and after the COVID-19 pandemic: DSS recommendations for management of surgical candidates and postoperative patients and prioritisation of access to surgery. *Lancet Diabetes Endocrinol*. 2020 Jul;8(7):640-648. doi: 10.1016/S2213-8587(20)30157-1. PMID: 32386567 <https://www.sciencedirect.com/science/article/pii/S2213858720301571>
- During the Covid-19 epidemic treatments were stopped for patients with obesity, diabetes and chronic kidney disease. Carel was approached to contribute as part of a highly respected international panel to guide current and future prioritisation of patients. He was able to use his research to convince the consortium that patients with obesity, diabetes and chronic kidney disease need to be prioritised during the Covid-19 epidemic and thereafter. Impact factor: 25, citations 20, Altmetric Impact score 146. High Attention Score compared to outputs of the same age (97<sup>th</sup> percentile).

### Assoc Prof Neil Docherty

- **Docherty N.G.** [Corresponding Author], **le Roux C.W.** "Bariatric surgery for the treatment of chronic kidney disease in obesity and type 2 diabetes mellitus". *Nature Rev Nephrol*. 2020 Aug 10. doi: 10.1038/s41581-020-0323-4. Epub ahead of print. DOI: 10.1038/s41581-020-0323-4

Based on their recent high impact research studies and recognising their role as leading experts in the field, Neil and Carel were commissioned by Nature Reviews Nephrology to complete this state-of-the-art review. The paper is a comprehensive synthesis of the evidence base to date on the emerging prominence of bariatric surgery as a treatment option in patients with obesity, diabetes and associated kidney injury. Impact Factor 20, Citations 5, Altmetric Impact Score 20- High Attention Score compared to outputs of the same age (88<sup>th</sup> percentile)

**UCD Centre for  
Experimental Pathogen  
Host Research**

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



**Director**  
Prof Patrick Mallon

Established in 2008, CEPHR (formerly the HIV Molecular Research Group, HMRG) is internationally recognized for its translational research into long-term co-morbidities associated with HIV infection and its treatment with antiretrovirals and re- search into models of testing to increase early diagnosis of HIV.

The CEPHR, based on the Mater Misericordiae University Hospital (MMUH) campus, coordinates international, collaborative, translational research in HIV. The group comprises researchers with laboratory, statistical and clinical re- search expertise and is funded through a number of streams including Science Foundation Ireland, the Health Research Board and several industry supporters.

**Key Awards in 2020**

- Dr Jaythoon Hassan: Winner, Irish Laboratory Award, Laboratory Scientist of the Year, 2020

**Key Grants in 2020**

- Dr Eoin Feeney – Lead applicant: SFI 20/COV/8566. Markers of adipose tissue and systemic inflammation in obese and non-obese patients with COVID-19. €309,750
- Dr Michael Carr – Co PI: SFI-funded Irish coronavirus sequencing consortium (ICSC)
- Dr Jaythoon Hassan – Co PI: Temple Street Foundation Children’s University Hospital €261,280
- Dr Jaythoon Hassan – Collaborator: UCD Wellcome Trust ISSF –Clinical Primer Scheme €52,018
- Dr Jaythoon Hassan – Co PI: SFI COVID Rapid Response Call €122,979



**Director**  
Prof Michael Turner

Established in 2007, the Centre for Human Reproduction at the Coombe Women and Infants University Hospital has focused on multidisciplinary research with two main themes, maternity services research nationally and modifiable risk factors for pregnancy. These include maternal obesity, gestational diabetes mellitus, infection and sepsis, suboptimal folic acid supplementation, smoking and aberrant fetal growth.

#### Centre news in 2020

- In the last year, Dr Ciara Reynolds was awarded her PhD for her thesis on maternal smoking during pregnancy. Apart from a number of peer reviewed publications, Ciara's research received considerable attention on national radio and in the media, both print and social. Furthermore, her research is cited in the National Clinical Effectiveness Committee's (NCEC) new national guidelines on smoking cessation which are due to be published soon. Ciara's research on the carbon monoxide breath (BCO) test was key to the proposed recommendation on offering a BCO test to all women at their first antenatal visit to identify persistent smoking. As well as being in the maternal interest, this potentially can prevent intrauterine fetal growth restriction and improve fetal outcomes. It is a good example of translating scientific research quickly into clinical practice.
- Also during the year, Dr Eimer O'Malley submitted her PhD on the diagnosis of gestational diabetes mellitus (GDM). To date there have been 11 peer reviewed publications and the findings have implications for the development and revision of future national guidelines. Eimer's research has also received widespread media coverage and her findings on point of care (POC) capillary glucose measurements for selective screening with an Oral Glucose Tolerance Test (OGTT) published in the high impact laboratory medicine journal *Clinical Chemistry* was the subject of editorials in both *Clinical Chemistry* and the high impact *Diabetes Care*.
- The Centre continued its collaboration with Dr Léan McMahon, Project Manager in the National Women and Infants Programme Office on the Irish Maternity Indicator System (IMIS) Report which has already been published and disseminated for 2019. Ireland is the first country in the world to publish such a comprehensive, contemporary report on a blend of 40 different outcomes from all the maternity units in the country which can inform hospital management as well as the general public and healthcare professionals. Hospitals can benchmark their annual performances against their own previous performances and against other hospitals nationally. The highlights of the most recent report was carried on the front page of the *Irish Times*.



**Director**  
Prof Fionnuala Mc Auliffe

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

The Centre comprises researchers with backgrounds ranging from clinical obstetrics, paediatrics, nutrition, exercise physiology, behaviour and marketing, public health to health economics. The research is funded by grants from Health Research Board Ireland, Science Foundation Ireland, the European Union, the National Children's Research Centre, and the National Maternity Hospital Medical Fund.

#### **Key Awards in 2020**

- UCD Research Impact Case Study Competition – Finalist runner up – Prof. Fionnuala McAuliffe – Oct 2020
- Research prize for oral presentation at UCD Conway Festival – Anna Delahunt – Oct 2020
- First prize oral presentation at the UCD Translational Medicine Research Seminar – Anna Delahunt – April 2020
- BMFMS medical student prize awarded – Cara Yelverton

#### **Key Grants in 2020**

- Dr Sharleen O'Reilly a PI in the centre, was awarded EU Horizon Euro €4,000,000 for *Bump to Baby and Me*, a multicentre research programme on the identification of women at risk of gestational diabetes in early pregnancy and the validation of a multifaceted life coaching supported by app during pregnancy and up to 1 year postnatally to reduce risks of diabetes and weight gain.
- Prof McAuliffe was awarded a €270,000 research grant from the National Children's Research Centre to study childhood cardiometabolic health with the ongoing *ROLO Pre-Teen* study, a longitudinal birth cohort study in which the children are now aged 10 years. This exciting project started with 800 pregnant women participating from early pregnancy (*ROLO* study – Randomised cOntrol trial of a Low glycaemic index diet in pregnancy to prevent macrosomia). The *ROLO Kids* longitudinal follow up study occurred when these children were aged 5 years and we are currently recruiting at the 10 year follow up stage.

#### **Centre news in 2020**

We are delighted to announce that a free-to-access mobile app for pregnant women will be launching at the end of 2020. This app, *Hollestic*, consists of healthy, evidence based nutritional advice and was originally employed as part of the *PEARS* (Pregnancy Exercise and Nutrition Study with Smartphone Application Support) randomised controlled trial.

We have an established *ROLO Families Advisory Committee*, consisting of a self-selected group of parents from the longitudinal follow-up of the *ROLO* study. This richly informative collaboration between participants and researchers has been integral to shaping the research agenda within the Perinatal Research Centre. Building on the success of this committee we have in 2020 launched the *ROLO Pre-Teen Advisory Committee*, consisting of the *ROLO* pre-teens and their older siblings. We are excited to hear directly from these young participants about what they identify as important and interesting aspects of health.

## UCD Centre in Translational Oncology

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



**Director**  
Prof Amanda McCann

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.

### Key Grants in 2020

- 19 New awards internally funded:- €2,226,015
- 45 New awards externally funded:- €12,941,001
- DevelopMed MSCA for 12 postdocs in precision oncology (Kolch *et al.*)



## UCD School of Medicine - Research Office

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