



# MAYNOOTH UNIVERSITY RESEARCH AND INNOVATION REPORT 2023





# Contents

Introduction	2
Vision and Purpose	3
Note from the Editor	4
Research Highlights	5
Research and Innovation at Maynooth University 2023	6
Awards and Prizes	12
Faculty Highlights	19
Faculty of Arts, Celtic Studies and Philosophy	20
Faculty of Science and Engineering	34
Faculty of Social Sciences	56
Maynooth University Library	93
Research Institutes and Centres	96
MaynoothWorks	119
Glossary	122
Appendix	125
Acknowledgement	126

# Introduction

The 2023 Research and Innovation Report for Maynooth University celebrates the excellent work of the research community and professional support staff together with the significant outputs and achievements of 2022.

During this time frame, the community were still managing the continued multi-faceted impact of the COVID-19 pandemic, together with the significant increase in workload that this brought. In spite of the added burden and pressure, research continued to thrive and progress, with new areas of work opening up in some disciplines, and international recognition of the fundamental important of research and innovation to global wellbeing and all of our everyday lives.

The report highlights our research achievements across all Maynooth Departments and Research Institutes and Centres and showcases the cross disciplinary and impactful nature of collaboration that exists at Maynooth.

When reflecting back on all of these achievements, it is natural that we look to the future as well. This year we have been developing our new Strategic Plan (2023–2028). This is an exciting phase in the University's development with an ongoing commitment 'to imagine and create better futures for all' with our vision to be a university of *excellence, opportunity and impact*. We will embark on a new research strategy focussed on our building capacity within research beacons aiming to show research excellence of national and international significance. We will do this by building on our already excellent research structures, supporting and enabling our talented staff to achieve their potential, establishing a Graduate Research Academy and interdisciplinary Futures Institutes.

**Professor Eeva Leinonen**  
President

**Professor Rachel Msetfi**  
Vice-President for  
Research and Innovation



# Vision

## To be a university of excellence, opportunity and impact

### Our vision builds on;

- over two hundred years of academic excellence;
- our commitment to and achievements in equality, diversity and inclusion in higher education; and
- our societal mandate for public good as a civic university with significant local, regional, national and international impact.

We are a university which makes a significant contribution to the creation of a better society: a university of excellence, opportunity and impact.

We define ourselves as having a significant stake in all three – academic and professional excellence; providing life-changing opportunities for all who can benefit from higher education; and creating a positive impact on society through our students, our research and by building sustainable communities.

# Purpose

## To imagine and create better futures for all.

We believe in the power of our University and its people to imagine and create better futures for all. We see ourselves as a catalyst for creativity, imagination, critical thinking, constructive challenge and citizen empowerment.

We foster dialogue with society to ask and explore important questions with curiosity, expertise and an independent mind.

We imagine and create better futures for everyone, without discrimination, without judgement, without bias. We continue to be committed to social justice and to the development of a sustainable future for our planet and its people.

We push the boundaries of science, imagination and the human mind in order to create better futures for generations to come.

We educate our students to be global citizens and the next generation of leaders and change-makers, committed to making a positive impact on our future.

We are a civic university, tackling challenges facing regional, national and global communities, creating sustainable economic prosperity and advancing social cohesion through high quality education and world-class research.

We see ourselves as an anchor institution in society, providing stability as a centre of knowledge, expertise and critical insight in a time of uncertainty and disinformation.

We are excited about the power of our purpose to transform lives, communities and our planet for the better.

# Note from the Editor

It is with great pleasure that I present to you the 2023 Maynooth University Annual Research Report which highlights the major research outputs for the academic year 2021/2022.

The report highlights the successes of researchers in their research programmes with significant research outputs over the year.

This year has seen a further increase in research awards to €57 million included costs distributed to collaborating partners. This increase is primarily due to successes in Horizon Europe. Dr Sinead O’Gorman’s was awarded the MSCA4Ukraine, in collaboration the European Universities Association and Alexander von Humboldt Foundation (€25m) as well as two further European Council Awards, advanced and consolidator to Professor Jane Gray (€2.5m) and Professor Karen Desmond (€2m) respectively.

I would like also to congratulate Dr Katriona O’Sullivan on winning the first annual Women in Tech Europe Award for most impactful initiative for her STEM Passport for Inclusion project which was among five finalists for Most Impactful Initiative Award as part of the Women in Tech@ EUROPE Regional Awards 2022.

Professor Rachel Msetfi has now joined us as the Vice-President for Research and Innovation. I look forward to working with her on the implementation of the new Strategic Plan and in particular the Research and Impact Strategy over the coming years.

Finally, a massive thank you to all the staff in the Research Development Office for their dedication to the researchers at Maynooth University and their undying commitment and continuous support to me and the VPRI.

**Dr Carol Barrett**  
Director of Research Development



# Research Highlights



## University Rankings 2023

**86** In the World

Times Higher Education Young University Rankings 2023

**79**

Times Higher Education SDGS 5 – Gender Equality Ranking 2023

**101-200**

Times Higher Education SDGS 10 – Reduced Inequalities Ranking 2023

**401-500**

Times Higher Education World University Rankings 2023

### Times Higher Education World University Rankings 2023 by subject

**126-150**

Psychology

**201-250**

Education

**201-250**

Social Science

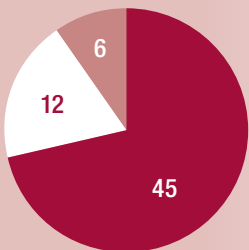
**251-300**

Physical Sciences



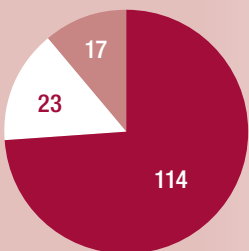
## Talent Development

**63** Research Graduates



- PhD students
- Professional Doctoral students
- Research Masters

**154** New Postgraduate Research Students



- PhD students
- Professional Doctoral students
- Research Masters

**84** Postdoctoral Researchers



## Publications & Impact 2022

**877**

Total (SCOPUS)

**45**

Books

**35**

Edited Books

**174**

Book Chapters

**1.64**

Field weighted citation impact (2018–2022)

**55.5%**

Publications with international collaborators

**2.6%**

Publications with industry partners

**30.1%**

Publications in the top 10% of cited publications worldwide (field weighted)

Web of Science Highly Cited

**1**

Hot Paper (2018–2022)



## Innovation & Impact 2022

**21**

New collaborations with Industry

**2**

License Agreements

**4**

Patents Filed

**6**

Invention Disclosures



## Research Grants Awarded 2021-2022

**210**

Research grants

**€57,516,762**

Total value of research grants awarded

**€28,012,213**

Value of grants direct to Maynooth

# Research and Innovation at Maynooth University 2023

The Annual Research Report showcases the activities of the research community at Maynooth University (MU). This year's report presents highlights of research, scholarship and innovation activities at MU for the academic year 2021/2022, across the academic departments, research institutes and designated research centres.





## Research activity across MU has continued to grow with the total value of new research grants awarded to the University in the year October 2021–September 2022 increasing to €57.5m.

This comprised a budget of €28m for research taking place at MU, in addition to €19.5m in funds transferred to international and national collaborating partners. Among the 210 research grants awarded during the reporting period were many significant multi-partner projects funded both nationally and via the European Commission. MU has already been awarded over €17m from the Horizon Europe Framework Programme compared with an overall drawdown from predecessor programme, Horizon 2020 (2014–2020), of €22m. The number MU led funded co-ordinated projects has increased five-fold since 2018.

MU success included a prestigious European Research Council (ERC) Consolidator Award and an Advanced ERC award. The ERC Consolidator was awarded to Professor Karen Desmond of the Department of Music and is valued at €2m over five years. BROKENSONG examines polyphonic singing in medieval Britain and Ireland during a transformative period of western music history, c.1150–1350, when written books devoted to polyphony begin to proliferate. Using methodologies from musicology, music analysis, medieval and manuscript studies, practice-based research, and digital humanities, BROKENSONG aims to answer the principal research question: What does it mean for a culture to write its music down? The ERC Advanced Grant (€2.5m) was awarded to Professor Jane Gray of the Department of Sociology and the MU Social Science Institute (MUSSI). LINLOSS: 'Towards a Sociology of Loss: Disposals and dead-ends in Lineages of Social Innovation and Change' aims to provide a new understanding of how losses, disposals and dead-ends shape the direction of social change at moments of rupture, and to develop a formal theory of social loss. It will deliver a methodological breakthrough in pioneering methods for the analysis of dynamic, multi-scalar social processes and will make a major theoretical contribution to scholarship on social change.

In order to build the international competitiveness of awardees and Ireland as a whole, and to leverage greater success for the Irish research system in ERC awards, the Irish Research Council ran the Starting and Consolidator Laureate Awards Programme that aims to enhance frontier basic research in Ireland. MU were very successful in the 2021 call receiving four IRC Laureate awards (€2m in total). The awardees are; *Consolidator Awards*: Dr Deborah Hayden, (Early Irish) and Dr John Regan (Theoretical Physics); €600K each and *Starting Awards*: Dr Lynsey Black (Law and Criminology) and Dr Lisa Orme (Geography); €400k each.

Turning to Consortia led programmes, MU successes included a €3.5m project funded under the EIC Pathfinder Challenge (DISCO) led by Professor Damien Woods of the Hamilton Institute and Computer Science Department which will run for five years. The DISCO project will address the challenge of engineering a programmable and robust DNA storage and computing platform. DISCO will combine powerful molecular-algorithmic ideas from DNA computing with thermodynamic stability from DNA nanostructures, to provide an expressive and robust system design.

The project proposes the use of long DNA scaffold strands, upon which hundreds of smaller strands bind to store data, which can be later read, erased, rewritten and computed upon.



Professor Fabiano Pallonetto, School of Business, Hamilton Institute and Innovation Value Institute

A second MU led co-ordinated project funded by the European Commission, valued at €2.5m, was awarded under Horizon Europe's Cluster 5: Climate, Energy and Mobility Pillar and is led by Professor Fabiano Pallonetto of the School of Business. The Res4City project with 13 European partners will aim to envision a codesigned educational framework for upskilling the workforce to integrate, influence and combine the current sustainability best practices for renewable energies and fuel technologies.

MU continued its success in supporting early career researchers to access external national funding to further their career pathways. MU celebrated the awarding of seventeen IRC Government of Ireland postgraduate awards, three IRC Government of Ireland postdoctoral awards, one IRC Employment based Postgraduate scholar and one IRC Employment based Postdoctoral Fellow in 2022. In addition, five early career MU researchers from Biology, (Dr Özlem Sarikaya Bayram), the Hamilton Institute, (Dr Trent Rogers and Dr Rowan McLaughlin), Early Irish (Dr Niamh Wycherley) and Sociology (Dr John Brown) were each awarded SFI-IRC Pathways awards which aim to support talented postdoctoral researchers from all research disciplines to develop their track record and transition to become independent research leaders. These projects run for four years with a value of over €2,000,000 in direct costs.

MU has had recent success in the Commission's flagship, prestigious funding mechanism to support career development. Marie Skłodowska-Curie Actions (MSCA) fund excellent research and innovation and equip researchers at various stages of their career with new knowledge and skills, through mobility across borders and exposure to different sectors and disciplines. The MSCA helps build Europe's capacity for research and innovation by investing in the long-term careers of excellent researchers.

MU was awarded five prestigious Marie Skłodowska-Curie Actions (MSCA) Doctoral Fellowships with an overall value of €1,061,832. Dr Corinna Salomon will work with Professor David Stifter in the Department of Early Irish will carry out research on the linguistic and sociolinguistic landscape of the Celtic Northern Italy and the alpine region of the iron age. Dr Jenny Säilävaara will be based in the Department

# Research and Innovation at Maynooth University 2023

of Applied Social Studies mentored by Dr Ciara Bradley focusing on Infant feeding decisions in Ireland and Finland. Dr Sukanya Ramaraj will join the Department of Chemistry working with Professor Carmel Breslin fabricating a novel asymmetric supercapacitor with the aim of developing the next generation of high energy and power density SC as energy storage devices. Working with Dr John Regan in the Department of Theoretical Physics, Dr Ricarda Beckmann will carry out the first large-scale study of seed black hole dynamics in the early Universe through numerical simulations to design high-resolution simulation to fully resolve seed black hole trajectories. Dr Joanna Walsh will work with Dr Jeneen Naji in the Department of Media Studies will develop an open-source web-based text to speech reader using an alternative range of voices of gender, age, class, race and regional accent with a view to address the negative impacts of under-representation.



Professor Markus Helfert, School of Business and Innovation Value Institute

In addition, Professor Markus Helfert, has secured a MSCA CoFund (€2.9m) to fund 20 Postdoctoral Researchers to advance digital transformation practices in four multidisciplinary research themes:

1. Innovative Business Models and Data Ecosystems;
2. Digital Culture and Skills;
3. Data Governance;
4. Innovative Digital Technologies and Adoption aligned with the EU sustainable development goals.

Professor Helfert also was awarded funding for an MSCA Doctoral Network (Entrust). This project brings together 16 leading research institutions and enterprise from five different countries across Europe to establish a Doctoral Network that will train a cohort of 11 Doctoral Researchers (DRs) in an intersectoral, international and interdisciplinary setting with the aim to establish a new generation of Data Executives.

MU hosts Scholars at Risk Europe (SAR Europe) and plays a pivotal role contributing to informed policymaking in Europe on academic freedom, higher education values, and support for at-risk scholars. Under SAR Europe, MU was awarded two significant projects, led by Dr Sinead O’Gorman and both programmes funded both under MSCA.

InspireEurope Plus (€1.5m) will strengthen and coordinate support in Europe for researchers at risk. MSCA4Ukraine, in collaboration the European Universities Association and Alexander von Humboldt Foundation (€25m), will provide support to displaced researchers from Ukraine through dedicated fellowships to enable them to continue their work in safety, and to facilitate their reintegration into Ukraine if conditions for safe return are met. The MSCA4Ukraine scheme is a key part of the EU’s response to the Russia’s invasion of Ukraine. It answers the need for crucial support for researchers fleeing the war. The new scheme aims at enabling them to continue their work in Europe, helping to safeguard Ukraine’s research and innovation system, and the freedom of scientific research at large.

Under the Horizon Europe Cluster 1: Health: Pre-clinical development of the next generation of immunotherapies for diseases or disorders with unmet medical needs, Professor Karen English (Biology and Kathleen Lonsdale Institute for Human Health Research) will lead a significant work package of MAGIC as part of a €9.5m grant. The work will focus on the next generation models and genetic therapies for rare neuromuscular diseases. The consortium consists of 16 EU and international partners. MU will receive €400,000 for the work on this project.

MU has championed Equality, Diversity and Inclusion across the whole institution and was awarded the inaugural Gender Equality Newcomers Champions Prize awarded by the European Commission bringing €100,000 to the Office of the Vice President for Equality, Diversity and Inclusion for the outstanding results achieved in the implementation of gender equality plans by academic and research organisations.

Dr Katriona O’Sullivan, Department of Psychology, was awarded €1.2m, funded jointly by the Science Foundation Ireland (SFI) Discover Programme (€300k), the Department of Education (€300k), and Microsoft Ireland (€600k), to address gender inequalities among female pupils in socially disadvantaged communities through an innovative programme of mentoring and education supports. The STEM Passport for Inclusion offers female secondary school students the opportunity to graduate with a university-accredited STEM skills module, and to develop a meaningful mentoring relationship with women in Industry. The initiative provides a platform for girls to understand, participate and celebrate STEM, in order to increase STEM awareness and create pathways to further and higher education in STEM.



Dr Katriona O’Sullivan, Department of Psychology and Assisting Living and Learning (ALL) Institute

MU researchers also had notable success in Science Foundation Ireland's Frontiers for the Future Programme (FFP) in 2022. The FFP programme provides opportunities for independent researchers to carry out highly innovative research with the potential to deliver impact and is split into projects and awards. The projects provide funding for high-risk, high-reward research that facilitates novel approaches to research while the projects provide larger-scale funding for programmes of research that may deliver economic and societal impact. This year MU was awarded seven projects with a combined budget of €4.58m. In addition, Professor John Ringwood was awarded just over €1m under the awards programme for 'Economic wave energy through technical innovation (SeaChange)'. This project proposes a combination of strategic technological improvements, with both broad applicability as well as specific device improvements, to affect a significant impact on the economic performance of wave energy systems and produce the step change needed to re-accelerate the technical and commercial development of wave power.

A notable success under the prestigious Wellcome Trust's Mental Health Programme is a project led by Professor Daniel Smith of the Centre for Clinical Brain Sciences, University of Edinburgh who will collaborate with two MU Researchers, Professor Andrew Coogan (Psychology) and Dr Lorna Lopez (Biology and Kathleen Lonsdale Institute for Human Health Research). The project will focus on bi-polar disorder, aiming to improve our understanding of individual-level symptom trajectories and the mechanisms that drive clinical and functional outcomes. This work will inform future approaches to early intervention, clinical stratification and personalised medicine in bipolar disorder.

## Turning to publications MU published 877 publications (recorded in Scopus) in 2022, similar to the 2021 figure of 874.

The Scopus database captures the majority of publications, but it should be noted that it is still incomplete in its record of monographs and book chapters, and those publication forms are of particular significance in the Arts, Humanities and Social Sciences. In 2022, MU researchers authored 42 books, 35 edited books and wrote 174 book chapters captured by the MU Research Information System.

Citations are an important measure of the value of our published work to the wider academic community. Looking over the five-year period 2018-2022 the University recorded 3,764 publications in Scopus with a field weighted citation (FWC) index of 1.64, which means that those publications have been cited at 1.7 times the world average when compared to the same disciplines globally. MU FWC has risen over the period and currently this is the highest FWCI of all Irish Universities. The excellence of MU research is supported by the fact that 30% of MU publications in the same period were published in top 10% of journals by cite-score percentile (relative standing within a subject's field). In the field of Earth and Planetary Science the percentage of MU publications in the top 10% of journals is above 40%.

Researchers at MU have a strong international focus with 55.5% of all MU publications co-authored in collaboration with international institutions, with a high field weighted citation index of 2.05. In the field of Psychology, MU's international focus is over 60% since 2019.

MU collaborates with enterprise Partners and publishes with enterprise as co-authors such as Microsoft, Met Office, NASA, IBM, Intel, Siemens, Ford Motor Company and Nokia. MU is committed to open access (<https://nuim.libguides.com/openaccess/OAMandate>) of its research outputs and 70.9% of its publications in Scopus from 2018-2022 are recorded in open access journals. MU hosts the Maynooth University Research Archive Library (MURAL) the institutional open access repository. During 2022, 1,494 items were submitted to MURAL, with 634,330 downloads. The total number of publications in MURAL is now 15,655.

Web of Science recognises publications that develop a significant number of citations very soon after publication and class these as 'hot papers'. In 2018–2022, two publications by Dr Michael Daly (Psychology) received this classification. These included *A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic in 2020* in the Journal of Affective Disorders, which examined whether mental health symptoms incurred during the Pandemic were persistent or short-lived. The second paper, *Longitudinal changes in mental health and the COVID-19 pandemic: evidence from the UK Household Longitudinal Study in Psychological Medicine* examined longitudinal changes in mental health issues in subgroups that were psychologically vulnerable during the pandemic.

In the period 2021/2022, MU had over 2,500 mentions in social media and 120 mentions in news stories as categorised by Altmetric sources (Altmetric Explorer). Four articles by MU researchers scored in the top 5% (99<sup>th</sup> percentile) of all research outputs scored by Altmetric: Altmetric scores are determined by two factors, the quantity of online posts mentioning an output and the quality of the post's source, across social media, news media, and policy documents compared with other articles published at the same time. One of which included Dr Daly's paper also listed as a 'hot paper' in Web of Science published in the Journal of Affective Disorders.



Dr Michael Daly, Department of Psychology

# Research and Innovation at Maynooth University 2023



Dr Stephen McCarron, Department of Geography and ICARUS

The paper with the highest score; *Growth and retreat of the last British-Irish Ice Sheet, 31,000 to 15,000 years ago: the BRITICE-CHRONO reconstruction*, published in *Boreas: An International Journal of Quaternary Research* in September 2022, with Dr Stephen McCarron (ICARUS and Geography). The paper examined the British-Irish Ice Sheet between 31,000 and 15,000 years before the present day between 2012 and 2018. The extensive project involving 377 cores of the sea floor and geomorphological and stratigraphical information from 121 land sites produced 18,000km of marine geophysical data. New reconstructions were presented based on both the empirical data and a combination of modelling with the new empirical data which confirmed that a larger extent than previously defined was found and widespread advance of ice to the continental shelf break during the last glacial was confirmed. The team's hypothesis that marine-influence sectors collapsed rapidly was accepted based on the analysis of retreat rates. As a result of this study, the retreat of the British-Irish Ice Sheet now provides the world's most valuable data rich environment for improving ice-sheet modelling.

Also in Altmetrics top 5% for the period is *A regional (land-ocean) comparison of the seasonal to decadal variability of the Northern Hemisphere jet stream 1871–2011*, published in *Climate Dynamics*, with Dr Samantha Hallam and Dr Gerard McCarthy from ICARUS and Geography published in February 2022. The paper presented the variations in the Northern Hemisphere jet stream latitude and speed over land and oceanic regions between the period 1871–2022 from the twentieth century reanalysis dataset. The results indicated that there are different mechanisms influencing the jet stream latitude and speed which has an important impact on climate modelling for climate predictions both in the near and longer term.

Finally, a paper published by Dr Jon Gruda and Dr Adegboyega Ojo (Business), *Don't you tweet me badly: Anxiety contagion between leaders and followers in computer-mediated communication during COVID-19* in *PLOS One* features in Altmetrics top 5%. The paper explored the influence of organisational leaders' tweets on employees' anxiety using machine learning to track anxiety and personality traits during the pandemic. The study involved 197 leaders and over 900 followers across 79 organisations over 316 days and the study found that the tweets did influence followers' anxiety and the effect was stronger post-onset of the pandemic compared to the pre-pandemic crisis.

MU researchers also continue to play key roles in the participation in national and international policy advisory bodies; preparation of strategies to support local authorities, local communities, and private enterprises as well as engaged research with hospitals and local and international community groups.

Professor Maurice Devlin and Associate Professor, Dr Hilary Tierney of the Department of Applied Social Studies in collaboration with colleagues from the Centre for Youth Research and Development (Dr Jamie Gorman, Aidan Farrelly, Tonye Benson-Olatunde and Reuben Hambakachere) and in close collaboration with local communities, young people, and local organisations are undertaking a research project to capture experiences of minority ethnic young people in north County Dublin which was commissioned by National Youth Council of Ireland (NYCI). Dr Niamh Flanagan (Department of Applied Social Studies) became a convenor of the MU Anti Trafficking in Humans Network, through her involvement on the Advisory Board of the Children's Research Network and through her membership of the Children's Rights Alliance.



Dr Hilary Tierney, Department of Applied Social Studies and Assisting Living and Learning (ALL) Institute

Engaged research is also an important element of our postgraduate researchers. The School of Business run The Business Consultancy Project (BCP, an element of their MSc programmes) that provides a significant opportunity for students, supervised by faculty, to gain real world experience of a business issue. The BCP enables students and faculty to apply their research and practice skills to a problem that a client organisation faces. Postgraduates at the School of Business carry out research on any one of a wide number of business areas of strategic importance to organisations. This year there were 105 BCPs across 57 organisations in a range of industries including Tourism, Consultancy, Sustainability, Education, Fashion and Technology. This is an important method through which the research informed, practice engaged values of the School of Business are brought to life and how we seek to live our mission of providing both developing critical thinkers and impactful knowledge for society.

Dr Aedín Doris, Professor Donal O'Neill and Dr Olive Sweetman of the Department of Economics and Finance conducted research on behalf of the Department of Enterprise, Trade and Employment and the Low Pay Commission, reviewing the national and international evidence on the impact of the introduction of a living wage on employment, hours of work and consumer prices. It also examined the impact of a living wage on inequality, in-work poverty, and employer costs, as well as the possible interactions between a living wage and other policy instruments, such as tax rates, social insurance rates, social policy health, education, and housing policy. The report, *Research on the Introduction of a Living Wage in Ireland*, was published in March 2022. The recommendations that followed from the report were adopted by the Government in November 2022, with the Government announcing that a new National Living Wage will be set at 60% of hourly median wages and will be introduced over a four-year period to be fully operational by 2026, at which point it will replace the National Minimum Wage.

Collaborations with established hospital research networks aiming to create new knowledge that, over time, will help to address major health challenges in society and have an impact on tomorrow's health and social care were funded under the Health Research Board Investigator-Led Projects.



Dr Joanne Masterson, Department of Biology and Kathleen Lonsdale Institute for Human Health Research

#### HRB Investigator-Led project

Patient orientated research remit led by Dr Joanne Masterson, in collaboration with St James' Hospital Dublin will investigate Eosinophilic Oesophagitis, a rare, increasingly recognised disease where an immune cell (eosinophil) builds up in the oesophagus in response to allergens including foods. This project will use cutting edge research approaches that will result in major advances towards filling gaps in clinical and scientific knowledge, including why up to 40% of individuals are non-responsive to steroids, the current standard medical treatment.

#### HRB Investigator-Led project

Population Health Research remit led by Professor Fiona Walsh, in collaboration with Beaumont hospital, Cavan and Monaghan General Hospital, Cork University Hospital and Limerick University hospital will aim to identify reservoirs of persistent antimicrobial-resistant pathogens. This will enable infection control teams to remove these bacteria and reduce the levels of patient infections from antibiotic resistant bacteria, reducing the duration of hospital stays and the burden and costs on our healthcare system.



Professor Tim McCarthy, Department of Computer Science, National Centre for Geocomputation (NCG), Social Sciences Institute (MUSSI), Hamilton Institute and ICARUS

In support of building capacity within the Defence Forces through collaborative opportunities with the Irish STEM community, Professor Tim McCarthy and Professor John McDonald (Computer Science) were awarded just under €1m for a two-year programme of work starting in March 2023 under SFI's Future Innovator 'Defence Challenge' Programme which is co-funded by the Defence Forces. The team developed the CoPilot-AI project, an intuitive Common Operational Picture platform to improve how digital data from satellites, aircraft and drones sensors can be captured, pooled and shared in real time between various agencies responding to wildfire events. The project involves close collaboration with the Defence Forces, Fire Service, National Parks and Wildlife Service and Coillte amongst others.

**Finally, we are pleased that the 2023 Times Higher Education Young University Ranking ranked MU at 86<sup>th</sup> in the world among universities under 50 years old and No.1 in Ireland.**

Furthermore, under the THE Impact rankings the University ranked 79 for the United Nations Sustainable Development Goal (SDGs) 5 in Gender Equality. MU's research on social inequalities, policies on discrimination and commitment to recruiting staff and students from under-represented groups was reflected in MU being ranked in the top 101-200 for SDG 10, Reducing Inequalities. The impact rankings seek to assess universities according to their contribution to achieving the UN's Sustainable Development Goals.

# Awards and Prizes



## 1<sup>st</sup> Annual Women in Tech Europe Award

Dr Katriona O’Sullivan



Dr Katriona O’Sullivan of the Department of Psychology and the Assisting Living and Learning Institute (ALL), with the STEM Passport for Inclusion project ([www.maynoothuniversity.ie/all-institute/all-projects/stem-passport-inclusion](http://www.maynoothuniversity.ie/all-institute/all-projects/stem-passport-inclusion)), won the first annual Women in Tech Europe Award for most impactful initiative.

The STEM Passport for Inclusion project was among five finalists for Most Impactful Initiative Award as part of the Women in Tech® EUROPE Regional Awards 2022. The Stem Passport for Inclusion promotes STEM careers and education to girls who are socioeconomically disadvantaged across Ireland.

## US-Ireland Research Innovation Award

MU’s Terrain-AI and Microsoft Ireland



MU’s Terrain-AI and Microsoft Ireland have received the prestigious US-Ireland Research Innovation Award.

The award is for Innovation in Sustainability recognises a team demonstrating transformational change in environmental, economic, or social sustainability. Terrain-AI, led by Professor Rowan Fealy, Department of Geography and ICARUS Climate Research Centre, and Professor Tim McCarthy, Department of Computer Science, aims to help understand the impact of human activity on land use and as a driver of climate change for more sustainable land use.

## Four Courts Press/American Society for Irish Medieval Studies Michael Adams Prize

Dr Deborah Hayden



Dr Hayden was awarded the 2022 Four Courts Press/American Association of Irish Medieval Studies Michael Adams Prize.

The award is for best academic article in medieval Irish studies published in a book or journal during 2020-2021.

## Awards and Prizes in 2021/2022

### Member of the Royal Irish Academy

Professor David Stifter and Dr JoAnne Mancini



Professor David Stifter and Dr JoAnne Mancini were elected as Members of the Royal Irish Academy for their significant roles and contributions to the Humanities and Social Sciences.

Professor Stifter is an international leader in the field of Celtic Studies and Medieval Irish and held an European Research Council Consolidator award for his project 'Chronologica Hibernicum – A Probabilistic Chronological Framework for Dating Early Irish Language Developments and Literature'.

Dr Mancini is author of prize-winning books which illuminate the origins of artistic modernism in the United States, demonstrating how fundamental looting, iconoclasm, and other destructive art practices have been to imperial war.

### The Medium Ævum Essay Prize for 2022 by the Society for the Study of Medieval Languages and Literature

Victoria Krivoshchekova



PhD student Victoria Krivoshchekova was awarded the Medium Ævum Essay Prize for 2022 by the Society for the Study of Medieval Languages and Literature.

The award was for her article '*Vice and Virtue as Cognitive Experiences in Early Irish Tradition*'.



## The Eva Philbin Award 2022, Institute of Chemistry, Annual Award for Chemistry

Professor Carmel Breslin



Professor Carmel Breslin was awarded the Eva Philbin Award 2022, Institute of Chemistry, Annual Award for Chemistry.

This award is for a practising chemist working in Ireland, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner.

## The Novartis Prize for Best Health Economics Paper

Dr Irene Mosca



Dr Irene Mosca, was awarded the Novartis Prize for Best Health Economics paper at the 2022 Irish Economics Association Conference.

Dr Mosca's research focuses on the area of health and labour economics and her prize-winning paper with Dr Anne Nolan examines the impact of the rubella outbreak in Ireland on those in utero at the time.

# Awards and Prizes in 2021/2022

## The Irish Research Council Research Ally Prizes 2022

Professor Pat Palmer, Professor Valerie Heffernan, Professor Sinéad McGilloway, Dr Liam Mac Amhlaigh, Angela McGinn and Dr Amir Azadnia



In 2022 the Irish Research Council awarded 56 Research Ally Prizes in 2022. The Research Ally Prize recognise mentors, supervisors, research and technical support officers who have supported the research of postgraduates, postdoctorates and principal investigators and have improved the Irish research ecosystem.

Professor Pat Palmer, Professor Valerie Heffernan, Professor Sinéad McGilloway, Dr Liam Mac Amhlaigh, Angela McGinn and Dr Amir Azadnia were among those awarded for their roles as supervisors and mentors. The awards celebrate the roles these individuals have played in supporting their colleagues across all career stages in supporting researchers and their career development.

## Bronze Athena Swan

Faculty of Arts, Celtic Studies and Philosophy

The Maynooth University Faculty of Arts, Celtic Studies, and Philosophy was awarded the Athena Swan Bronze Award, in recognition of work undertaken to advance gender equality for staff and students in Higher Education.



The Faculty is one of the first in Ireland to be awarded the Bronze Athena Swan accreditation. The Self-Assessment Team for the application numbered 39 colleagues from the Faculty's six Departments and two Schools, including co-chairs Dr Catherine Gander (Associate Dean for Equality, Diversity, and Inclusion, EDI), Professor Colin Graham (Dean of the Faculty), Professor Marian Lyons, and Professor Moynagh Sullivan (Associate Dean for EDI), as well as members of the EDI Office.

The four-year Gender Action Plan will address key areas including:

- Extending the Faculty's established Early Career Academic Mentoring scheme to Mid-Career Academics
- Ensuring good practice flexible working arrangements across the Faculty
- Requiring Departments and Schools to commit a budget line for career development training for Administrative staff
- Ensuring Bias Awareness Training for all staff involved in the recruitment of students and staff
- Instituting EDI Representatives at Department and School levels across the Faculty.

## Maynooth University Research Achievement Awards 2023

### Maynooth University 2023 Research Achievement Award

Dr Deborah Hayden



The overall winner selected for the Maynooth University 2023 Research Achievement Award was Dr Deborah Hayden of the Department of Early Irish who also won the Faculty of Arts, Celtic Studies, and Philosophy Research Achievement Award.

Dr Hayden's research interests centre on medieval Irish, Latin and Welsh languages, literature and textual culture. The nomination described her, "ground-breaking achievements in the field of Irish cultural/intellectual history..." and consistent with that description, she has achieved significant success in securing highly competitive research grants, including two IRC Laureate Starting Awards amongst others.

### Faculty of Science and Engineering Research Achievement Award 2023

Dr Michael Daly



Dr Michael Daly of the Department of Psychology was awarded the 2023 Faculty of Science and Engineering Research Achievement Award.

This award recognises Dr Daly's exceptional contribution to the field of stress, mental health and wellbeing research, in particular the effects of major social factors. This work has been particularly important and impactful during the COVID-19 pandemic, importantly helping guide our understanding of the psychological impact of that challenging time.

# Awards and Prizes in 2021/2022

## Early Career Research Achievement Awards 2023

### Maynooth University Early Career Researcher of the Year 2023 award

Professor Philip Hyland



The overall winner of the 2023 Early Career Research Achievement Award was awarded to Professor Philip Hyland of the Department of Psychology, who also won the 2023 Early Career Faculty of Science and Engineering Research Achievement Award.

Professor Hyland's research focuses on understanding the nature, predictors, and outcomes of psychological responses to trauma. He is a leader in his field. His research was integral to the WHO's decision to include PTSD and Complex PTSD in the recently published 11<sup>th</sup> version of the International Classification of Diseases which is the diagnostic manual used by clinicians and researchers.

## Early Career Faculty of Social Science Research Achievement Award 2023

Professor Fabiano Pallonetto



Professor Fabiano Pallonetto of the School of Business was awarded the 2023 Early Career Faculty of Social Science Research Achievement Award.

Professor Pallonetto brings together his disciplinary background in computer science and engineering with his industry expertise in Energy, Sustainable Mobility, Data Analytics, Control Algorithms and Optimisation. He aims to bridge the gap between academic and societal challenges, building solutions and solving technical challenges for the deployment and integration of the smart grid and its associated carbon footprint reduction. His work has earned recognition through awards, funding, and collaborations with esteemed organisations, and he continues to drive forward cutting-edge initiatives, contributing to the advancement of his field.

## Early Career Faculty of Arts, Humanities, Celtic Studies and Philosophy Research Achievement Award 2023

Dr Niamh Wycherley



Dr Niamh Wycherley of the Department of Early Irish was awarded the 2023 Early Career Faculty of Arts, Humanities, Celtic Studies and Philosophy Research Achievement Award.

Dr Wycherley is a medieval historian, specialising in the early Irish Church, writing on the cult of saints, the cult of relics, and the interactions between the church and wider society. She was described as one of the most significant and innovative historians working in Ireland today and is the recipient of a prestigious SFI-IRC Pathway grant entitled, 'Power and Patronage in Medieval Ireland.'

# Faculty Highlights

2021/22 saw a further increase in achievements in research, scholarship, innovation and engagement across all three faculties. A selection of those achievements is presented here.



# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

### Ancient Classics

In the academic year 2021–2022 the Department of Ancient Classics comprised five full-time staff (three permanent, two contract) and three PhD students. Much of the Department's time and energy were given over to teaching, the Quality Review, and future planning. Nevertheless it made contributions to research and scholarship by publishing two peer-reviewed articles, four peer-reviewed book chapters, and one book review. The articles appeared with *Intellectual History Review* and *Journal for the Study of Judaism*. The chapters appeared in books published by Brill and the University of California Press. The book review was published by Bryn Mawr Classical Reviews. In addition, three papers were presented at separate conferences, and over the year the Department hosted seven research seminars with invited speakers (from Harvard, Maynooth, McGill, Oxford, TCD) on a variety of topics (literary, legal, and historical), from both Greek and Roman cultures.

### Scoil an Léinn Cheiltigh/School of Celtic Studies

The School of Celtic Studies encompasses the Department of Early Irish, Roinn na Nua-Ghaeilge (Department of Modern Irish), Lárionad na Gaeilge (Centre for Irish Language Research, Teaching and Testing), and the Irish Cultural Heritages subject area.

### Department of Early Irish

In 2021–2022, the Department of Early Irish continued to produce world-leading research in the language, literature, history and culture of pre-modern Ireland. The first year of work was completed on the project *Harnessing Digital Technologies to Transform Understanding of Ogham Writing, from the 4<sup>th</sup> Century to the 21<sup>st</sup>* (OG(H)AM), funded by a grant from the AHRC-IRC UK-Ireland Collaboration in the Digital Humanities scheme, and two major new projects (funded by an IRC Laureate Consolidator Award and an SFI-IRC Pathways Grant) began in the Department on 1 September 2022. Dr Deborah Hayden spent the 2021–2022 academic year on sabbatical as a Visiting Researcher in the Department of Celtic Languages and Literatures at Harvard University.

### Research Grants and Awards

- Professor Stifter, as Irish PI, and Dr Hayden, as CI, completed the first year of work on their project OG(H)AM: Harnessing digital technologies to transform understanding of ogham writing, from the 4<sup>th</sup> century to the 21<sup>st</sup>, together with researchers from the University of Glasgow (2021–2024). This project is funded by a UK-Ireland Collaboration in the Digital Humanities Research Grant (€269,919.13 +£319,818.91).
- Dr Hayden was awarded an IRC Consolidator Laureate Award (€599,391.90) for her four-year project LEIGHEAS: Language, Education and Medical Learning in the Premodern Gaelic World (2022–2026). Dylan Bailey began work as project-funded PhD student on 1 September 2022, and Dr Siobhán Barrett was hired as a postdoctoral researcher in August 2022 (to begin in November 2022).



Dr Niamh Wycherley, Department of Early Irish

- Dr Niamh Wycherley was awarded an SFI-IRC Pathways grant (€495,847) for her four-year project Power and Patronage in Medieval Ireland: Clonard from the Sixth to Twelfth Centuries (2022-2026; mentor Dr Elizabeth Boyle). Dr Wycherley rejoined the Department as a Senior Postdoctoral Researcher on 1 September 2022 along with her project-funded PhD student, Tiago de Oliveira Veloso Silva.
- Professor David Stifter was awarded an Irish Research Council Ulysses Travel Grant for his project on the Digitisation of Gaulish Inscriptions (€2,455).
- Dr Siobhán Barrett and Dr Hayden were awarded an Impact Through Dissemination Support Fund grant of €2,000 from Maynooth University to organise an international workshop on medieval medical texts.
- Dr Barrett completed the final year of her Government of Ireland Postdoctoral Fellowship project A Triad of Medical Glossaries (€95,937.93), mentored by Dr Hayden.
- Professor Stifter completed his Royal Irish Academy Nowlan Digitisation Grant (€10,000) for A Digital Corpus of Medieval Irish Latin Inscriptions (EMILLI; May 2021–April 2022), with postdoctoral researcher Dr Nora White.
- Emer Kavanagh completed her second year on a Government of Ireland Postgraduate Scholarship for her thesis Signs and Wonders: Magic and the Supernatural in Medieval Ireland. Benedetta d'Antuono received a John & Pat Hume Fellow Scholarship for her PhD project Ireland and Europe: Cultural Intersections and Literary Transitions in a Late-Medieval Manuscript - both were supervised by Dr Hayden. Lydia Hursh was awarded a John & Pat Hume Fee Waiver Scholarship for her project Autonomy and Consent in the Marriages of Literary Royal Women in Early Ireland - supervision by Dr Boyle.
- Dr Hayden was awarded the 2022 Four Courts Press/American Association of Irish Medieval Studies Michael Adams Prize for best academic article in medieval Irish studies published in a book or journal during 2020-2021.
- Professor Stifter was elected as a Member of the Royal Irish Academy.
- PhD student Victoria Krivoshchekova was awarded the Medium Ævum Essay Prize for 2022 by the Society for the Study of Medieval Languages and Literature for her article 'Vice and Virtue as Cognitive Experiences in Early Irish Tradition'.



*Fierce Appetites* by Dr Elizabeth Boyle, Department of Early Irish

## Publications

Members of the Department of Early Irish continued to publish world-class research in a diverse range of publications, including books, edited volumes, and international peer-reviewed journals.

- Dr Boyle's book *Fierce Appetites* was published by Penguin Ireland (2022). Professor Stifter's book *Ogam. Language | Writing | Epigraphy* (Zaragoza) also appeared in 2022. Dr Nora White published her book *Our Ancient Landscapes: Ogham Stone in Ireland* with the Heritage Council of Ireland (2021).
- Publications in leading peer-reviewed journals in the field include three articles by Dr Hayden (in *Speculum*, *Irish Historical Studies* and *Celtica*), two by Professor Stifter (in *Études celtiques* and *Palaeohispanica*) and one by Dr Boyle in the *North American Journal of Celtic Studies*. Dr Barrett and Dr White each published one article in other journals (*Kelten* and *Archaeology Ireland*). Dr Wycherley had two book chapters published. Professor Stifter published one, and Dr Hayden two, book reviews.
- Dr Hayden published three research blogs for the OG(H)AM project and the Royal Irish Academy Library, and Professor Stifter and Dr White each published one blog for the OG(H)AM project (<https://ogham.glasgow.ac.uk/index.php/category/blog/>). Dr Barrett published one blog for the Herbal History Society Network.
- Under the chief editorship of Dr Hayden, three issues of the journal *Language & History* (Taylor & Francis) were published during this period ([www.tandfonline.com/toc/yghi20/current](http://www.tandfonline.com/toc/yghi20/current)).

## Conferences and Invited Lectures

The Early Irish and Celtic Studies Research Seminar resumed in an in-person format in 2021, with invited speakers from Ireland and further afield. This included the Paul Walsh Memorial Lecture (hosted by Dr Boyle) and the launch of vol. 6 (2020) of the Paul Walsh Memorial Lecture publication series.

In the academic year 2021–2022, Department of Early Irish staff delivered numerous talks at national and international events. Professor Stifter gave talks at the University of Leiden and the University of Limerick, and Dr Boyle delivered the 2022 O'Donnell Lecture at the University of Oxford.

Dr Hayden was on sabbatical leave for the duration of the year. She spent this time as a Visiting Researcher in the Department of Celtic Languages and Literatures at Harvard University, as part of which she gave two talks about her research to University staff and students. She also gave invited lectures at the University of Connecticut, the Celtic Studies Association of North America Online Lecture Series, *Léachtaí Cholm Cille* (Maynooth) and the Celtic Studies seminar jointly hosted by the University of Oxford and the Centre for Advanced Welsh and Celtic Studies, Aberystwyth University.

Dr Barrett (assisted by project mentor Dr Hayden) organised a workshop on medieval medicine, funded by a grant from the MU Impact Through Dissemination Support Fund. Dr Hayden, Professor Stifter and Dr Barrett all gave papers at the workshop, alongside PhD student Emer Kavanagh and invited speakers from the University of Nottingham, the University of Cambridge, the Centre for Advanced Welsh and Celtic Studies at Aberystwyth University, and St Francis Xavier University (Canada). The workshop also featured an exhibition of scientific manuscripts organised by staff in the Russell Library.

## Impact and Externally-Engaged Research

Dr Boyle's monograph, *Fierce Appetites*, which blends memoir with her work on medieval history, spent four weeks in The Irish Times top 10 nonfiction bestseller list (March/April 2022). Dr Boyle took part in several public engagement events following the appearance of her book, including interviews for *The Irish Times Weekend Magazine*, the *Sunday Times* (Irish Edition) and the Ryan Tubridy Show (RTÉ Radio 1). She also wrote opinion pieces for TheJournal.ie and the *Irish Independent*. Dr Wycherley published an article on St Patrick for RTÉ Brainstorm and featured in the documentary 'Colmcille, An Naomh Dána' for TG4 and BBC Alba. She was also interviewed about St Brigit for RTÉ News, Radio KFM and Tourism Ireland magazine. In addition to their contributions to the OG(H)AM project research blog (noted above under publications), Professor Stifter, Dr Hayden and Dr White all appeared (alongside collaborators from the University of Glasgow) in a video about ogham script (<https://ogham.glasgow.ac.uk/index.php/media/>), produced by the MU Communications Office on behalf of the OG(H)AM project. A short version of this video has already appeared and a longer documentary-style one is currently in production.



Professor David Stifter, Department of Early Irish and Arts & Humanities Insitute

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

### Community Partnership

Dr White continued working as joint manager/coordinator of the Knockboy Conservation Group (County Waterford). They are doing preservation and digital documentation work at Knockboy Graveyard. Dr White is also a panelist of the Heritage in Schools programme (<http://www.heritageinschools.ie/heritage-expert/profile/nora-white>).

### Other Research Contributions

Members of the Department of Early Irish continue to provide academic service in MU and within the discipline of Celtic Studies. This includes serving on editorial boards and the committees of learned societies, engaging extensively in peer reviewing and in organising training events and masterclasses for postgraduate students and postdocs. Professor Stifter served on the FACSP Research Committee, as a member of the Board of Management of the MU Arts and Humanities Institute, as Chair of the Publications Committee of the Dublin Institute for Advanced Studies' School of Celtic Studies, and on the Executive Board of the Societas Celtologica Europaea. He is collaborator in two international research projects, one at the University of Bordeaux and the other at the Austrian Academy of Sciences. Dr Hayden serves as the Ireland International Representative for the Celtic Studies Association of North America and on the Executive Committee of the Henry Sweet Society for the History of Linguistic Ideas; she is also a member of the Editorial Board for the *Journal of Celtic Linguistics*. Dr Boyle serves on the Editorial Board for the Brepols Series *Medieval Texts and Cultures of Northern Europe*.

### Roinn na Nua-Ghaeilge/ Department of Modern Irish

This has been a particularly productive year for Roinn na Nua-Ghaeilge, with research outputs including one edited collection, one edited journal, one peer-reviewed journal article, four other journal articles, one digital humanities project contribution, six peer-reviewed book chapters, a four-part radio documentary series, three radio presentations, one podcast, five conference contributions, and four public performances. Two major Irish-language conferences were also hosted by the Department: the celebrated *Léachtaí Cholm Cille*, funded by Foras na Gaeilge, Scéim Miondeontas Cholmcille and Maynooth University, which in 2022 focused on Irish-language feminist and gender studies, and an Irish-language Artistic Research symposium, entitled *Taighde Dána*, funded by Foras na Gaeilge and Lárionad na Gaeilge.

The diverse range of research specialisms among the Nua-Ghaeilge staff is reflected in the outputs listed below: *Léachtaí Cholm Cille 52: Stair agus Ficsean Ó Beatha Cholaim Cille go Bealach na Spáinneach*, edited by Professor Fionntán de Brún, is a highly original collection of essays on Irish-language historical fiction, and includes important contributions from Professor Fionntán de Brún on the conceptualisation of historical fiction and Caitlín Nic Íomhair on contemporary and historical time in the work of Proinsias Mac a' Bhaird; Dr Eoghan Ó Raghallaigh's article on 'Maigh nach molann máthair Dé' in the highly prestigious journal, *Eriu*, and Dr Lára Ní Mhaoláin's contribution to 'Bás Chon Raoi' to the international digital humanities' project, *leamh.org*, reflect the international profile of Departmental specialists in the area of Early Modern Irish; Dr Tracey Ní

Mhaonaigh's expertise in the work of the famous Irish-language revivalist, Eoghan Ó Gramhnaigh, and on the history of Maynooth University in respect of the Irish-language revival, as demonstrated in a number of impactful articles as outlined below, is also receiving significant media coverage at present; Professor Fionntán de Brún has published an important chapter on the dramatic works of Darach Ó Scolaí with the high-profile Irish-language publisher, Cló Iar-Chonnacht, while Professor Tríona Ní Shíocháin has contributed to the fields of performance studies and musicology in her chapters on anti-colonialist and modernist thought in the musical works of Seán Ó Riada, theorisation of sean-nós singing and thought formation, and on prophecy and parrhesia in the works of women song composers, published by Cló Iar-Chonnacht, Cló Léann na Gaeilge, and an tOireachtas; and Caitlín Nic Íomhair's impactful translations from French to Irish of the work of De Thuin reflect considerable expertise in literary translation, indicating a further significant diversification of faculty specialisms. The Department's outstanding contribution to the long-term development of the discipline of Irish-language and literature studies is also evident in important editorial work in the case of *Irisleabhar Mhá Nuad* (Ní Mhaonaigh 2022).



*Béal na Péiste* by Professor Fionntán de Brún, Department of Modern Irish, School of Celtic Studies

The further development of Nua-Ghaeilge's profile in creative writing, creative practice and artistic research is notable also: Professor Fionntán de Brún's novel, *Béal na Péiste*, won the highly prestigious Oireachtas literary award for original fiction at Oireachtas na Samhna 2022, while Caitlín Nic Íomhair's creative work (both poetry and prose) is making significant impact in high-profile literary journals and collections, such as *Comhar*, *Feasta*, and *Aneas*. Professor Tríona Ní Shíocháin's public performances (sean-nós singing and traditional tin whistle) at events such as Oireachtas na Gaeilge's Nollaig na mBan concert, the Willie Clancy week, Oireachtas na Samhna, and her work in facilitating and directing public performances by MA and PhD artistic researchers, has also contributed to the highly distinctive creative practice profile within the Department. This has been further enhanced by radio presentations, performances, and radio documentaries pertaining to creative writing, song composition, and singing, while the Taighde Dána Artistic Research symposium also attracted leading Irish-language and Gaeltacht artists to Maynooth University (singers, dancers, musicians, writers), thereby further contributing to Maynooth University's reputation as a centre of excellence in Irish-language creative practice and artistic research.



The Department continues to attract research funding, including Enterprise Ireland funding for Professor Ní Shíocháin's ERC consolidator grant application, and significant funding from Foras na Gaeilge for conferences and related publications.

## Publications

### Edited Books

- De Brún, F. (ed.) 2022. Léachtaí Cholm Cille 52: Stair agus Ficsean Ó Beatha Cholaim Cille go Bealach na Spáinneach. Maigh Nuad: An Sagart.

### Edited Journals

- Ní Mhaonaigh, T. (ed.) Irisleabhar Mhá Nuad 2022. Maynooth: An Sagart.

### Books Translated

- De Thuin, D., & Nic Íomhair, C. 2022. Art Abú!: Scoil na nArrachtaí. Youghal, Co. Cork: Dalen Éireann.
- De Thuin, D. & Nic Íomhair, C. 2022. Art Abú!: Spiorad na Coille. Youghal, Co. Cork: Dalen Éireann.
- De Thuin, D. & Nic Íomhair, C. 2022. Art Abú!: Dúrún Dhonnabháin. Youghal, Co. Cork: Dalen Éireann.

### Book Chapters

- De Brún, F. 2022. 'Darach Ó Scolaí – Coinneáil Orainn (2005) agus Craos (2008)' In: Drámaíocht na Gaeilge ón Dara Cogadh ar Aghaidh. Indreabhán: Cló Iar-Chonnacht.
- De Brún, F. 2022. 'Idir res factae agus res fictae – ficsean faoi chulaith na staire agus stair faoi chulaith an fhicsin' In: Léachtaí Cholm Cille 52 – Stair agus Ficsean ó Beatha Cholm Chille go Bealach na Spáinneach. Maynooth: An Sagart.
- Nic Íomhair, C. 2022. 'Cianaisir agus Comhairsir in Tairngreacht le Proinsias Mac a' Bhaird' In: Léachtaí Cholm Cille 52: Stair agus Ficsean ó Beatha Cholm Chille go Bealach na Spáinneach. Má Nuad: An Sagart.
- Ní Shíocháin, T. 2022. 'An smaointeoireacht fhrithchoilíneach agus nua-aoiseach i saothar ceoil an Riadaigh' ['Anticolonial and modernist thought in the musical works of Seán Ó Riada']. In Denvir, G. (ed.) Oidhreacht an Riadaigh. Dublin: An tOireachtas, 21–40.
- Ní Shíocháin, T. 2022. 'Eispéireas, Brí agus Machnamh: an Smaointeoireacht agus an Amhránaíocht.' ['Experience, Meaning and Thought: On Singing and Thinking'] Edited by Philip Fogarty, Tiber Falzett, and Lillis Ó Laoire, Dhá Leagan Déag: Léargais Nua ar an Sean-nós, Indreabhán: Cló Iar-Chonnacht, 51–78.
- Ní Shíocháin, T. 2022. 'Parrhesia na mBan: Máire Ní Dhroma, Máire Bhuí Ní Laeire, agus Smaointeoireacht na hAmhránaíochta' ['Parrhesia of Women': Máire Ní Dhroma, Máire Bhuí Ní Laeire and the Thought of Song'] In: Léann na Sionainne. Dublin: Cló Léann na Gaeilge.

### Peer-Reviewed Journals Articles

- Ó Raghallaigh, E. 2022. 'Woe Is He Who Does Not Praise the Mother of God': Another Poem Beginning Maírg nach molann máthair Dé'. Eriu, 72:1-11.

### Other Journal Publications

- Nic Íomhair, C. 2022. 'Deoraíocht Bhaile' Comhar, (82)
- Nic Íomhair, C. 2022. 'Crom, Dubh' Feasta
- Nic Íomhair, C. 2022. 'An Seomra Feithimh' Aneas: Belles Lettres na Gaeilge
- Ní Mhaonaigh, T. 2022. 'St Patrick's College, Maynooth, the Irish language revival effort and the Meath-men who made their mark' Ríocht na Midhe, XXXIII (2022):198-220.

### Digital Humanities Outputs

- Ní Mhaoláin, L. 2022. 'Bás Chon Raoi': a contribution to the <https://léamh.org> project.

### Conferences Organised

- De Brún, F. agus Nic Íomhair, C., 2021. Léachtaí Cholm Cille 52 – Stair agus Ficsean Ó Beatha Cholaim Cille go Bealach na Spáinneach. [The Colm Cille Lectures 2021: History and Fiction from Beatha Cholaim Cille to Bealach na Spáinneach], funded by Foras na Gaeilge.
- Ní Annracháin, M. agus Ní Shíocháin, T. 2022. Léachtaí Cholm Cille 2022: Léann Feimineach agus Inscne na Gaeilge [The Colm Cille Lectures 2022: Irish-language Feminist and Gender Studies], funded by Foras na Gaeilge and Scéim Miondeontas Cholm Cille, 09-10 September 2022
- Ní Chuirín, N. agus Ní Shíocháin, T. 2022. Taighde Dána: Tionól Ealaíonta [Bold/Artistic Research: Irish-language Artistic Symposium] funded by Foras na Gaeilge, 14-15 October 2022

### Conference Contributions

- De Brún, F. 2021. 'Idir res factae agus res fictae – ficsean faoi chulaith na staire agus stair faoi chulaith an fhicsin' In: Léachtaí Cholm Cille 52 – Stair agus Ficsean ó Beatha Cholm Chille go Bealach na Spáinneach. Maynooth: An Sagart. Ollscoil Mhá Nuad, 12/11/2021-13/11/2021
- De Brún, F. 2022. 'An tOireachtas agus cothú na nualitrichta' Scoil Gheimhridh Merriman.
- De Brún, F. 2022. 'Conversing with the living and learning from the dead – tracing the strands of Irish revivalism in the eighteenth century'. Societas Celtologica Nordica, Uppsala University, 12/05/2022.
- Nic Íomhair, C. 2021. Léachtaí Cholm Cille 2021 'Ó Í go Isis: Tairngreacht le Prionsias Mac a' Bhaird' Ollscoil Mhá Nuad, 12/11/2021-13/11/2021
- Ní Mhaonaigh, T. 2022. LCC 52: Aitheasc Seolta Léachtaí Cholm Cille Ollscoil Mhá Nuad, 09/09/2022-09/09/2022.
- Ní Mhaonaigh, T. 2022. 'An tAthair Eoghan Ó Gramhnaigh: His Final Journey'. Lismullin Heritage Series Meath, 22/02/2022-22/02/2022.
- Ní Mhaonaigh, T. 2022. 'Solais sa Dorchadas: An tAthair Eoghan Ó Gramhnaigh agus Coláiste Phádraig, Maigh Nuad', An Dearthach Éireannach agus Gaelach: Céad Bliain den Oideachas Éireannach, Trinity College, Dublin, 12/05/2022-12/05/2022.
- Ní Shíocháin, T. 2022. Trad Talk Symposium 'The Traditional Arts and Third Level Education' (panel member/ball de phainéal) University College, Cork, 05/11/2022-05/11/2022.

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

### Guest Lectures

- De Brún, F. 2022. 'Na Fadgíes – cainteoirí Gaeilge as Ó Méith a lonnigh i mBéal Feirste' Dolmen Centre, Omearth.
- Ní Shíocháin, T. 2022. 'An Taighde Ealaíonta agus Ceist na Béalaireachta' [Artistic Research and the Question of Orality], Acadamh na hOllscolaíochta, Gaillimh/University of Galway

### Radio Documentaries

- McCarthy, P. agus Ní Shíocháin, T. 2022. 'Cérbh í Máire Bhuí Ní Laoghaire? Eipeasóid 1: Turas Mhuintir Mhic Cárthaigh' RTÉ Raidió na Gaeltachta.
- McCarthy, P. agus Ní Shíocháin, T. 2022. 'Cérbh í Máire Bhuí Ní Laoghaire? Eipeasóid 2: Máire Bhuí i measc na mBan (Cuid 1) RTÉ Raidió na Gaeltachta
- McCarthy, P. agus Ní Shíocháin, T. 2023. 'Cérbh í Máire Bhuí Ní Laoghaire? Eipeasóid 3: Máire Bhuí i measc na mBan (Cuid 2)' RTÉ Raidió na Gaeltachta.
- McCarthy, P. agus Ní Shíocháin, T. 2023. 'Cérbh í Máire Bhuí Ní Laoghaire? Eipeasóid 4: An Liú gur Leath i bhfad i gcian' RTÉ Raidió na Gaeltachta.

### Radio Presentations

- Nic Iomhair, C. 2022. Léirmheas Bláth na dTulach. RADIO
- Ní Shíocháin, T. 2022. Agallamh fé Chath Chéim an Fhia [Interview on bicentenary of the Battle of Keimaneigh], An Saol ó Dheas, RTÉ Raidió na Gaeltachta
- Ní Shíocháin, T. 2022. Amhránaíocht ar an sean-nós mar chuid de chlár raidió ar Mháire Bhuí [Sean-nós singing performance] (RTÉ Raidió na Gaeltachta)

### Podcasts

- Nic Iomhair, C. 2022. 'Madame Lazare'

### Performances

- Ní Shíocháin, T. 2022. 'Oíche Nollaig na mBan', an tOireachtas (Song performance) 06 January 2022
- Ní Shíocháin, T. 2022. 'Splanc: Taibhithe ón Taighde Ealaíonta in Ollscoil Mhá Nuad' ['Spark: Artistic Research Performances from Maynooth University'] (Whistle and Song Performance; Co-director), Oireachtas na Samhna, 04 November 2022
- Ní Shíocháin, T. 2022. Feadóg Stáin do léachtcheadal Nada Ní Chuirín (damhsóir) ag Taighde Dána [Tin Whistle performance for sean-nós dance lecture recital by Nada Ní Chuirín at Taighde Dána Artistic Research Conference] 15 October 2022
- Ní Shíocháin, T. 2022. Ceol ar an bhfeadóig stáin mar chuid de cheolchoirm speisialta in ómós do Bobby Gardiner ag Scoil Shamhraidh Willie Clancy, i gcompháirt le Mary Mitchell-Ingoldsby, Jack Talty, agus Máire O'Keefe [Tin whistle performance with Mary Mitchell-Ingoldsby, Jack Talty, and Máire O'Keefe as part of Bobby Gardiner tribute concert at Willie Clancy Summer School in Miltown Malbay]

## Lárionad na Gaeilge/ The Centre for Irish Language

This year marked the 50<sup>th</sup> anniversary of the foundation of the Maynooth University Language Centre, the first of its kind in a higher education institution in Ireland. While the centre was rebranded in 2016 as the Centre for Irish Language Research, Teaching and Testing, it continues in the tradition of its predecessor, by supporting the teaching, learning and assessment of Irish among all staff and students of Maynooth University and the wider community, and by promoting excellence, innovation and evidence-based practice in the teaching, learning and assessment of Irish, on an institutional, local, national and international level. The Centre offers both credit-bearing and extramural language classes for staff, students and the public, as well as a number of innovative online professional training programmes in Irish translation and Irish-language teaching.

The Centre for Irish language is recognised both nationally and internationally as the leader in the field of Irish-language testing and assessment. A major focus of the work of the Centre is the development of proficiency tests in Irish for adult learners (Teastas Eorpach na Gaeilge/TEG), which are administered in Ireland, Europe, North America and Australia ([www.teg.ie](http://www.teg.ie)). The Centre is the Irish member of the Association of Language Testers in Europe (ALTE) and has twice been awarded the prestigious ALTE Q-mark for excellence in language testing. It is also a three-time winner of the European Language Label for excellence and innovation in language teaching.

Research in the Centre for Irish Language focuses primarily on aspects of applied linguistics related to the learning, teaching, assessment and use of Irish, in order to inform evidence-based practice in language education and policy, both within our own institution and on a national level. The Centre often acts as advisor to state bodies on issues related to language proficiency and language testing and has been commissioned on several occasions to produce test-related research on aspects of Irish-language learning. As such, our research builds on our strengths in language teaching and testing and is very much integrated with our practice in those areas. Our staff members are also interested in the rich cultural heritage associated with the Irish language, particularly the Irish song tradition and aspects of Irish folklore.

## Research on Curriculum Development and Assessment in Post-Primary Education

Throughout the 2021–22 academic year, members of the Centre worked on a validation study of the Leaving Certificate Irish oral exam, funded by An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta (COGG). This work was carried out in the context of a review of the existing Leaving Certificate Irish language syllabus and the publication of draft specifications for a revised curriculum. Lárionad na Gaeilge Director, Aoife Ní Ghloinn, was invited to deliver a guest lecture on this work as part of the annual seminar series of the Sealbhú research institute, Dublin City University in March 2022. A recording of the lecture is available on the Sealbhú website, <https://dcu-ie.zoom.us/rec/play/tap-4PJyXmjikySajnTxUV56jf9c6Gdj8NREbQcvog-dj8893nq9U-sPdmla57YX-Mv3KoOhMs2WgXng.I9IGqD255xUNIYk?>



Aoife Ní Ghloinn, Lárionad na Gaeilge

Siuán Ní Mhaonaigh and Aoife Ní Ghloinn were also invited to be part of a Conradh na Gaeilge expert working group, which was formed to examine the draft curriculum specifications for the new Leaving Certificate Irish course. They contributed a section on the use of the Common European Framework of Reference for Languages to a discussion paper published by Hyland & Uí Uiginn in autumn 2021, in order to inform a public consultation on the proposed curriculum revisions.

Members of Lárionad na Gaeilge continued to collaborate with the National Educational Psychological Service (NEPS), the Educational Research Centre (ERC) and An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta (COGG), to develop a national standardised diagnostic and screening literacy test for post-primary students in Irish-medium schools. TEG Deputy Director, Aodh Ó Gallchóir and Dr Emily Barnes were involved in writing items for the literacy test and Aoife Ní Ghloinn was appointed as chair of the expert advisory group established by COGG to support the project.



Siuán Ní Mhaonaigh, Lárionad na Gaeilge, Stiúrthóir TEG

TEG Director, Siuán Ní Mhaonaigh, led a research study in collaboration with the Educational Research Centre (ERC) to assess the language proficiency of third-year students in seven Gaeltacht schools, as part of the evaluation of the implementation of the *Policy for Gaeltacht Education, 2017–22*.

Ailín Ní Chonchúir continued her research on translanguaging in the Irish immersion education context, presenting the work at the Third All-Ireland Research Conference on Immersion Education in Mary Immaculate College, Limerick in June 2022 as well as at the 14<sup>th</sup> annual International Conference of Education, Research and Innovation, 8 November 2021.

### Invited Lectures

- Ní Mhaonaigh, S. & Ní Ghloinn, A. 'Teastas Eorpach na Gaeilge (TEG): Cúrsaí earcaíochta agus cur chun cinn na Gaeilge san earnáil phoiblí.' Invited presentation delivered to the Joint Parliamentary Committee for Irish and the Irish-speaking Community, 3 November 2021 ([https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/comhchoiste\\_na\\_gaeilge\\_na\\_gaeltachta\\_agus\\_phobal\\_labhartha\\_na\\_gaeilge/submissions/2021/2021-11-03\\_raiteas-tosaigh-aoife-ni-ghloinn-stiurthoir-larionad-na-gaeilge-ollscoil-mha-nuad-larionad-na-gaeilge-taighde-teagasc-tastail-ollscoil-na-heireann-ma-nuad\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/comhchoiste_na_gaeilge_na_gaeltachta_agus_phobal_labhartha_na_gaeilge/submissions/2021/2021-11-03_raiteas-tosaigh-aoife-ni-ghloinn-stiurthoir-larionad-na-gaeilge-ollscoil-mha-nuad-larionad-na-gaeilge-taighde-teagasc-tastail-ollscoil-na-heireann-ma-nuad_en.pdf)).
- Ní Ghloinn, A. 'Gnéithe den bhailíocht i mbéaltríal Ghaeilge na hArdteiste.' Invited lecture delivered as part of the annual seminar series of the Sealbhú research institute, Dublin City University, March 2022. Recording available at [https://dcu-ie.zoom.us/rec/play/tap-4PJyXmjikySajnTxUV56jf9c6Gdj8NR\\_EbQcvog-dj8893nq9U-sPdmla57YX-Mv3KoOhMs2WgXng.I9IGqD255xUNiYfK?canPlayFromShare=true&from=share\\_recording\\_detail&startTime=1648577131000&componentName=rec-play&originRequestUrl=https%3A%2F%2Fdcu-ie.zoom.us%2Frec%2Fshare%2Fot7NcUZDsoXgTHQ2E3opX64I3c-gY\\_wtyE6tRst6mtFWxzjiJ84Dr3pzwszknf1x.C-4f6p4SuXiwUwju%3FstartTime%3D1648577131000](https://dcu-ie.zoom.us/rec/play/tap-4PJyXmjikySajnTxUV56jf9c6Gdj8NR_EbQcvog-dj8893nq9U-sPdmla57YX-Mv3KoOhMs2WgXng.I9IGqD255xUNiYfK?canPlayFromShare=true&from=share_recording_detail&startTime=1648577131000&componentName=rec-play&originRequestUrl=https%3A%2F%2Fdcu-ie.zoom.us%2Frec%2Fshare%2Fot7NcUZDsoXgTHQ2E3opX64I3c-gY_wtyE6tRst6mtFWxzjiJ84Dr3pzwszknf1x.C-4f6p4SuXiwUwju%3FstartTime%3D1648577131000)
- Ní Ghloinn, A. 'Irish language policy in practice: lessons from the Centre for Irish Language: Research, Teaching & Testing', Invited lecture delivered as part of the BAQONDE summer school, Trinity College Dublin, July 2022.

### Conference Paper

- Ó Ceallaigh, T.J. & Ní Chonchúir, A. 'Reconceptualising translanguaging practices for minority language immersion education: implications for teacher education and curriculum design.' Paper delivered at 14<sup>th</sup> annual International Conference of Education, Research and Innovation, 8 November 2021. Available <https://library.iated.org/publications/ICERI2021>

### Conference Presentations

- Ní Chonchúir, A. 'Ag droicheadú is ag dúnadh bearna: an idirghabháil mar ghníomh agus mar straitéis chumarsáide don mhúinteoir tumoideachais/ Bridging and closing a gap: mediation as an activity and a strategy for the immersion teacher.' Paper delivered at The Third All-Ireland Research Conference on Immersion Education – Immersion Education: Taking Stock and Moving Forward. Mary Immaculate College, Limerick. June 2022.
- Ní Ghloinn, A. 'An dearcadh Eorpach: Tionchar an FTCE ar mhúineadh, ar fhoghlaim agus ar mheasúnú na Gaeilge'. Paper delivered at the conference 'An dearcadh Éireannach agus Gaelach: 100 bliain den oideachas Éireannach', Trinity College Dublin, May 2022.

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

Lárionad na Gaeilge is closely engaged with a number of state bodies and much of our work develops in response to the needs of national educational and Irish-language policy.

### Consultation Work for the Development and Implementation of Irish-Language Policy and Legislation

TEG Director, Siuán Ní Mhaonaigh, led a research study in collaboration with the Educational Research Centre (ERC) to assess the language proficiency of third-year students in seven Gaeltacht schools, as part of the evaluation of the implementation of the *Policy for Gaeltacht Education, 2017–22*.

2021/22 was an important year for the development of Irish-language policy, as amendments to the Official Languages Act 2003 were drafted and debated by the committees and houses of the Oireachtas, before the legislation was finally passed in December 2021. Members of the Lárionad provided expert advice to government officials to inform the development of the legislation, and Aoife Ní Ghloinn, Siuán Ní Mhaonaigh and Aodh Ó Gallchóir were invited to address the Joint Parliamentary Committee for the Irish Language, Gaeltacht and Irish-speaking Community as part of the consultation process.

On foot of these policy developments, TEG saw an increase in demand for the provision of Irish-language proficiency tests to support promotion and recruitment schemes in a number of state bodies and organisations. In July 2022, the Centre established a new partnership with the civil service training and development unit, One Learning, in order to embed TEG assessments and certification into Irish-language training programmes across the civil service.

During 2021–22, the Centre also continued its partnership with the Department of Education, providing TEG Irish-language proficiency tests for all prospective candidates applying for the Postgraduate Masters in Education (Primary Teaching).

### Other Committees and Advisory Roles

Members of the Lárionad have also continued to serve on a number of other external advisory boards and committees. Aoife Ní Ghloinn continued in the following roles:

- Elected representative for the Republic of Ireland on the Executive Committee for the Association of Language Communities in the UK and Ireland (AULC);
- Member of the advisory committee for *Corpas Náisiúnta na Gaeilge*, a new large-scale project led by DCU to develop a 155-million word national corpus of contemporary Irish;
- Chair of the advisory committee and coordinator of the working group for the MDLI-G project, to develop a national standardised diagnostic and screening literacy test for post-primary students in Irish-medium schools; and
- Member of the *Conradh na Gaeilge* Education committee.

She was also invited to join the University of Galway Standing Committee on Language Competency, which advises the University on matters relating to Irish language competency and recruitment.

## English

The Department of English had 16 full-time members of staff of which Professor Graham was seconded as Dean of the Faculty and Dr O'Hanlon was his replacement. Dr Condon is a 50% appointment with Media Studies. Dr Devlin is a .4 appointment in line with Professor Palmer's MACMORRIS grant. Additionally, the MACMORRIS team brought six team members to the Department, of which two were postdoctoral researchers. The Department of English was home to 12 PhD students with three new students commencing their studies and one student graduating. In 2022, members of the Department produced 82 publications. The Department of English secured four funded awards to the value of €239,703.



Professor Pat Palmer, Department of English

### Research Grants and Awards

Dr O'Hanlon secured an HEA grant through the North-South Research Programme for "Our roots travel widely: Irish Poetry Beyond Regionalism and Nationalism" in collaboration with Dr Gail McConnell of Queen's University Belfast. This project creates a new paradigm for understanding Irish poetry north and south between Partition and the Troubles, one which displaces the monolithic focus on the constitutional question and its outworn dichotomies: regionalism versus nationalism, Catholic versus Protestant, neutrality versus war, Dublin versus London. By examining poetic collaborations north and south, feminist poetics, international literary exchanges, ideological commitments beyond unionism or nationalism, and the role played by migrants and visitors, the project reconceptualises twentieth-century Irish/Northern Irish poetry and initiates a vibrant cultural dialogue which transcends old polarities. The project explores the extent and richness of Irish poetry's 'web of affiliations', in Edna Longley's phrase, highlighting forgotten and dissenting voices from 1920 to 1965. The project brings a postdoctoral researcher to Maynooth in 2022–23 (Dr Julie Morrissey). The project will galvanise a growing cross-border network of writing and scholarship on Irish poetry through scholarly articles, public symposia, a digital exhibition, an anthology/essay collection and a public audio archive. The production and dissemination of this research is enabled through key institutional partnerships with the Museum of Literature Ireland, the Linen Hall Library, and Quotidian (Poetry Jukebox).

Professor Arrington secured an IRC Postdoctoral Fellowship, *Celibacy in Irish Women's Writing, 1860s–1950s*, which will bring Dr Paul Fagan to the Department in 2022–2023. Dr Fagan is founding editor of the *Journal*

of *Flann O'Brien Studies* and *Production Archives*, both published by the Open Library of Humanities. He is co-editor of *Irish Modernisms: gaps, Conjectures, Possibilities* (Bloomsbury, 2021) and *Stage Irish: Performance, Identity, Cultural Circulation* (Irish Studies in Europe, 2021), as well as editor of four volumes on Flann O'Brien from Cork University Press. He is completing a monograph on Irish Literary Hoaxes in addition to embarking on this new project on Celibacy in Irish Women's Writing.

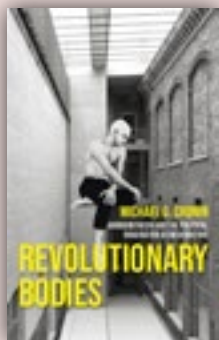


Professor Lauren Arrington, Department of English

Dr Stephen O'Neill secured a New Foundations grant for "Literature and Ireland's Trees," and Professor Palmer secured an Enterprise Ireland grant to support the preparation of an ERC Advanced Grant.

### Publications

The Department produced 82 publications including two books, 12 book chapters, three referred journals and 67 other publications. Of note are Dr Cronin's published two books in 2022, *Revolutionary Bodies: homoeroticism and the political imagination in Irish Writing* (Manchester University Press) and *Sexual/Liberation* (Cork University Press). Colleagues published in prestigious, wide-reaching literary outlets including Belinda McKeon's essays in the *Paris Review* and *Winter Papers*.



*Revolutionary Bodies: homoeroticism and the political imagination in Irish Writing* by Dr Michael G. Cronin, Department of English

### Engaged Research

Two partnerships continue with Kildare County Council Writers in Residence and the Arts Council Writer in Residence programme.

## History

The Department of History at Maynooth University is widely recognised as being among Ireland's leading centres for the teaching and research of history. During the academic year 2021–22, the History Department counted 18 academic staff. In total the Department had 28 registered PhD students, one MLitt, and 36 taught MA students and counted 539 full-time undergraduate students (227, 141, 171). Professor Dejan Djokic (Professor A), Professor Roisín Higgins (Professor B) and Dr Ciarán Reilly (Assistant Lecturer) were all appointed in 2022. The appointment of Professor Djokic makes the Department a major focus for Balkan studies, adding further to its prestige as a vibrant centre of European History teaching, research and publication. The appointments of Professor Higgins and Dr Reilly to join existing colleagues enhances the Department's standing as a centre of excellence in relation to Irish social history.

### Research Grants and Awards

History Department members achieved several prestigious grants and its members continued to engage in active research and produce high quality research outputs over the course of the calendar year. During the period under review, the Departmental staff applied for 12 grants and to date have been awarded over €275,000.

Of great satisfaction was the fact that Professor Ian Speller was once again successful in winning the tender worth €1.2 million for the provision of the MA LMDS and the HDip LMDS to the Defence Forces. This has been recognised across the institution as an excellent result for the Centre for Military History and Strategic Studies, and more widely for the Department and the Faculty. It is further recognition of the quality of the Department's work with the Defence Forces over the last number of years.



Professor Ian Speller, Department of History

The OPW continued its annual support for the Centre for the Study of Historic Irish Houses and Estates, directed by Professor Terence Dooley, which brought national and international scholars of the highest reputation to the University for its 20<sup>th</sup> Annual Historic Houses Conference.

Meath County Council continued its generous support of Dr Michael Potterton's Moynagh Lough Archaeological Excavation with a consultancy grant.

In terms of scholarships during the period, a number of the Department's PhD students were in receipt of prestigious awards from the Irish

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

Research Council and other bodies: Veronica Barry is an IRC awardee for her examination of Nazi propaganda directed at women of neutral countries from 1933–1945; Thomas McGrath for his examination of the Irish in South Africa from the Irish Revolution to the declaration of the South African Republic; and Eamonn Milliken for his work on German/Austrian Officer Veterans of the Great War in Military Service, 1918–45. The Department welcomed a recipient of the top John & Pat Hume scholarship, Aidan Gilligan, who is undertaking work on the evicted tenants of the Land War era. Megan McAuley is the recipient of a John & Pat Hume fee waiver scholarship and the Egan Distillery Historical Scholarship for her work on the lives and deaths of Donegal's children from 1850 to 1950. Thomas Appleby, another John & Pat Hume scholar, was awarded a prestigious scholarship from the German Academic Exchange Service (DAAD) to conduct research for one year at the Freie Universität in Berlin on the influence of Lutheran Pietism on the nascent psychiatric profession in late-eighteenth/early-nineteenth century Prussia.

### Publications

In terms of publications, the Department continues to be one of the most vibrant in the country. Colleagues in the Department published two books, 13 edited volumes, contributed 10 book chapters to edited volumes, and 18 articles to refereed journals.

The breadth of the scholarship is astonishing (in no particular order):

- gender history,
- the Irish revolution,
- maritime strategy and naval warfare,
- urban landscapes,
- synchronous nationalisms in Europe,
- migration studies,
- children and school provision,
- charity and philanthropy in Victorian and Edwardian Britain,
- slavery in Belfast,
- political ideologies in Europe,
- archaeology,
- the great houses of Ireland,
- nursing and midwifery,
- Victorian religion,
- documents on Irish foreign policy,
- American song,
- political and political culture in eighteenth-century Ireland and much more.



Professor Marian Lyons, Department of History

- Professor Marian Lyons was involved in the editing of three books on topics as diverse as Politics and culture in eighteenth-century Ireland, Donegal in the Irish revolution, 1912–23, and the Jesuit mission in early modern Ireland 1560–1760.
- On 24 March 2022, Dr Eddie McParland (Trinity College Dublin) launched *Politics and political culture in Ireland from Restoration to Union, 1660-1800: essays in honour of Jacqueline R. Hill* (Four Courts Press) in MU's Arts & Humanities Institute, edited by Professors Raymond Gillespie, James Kelly and Marian Lyons.
- Professor Ian Speller consolidated his position as a leading expert in modern maritime strategy and naval warfare. Dr Raul Cârstocea was prolific in his numerous publications and conference presentations on a wide variety of topics relating to modern European history.
- Professor Terence Dooley's *Burning the Big House: the Story of the Irish Country House in a Time of Revolution* was published to widespread acclaim by Yale University Press. In one of his Macnamh speeches, President Michael D. Higgins made copious reference to the book and subsequently invited Professor Dooley and his family to a private audience in Arás an Uachtaráin where Professor Dooley was invited to present the President with a signed copy of the book. *Burning the Big House* was chosen as an Irish Times Book of the Year and was also a Times Literary Supplement Book of the Year 2022.
- Professor Dooley and Christopher Ridgway edited *Country House Collections: Their Lives and Afterlives* which was chosen for a Sunday Times Book of the Year Award.
- The Kalima of the Abu Dhabi Cultural Authority, recognising the importance of his work for the wider Arab audience, has bought the Arabic translation copyright of Dr Hussam Ahmed's internationally celebrated monograph, *The Last Nahdawi* (2021, Stanford University Press), and is getting the translation ready for publication in time for the Abu Dhabi International Book Fair in May 2023.
- Dr Ciarán Reilly (along with another former student, Dr Ciarán McCabe, and Professor Emily Mark FitzGerald of UCD) edited the acclaimed *Dublin and the Great Irish Famine* (UCD Press, 2022).

- The Department produces the *Journal of Military History and Defence Studies*, a new online, open-access journal produced in collaboration with Maynooth Academic Publishing. The journal provides an outlet for new research in the fields of military history and defence studies, with a particular focus on the work of early career researchers. The impact of the journal is reflected in the fact that, since January 2020 28 articles have been published and these have accrued a total of 9,875 abstract views/downloads.
- Dr Rory Finegan was co-Editor of the journal, *Dealing with the Legacy of Conflict in Northern Ireland through Engagement and Dialogue*, funded by the European Union peace IV Programme Body (SEUPB), and published in collaboration with the University of Ulster and the Irish Centre for Human Rights at University of Galway.

Of final but very significant note, six new volumes appeared in The Maynooth Studies in Local History series edited by Dr Michael Potterton.

- Rachel Moss & Colmán Ó Clabaigh on Religion and Society in medieval Galway
- Suzanne Pegley on Thomas Conolly of Castletown House;
- Regina Donlon on the burning of Knockcroghery village in 1921
- John Colgan on Nathaniel Colgan
- David Heffernan on early modern Duhallow
- Lisa McGeeney on midwifery in Bossisokane and Nenagh, 1882–1922.

This series, described as ‘one of the most significant publishing achievements in Irish history’, now runs to 159 volumes (and there are to date nineteen volumes in the Maynooth Research Guides series).

## Engaged Research

Dr Jennifer Redmond is Chair of the EU funded COST Action HIDDEN: the history of identity documentation in European nations (2022-2026), funded by the European Union, see [www.cost.eu/actions/CA21120/](http://www.cost.eu/actions/CA21120/) In its first year the Action has been awarded €149,899. The HIDDEN network unites scholars in history, migration studies, geography, sociology, law, linguistics, postcolonial studies, human rights and more to look at the history of ID regimes in Europe and beyond, drawing connections between the past and present.



Dr Jennifer Redmond, Department of History

In 2022, Professor Terence Dooley worked in collaboration with the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media in curating an exhibition entitled *Burning the Big House* which was launched in the Irish Architectural Archives and then hosted by MU Library and the offices of the Irish Georgian Society.

The Centre for the Study of Military History and Strategic Studies (CMHSS) goes from strength to strength. Since 2009, the Centre has been at the core of a very important strategic collaborative partnership between the University and the Defence Forces. The CMHSS is recognised nationally and internationally as a centre of excellence in the provision of Professional Military Education (PME). For over a decade, it has maintained its position as the Defence Forces’ preferred partner for the delivery of their key officer career courses, despite fierce competition from other institutions that have devoted far greater staff resources to relevant fields.



Dr Raul Cârstocea, Department of History

Since May 2022, Dr Raul Cârstocea has been working as an expert on the ‘Transnational History Education and Co-operation Laboratory’ (HISTOLAB), a joint project of the European Union and Council of Europe, funded with €1.1 million and running from May 2022 until April 2024. The aim of the project is to bring together innovative ideas on history education across EU and Council of Europe member states.

The Centre for the Study of Historic Irish Houses and Estates (CSHIHE) continued its long-standing partnership (twenty years) with the Office of Public Works (and several Government Departments) to develop government policy in relation to the future sustainability of country houses and landscapes in an era of environmental challenge, to develop interdisciplinary research at international level and inform public policy with other stakeholders at local, regional and national levels.

The CSHIHE led an international forum, Centre for the Study of the European Country House, made up of colleagues from the universities of Oxford, Newcastle, Bangor and QUB in the organisation of seminars, and online lectures series. The CSHIHE celebrated its twentieth anniversary hosting the Twentieth Annual Historic Houses International Conference held at MU, and drawing speakers from Ireland, the UK, Europe and the US.

The Department of History in collaboration with St Patrick’s College, the Department of Adult Education and MU Library began preparations for the organisation of a community initiative to bring the history of Maynooth to the local community through a series of lectures and tours. This series ‘Maynooth Through the Ages’ was planned to be delivered in spring 2023.

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

### School of Modern Languages, Literatures and Cultures

During the academic year 2021–22, research-active staff in the School of Modern Languages, Literatures and Cultures (SMLLC) comprised 18 academic staff members (one of whom was employed on a part-time basis) and eight doctoral students. These researchers produced one monograph, one edited book, six book chapters, six peer-reviewed journal articles, and three other publications (book reviews and media articles). Researchers in the SMLLC also gave seven conference presentations during this period.

During the 2021–22 academic year, two members of staff in the School of Modern Languages, Literatures and Cultures were offered prestigious research fellowships. In 2021, Dr Julie Rodgers (French Studies) was awarded a D'Arcy McGee Beacon Fellowship through the Ireland–Canada University Foundation, which she held at Concordia University in Quebec. As part of her fellowship, she gave the Beacon Lecture on “Maternal Counter-narratives in Contemporary Irish and Quebec Women’s Writing”. In April 2022, Professor Valerie Heffernan was awarded a Visiting Fellowship at the University of Jyväskylä in Finland. As part of her fellowship, she organised a symposium on the topic of ‘International Perspectives on Regretting Motherhood’, which featured nine speakers from seven different countries. We see these awards as important indicators of the esteem in which our researchers are held and are pleased to see them attract international visibility for their research.



Dr Julie Rodgers, School of Modern Languages (French Studies)

The School of Modern Languages, Literatures and Cultures had a productive year when it comes to the publication of books with prestigious international publishers. Three staff members published books during 2022, representing the particular research strengths of the SMLLC.

- Dr Zhouxiang Lu (Chinese Studies) published his fifth monograph, entitled *A History of Competitive Gaming*, with Routledge. This book looks at the development of competitive gaming and esports from the 1970s to the 2010s and considers how it relates to the evolution of the video games industry.
- Dr Loïc Bourdeau (French and Francophone Studies) published two edited books in 2022. The first, *Diversity and Decolonisation in French Studies* (Springer), co-edited with Siham Bouamer, showcases new approaches to the teaching of French that offer a more diverse and inclusive perspective on French language and culture; the second, *Revisiting HIV/AIDS in French Culture: Raw Matters* (Lexington Books),

co-edited with V. Hunter Capps, looks back on the HIV/AIDS crisis from the point of view of the present.

- Dr Britta Jung (German Studies) co-edited a book entitled *Exploring the Transnational Neighbourhood: Perspectives on Community-Building, Identity and Belonging* (Leuven UP) together with Stefan Ehrig and Gad Schaffer. This volume uses interdisciplinary and cross-disciplinary perspectives to probe the concept of the “transnational neighbourhood” in contemporary cities and questions how community-building happens in such culturally diverse spaces.

These various works demonstrate that SMLLC researchers are contributing to significant conversations at the cutting edge of research in their respective fields.



Dr David García León, School of Modern Languages (Spanish and Latin American Studies)

Several SMLLC staff members saw their work appear in high-ranking international journals during 2022. To mention a few examples: Dr David García León (Spanish and Latin American Studies) published an article on the representation of male disability in Colombian audiovisual media in the Q1-ranked *Latin American Research Review*; Dr Cordula Böcking (German Studies) saw an article on Anna Seghers’ and Christian Petzold’s *Transit* appear in the bilingual journal *Interfaces*; Dr Julie Rodgers (French and Francophone Studies) published an article on Sylvie Testud’s film *La Vie d’une autre* (2012) in the Q1-ranked journal *Modern and Contemporary France*; and PhD student Julie Trobitsch (Applied Linguistics) succeeded in placing an article related to her doctoral study of how culture is transmitted in the French-language classroom in *Teanga, The Irish Yearbook of Applied Linguistics*.

Researchers in the School also published chapters in important books with respected publishing houses in 2022. As an example, Dr David García León published a chapter on transness and disability in discourses of access to healthcare in the Colombian press in a new volume entitled *Healthcare in Latin America. History, Society, Culture*; Dr Loïc Bourdeau saw a chapter on contemporary French womanhood in the TV series *Dix Pour Cent [Call my Agent]* appear in a volume called *Taking Up Space: Women at Work in Contemporary France*; and Dr Britta Jung’s chapter on the depiction of Genoa’s Prè neighbourhood in Dutch writer Ilja Leonard Pfeijffer’s novel *La Superba* (2013) appeared in her edited volume *Exploring the Transnational Neighbourhood*.



## Media Studies

In the academic year 2021/22 there were 8.5 members of staff and six doctoral students in the Department of Media Studies during 2021/22. During this time the Department produced three books, nine peer reviewed journal articles, and two book chapters. The Department also received €413,128 in research funding.

### Research Grants and Awards

Noteworthy grants awarded this year include Dr Sarah Arnold's awards of €11,600 through the IRC New Foundations scheme for the project 'Locating & Narrating Women's Amateur Filmmaking in the IFI Irish Film Archive', Dr Anne O'Brien's awards from Enterprise Ireland of €15,678 and Professor Gavan Titley's EU Horizon Europe Cluster 2 award of €303,517 as well as an IRC Postgraduate Scholarship of €82500. A total award of €424,895.

### Publications

A significant proportion of Media Studies publications are featured in highly cited journals.

- Professor Titley's article in International Journal of Cultural Studies
- Dr Arnold's article in Industry and Higher Education
- Two of Dr O'Brien's five articles are in European Journal of Cultural Studies, International Journal of Cultural Policy and Cultural Trends Journal.

### Impact

The Association of Internet Researchers conference was held in 2022 with the theme De-Colonising the Internet. The conference hosted 544 international delegates from 38 countries over three days with an additional pre-conference day which included a doctoral colloquium and early career workshops. Dr Jarrett served as Programme Chair and was local co-host for the event. The Platform Work Inclusion Living Lab (P-Will) COST Action began involving over 200 members from 43 countries in developing an intersectional feminist approach to work in the platform economy. The main objective is to build a European multi-stakeholder network including policymakers, industry leaders, civil society organisations and researchers, to develop alternative scenarios in the frame of platform work. Dr Jarrett is serving as co-leader of Working Group 1 charged with developing the theoretical framework for the Action. She is also on the Management Committee.



Dr Kylie Jarrett, Department of Media Studies

## Engaged Research

An engaged project with the broadcast industry which audited diversity and equality policies for stakeholder organisations, such as the Broadcasting Authority of Ireland, RTÉ, TG4, Virgin Media, Director's Guild & Screen Ireland was further extended through engagement with the Commission on the Future of Media and the research findings significantly informed the Commission's report ([www.gov.ie/en/publication/ccae8-report-of-the-future-of-media-commission](http://www.gov.ie/en/publication/ccae8-report-of-the-future-of-media-commission)).



Report on the Future of Media Commission

## Music

In the academic year 2021/22 the Department of Music hosted 13 Academic staff, one member who is half-time St Patrick's College, and two University Tutors and 16 PhD students. The Department produced four book chapters with prestigious international publishers, four articles in high impact peer reviewed journals, eight performances, nine conference contributions/invited talks and two other journals.

### Publications and Compositions

Dr Adam Behan published *Reading Creativity Forwards and Backwards: Process and Product Revisited with Herbert von Karajan's Legato Aesthetic and Hypermasculinity*, *Music & Letters*. This article brings together several different methodological strands of performance studies, drawing upon ethnography, film studies, creativity studies and music performance analysis. It was picked as the 'Editor's Choice' of article for the issue in which it was published.

During his recent sabbatical leave, Dr Gordon Delap worked on ambisonic compositions realised through technologies developed at the University of Bordeaux. These technologies allow for realisation across a range of 2D and 3D environments. In 2022, this work was further extended and developed via an IRC Ulysses award.

Related compositions were performed at:

- New York City Electroacoustic Music Festival;
- Convergences Conference at the University of de Montfort;
- Immersive Audio Conference at the University of Gloucestershire;
- Sound and Music Computing Conference at the University of Saint-Étienne.

# Faculty Highlights

## Faculty of Arts, Celtic Studies and Philosophy

Two performances of Dr Ryan Molloy's work *Arcady* took place (including its première) at the Dublin International Piano Competition in May 2022. He represented Ireland at the International Society of Contemporary Music's World New Music Days Festival in Christchurch, New Zealand, with a performance of his orchestral work *Ogham* (in August 2022). His sextet *Dluthinneach* was commissioned by and premiered at the Westport Festival of Chamber Music, in September.



Dr Ryan Molloy, Department of Music

Dr Laura Watson co-edited (with Dr Jennifer O'Connor-Madsen and Dr Ita Beasung) the book *Women and Music in Ireland* (Boydell, 2022). In a story which spans several centuries, this volume highlights representative composers and performers in classical music, Irish traditional music, and contemporary art music whose contributions have been marginalised in music narratives. As well as investigating the careers of public figures, this edited collection brings attention to women who engaged with and taught music in a variety of domestic settings. It also shines a spotlight on women who worked behind the scenes to build infrastructures such as festivals and educational institutions which remain at the heart of the country's musical life today. As well as co-editing the book, Dr Watson was the lead author of the Introduction and the sole author of a chapter on the Radio Éireann accompanist and concert pianist Rhoda Coghil.



Dr Laura Watson, Department of Music

Dr Watson is also the author of the article *Feminist Musical Activism in Ireland (2016–21) and Feminist Musicology* ([www.ictm.ie/feminist-musical-activism-in-ireland-2016-21-and-feminist-musicology-laura-watson/](http://www.ictm.ie/feminist-musical-activism-in-ireland-2016-21-and-feminist-musicology-laura-watson/)), published in *Ethnomusicology Ireland* (8/1, 2022). Music has been a key site of feminist activism in Ireland since 2016. This article explores the multiple ways in which feminist collectives have challenged structural inequalities in Ireland's music world. This discussion of collectives such as Sounding the Feminists, FairPlé, Why Not Her? and Irish Women in Harmony shows that this activism amounts to a larger movement. This article further offers an analysis of the Irish feminist conditions influencing the movement, which include the 'Repeal' campaign. It also frames and critiques this musical activism as gendered 'equality labour.'

In two articles Professor Victor Lazzarini discusses techniques for the digital modelling of analogue audio filters. Such devices have been very important in electronic music production, particularly since the 1960s when voltage control methods were first developed. In the *Journal of the Audio Engineering Society* (JAES) article, *Improving the Chamberlin digital state variable filter*, a new digital version of the analogue state variable filter is put forward, together with a discussion of the digital signal processing techniques that led to its formulation. This is followed up in the *Computer Music Journal* (CMJ) paper, where the focus is on how nonlinear versions of this, and other filters can be developed. This research was also complemented by additions to the Csound system, making the work openly available to composers, sound designers, and researchers.

### Conferences

Colleagues have continued to actively engage with the international research community, presenting at both in-person and online conferences, and giving invited talks.

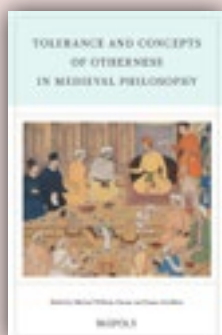
- Dr Laura Watson took part to the Feminist Theory and Music Conference (2022) with the Roundtable on Women's Musical Leadership as Lens for Feminist Musical Study: Salon Culture, Collectives, Mentorship, and Networks (University of Guelph, Canada).
- Dr Antonio Cascelli presented a paper on music and visual Culture, Rethinking the Origin of Opera, at the annual Medieval and Renaissance Conference, in Uppsala (July 2022). In December 2022 Dr Cascelli also presented a paper on Giorgio Vasari and the aesthetic evaluation of the experience of painting and music at the Online Conference of the Renaissance Society of America.
- Professor Palmer gave a fascinating paper in Maynooth, entitled Unpacking the Maestro Myth: Bugs Bunny, Clerical Garb, and a Walrus Moustache... in which she presented a series of case studies which will form a core element of her forthcoming book on the history of orchestra conducting in Britain.

- Dr Estelle Murphy was invited to present a paper on Walsh in Europe and Beyond: Dissemination and Reception of English Music Prints in the 18<sup>th</sup> Century at the international Project and Conference John Walsh and the Music Trade in Dublin and Ireland in Greifswald, Germany. She also presented a paper on Poet, Poetry, Purcell: A New Understanding of the Collaborative Creative Process at the Annual Plenary Conference (online) of the Society for Musicology in Ireland at University College Cork. Furthermore, she was invited to present her talk Again the Welcome Morn We Sing: Constructing a Skewed History of the Baroque Court Ode at DCU.
- Professor Lorraine Byrne-Bodley gave two invited lectures: Richard Festinger's Icarus in Flight, at the Concert for Climate Action with Live Performances by Yury Revich and James Cottrill from Vienna and Telegraph Quartet, San Francisco, Climate Music Project, at the Dargan Theatre Trinity College Dublin; Schubert and The Makings of Biography, at the Schubert Research Centre, in the Austrian Academy of Sciences in Vienna.
- In July 2022 Dr Estelle Murphy held a Bodleian Fellowship, with the British Society for Eighteenth-Century Studies hosted at the Weston Music Library, Oxford, studying the manuscripts of William Boyce for her forthcoming monograph on the Court Ode.

## Philosophy

In the calendar year 2022 the Department was composed of six academic staff, one contract lecturer and one new postgraduate research student commencing their studies. New publications included three books, 11 book chapters, six refereed journal articles, and 11 conference contributions and two other publications.

Professor Michael W. Dunne and Dr Susan Gottlöber edited the volume, *Tolerance and Concepts of Otherness in Medieval Philosophy*, published by Brepols, an important collection of chapters deriving from the papers delivered at the Colloquium of the Société Internationale pour l'étude de la philosophie médiévale, held in Maynooth in 9–12 September 2015, organised by Professor Dunne and Dr Gottlöber. The studies contained in this book span a thousand years of Western Latin, Greek, Russian as well as Islamic thought on toleration and otherness.



Professor Michael W. Dunne and Dr Susan Gottlöber edited the volume, *Tolerance and Concepts of Otherness in Medieval Philosophy*

Dr Gottlöber also edited and published the book, *Max Scheler in Dialogue*, again a volume based on papers from the conference held in Maynooth in 2016, under the auspices of the Irish Philosophical Society and the German Max Scheler Society and the Department of Philosophy. This is the first edited collection in English dedicated to Scheler since 1974.

Dr Amos Edelheit continues his interests in the relationship between renaissance thought and scholasticism in his recent monograph *A Philosopher at the Crossroads. Giovanni Pico della Mirandola's Encounter with Scholastic Philosophy*.

In a series of book chapters, journal articles, and conference presentations, the members of the Department continued their research into such topics and thinkers such as Edith Stein (Dr Mette Lebech), Renaissance Thought (Dr Amos Edelheit), Hume and Brentano (Dr Cyril McDonnell), Max Scheler, personalism, and toleration (Dr Susan Gottlöber), 13<sup>th</sup> and 14<sup>th</sup> philosophy (Professor Michael Dunne).

## Funded Awards

Dr Susan Gottlöber, Research Grant, Enterprise Ireland Support for ERC.



Dr Susan Gottlöber, Department of Philosophy

# Faculty Highlights

## Faculty of Science and Engineering



## Biology

In the 2021/22 academic year, the Department of Biology had 27 academic staff, 15 technical and five administrative staff. In the last year the Department has increased its PhD numbers by 26% and cumulatively over the last three years by 82% to a current total of 45 PhD students. PhD students now represent 7.4% of the total student population of the Department of Biology. The Department has maintained an excellent output with 54 publications in total, including 52 peer-reviewed publications in international journals, many of which had an impact factor above 3. Future research in the Department will be supported through 32 competitive grants secured in the 2021/22 academic year, bringing a total of €2,484,184 to Maynooth University.

### Publications

Research groups in the Department of Biology have published a total of 52 publications (research articles and reviews), 50 of which were in peer-reviewed journals. Most of these publications were in journals of high international standing with impact factors between 3 and 10 (e.g. *Science Translational Medicine*, *PLoS Genetics*, *Nucleic Acids Research*, *Diabetologia*, *iScience*, *Journal of Experimental Medicine*, *Microbiology*, *Journal of Ecology*, etc.). In addition, several publications have also been published in high-impact factor (>10) journals (e.g. *Science Translational Medicine*, *Nucleic Acids Research*, *Diabetologia* & *Journal of Experimental Medicine*). Notably, 13 of the peer-reviewed publications emanated from collaborations between different groups within the Department of Biology, and four were the result of collaborations with other Departments at Maynooth University. These collaborations highlight the multidisciplinary nature of the research in the Department of Biology.

### Funding highlights

- Five major grants (funding >€100,000 total costs), including the following examples:
  - Dr Özlem Sarikaya Bayram; SFI IRC pathways project; €425,000
  - Dr John Devaney; IRC COALESCE; €236,452
  - Professor Fiona Walsh; Soil EIP-AGRI; €190,800
- Seven postgraduate scholarships (five IRC PhD scholarships, two Teagasc Walsh fellowships)



Dr Özlem Sarikaya Bayram, Department of Biology

### Significant Conferences

Members of the Department of Biology hosted the largest ever Irish Society for Immunology annual conference (220 delegates). The conference had >40 presentations from invited international and national speakers, 122 poster presentations from early career researchers, and 15 industry sponsors.



Members of the Department of Biology hosted the largest ever Irish Society for Immunology annual conference (220 delegates)

### Collaborations

Members of the Department of Biology engaged in a large number of collaborations with other national research institutions, such as TCD, UCD, UCC, NUIG, Teagasc, St James's Hospital, St Vincent's University Hospital, Cavan/Monaghan Hospital, as well as local authorities such as the Kildare County Council. Research groups in Biology also engaged with many European research institutions in:

- Germany (Jülich Research Centre, University of Mainz, TU Dresden)
- Austria (University of Natural Resources and Life Sciences, Vienna; TU Vienna)
- France (Environment and Plant Protection (INRA); Environment and Plant Protection (INRA))
- UK (Rothamsted; John Innes Centre; University of Dundee; Swansea University, University of Birmingham, Imperial College London; Cardiff University; University of Edinburgh)
- Norway: University of Stavanger
- USA (University of Colorado, Harvard Medical School, the National Autonomous University of Mexico, the Smithsonian Institution)
- Japan (University of Kyoto)
- Senegal (Senegalese Institute of Agricultural Research).

### Commercialisation Achievements

- One Patent Application
- Two Licences/Letter of Access

### Contributions towards Public Policy

- Input on national clinical guidelines for obesity management (Dr Andrew Hogan)

# Faculty Highlights

## Faculty of Science and Engineering

### Summary of External Engaged Research Highlights

Several researchers have been involved in consultancy projects including public institutions such as the National Parks and Wildlife Service and several Ireland-based companies including Access to LC-MS facility by external partners TCD and TUS and four consultancies to Teagasc, National Parks & Wildlife Service and food/drink industry.

Members are involved in partnerships with educational bodies such as the Biology Education Special Interest Group (SIG) funded by the Educational Studies Association of Ireland (ESAI).

The SIG aims to address:

- (i) the gap between policy and practice in practical biology teaching in Ireland;
- (ii) how to give teachers the skills needed to foster real inquiry-led biology teaching;
- (iii) the important role that inquiry-led biology teaching can play in sustainability and biodiversity education.

Members of the Department also engaged with the general public and local organisations. These activities have strongly promoted the role of the Department of Biology and Maynooth University. Examples included:

- i. participation in NeuroInsight IPPOSI Dragon's Den
- ii. Launch of "An illustrated exploration of autism genomics research processes" videos on our website and YouTube for World Autism Awareness Day
- iii. Giving talks to the American Partnership for Eosinophilic Disorders (Patient advocacy group)
- iv. collaborating with the National Liver Transplant Centre and the Hepatopancreaticobiliary (HPB) Group at St Vincent's University Hospital
- v. Women Blazing a Trail in Stem – Perspectives from Sweden and Ireland, St Brigid's Day, Department of Foreign Affairs, Irish Embassy in Sweden
- vi. Science Communication Research Activity for displaced Ukrainian community, Maynooth University
- vii. Collaborating with Irish Coalition for People living with Obesity (Patient advocacy group)
- viii. Collaborating with National Weight Management Service

### Chemistry

Research outputs from the Department of Chemistry (14.5 academic staff) continue to be strong over the reporting period. The Department listed 35 publications in international peer-reviewed journals (research articles and reviews) in 2022. There is a high level of external engagement in research in the Department. Many of these papers have co-authors from Irish (e.g. TCD, UCD, NIBRT and TUD) and international institutions (based in countries such France, Spain, Korea, Taiwan, Brazil, UK, China and Italy). The publications cover a broad range of areas highlighting the inter-disciplinary nature of Departmental research.



Dr Elisa Fadda, Department of Chemistry, Hamilton Institute and Kathleen Lonsdale Institute for Human Health Research

### Publications

Publications in high impact journals include Dr Elisa Fadda's publication on *Fine-tuning the spike: role of the nature and topology of the glycan shield in the structure and dynamics of the SARS-CoV-2 S* in Chemical Science. Dr Diego Montagner's and Dr Trinidad Velasco-Torrijos' publication on *Metal-Tyrosine Kinase Inhibitors: Targeted metal-drug conjugates* in Coordination Chemistry Reviews and Dr Tobias Krämer was a co-author on a paper on *Gauging the donor strength of iron (0) complexes via their N-heterocyclic carbene gold(I) adducts* in Chemical Communications.

### Invited Guest Editors

Professor Carmel Breslin was a guest editor for a focus issue on *Electrochemistry of Functionalised Carbon Materials (EFCARBON 2022)* published in Electrochimica Acta. Dr Eithne Dempsey was a guest editor for focus issues *Women in Electrochemistry* and *Women in Sensing* in the J Electrochemical Society and Sensors and Actuators Reports respectively. Dr Rob Elmes was a guest editor for a Special Issue on *Supramolecular Anion Recognition: Principles and Applications* published in MDPI Chemistry.

### Invited Book Chapters

Professor Frances Heaney was invited to contribute a book chapter to *University Chemistry Teaching in the 21<sup>st</sup> Century*.

## Postgraduate Students

11 postgraduate (PhD and masters) students commenced their studies in the 2021–22 academic year, including two IRC Postgraduate scholars, one John & Pat Hume Scholar, and students three funded through SFI awards. We had a number of international student visitors including three students from the US (whose visits were arranged by Global experiences) and one from Federal University of Uberlândia, Brazil who all visited Professor Carmel Breslin's lab. Dr Eithne Dempsey had a PhD student visitor from the University of the Western Cape, Cape Town, South Africa under an IRC New Foundations mobility project. Postgraduate students from Munster University, Germany and Parma University, Italy had visits hosted in the laboratory of Dr Diego Montagner. Dr Rob Elmes hosted students from University of Cagliari, Italy as part of the Erasmus+ Program and Turkey funded by Scientific and Technological Research Council of Turkey. Students from the University of Florence, Italy, University of Bristol, UK and Consejo Superior de Investigaciones Científicas, Madrid, Spain visited the laboratory of Dr Trinidad Velasco-Torrijos to complete Short Term Scientific Missions under the COST Action GlycoNanoProbes.

## External Engaged Research

Engaged research projects that have been initiated/continued in 2021–2022 are as follows.

- Professor John Stephens is a supervisor on an IRC Government of Ireland Postgraduate Scholarship co-funded with Pfizer.
- Professor Carmel Breslin is carrying out consultancy work for CroiValve.
- Dr Roisin O'Flaherty has Enterprise partnerships with NIBRT and Agilent and has a collaboration with the charity Cystinosis Ireland.
- Dr Robert Elmes has an ongoing collaboration with Janssen/SFI SSPC.
- Dr Fergal Byrne is working with the sustainable chemistry consultancy firm Addible.
- Boehringer Ingelheim Pharma GmbH & Co. KG (Germany): MU signed a commercialisation agreement (Trial Licence) with Boehringer in October 2021.
- Ulysses Neuroscience Ltd. (Ireland): MU signed commercialisation agreements with Ulysses Neuroscience in November 2021. The company accessed (under a Service Agreement) and used SFI funded infrastructure (Award 12/RI/2346/4).
- Bioanalytical Systems, Inc. (USA, BASi Research Products): MU signed a commercialisation agreement (Trial Licence) with BASi in September 2022.
- COMPASS Pathways Ltd. (UK): MU signed a research agreement with COMPASS Pathways and the University of Bristol in May 2022.
- W.L. Gore & Associates (Germany, Ireland and USA): Staff from W.L. Gore visited MU in November 2021 (Andrea Doernhoefer, Germany & Daniel O'Shea, Ireland) and September 2022 (Nathan Friedman, Bernadette Parsons and Chris Wiley, USA).

Researchers from the Department delivered a number of important talks and were involved in external scientific bodies and outreach activities;

- Dr Tobias Krämer gave an invited talk at the 12<sup>th</sup> Congress of WATOC, Vancouver, July 2022 on *A Shape-changing Rh (CNC) Catalyst*
- Dr Eithne Dempsey gave an invited talk at 7<sup>th</sup> International Conference on Molecular sensors and Login Gates July 22.
- Dr Robert Elmes gave an invited seminar at the Scripps Institute in La Jolla, California in December 2021. He was also one of the nominated Irish speakers at The Young Investigator Workshop 2021/2022 in Lisbon, Portugal, as part of the EuChemS Division of Organic Chemistry in August 2022.

## Awards

Professor Carmel Breslin was awarded the Eva Philbin Award 2022, Institute of Chemistry, Annual Award for Chemistry. "This award is for a practising chemist working in Ireland, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner."



Professor Carmel Breslin, Department of Chemistry and Kathleen Lonsdale Institute for Human Health Research was awarded the Eva Philbin Award 2022

Dr Rupa Kasturi Palanisamy, was awarded a Government of Ireland Postdoctoral Fellowship. Dr Robert Elmes received his Czarnik Emerging Investigator Award from the Molecular Sensors and Logic Gates International Committee.



Dr Robert Elmes (third from left), Department of Chemistry, received a Czarnik Emerging Investigator Award

# Faculty Highlights

## Faculty of Science and Engineering

### Postgraduate student awards

Colm McKeever was the winner of the 2<sup>nd</sup> prize for an excellent presentation of particularly significant and innovative analytical research, 18<sup>th</sup> International Conference on Electroanalysis, 5–9 June 2022, Vilnius, Lithuania.



Department of Biology Postgraduate student Colm McKeever won 2<sup>nd</sup> prize at 18<sup>th</sup> International Conference on Electroanalysis, Vilnius.

Eoin Moynihan and Kyle Doherty were awarded for the best poster presentation at 3<sup>rd</sup> Medicinal Chemistry Ireland Conference, Galway 17<sup>th</sup> June 2022. Clara Evans and Farhad Mohammed each won poster prizes at the ICI Chemistry Colloquium at UCD in June 2022. Hua Tong won the MDPI poster prize at the 7<sup>th</sup> International Conference on Molecular sensors and Login Gates July 2022.

### Computer Science

In the period 2021/22 the Department of Computer Science had seven professors, four senior lecturers, 18 full-time lecturers including MIEC affiliations, and one tutor. Additionally, one professor associated with the Department works in the Hamilton Institute and one professor works with NCG. There were also three postdoc researchers, 21 full-time PhD students and two MSc by research students. The total number of publications was 72. This can be divided into one published report, one conference proceedings, 39 peer-reviewed conference publications, 22 peer-reviewed journal publication, four archive open access publications, two editorials, one survey, and two RTÉ brainstorm articles. Two Maynooth University computer scientists were listed in the top 32 computer scientists in the country according to the December 2021 edition of Research.com's list (Professors Pearlmutter and Naughton).



Professor Barak Pearlmutter, Department of Computer Science, Hamilton Institute and Assisting Living and Learning (ALL) Institute

### Publications

Highlight publications included:

- S. Ramachandran, J. Horgan, G. Sistu, J. McDonald, Fast and Efficient Scene Categorisation for Autonomous Driving using VAEs, in Proc. of Irish Machine Vision and Image Processing Conference (IMVIP), pp. 9-16, Aug 2022. Jonathan Campbell Best Oral Paper Award.
- R. McDonnell, K. Zibrek, E. Carrigan, and R. Dahyot, Model for predicting perception of facial action unit activation using virtual humans, *Computers & Graphics*, Volume 100, 2021, Pages 81-92, Graphics Replicability Stamp Initiative (GRSI) Best Paper 2021 Award
- E. Galván, L. Trujillo, and F. Stapleton, Semantics in Multi-objective Genetic Programming, *Applied Soft Computing*, Volume 115, 2022.
- H. Wu, QMaxUSE: A Query-based Verification Tool for UML Class Diagrams with OCL Invariants. In *Fundamental Approaches to Software Engineering: 25<sup>th</sup> International Conference, FASE 2022, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2022, Munich, Germany, April 2–7, 2022*.
- L. Juhász and P. Mooney, "I Think I Discovered a Military Base in the Middle of the Ocean"—Null Island, the Most Real of Fictional Places, *IEEE Access*, vol. 10, pp. 84147-84165, 2022.
- R. Miller, and P. Maguire, A real-time mix-adjusted median property price index enabled by an efficient nearest neighbour approximation data structure, *Journal of Banking and Financial Technology*, 6, pp. 135–148, 2022.
- Mc Carthy T, Accelerating the Potential of Drones for Local Government International Best and Emerging Practice Report. Project Report. Smart Dublin, DCC, Dublin, 2022.
- Upreti, D., McCarthy, T., O'Neill, M., Ishola, K., & Fealy, R. (2022). Application and Evaluation of a Simple Crop Modelling Framework: A Case Study for Spring Barley, Winter Wheat and Winter Oilseed Rape over Ireland. *Agronomy*, 12(11), 2900.
- Casal, G., Cordeiro, C., & McCarthy, T. (2022). Using satellite-based data to facilitate consistent monitoring of the marine environment around Ireland. *Remote Sensing*, 14(7), 1749.
- J. Lambert, R. Monahan, and K. Casey, Accidental Choices—How JVM Choice and Associated Build Tools Affect Interpreter Performance. *Computers*, 11(6):96, 2022.
- M Farrell, R. Monahan, J. F. Power – Building Specifications in the Event-B Institution
- Imcs:7286 – Logical Methods in Computer Science, 2022, Volume 18, Issue 4 – [https://doi.org/10.46298/lmcs-18\(4:4\)2022](https://doi.org/10.46298/lmcs-18(4:4)2022)
- S. Chakraborty, A. Yaseen, J. Timoney, V. Lazzarini, and D. Keller, Adaptive touchless whole-body interaction for casual ubiquitous musical activities, in *Proc of the International Computer Music Conference, Limerick, Ireland, 2022*.
- M. Noone, A. Thompson, and A. Mooney, An Overview of the Redevelopment of a Computer Science Support Centre and the Associated Pedagogy Impacts. *All Ireland Journal of Higher Education*, 13(2), 2021.



- M. Noone, A. Mooney, A. Thompson, F. Glavin, M. Ward, K. Nolan, ... & D. Williams. A Review of the Supports Available to Third-Level Programming Students in Ireland. *All Ireland Journal of Higher Education*, 14(2), 2022.
- I Kostitsyna, C Wood, D Woods. Turning machines: a simple algorithmic model for molecular robotics. *Journal of Natural Computing*. Springer 2022. Open Access.
- Rasool Chaudhry, S., Tabatabaee Malazi, H., Dhara, S., Kazmi, A., and Clarke, S., Towards Context-aware Information Dissemination in Autonomous Networks of Vehicles, *IEEE Communications Standards Magazine*. 7(2):8-15, (2023) IEEE.
- Khazael, B., Vahidi-asl, M., and Tabatabaee Malazi, H., Geospatial Complex Event Processing in Smart City Applications, *Simulation Modelling Practice and Theory*, 122 (2023):102675 Elsevier.
- Tabatabaee Malazi, H., Chaudhry, S.R., Kazmi, A., Palade A., Cabrera, C., White, G., and Clarke, S. Dynamic Service Placement in Multi-access Edge Computing: A Systematic Literature Review. *IEEE Access* 10 (2022): 143150-143165
- Elahi, F., Fazlali, M., Tabatabaee Malazi, H., and Elahi, M. Parallel Fractional Stochastic Gradient Descent with Adaptive Learning for Recommender Systems, *IEEE Transactions on Parallel and Distributed Systems*, 2022.
- Kazmi, A., Rasool Chaudhry, S., Tabatabaee Malazi, H., Dhara, S., and Clarke, S., Interoperable Internet of Things for Smart Transportation Systems in Circular Cities, *Computer*, 55(12): 86-97, (2022), IEEE
- P. Schelkens, A. Ahar, A. Gilles, R. K. Muhamad, T. J. Naughton, C. Perra, A. Pinheiro, P. Stepien, and M. Kujawinska, "Compression strategies for digital holograms in biomedical and multimedia applications," *Light: Advanced Manufacturing* 3, 40, 2022.

#### Professor John McDonald

Professor John McDonald had a number of engagements and responsibilities including:

- Associate Editor 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- Programme Committee Irish Machine Vision and Image Processing Conference 2022 (IMVIP)
- Professor John McDonald and Saravanabalagi Ramachandran co-organised the CVPR OmniCV Workshop and WoodScape Object Detection Challenge 2022.

#### The OmniCV Workshop

Professor McDonald and Saravanabalagi Ramachandran co-organised the CVPR OmniCV Workshop and the WoodScape Object Detection Challenge 2022. The workshop brought together some of the world's leading researchers to present their latest research in the development of computer vision techniques for omnidirectional cameras. The WoodScape Object Detection Challenge which was run as part of the workshop involved 120 global teams competing to advance the state of the art in object detection on fisheye images, based on the Valeo WoodScape

dataset. The event was co-organised with researchers from Valeo Vision Systems, Qualcomm Technologies Inc., Yembo.ai, Spleenlab.ai, Ilmenau University of Technology, Wormpex AI Research, Facebook, and University of North Carolina at Chapel Hill. See the OmniCV2022 Website (<https://sites.google.com/view/omnicv2022>).



Professor John McDonald and Saravanabalagi Ramachandran co-organised the CVPR OmniCV Workshop

#### Newly Awarded Project

NeRF-XR (SFI Lero/Valeo) – Neural Rendering for Autonomous Vehicles – with Professor Tim McCarthy

#### Professor Tim McCarthy

##### Advisory Boards/Expert Groups

- Continuing as national delegate on EU Copernicus EO Committee
- Continuing as a member of the IAA UAS Advisory Council 2021.
- Continuing as Chair of Society of Chartered Surveyors Ireland (<https://scsi.ie/>) "UAV Working Group"

##### Ongoing Projects

- Terrain-AI (SFI) GHG Emissions – with Professor Rowan Fealy
- U-Flyte (SFI) Drones
- MaCoBIOS (H2020) Coastal Ecosystems
- FCUP Copernicus (H2020) EO Exemplars
- Predict (SFI) Dublin Bay Environmental with Professor Brian Kelleher (PI, DCU)
- HD-Maps (SFI LERO), License (PMS Ltd) for ML Road Surface Crack Detection in prep., with Professor John McDonald Release of EoDataHub.com project (ESA/FPCUP) - [www.maynoothuniversity.ie/news-events/minister-damien-english-launches-ireland-s-copernicus-academy-and-relay-maynooth-university](http://www.maynoothuniversity.ie/news-events/minister-damien-english-launches-ireland-s-copernicus-academy-and-relay-maynooth-university)
- Release of Drone Innovation/Governance Report project (DCC) – [www.irishtimes.com/technology/2022/06/14/drone-technology-has-potential-but-concerns-need-to-be-addressed/](http://www.irishtimes.com/technology/2022/06/14/drone-technology-has-potential-but-concerns-need-to-be-addressed/)
- National Road Speed-limit Review Project. Open-Source Release for updated Safe Profile Velocity (Vsp) toolset (currently in use by Department of Transport)

# Faculty Highlights

## Faculty of Science and Engineering

### Newly awarded projects

- Co-Pilot-AI (SFI) t: SFI Future innovator Prize (Defence challenge) with Professor John McDonald & Dr Charles Markham
- EO Pathfinder (ESA)
- Framework for Human Robot Cognition Interaction (SFI LERO) Collaborative robots with Professor John McDonald
- MADsSens (SFI LERO) Multimodal Aerial/Drone Sensor Data Capture & Analysis for Real-World Environments, Collaborative agreement (Industry Partner = Airbus, Germany) with Professor John McDonald

### Awards

- T-AI won an AI Award for 'Best Application of AI to achieve Social Good' Sponsored by IDA Ireland 24<sup>th</sup> Nov 2021 – with Professor Rowan Fealy – [www.linkedin.com/posts/tim-mccarthyrdti\\_aiawardsirl-aiireland-aiforgood-activity-6869629259116290048-060g/](https://www.linkedin.com/posts/tim-mccarthyrdti_aiawardsirl-aiireland-aiforgood-activity-6869629259116290048-060g/)
- T-AI won US-Ireland Research Award 17<sup>th</sup> May 2022 (RIA/American Chamber) – with Professor Rowan Fealy – [www.maynoothuniversity.ie/news-events/mu-terrain-ai-and-microsoft-ireland-win-us-ireland-research-innovation-award](https://www.maynoothuniversity.ie/news-events/mu-terrain-ai-and-microsoft-ireland-win-us-ireland-research-innovation-award)

### Workshop/Symposia

- Ireland Space Industry Day May 2022 ([www.maynoothuniversity.ie/national-centre-geocomputation-ncg/events/ireland-space-industry-day](https://www.maynoothuniversity.ie/national-centre-geocomputation-ncg/events/ireland-space-industry-day))
- Invite to present as key-note speaker/panelist at 4 x Events
- Various (~12) workshops (Industry, Government, NGOs)

### Outreach Activities (together with CS JMcD/CM & MU colleagues)

- DCC/MU Drone Information/Demo Day (June 2022) – <https://youtu.be/tkOR5L0xAUc?t=92>

### Media Articles

- RTÉ Brainstorm CoPilot-AI – [www.rte.ie/brainstorm/2022/1114/1335988-wildfires-irish-air-corps-data-technology-copilotai/](https://www.rte.ie/brainstorm/2022/1114/1335988-wildfires-irish-air-corps-data-technology-copilotai/)
- The Irish Times (T-AI) – [www.irishtimes.com/business/technology/through-mapping-ireland-s-terrain-one-company-seeks-to-reduce-carbon-levels-1.4743006](https://www.irishtimes.com/business/technology/through-mapping-ireland-s-terrain-one-company-seeks-to-reduce-carbon-levels-1.4743006)
- Silicon Republic – three articles (EO, CoPilot-AI, Drones)
- LinkedIn Posts (# of views listed after each post below)
- CoPilot Exercise (Sept 2022), 9k – [www.linkedin.com/posts/tim-mccarthyrdti\\_earthobservation-drones-machinelearning-activity-6984165483402911745-NR5U?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_earthobservation-drones-machinelearning-activity-6984165483402911745-NR5U?utm_source=share&utm_medium=member_desktop)
- Drone Innovation (July 2022) 3.8k – [www.linkedin.com/posts/tim-mccarthyrdti\\_maynooth-university-faculty-of-social-sciences-activity-6942878204751724545-1doS?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_maynooth-university-faculty-of-social-sciences-activity-6942878204751724545-1doS?utm_source=share&utm_medium=member_desktop)
- EoDataHub Launch (May 2022) 2.1k – [www.linkedin.com/posts/tim-mccarthyrdti\\_maynooth-university-faculty-of-social-sciences-activity-6935268114867662848-S63p?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_maynooth-university-faculty-of-social-sciences-activity-6935268114867662848-S63p?utm_source=share&utm_medium=member_desktop)

- T-AI RIA/AmCham Award (May 2022) 2.9k – [www.linkedin.com/posts/tim-mccarthyrdti\\_terrainai-amchamria-amchaminnovate-activity-6933829956628078592-4v4N?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_terrainai-amchamria-amchaminnovate-activity-6933829956628078592-4v4N?utm_source=share&utm_medium=member_desktop)
- CoPilot-AI Project (Feb 2022) 3.5k – [www.linkedin.com/posts/tim-mccarthyrdti\\_mu-researchers-to-devise-solutions-for-sfi-defence-activity-6900051289796157440-Z9QN?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_mu-researchers-to-devise-solutions-for-sfi-defence-activity-6900051289796157440-Z9QN?utm_source=share&utm_medium=member_desktop)
- T-AI AI Award (Nov 2021) 3.7k – [www.linkedin.com/posts/tim-mccarthyrdti\\_aiawardsirl-aiireland-aiforgood-activity-6869629259116290048-060g?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_aiawardsirl-aiireland-aiforgood-activity-6869629259116290048-060g?utm_source=share&utm_medium=member_desktop)
- Collaborative Robots (Sept 2021) 8.1k – [www.linkedin.com/posts/tim-mccarthyrdti\\_robotics-drones-machinelearning-activity-6860256989000327168-mxON?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/tim-mccarthyrdti_robotics-drones-machinelearning-activity-6860256989000327168-mxON?utm_source=share&utm_medium=member_desktop)



Professor Rozenn Dahyot, Department of Computer Science and Hamilton Institute

### Professor Rozenn Dahyot

- Continuing on the management committee for the European Cost action CA21163 – Text, functional and other high-dimensional data in econometrics: New models, methods, applications (HiTEc).
- Continues as a PI with the SFI Adapt Centre and is also a PI with the SFI I-Form Centre.

### Newly Awarded Projects

- Smart Hangar: SFI Future Innovator Prize (Defence challenge)
- ADAPT Phase II – platform project, SFI.

### Professor Rosemary Monahan

Professor Rosemary Monahan was leading a number of ongoing projects that included:

- MAIVV: Modular AI Verification and Visualisation (Science Foundation Ireland/Frontiers for the Future, 2021–2025)
- VALU3S: Verification and Validation of Automated Systems' Safety and Security (H2020 ESCEL JU Research and Innovation Action, 2020–2023) which designs and implements process workflows and tools for improving the time and cost needed in verification and validation of

automated systems. It brings together a consortium with partners from 10 different countries, amounting to a mix of 25 industrial partners, six leading research institutes, and 10 universities. Funded by H2020 and Enterprise Ireland.

- InSPECT Introducing the Science of Problem-solving through Education in Computational Thinking. (SFI Discover, 2019-June 2022)
- CoCoA: Co-create Collaborate Activate – Advancing Computational Thinking Education (SFI Discover, 2021–June 2023). This provided teacher training workshops in Computational Thinking, resources for students/teachers, school visits, the Bebras National Competition, and development of our community of practice.

In addition to having an editor role in the Science of Computer Programming Journal, Professor Monahan is the MU representative on INGENIC (Irish Network for Gender Equality in Computing), a committee member of ACM SIGCSEire and Hibernia ACM-W chapters, as well as a member of steering committees for three international conferences, a program committee member for four international conferences and program co-chair for the 17<sup>th</sup> International Conference for integrated Formal Methods 2022.

### Professor Thomas J. Naughton

Publications included an invited presentation at the annual Optica Digital Holography and Three-Dimensional Imaging 2022 conference, the most prestigious conference in the field of digital holography, in Cambridge, UK during August 2022, a journal article in *Light: Advanced Manufacturing* (doi: 10.37188/lam.2022.040), and conference papers in ACM ITiCSE 2022 and ACM UKICER 2022.

Activity during this period included co-PI on InSPECT (see Professor R Monahan) and co-PI on CoCoA (see Professor R Monahan).

Professor Naughton is a member of the international standardisation ISO/IEC JTC 1/SC 29/WG 1 (ITU-T SG16) JPEG Joint Photographic Experts Group and has an ongoing collaboration with the Faculty of Medicine, University of Oulu, Finland, on early cancer detection using digital holography.

### Dr Peter Mooney

Dr Peter Mooney had a number of engagements and responsibilities.

#### Newly Awarded Projects

- Crowdsourced Knowledge to drive SME Circular Economy Engagement (CSCEE), Environmental Protection Agency, with Dr Edgar Galvan, June 2022, Duration 24 months.
- A Value Centric Approach for Circular Businesses to reduce Virgin Material in the construction sector (VISION), with Dr Edgar Galvan, June 2022, Duration 24 months.
- CircAI Project (funded by the Environmental Protection Agency €150,000). Dr Muhammad Salman Pathan started as a Senior Postdoctoral Researcher in May 2022.
- “Mindful Computing” with Dr Ralf Bierig, MUSSI (Maynooth University Social Science Institute), April 2022, duration 12 months.



Dr Peter Mooney, Department of Computer Science and Hamilton Institute

He had three invited talks in the period.

*International Journal of GIS* (Highest ranked GIS journal) – invited as a Special Issue editor (with experts from the Hebrew University of Jerusalem and University of Heidelberg). SI Title “Crowdsourced Geoinformation in the study of Natural Hazards and Disasters”.

Dr Liadh Kelly is Co-chair of the international CLEF eHealth lab series.

Dr Hao Wu received funding for a SFI Ulysses project with two French collaborators: Dominique (LORIA/INRIA) and Zheng Cheng (LORIA/INRIA). The title of the project was: Cyclone, a new language for verifying/testing graph-based structures. The application of this language can be to prove safety of car/train controller systems.

Dr Phil Maguire was working half-time for DLT Capital, developing intercontinental microwave networks between cloud-based matching engines, applying deep learning edge AI to identify high-frequency trading patterns and optimizing order execution by streamlining cloud server kernels.

Dr Edgar Galvan was ranked, by University College London, as one of the all-time top 1% researchers in Genetic Programming (ranked 72 out of 16,342 researchers). He wrote seven Journal papers and nine conference papers in this period. The conferences include several top-A-ranked conferences including GECCO, CEC, WCCI, SSCI. His publications in 2022 and 2021 SSCI were the only works accepted from Ireland (50+ countries represented in the SSCI conference).

#### Newly Awarded Projects

- Crowdsourced Knowledge to drive SME Circular Economy Engagement (CSCEE), Environmental Protection Agency, with Dr Peter Mooney, June 2022, Duration 24 months.
- A Value Centric Approach for Circular Businesses to reduce Virgin Material in the construction sector (VISION), with Dr Peter Mooney, June 2022, Duration 24 months.
- EPA, ‘circAI: Artificial Intelligence and the Circular Economy’, Co-PI, €142,000, 2022-2025

#### Expert proposal reviewer for:

- Dutch Research Council 2022
- Marsden Fund New Zealand 2022

# Faculty Highlights

## Faculty of Science and Engineering



Professor Damien Woods, Department of Computer Science and Hamilton Institute

### Professor Damien Woods

#### Newly awarded grants (€1.16m)

- €604k SFI Frontiers for the Future Project (FFP) to carry out research on nucleation and growth in DNA tile-based self-assembly.
- €551k SFI/IRC Pathways grant to Senior Postdoc Dr Trent Rogers, mentored by Professor Woods. Dr Rogers is a theoretical computer scientist, his work will form the basis for implementing DNA computers/nanostructures via temperature control.
- The group is running €4.16m in awards, including €2.35m European Research Council (ERC) since 2018; and €656k SFI award to support the ERC (via RDO/VPR offices).

#### Publications

One journal paper and three accepted conference submissions to the DNA28 conference “Track B” (for wet-lab-based experimental work; only one other group achieved three accepted Track B submissions—Qian group, Caltech).

#### Talks and Committees

Three keynote/invited talks, two PhD/HDR committees, two conference Programme Committees, and continued community-leading role on Steering Committee for International Conference on DNA Computing and Molecular Programming.

#### Expansion

Five undergraduate students joined the group for summer, one of which, Ahmed Shalaby, stayed on as a PhD student registered in Computer Science.

#### Outreach

Interview on the Molpigs podcast, a forum for molecular programming. Hosted international visitors/speakers from Johns Hopkins, UC Davis, TU Eindhoven, UT Austin, and Equal1 Labs (industry), also as Hamilton Institute seminars speakers.

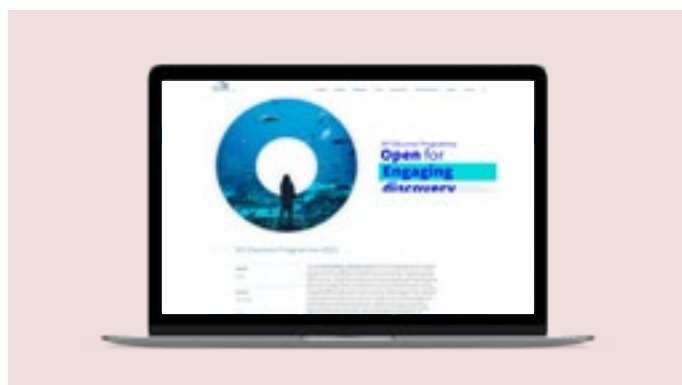
### Engaged Research

The PACT group in the Department (Dr Aidan Mooney, Professor Rosemary Monahan, Professor Thomas Naughton, Dr Kevin Casey, Taina Lehtimäki, Joseph Duffin, Dr Liadh Kelly) are working on externally engaged research to support primary and secondary teachers to introduce computational thinking into (and enhance STEM generally) in their classrooms. Research is conducted into the open problem of how best to teach computer science at primary level. This €370k budget project (InSPECT) is partially funded through the Science Foundation Ireland Discover Programme with a €273k grant.

The PACT research group also has the SFI Discover project CoCoA: Co-create Collaborate Activate – Advancing Computational Thinking Education. This provides for CPD teacher training workshops in Computational Thinking, resources for students/teachers, school visits, the Bebras National Competition, and the development of our community of practice. Taina Lehtimäki works on this project as a tutor and manages much of the interactions with the schools.

Professor Tim McCarthy was part of a large team that produced a dataset gathered from a self-administered online survey on public perceptions about climate change, the value of marine and coastal ecosystems, human impacts on them and their management. The survey was released in four languages, English, French, Spanish and Italian. The final dataset comprised a total of 709 respondents. A Version 2 of this dataset converted all responses in English.

Professor Naughton is a member of the international standardisation ISO/IEC JTC 1/SC 29/WG 1 (ITU-T SG16) JPEG Joint Photographic Experts Group to develop the first ISO/IEC industry-supported compression standard for digital holograms.



The PACT research group's InSPECT and CoCoA: Co-create Collaborate Activate projects are supported by SFI's Discover Programme

## Electronic Engineering

There are in total 10 permanent staff members in the Department. With new members joining Professor Gerard Lacey, Dr Erivelton Nepomuceno, and Dr Mustafa Kishk joining the Department during the reporting period. Dr Mustafa Kishk and Dr Nepomuceno were strategically hired as strong additions to the wireless communications research group and the COER research group. Professor Lacey was hired to augment the research direction of the Department in robotics and automation. Most staff are research active.



Professor Gerard Lacey, Department of Electronic Engineering and Hamilton Institute

### Highlights for the academic year 2021–22 included:

- Publication numbers: 42 journal papers, another 29 conference papers, two book chapters and one book with the majority of publications in Q1 journals or major conferences.
- Continued high performance of COER group led by Professor John Ringwood with EU, SFI/NSF and MaREI awards, a team of 25–30 researchers and high publication numbers.
- Continued participation in high profile SFI Centres MaREI and CONNECT and the Foundations of Data Science and ADVANCE Centres for Research Training. The wireless group received several new awards from CONNECT during this reporting period including funding for a new project and lab equipment in Quantum Communications, which is a new research direction for the Department.
- Highly prestigious Science Foundation Ireland Frontiers for the Future award for Professor John Ringwood to develop wave energy technology (total value €1,074,213).
- Dr Seamus McLoone was awarded a Commercialisation Fund (total value of award €426,460) by Enterprise Ireland to further improve and commercialise the UniDoodle student response system.
- Professor Lacey was awarded funding from Science Foundation Ireland Defence Challenge fund, project Smart Hangar Project (total value of award €228,610).

The Department's two largest research groups are integrally involved in the Science Foundation Ireland Centres CONNECT, ADVANCE and MaREI in the areas of Future Networks & Communications and Energy, Climate and Marine. These groups received funding from the centres during the reporting period.

There were 26 grant applications made during the reporting period with a total value of €8.25m. During the same period six grant applications were successful with a value of €2.18m, representing a very successful year for the Department. Overall, there is a high level of funding diversity with EU grants active during the reporting period, several SFI grants including a large Frontier for the Future awards as well Enterprise Ireland commercialisation funding as well as PhD funding from other sources.

Notable funding successes in the reporting period include a highly prestigious Science Foundation Ireland Frontiers for the Future award for Professor John Ringwood to develop wave energy technology (total value €1,074,213) an Enterprise Ireland Commercialisation Fund award for Dr Seamus McLoone (total value of award €426,460)

### The Centre for Ocean Energy (COER) Group

The COER group commenced or continued work on several externally funded projects, with a research team of 35. The aforementioned SFI Frontier for the Future award will further enhance the research capacity of the group. It should also be noted that Dr Erivelton Nepomuceno has now integrated into the COER group and is managing an SFI Frontiers Project which started in this reporting period.

During the academic year 2021–2022, COER was awarded three new prestigious grants which are due to commence in late 2022 and will see the COER group expand by 10 researchers in total. These projects have attracted top academic and industrial collaborators (NREL, CorPower, Virginia Tech, Danish Technological University, University of Illinois, Michigan University, Politecnico di Torino, Queen's University Belfast, Floating Power Plant etc.). In addition to this, the group saw Thalita Nazare begin her John & Pat Hume WISH scholarship. This was part of a concerted effort to encourage more STEM women researchers which also included five female interns. The group was the recipient of a number of awards for publications and public engagement and has extended its communications and public engagement reach. The Centre director, Professor John Ringwood, was also invited to act as keynote and plenary speaker at several international events.

# Faculty Highlights

## Faculty of Science and Engineering

### New grants in 2021–22 include:

- SFI Frontiers for the Future: Economic wave energy through technical innovation (SeaChange). €1,074,212.
- NSF/SFI/DfE – LEAP-HI: US-Ireland R&D Partnership: Control Co-Design for Ocean Wave Energy Conversion, Total value \$1.3m (value for COER €452,251). (Partnership with University of Michigan, Virginia Tech and QUB).
- SFI Frontiers for the Future: Simultaneous stabilisation and wave energy harvesting for a floating offshore wind/wave platform. €587,975
- MaREI public engagement award €725 5.
- International Federation of Automatic Control (IFAC) Activities Award €5k

Total new funding: €2,120,163

### The Wireless Research Group

The Telecommunications Research Group in Department of Electronic Engineering has continued to make significant contributions to the field of high frequency wireless communications. Some of the notable achievements include:

- Six conference papers and one Journal paper (IEEE TMTT)
- A fundamentally new artificial neural network structure that improves 5G base station performance. Successfully demonstrated to provide a more accurate and computationally more efficient means of correcting signals transmitted from cellular network base stations.
- A best student paper award at the 19<sup>th</sup> RIA/URSI Research Colloquium on Radio Science and Communications in October 2022. This project also successfully demonstrated a high data rate optical wireless communication link.
- Recruitment of a Research Fellow, Galyna Otlivanska who is analysing the business models for cellular network operations in Ireland. 5G deployments have stalled globally, with possibly the largest challenge being economic as opposed to technological.
- The group contributed to both SFI Defence Forces Challenge projects in Maynooth. Co-Pilot AI and Smart Hangar, with Co-Pilot AI ultimately winning the challenge with an integrated platform for coordinating multi-agency emergency responses e.g. forest fire fighting. Dr John Dooley worked on the secure and robust wireless communication links between air (helicopter/drone) and ground crews.
- Graduation of PhD student, now working in SuperNode Ltd. – a company developing solutions for superconductor interconnects for electricity power grids.

Successful PhD student internship in NXP (formerly Philips Semiconductors), Nijmegen.

### Engaged Research

- Launch of Unidoodle – first native mobile classroom response system ([www.unidoodle.com/](http://www.unidoodle.com/))
  - Photonics group has an ongoing collaboration with TE Connectivity
  - The SMART HANGAR project involving Professor Gerard Lacey together with other team members Professor Rozenn Dahyot (CS, Maynooth University), Dr John Dooley (EE, Maynooth University) DefOrg Liaison Captain Tom Mullarkey (Irish Air Corps) and Dr Joan Cahill (Psychology, TCD) was funded under the SFI-Defence Organisation Innovation Challenge to assist in, or potentially automate, manoeuvring of aircraft between a hangar and apron. Smart Hangar will develop a co-operative system that will allow a human controller and robot to work together to manoeuvre aircraft. [www.maynoothuniversity.ie/robotics/research/projects/smarthangar](http://www.maynoothuniversity.ie/robotics/research/projects/smarthangar)
  - Dr John Dooley is involved in another project funded under the SFI-Defence Organisation Innovation Challenge: The CoPilot-AI (<https://copilotai.ie/>) project involves team members Professor Tim McCarthy (CS, Maynooth University), Professor John McDonald (CS, Maynooth University), DefOrg Liaison Comdt Jay O'Reilly (Irish Air Corps), addresses the challenge to enhance the efficiency and effectiveness of the fire extinguishing capability of rotary-wing aircraft. CoPilot-AI aims to use earth observation and artificial intelligence technologies to develop a new system capable of providing real-time information to responders in the air and on the ground.
  - The COER group includes the following industrial collaborations:
    - NREL (US)
    - CorPower, Sweden
    - Resolute Marine, USA
    - TechWorks Marine, Ireland
    - WaveVenture, UK
    - Monterrey Bay Aquarium Research Institute, USA
    - INNOSEA, UK
    - WAVEEC, Portugal,
    - Floating Power Plant, Denmark;
- and academic collaborations:
- Imperial College London
  - Quilmes University Argentina
  - Universidad Nacional de la Plata
  - Dundalk IT
  - Queen's University Belfast
  - L'École centrale de Nantes
  - Hamburg University of Technology
  - Aalborg University
  - Virginia Tech (US)
  - IST Lisbon
  - Politecnico di Torino.

## Experimental Physics

In the academic year 2021/22 the Department of Experimental Physics comprised six permanent and two temporary-contract members of academic staff, together with technical (5.5) and support (1) staff. There were eight PhD students and two Research MSc students. During 2022, 15 papers were published in peer-reviewed journals and seven in conference proceedings.

### Terahertz Space Optics

PIs: Dr C. O'Sullivan, Dr N. Trappe, Dr M. Gradziel, Dr C Bracken

#### MKIDs

Dr C. Bracken and students have continued researching new methods for automating and optimising the geometrical and electrical design of MKID (Microwave Kinetic Inductance Detector) arrays, to assist the broader research being carried out in collaboration with DIAS. The year saw significant progression on the DIAS/Maynooth project, with multiple prototype arrays of MKIDs being produced at the Tyndall National Institute in Cork. The new MKID designs relied on the simulations carried out at Maynooth University Experimental Physics. These arrays, fabricated from novel Ti/TiN multi-layer materials are currently being tested at the cryogenic facilities in the DIAS MKID lab.

A research funding award (SFI's Frontiers for the Future (Project)) was applied for in January 2022, and was successful, receiving funding of €613,466.00 over four years (2023–2026) to continue the MKIDs research.

Three papers were presented at the 2022 SPIE Astronomical Telescopes Conference in Montreal, showing progress made in 2D superconducting materials, noise-reduction, and large photon statistics and the associated readout hardware and software developed at Maynooth/DIAS. Two additional peer-reviewed papers on MKID-related work were published in the Journal for Low Temperature Physics, and three further papers were uploaded to the Arxiv preprint server.

Dr Bracken continues to collaborate with the Electronic Engineering Department at Maynooth University, toward new hardware, firmware, and software solutions for clean channelisation of broadband signals. While EE aim for applications in 5G networks, Experimental Physics aim to use the new tools and techniques for frequency domain multiplexing (FDM) readout electronics for the MKID detector arrays.



Q&U Bolometric Interferometer for Cosmology (QUBIC)

### Q&U Bolometric Interferometer for Cosmology (QUBIC)

Work has continued on QUBIC, a ground-based experiment that aims to measure the extremely faint B-mode polarisation features of the Cosmic Microwave Background (Maynooth PI, Dr C. O'Sullivan, PhD students D. Gayer, and J. Murphy). Discovering this elusive signal (at most a signal of 45nK over a background of 3K) generated by primordial gravitational waves would confirm for the first time that the Universe underwent inflation during its first fraction of a second. The existence of primordial gravitational waves would also be the first direct evidence for the quantum nature of spacetime.

QUBIC is a collaboration between researchers in France, Italy, Argentina, the United Kingdom and Ireland. The QUBIC Observatory (5000m altitude) was inaugurated on November 23<sup>rd</sup> 2022 at its site in Alto Corrillos, Salta Province, Argentina in an event attended by the Argentinian Ministers for Science, Technology and Innovation and Education and Culture in addition to representatives of the French and Italian funding agencies and members of the QUBIC collaboration and local communities. This marked the completion of the more than ten-year design and testing phase of the QUBIC instrument and a series of eight peer-reviewed papers were published in the Journal of Cosmology and Astroparticle Physics describing this. Maynooth researchers have led the work on the QUBIC optics. PhD Student J. Murphy (funded by the IRC) successfully defended his thesis on QUBIC in 2022 and began a job in Mbrionics in Galway.

### BISOU

Dr N. Trappe and Dr C. O'Sullivan are part of the BISOU consortium that is led by the Université Paris Sud. The BISOU (Balloon Interferometer for Spectral Observations of the Universe) project aims to study the viability and prospects of a balloon-borne spectrometer, a pathfinder for a future space mission dedicated to the measurements of spectral distortions in the Cosmic Microwave Background.

During 2022 work continued on the Phase 0 study, funded by the French CNES agency, to evaluate if such a spectrometer is sensitive enough to measure the Compton  $\gamma$ -distortion of the CMB. The optical design of the instrument, for one channel, was consolidated and presented at the international SPIE Astronomical Instrumentation Conference. Maynooth continues to work on a multimoded optical model of the optical train from the detector to the sky. We have also been invited (as part of the same consortium) to contribute to the optical modelling of novel Kinetic Inductance Detectors (KIDs) in a new research proposal entitled "KIDs for CMB spectral distortion studies" through CNES in France. This work ties in with the research of Dr Colm Bracken in the Department. During 2022 MSc student J. O'Shea joined the BISOU project.

### Miniaturised Frequency Comb for Science Mission Applications: Terahertz Generation for Heterodyne Systems (€20,000)

In collaboration with Pilot Photonics (DCU) Dr Trappe, Dr O'Sullivan, and Dr Gradziel are contributing to a European Space Agency (ESA) technology development grant entitled "Miniaturised Frequency Comb for Science Mission Applications: Terahertz Generation for Heterodyne Systems". Pilot Photonics have asked Maynooth University to provide consultancy around a review of THz space science missions, requirements

# Faculty Highlights

## Faculty of Science and Engineering

for a new technology development and subsequent validation of the developed hardware using our Irish THz Measurement Facility. The test campaign will make use of THz test facility (Rohde & Schwarz Vector Network Analyser system), frequency extension heads, horn antennas, photoconductive antennas and matching optics to be developed. Pilot Photonics will develop a THz source through mixing technology to produce a specific THz frequency, which we can verify in terms of spectral fidelity and signal power requirements for future missions. A review of LO heterodyne technology already being used for THz astronomy has already been written and presented to ESA as part of phase 1 of the project in March 2022.

In 2022, NASA announced its plan to solicit Far-IR and X-ray Probe proposals in 2023. Due to the expertise in the area of optical simulation at Maynooth, we were asked to lead one of four working groups for the project. This exciting research project has rekindled our previous research carried out from 2014 to 2017 under EU FP7 funding (FISICA). This new project will result in a funding proposal being submitted to NASA in 2023, with the aim of applying for European funding to support the mission. A number of papers are currently being written aimed toward multiple high-impact journals. This collaboration has brought together researchers from Maynooth University, Trinity College Dublin, the UK, the Netherlands, Italy, France, Sweden, Japan, Canada, and the USA, as well as industry researchers at Lockheed Martin (USA).



Dr Emma Whelan, Department of Experimental Physics

### Star and Planet Formation Group

PI: Dr E. Whelan

The star and planet formation group continued to work on three related projects. These projects explore methods for detecting exoplanets around young stars, the role of MHD winds in the removal of angular momentum from young stellar systems and the launching of protostellar jets. The group works primarily with data from the European Southern Observatory's Very Large Telescope (ESO, VLT) and has been awarded significant allocations of time in recent years. Highlights for the star formation group include the publication of two peer-reviewed papers (in *The Astrophysical Journal* and *Astronomy & Astrophysics*) and the award of two ESO telescope time allocations, one hour of VLT science verification time (PI M. Birney) and three hours of VLT service time (PI A. Murphy).

Research was carried out in the area of observations of MHD winds. This was done in collaboration with groups in the US, Taiwan and Europe. She worked on two papers on this. One of these papers was funded by her Maynooth University Seed funding. She also helped to found the Dublin Star Formation and Debris Disks and Planets group in 2022. The group meets monthly in different participating universities to discuss recent highlights in the field and collaborations.

Aisling Murphy successfully defended her PhD work in May 2022. Her thesis explored protostellar jet launching and presented a novel method for finding companions around young stars. She was awarded ESO VLT time in early 2022 to further explore the young star TH 28 which was the subject of her PhD work.

Andrew Kirwan (John & Pat Hume Scholar) completed the final year of his PhD work on understanding the launching of jets from young stars. He looked at the variety of objects which launch jets including brown dwarfs and proplyds. Andrew published a paper on the intermediate mass star HD 163296 and submitted a paper on the Orion Proplyd 244-440. Andrew attended the Irish National Astronomy Meeting (INAM) in September 2022 and gave a talk on his PhD work.

Matthew Birney completed the second year of his PhD fellowship in 2022. Matthew is funded by a John & Pat Hume fellowship and a NUI travelling fellowship. Matthew is working closely with a group at the Institut de Planetologie et d'Astrophysique in Grenoble on a project to study rotation of the outflow from the young star HH46/47. This work is relevant to the question of how angular momentum is removed from young stars. As part of travelling fellowship Matthew went on research visits to Grenoble and the ESO in Garching in 2022. He gave a talk on his work at the ESO star and planet formation meeting. Matthew also attended the Interstellar Shocks school in Les Houches in France in June 2022 and INAM in September 2022. He gave a talk at INAM. Matthew was awarded science verification time for the new ESO instrument ERIS in 2022.

Noah Otten completed the first year of his PhD thesis in 2022. Noah is working on a project to use spectro-astrometry to understand the origin of forbidden lines in the spectra of young stars. This is relevant to the angular momentum question. Noah also attended the Les Houches Interstellar Shocks school and gave a talk at INAM in September 2022.

Darren Cashin successfully completed his MSc thesis on spectro-imaging of the jet from the young stars RW Aur in summer 2022. Two new students joined the group, Seán Mills for an MSc and Aparna Unni for a PhD (John & Pat Hume WISH awardee).





Dr Frank Mulligan, Department of Experimental Physics

### Atmospheric Physics

PI: Dr Frank Mulligan

Research and international collaboration continues in Atmospheric Physics, a highlight being the invitation for Dr Mulligan to participate in an International Space Science Institute (ISSI) Working Group on “The variability of the Airglow for the Detection of Atmospheric Dynamics” with several meetings planned for the following year in Bern, Switzerland. Dr Mulligan was also appointed as an External Examiner for a PhD thesis from the University of Bath entitled “The Tides, the Waves and the Airglow: Dynamics of the Antarctic Mesosphere and Lower Thermosphere”.

A new research strand in Atmospheric and Environmental Physics will be starting with the appointment of Dr J. McGrath.

In 2022, Dr Arnaldo Donoso participated in the General Assembly of the Latin American Center of Physics (CLAF), as a member of the directive council. The meeting was held online and featured delegates from Argentina, Bolivia, Brazil, Chile, Cuba, Costa Rica, Mexico, Panama, Uruguay, and Venezuela. Dr Donoso was re-elected as member of the directive council representing Venezuela for the next four years. He was also appointed as a member of the Commission for Climate Change, along with representatives from Brazil and Bolivia.

### Time of Flight spectroscopy of electron impact fragmented PAHs

PIs: Dr P.J.M van der Burgt, Dr M. Gradziel

Current research in the group focusses on the fragmentation of pyrene molecules following double ionisation by electron impact. Fragmentation processes producing two singly-ionised fragments are studied using coincident time-of-flight mass spectrometry. Results have been presented at a major international conference, and a publication is in preparation. Earlier research on anthracene has resulted in a peer-reviewed publication in 2022.

## Mathematics and Statistics

During 2021–22, the Department had 20 long-term academic positions plus four postdoctoral researchers. Of the 20 regular positions, two were seconded partly or fully to the Hamilton Institute (Professor Andrew Parnell and Professor David Malone) and one was the Maths Support Centre Director (Dr Ciarán Mac an Bhaird). As well as the long-term academic positions, the Department hosted four postdoc researchers (Jitendra Jain, Youcef Belkhier, Kumars Mahmoodi, Fernando Mayer). Members of the Department supervised 31 PhD students and six research master’s students. The PhD numbers include 11 PhD students registered to the Hamilton Institute but supervised or co-supervised by members of the Department. In the 2020–21 academic year, there were eight new doctoral students. Three PhD students graduated.

Members of the Department had 58 publications in 2021. Of these 58 publications, 35 are in peer-reviewed journals and most of the remainder are conference publications. In addition, there were also 15 conference contributions.

### Publications

Dr Ian Banfield published a novel and unexpected connection between elementary algebraic properties of braids and the geometry of the braid closure in the *Journal of Knot Theory*. This connection has been exploited by Boileau-Boyer-Gordon in their celebrated work on L-space branched covers.



Dr Ian Banfield published *Almost all strongly quasipositive braid closures are fibered* in *Journal of Knot Theory and Its Ramifications*

Dr Galatia Cleanthous published a paper with A.G. Georgiadis in *Science China Mathematics* exploring the fundamental properties of certain modulation spaces. The importance of these spaces is that they are suitable for studying the smoothness of functions in a product setting. This is the first paper that studies such spaces in the product framework.

Dr Cleanthous also published a joint paper in the *Journal of Nonparametric Statistics* that proves oracle inequalities and upper bounds for density estimators on general metric spaces. This is a study of the estimation of a probability density function on a very broad class of metric spaces associated with operators. This general framework includes and unifies the Euclidean space, the sphere, the ball, manifolds, etc.

# Faculty Highlights

## Faculty of Science and Engineering

Dr Cleanthous published another joint paper study in *Computational Statistics & Data Analysis* on axially symmetric Gaussian random fields on the sphere. Theory, methodology, simulations and applications in environmental science are obtained. Axially symmetric random fields are complicated, and this paper makes an effort to explore them. This is highly important for the modelling of environmental data that enjoy axial symmetry.

Dr Rafael de Andrade Moral published a joint paper in collaboration with Ulster University and BT, as part of the BT Irish Innovation Centre. They developed a new modelling framework that allows for identifying customers that have a potential to churn, by analysing their television watching behaviour. They were able to summarise thousands of observations per customer as 11 variables and were able to distinguish churning customers from non-churning ones.

Another of Dr de Andrade Moral's joint papers, in collaboration with the MU Psychology Department and Universidad Miguel Hernández de Elche, Spain, was published in *Psychological Assessment*. They developed a new index which is more reliable for identifying patients with early cognitive decline, therefore allowing for early interventions in case this cognitive decline precedes the onset of dementia or Alzheimer's disease.

Dr Ciarán Mac an Bhaire and his MU collaborators Peter Mulligan, James O'Malley, and Rachel O'Neill published three practice-based papers which directly relate to different aspects of the mathematics strand of the HEA funded ICT and STEM Enhancement Project at MU. All three papers concern student attitudes to supports provided to them by the Maths and Statistics Department at MU.

Another joint paper of Dr Mac an Bhaire reports on the first survey of the extent of maths support provision in US higher education. It finds that maths support is widely available amongst responding institutions, and that the types of maths support available appear to depend on the institution type and size. The paper also contains a comparison of results with the latest surveys of MLS provision internationally (Ireland, England and Wales, Germany, and Australia) and with previous MLS studies in the US.

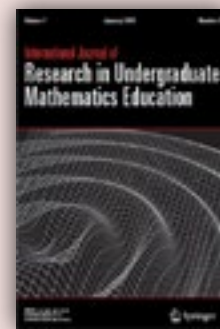
Professor David Malone and Dr Hazel Murray (MTU) won €50k of credit for quantum computing as part of the SFI CONNECT Centre. Work on the quantum computer was supported by a summer internship funded by the Department.

Professor Oliver Mason published a joint paper with collaborators at the MU Centre for Ocean Energy Research (COER) and the University of the Basque Country on pseudo-spectral numerical optimal control for Wave Energy Converters (WECs) at the IFAC conference on control applications of optimisation. This research developed numerical optimal control schemes for WECs that can incorporate nonlinear reactive power constraints. Robust back-stepping algorithms for lower-loop control were also developed.

Professor Mason also published a joint paper with COER collaborators investigating circumstances under which reactive power flow can become significant in Wave Energy Converters, with particular focus on the size of predominant wave period relative to the device resonant period; this work was published at the 14<sup>th</sup> IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles. This work also studied the impact of imposing a limit on reactive power flow for optimal power capture.

Professor Anthony O'Farrell published a paper in *Mathematical Proceedings of the Royal Irish Academy*. This is a first result about centralisers for higher dimensional formal maps. Professor O'Farrell also published a paper with Gavin Armstrong in *Mathematica Scandinavica* that provided an unexpectedly neat solution to a new kind of problem that could start a trend!

Professor Ann O'Shea was part of an international team who developed a research agenda in the growing area of e-assessment of mathematics at university level. The aim was to create a research programme in order to improve the theoretical understanding and practice of practitioners. The agenda, which was published in the *International Journal of Undergraduate Mathematics Education*, will act as a roadmap for research projects in the coming years. Professor O'Shea and her collaborators are currently working on questions that arose from this project.



A research agenda developed by an international team including Professor Ann O'Shea focussing on e-assessment of mathematics at university level was published in the *International Journal of Undergraduate Mathematics Education*

E-assessment became much more prevalent in mathematics modules over the COVID-19 period and this was one of the themes explored by Professor O'Shea in her paper in the *Irish Mathematical Bulletin*. In this paper, she surveys research carried out on the teaching and learning of mathematics at university level in Ireland during the recent pandemic.

Professor O'Shea and Dr Diarmaid Hyland, an MU postdoctoral researcher, carried out an analysis of diagnostic tests in use in Irish universities; these tests are typically administered to incoming students to identify those that are in need of mathematics support. The resulting article, published in *Teaching Mathematics and its Applications*, analysed the content areas covered by current diagnostic tests and drew conclusions about lecturers' expectations about school leavers' mathematical knowledge. Comparisons were made between current tests and some dating from the 1980s.

Dr Mark Walsh and two collaborators in Wichita State University published a paper in the *Journal of Geometry and Physics* that extended the famous Gromov-Lawson Cobordism construction which turns a Riemannian metric of positive scalar curvature (psc-metric) into an appropriate psc-metric on the trace of a surgery in codimension at least three. The extension was to a much wider collection of stronger curvature conditions, the so-called intermediate scalar "p-curvatures".

Dr Walsh and his MU colleague Professor David Wraith published a paper in *Communications in Contemporary Mathematics* that generalises Dr Walsh's earlier ground-breaking work in positive scalar curvature to stronger curvature conditions. The objective was to show that the set of metrics on any sphere which satisfy such curvature conditions display subtle, but topologically significant, algebraic properties.

Professor Wraith also published a joint paper with Diarmuid Crowley in the *Asian Journal of Mathematics*. This is the culmination of a four-year research project and considers the curvature properties of highly connected manifolds in dimensions  $4n+1$ . The results form a counterpart to an earlier paper by the same authors which dealt with the situation in dimensions  $4n+3$ . Dimensions  $4n+1$  present much more severe technical difficulties, with the main challenge being to develop a geometric surgery procedure for linked spheres in curvature conditions stronger than positive scalar curvature.

Philipp Reiser (University of Fribourg) visited Professor Wraith for three months during summer 2022. This led to a collaboration which has produced three preprints to date.

## Research Grants and Awards

The Department was awarded two new grants with a total direct value of about €124k. We are also involved on an ongoing basis in two CRTs that were funded by SFI starting in 2019 (Foundations of Data Science and ADVANCE): both networks were awarded over €13m by SFI and have additional private funding. The Department is also involved in the SFI Research Centre CONNECT which received fresh funding of €39m during 2021.



The Department is involved in CONNECT, the SFI Research Centre for Future Networks and Communications

## Engaged Research

Five lecturing staff in the Department (Professor Andrew Parnell, Professor David Malone, Dr Catherine Hurley, Dr Niamh Cahill, Dr Rafael de Andrade Moral) participated in the COVID-19 Data Dive project ([www.hamilton.ie/covid-19](http://www.hamilton.ie/covid-19)). This was funded by SFI grant 20/COV/0081 (€70k emergency COVID-19 funding portal; PI Professor Andrew Parnell). Output is available at and includes blog posts, apps, and other things of interest to society during the pandemic.

Professor Malone's archive of state exam papers from the STEM area has been maintained and expanded (<https://archive.maths.nuim.ie/staff/dmalone/StateExamPapers>). The collection of Leaving Cert and Junior Cert mathematics papers is now complete.

## Psychology

The Department of Psychology has a world-class track record of research publication and dissemination, as well as a strong research-informed focus on teaching/education. The Department's continuing success is reflected most recently in its latest 'top 150' ranking of Departments of Psychology worldwide, as featured in the 2022 *Times World University Rankings*; this also maintains the Department's position as the second ranked Department of Psychology in Ireland.

Staff in the Department make an internationally distinctive and vibrant contribution to research (and practice and policy) in two main thematic domains:

1. Health, wellbeing and society (including disability, services/organisations, systems and policies, and sustainable healthy environments); and
2. Neuroscience, behaviour and cognition. Most staff are affiliated to the Department-led Centre for Mental Health and Community Research and/or the ALL Institute, as well as one or more of the University institutes.

During the period covered by this report, the Department had a complement of 23 academic (22.1FTE) and 15 full- and part-time research staff, while maintaining, supporting and mentoring a very large cohort of postgraduate students (see below). During 2022, staff produced 115 publications/outputs, including mainly international and national peer-reviewed journal articles ( $n=96$ ), as well as a number of book chapters/books and other professional publications and outputs aimed at diverse audiences ( $n=19$ ), such as publicly available reports, professional/scholarly articles<sup>1</sup>, and education/public interest materials.

Our research during 2021/22 has been published in a wide range of prestigious and highly ranked psychology and interdisciplinary journals, including (in alphabetical order):

- *American Journal of Public Health*
- *Assistive Technology*
- *Behavior Research Methods*
- *Behavior Therapy*
- *BMC Psychiatry*
- *Disability and Rehabilitation*
- *European Journal of Ageing*
- *European Journal of Neuroscience*
- *Frontiers in Psychiatry*
- *Frontiers in Psychology*
- *Groupwork*
- *International Journal of Environmental Research and Public Health*
- *Open Research Europe*
- *PLoS ONE*
- *Psychiatry Research*
- *Nature Communications*
- *Nature: Scientific Reports*
- *The Lancet*, and
- *Urban Forestry and Urban Greening*.

<sup>1</sup> This total excludes (numerous) conference-related papers/publications.

# Faculty Highlights

## Faculty of Science and Engineering

The Departmental research and attendant outputs continue to reflect strong interdisciplinarity, as evidenced by publications related to, and collaborations involving, colleagues from cognate disciplines such as medicine/psychiatry, nursing/other health professions, environmental science, and the social sciences more generally. The published research of the Department of Psychology is high impact and strongly international as shown by the KPIs outlined below for the period 2019–2023, all of which show a marked upward trend relative to the previous 2016–2021 period.

- Field-Weighted Citation index: 3.00\*
- Citations per publication: 15.5
- Percentage of publications amongst the top 10% most cited publications worldwide: 26%
- Percentage of publications in the top 10% of journals ranked by citations: 32%
- Percentage of publications co-authored with international researchers/collaborators: 73%

\*The FWCI for publications in psychology in other Irish universities, ranges from 1.31-1.58.

The impact of our Departmental research can also be seen in metrics captured by Altmetric Explorer, which assesses research attention in sources such as traditional and social media, public policy documents, Wikipedia and blogs. Outputs from Departmental staff, to date, total 11,527 mentions from a total of 57,603 across Maynooth University (i.e., 20% of total mentions at university level). During October 2021 to December 2022, the work of Departmental staff received 513 mentions, mainly on social media, but also including a small number of blog and policy mentions.

### Research Projects

The Department has three ongoing flagship projects based on significant funding secured during 2019-2020 and totalling almost €45m. These include (in chronological order from least to most recent): (1) the EU-funded *SHAPES (Smart and Healthy Ageing through People Engaging in Supportive systems)* project which aims to find ways of helping Europe's ageing population live actively and independently at home, led by Professor Mac MacLachlan and Dr Michael Cooke (€21m); (2) *GoGreenRoutes*, an Horizon 2020 project on urban health led by Dr Tadhg MacIntyre and colleagues (€10.4m); and (3) the *Science Foundation Ireland ADVANCE Centre for Research Training* initiative, co-led by Professor Deirdre Desmond (and lead MU applicant) – with a total budget in excess of €13 million aimed at recruiting and training 120 PhD scholars, a number of whom are currently based at Maynooth University.

Over €1.15m of new grant funding was won (by 10 Departmental staff) during October 2021-September 2022 and secured from a range of prestigious funding sources, including:

- EU Horizon 2020;
- The European Defence Fund (EDF);
- the National Institute for Health Research (UK);
- the Department of Children, Equality, Disability, Integration and Youth;
- the Irish Research Council;

- the Health Research Board (SPHeRE programme);
- Enterprise Ireland; and
- the Environmental Protection Agency.

There were 17 successful bids for research funding submitted during the reporting period, ranging in size from €3k (conference workshop funding) to approximately €185k (postdoctoral Marie Skłodowska-Curie Fellowship), three of which exceeded €100k.

Only a small number of applications for funding were unsuccessful during this same period, demonstrating a very high overall level of research funding achievement. Current projects during the reporting period amounts to total research funding to the university of approximately €10m, pertaining to 18 ongoing and typically multi-year projects. These include, in addition to the three mentioned earlier, several EU-funded and other national and international research projects with varying time frames for completion from 2023 onwards.

Staff have been successful in securing a number of awards and in other notable achievements, as well as media exposure during 2022. Some examples are listed below (in alphabetical order in each sub-section).

### National and International Awards during 2022

Professor Sinéad McGilloway and the PRIMERA research team (Dr Mairead Furlong, Christine Mulligan, Sharon McGarr, Dr Siobhan O'Connor and Dr Nuala Whelan) won the prestigious (UK) *Association of Child and Adolescent Mental Health (ACAMH) Lionel Hersov Memorial award (2022)*, which recognises teams at the forefront of the advancement of child and adolescent mental health research and practice. Professor McGilloway was also one of six MU academics (out of 56 awardees nationally), who received an *Irish Research Council Research Ally Prize (2022)* for her role as supervisor/mentor in 'supporting and sustaining the Irish research community'. In addition, she was joint prize winner of the *SPARKS* competition to which she was invited to participate as part of MU Research Week 2022.



Professor Sinéad McGilloway and the PRIMERA research team win the Association of Child and Adolescent Mental Health Lionel Hersov Memorial award (2022)

Dr Katriona O'Sullivan and the STEM Passport for Inclusion won the IBEC Women in STEM Initiative of the year, and the European Women in STEM Initiative of the year. These awards specifically recognise the engaged research being undertaken by the STEM Passport team on gender equality.

### Other Notable Achievements during 2022

Research by Departmental members has received national and international media coverage and public interest during 2022. For example, Professor Andrew Coogan made multiple appearances on national media discussing sleep research, including a recurring slot on the Claire Byrne Show on RTÉ Radio1, comments on the RTÉ News website concerning derogations for HGV drivers from working time strictures arising from COVID, and articles in the Irish Times, Medscape Medical News, and [www.LiveScience.com](http://www.LiveScience.com).

A systematic review and meta-analysis completed by Dr Michael Daly and colleagues, to examine longitudinal cohort studies comparing mental health before and during the COVID-19 pandemic in 2020 (published in the *Journal of Affective Disorders*), has a current altmetric score of 122, indicating high levels, to date, of public attention and policy citations (e.g. World Health Organisation).

Professor Mac MacLachlan continues his work as Research & Innovation Lead for the WHO's Global Cooperation on Assistive Technology (GATE) programme and Knowledge Management Lead for the United Nations Partnership for the Rights of People with Disability (UNPRPD) Programme working across more than 20 countries. He also delivers regular presentations to the Oireachtas Committee on Disability Matters.



Professor Mac MacLachlan is Research & Innovation Lead for the WHO's Global Cooperation on Assistive Technology (GATE)

Dr Katriona O'Sullivan has presented her research on gender equality to the Oireachtas Committee twice in 2021 and 2022, while the recommendations from the STEM Passport research have been included in the national gender equality plan ([https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint\\_committee\\_on\\_gender\\_equality/reports/2022/2022-12-15\\_final-report-on-unfinished-democracy-achieving-gender-equality\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint_committee_on_gender_equality/reports/2022/2022-12-15_final-report-on-unfinished-democracy-achieving-gender-equality_en.pdf)). Dr O'Sullivan was also invited speaker at the United Nations in 2022, presenting at the gender equality and digitisation event. She has made multiple appearances on the Tonight Show, RTÉ radio 1, and Newstalk and has had several newspaper articles published. The STEM Passport project was also featured in the RTÉ1 ChangeMaker series on 31<sup>st</sup> January STEM Passport for Inclusion –

Maynooth University | Irish Universities Association ([www.iaa.ie/changemakers/stem-passport-for-inclusion-maynooth-university/](http://www.iaa.ie/changemakers/stem-passport-for-inclusion-maynooth-university/)).

In an SFI-funded series in *The Journal* ([www.thejournal.ie/prev/5920147/dvDtmypdn35U/](http://www.thejournal.ie/prev/5920147/dvDtmypdn35U/)), research relating to the H2020 GoGreenRoutes project on the topic of climate anxiety, was showcased in a video blog with Dr Tadhg MacIntyre and a news story as part of Science Week 2022. This topic also featured in coverage by *The Sun* newspaper in Ireland ([www.thesun.ie/news/9781717/climate-anxiety-growing-problem-despair-expert-psychologist/](http://www.thesun.ie/news/9781717/climate-anxiety-growing-problem-despair-expert-psychologist/)). In addition, Dr MacIntyre was the invited keynote speaker on the topic of nature and health, at the European Congress of Psychology, Padua, Italy, in July 2022.

The findings of the 'PRIMERA' research team (on family mental health), led by Professor Sinéad McGilloway, featured (in May 2022) in the *Irish Times* (two articles), the *Irish Independent*, the *Irish Examiner* and *Activelink*, with an additional special feature in the *Irish Times*. Professor McGilloway and Dr Mairead Furlong also participated in a number of radio interviews around the same time (e.g. Kildare FM and Phoenix FM).

Research led by Dr Joanna McHugh Power, on the impact of the Troubles on cognitive function, was covered in a BBC Radio Ulster radio interview and featured as a standalone piece by *The Times UK*.

During the reporting period, a number of Departmental staff also continued to contribute to important national and international research on the ongoing impact of the COVID-19 pandemic including, in particular, collaborative work on various aspects of mental health and wellbeing and psychological and service responses to the pandemic (e.g. depression, anxiety, sleep, worker burnout, alcohol consumption, mental health services) (Professor Coogan, Dr Daly, Professor Hyland, McCutchen and colleagues). Other research has focused on: vaccine hesitancy (Professor Hyland et al.); the impact on caregivers (Dr Higgins et al); environmental factors and health behaviours (Dr MacIntyre et al); and the impact on parents (Dr O'Sullivan et al.). Collectively, this work has led to a total of 12 peer-reviewed journal articles during the reporting period.

### Engaged Research

Civic engagement continues to be an important aspect of our Departmental research activities, involving collaborations and partnerships with individuals and wider groups in the national and international community, including service users and providers, practitioners, schools, hospitals, industry, governments, NGOs, United Nations agencies and other civil society representatives/actors. The work of both the ALL Institute ([www.maynoothuniversity.ie/all-institute/all-projects/stem-passport-inclusion](http://www.maynoothuniversity.ie/all-institute/all-projects/stem-passport-inclusion)) and the Centre for Mental Health and Community Research (CMHCR) (<http://www.cmhcr.eu>), in particular of which a number of Departmental staff and students are members, is characterised by a strong engaged research ethos with, for example, many knowledge production, health and wellbeing, socio-cultural and product development-related impacts at both a national and international level. Some examples, relevant to the reporting period, and across a number of our thematic domains, are provided below (in alphabetical order by name of academic staff member).

# Faculty Highlights

## Faculty of Science and Engineering

Professor Andrew Coogan's research on sleep in children with ADHD (conducted as part of a PhD by Upasana Bondopandhyay), involves developing psychoeducational materials on, and highlighting the importance of, sleep assessments in ADHD outpatient care. This project brings together actors from Linn Dara Child and Adolescent Mental Health Services, the ADMIRE Specialist ADHD Service and ADHD Ireland (NGO).

The (36-partner) 'SHAPES' project led by Dr Michael Cooke and Professor Mac MacLachlan (with lead Departmental researchers, Dr Melanie Labor and Dr Richard Lombard-Vance) involves extensive ongoing international collaborations with a wide and diverse range of community partners in order to build, pilot and deploy a large-scale, EU-standardised open platform to support smart and healthy ageing (involving 14 SMEs, four NGOs, one large industry, two Research and Technology Organisations and two public bodies). A large number of co-delivered outputs have been produced to date, including jointly authored publications/reports, co-hosted events, co-written blogs, co-delivered conference presentations and co-designed videos.



Dr Michael Cooke and Professor Mac MacLachlan are leading the 36-partner 'SHAPES' project

Dr Michael Cooke is PI on an EDF project with a MU budget of €438,633 looking at civil-military collaboration in the area of cybersecurity. The project will run for four years the ACTING project is a European consortium of 28 partners including SMEs, academics, RTOs, and EU defence ministries and aims to develop mechanisms for sharing best practice and education in the area of cybersecurity. MU's role in the project is on the human factor's aspects and the civil-military cooperation tasks.

The (40-partner) H2020 'GoGreenRoutes' project, led by Dr Tadhg MacIntyre, involves extensive global collaborations with a wide and diverse range of local community, municipal and regional partners in order to promote urban health through nature-based solutions supported by digital and social innovations (involving seven European Cities, 15 SMEs, three NGOs, and 15 Research and Technology Organisations with links to megacities Beijing and Mexico). Participatory strategies have been key to the co-creation of novel greenways, therapy forests and urban living rooms supported by nature across our targeted European cities.

A portfolio of projects in the Centre for Mental Health and Community Research involve engagement with a wide range of community partners and stakeholders. For example, the 'UNITES' project, led by Professor Sinéad McGilloway (co-led by Dr Deirdre Forde from the Froebel Department) and funded by the Department of Children, Equality, Disability Integration and Youth, involves a practice – and policy-relevant national review and analysis of home visiting services which is being conducted in partnership with the Home Visiting Alliance (five NGOs) and Tusla (and also the funder), who are contributing to aspects of project design, execution and reporting. Dr Fiona Flynn's recently completed (IRC PhD scholar) research (supervised by Professor McGilloway and Dr Catriona O'Toole (Education Department) entailed the co-design and co-development with young people, and in collaboration with Bodywhys, a school-based intervention (one of only three in the world), to help young people cope with body image and social media-related issues; the '#MoreThanASelfie' (MTAS) programme has been delivered to approximately 260,000 second level students in Ireland since its launch in October 2020 and during 2021, the programme was delivered to over 2,000 students internationally (e.g. in the UK, Australia, New Zealand, Canada, Saudi Arabia and the US). Lastly, as part of the 'CHERISH' project led by Mary Cronin (and supervised by Professor Sinéad McGilloway), carer workshop materials co-produced with a PPI panel of family carers, will be incorporated into a Level 6 family carer education course in collaboration with SETU and Family Carers Ireland, to help support family carers in their caring role.

A number of Departmental staff, including several in the Centre for Mental Health and Community Research, also contributed actively during the reporting period, to progress the work of national networks, such as the *Prevention and Early Intervention Network* (Yvonne Leckey, Executive Committee member) and the *National Parenting Network* (Professor Sinead McGilloway, academic representative, Executive Committee), both of which comprise a wide range of community-based NGOs.



Professor Sinéad McGilloway, Department of Psychology, Assisting Living and Learning (ALL) Institute, and Social Sciences Institute (MUSSI)



## UK Research and Innovation

Dr Joanna McHugh Power is a co-investigator on the UKRI-funded 'SPACE' project which entails collaborations with several international networks

Dr Joanna McHugh Power is a co-investigator on the UKRI-funded 'SPACE' (Supportive environments for Physical and social activity, healthy ageing and Cognitive hEalth) project (March 2021–February 2024) which entails collaborations with several international networks to promote cognitive health and minimise cognitive decline by targeting modifiable population risk factors, reducing neurodegeneration risk and increasing cognitive resilience. The study involves co-development (PPI) workshops and citizens' juries with numerous stakeholders including older people themselves as well as business, industry and civil society and advocacy groups. Dr McHugh Power is also leading several other engaged research projects in which PPI activities have been incorporated, including a study of befriending supports for older people, in partnership with ALONE and St. James's Hospital ('HALO'), and a study on spousal caregiver loneliness conducted with PPI contribution, in collaboration with the Alzheimer Society of Ireland.

Dr Katrina O'Sullivan leads the STEM Passport for Inclusion project, a collaboration with Microsoft Ireland, Accenture, Munster Technological University and Mercy Inchicore Secondary school. The programme is working to support 1,000 young women from DEIS schools to build the social, cultural and human capital to understand, and progress into, STEM courses and careers. The Digital Wealth Project, also led by Dr O'Sullivan, is partnering with 45 schools and Microsoft Ireland, over the next three years to build school digital wealth.

Research undertaken by Professor Bryan Roche and colleagues across several projects in the Middle East, involves the development of enhanced psychologist training to increase awareness of equality and diversity issues in the delivery of treatment to individuals with intellectual disabilities. This work is funded by the Abu Dhabi Early Childhood Authority and the Special Olympics.

Professor Richard Roche is currently leading two projects (AIM-WARM and TRIADICS) on ageing and reminiscence in older people living with dementia (supported by researcher Dr Cassandra Dinius and PhD student Carmen Pocknell). These are being carried out as part of the Age-Inclusive Maynooth Town (AIM) initiative and involve partnerships and engagement with a wide range of organisations including several major hospitals in Dublin (e.g. St James's Hospital), a number of NGOs (e.g. Age Friendly Ireland and the Alzheimer Society of Ireland), and Kildare and Meath County Councils. The outputs to date from both projects include jointly authored publications, co-written blogs and co-delivered presentations.



Professor Richard Roche, Department of Psychology and Assisting Living and Learning (ALL) Institute

A number of our postgraduate students are also conducting PPI-driven research in the field of health and wellbeing. For example, an SFI-funded project by Isaiah Gitonga (jointly supervised by Dr Rebecca Maguire and Professor Deirdre Desmond) is exploring the role of connected health in supporting the psychological wellbeing and quality of life of people living with, and beyond, cancer. This involves partnerships with the HSE National Cancer Control Programme, the Irish Cancer Society, the Irish Psycho-Social Oncology Network, the Patient Voice in Cancer Research and the international Psycho-oncology Society.

Other engaged and PPI-informed research supervised by Dr Rebecca Maguire, is investigating:

- The psychosocial wellbeing of paediatric cancer caregivers (in collaboration with Barretstown and Children's Health Ireland, Crumlin) (Dr Emma Delemere, also funded by SFI under the ADVANCE programme)
- Anxiety in those living with Multiple Sclerosis (Austin Fahy) (in partnership with MS Ireland); and
- Access to, and stigma surrounding, HIV prevention medications in gay/bisexual men (Jamie Howell) (involving a public panel).

Sarah Murray Cunningham (supervised by Dr Joanna McHugh Power and Professor Philip Hyland) is also conducting engaged research involving work with fatherhood support groups to investigate psychological distress and loneliness among new fathers during the peripartum period.

# Faculty Highlights

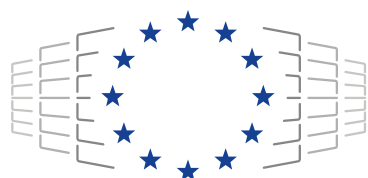
## Faculty of Science and Engineering

### Theoretical Physics

During 2022, the Department had seven academic staff, three postdoctoral researchers, 10 active PhD Students and one active students in the MSc by Research. There are also several research active emeriti. This was an unusual year, as we started the year with two vacant permanent positions and during the year, Dr Graham Kells and Dr Paul Watts were hired as Assistant Professors.

All academic staff in the Department are research active and have published papers in peer-reviewed in international journals resulting from work done during 2022. There was an estimated total of at least eight peer-reviewed journal publications and 11 conference proceedings by academic and postdoctoral staff during the academic year, and at least one additional publication by emeritus staff.

Dr John Regan's research focuses on understanding how the first black holes in the Universe formed and subsequently grew. The research is highly topical with the recently launched JWST telescope now unveiling black holes in the early Universe for the first time. Dr Regan was awarded an IRC Laureate Consolidator award (€600k, starting January 2023). He also received funding from the Royal Society Enhanced Funding Scheme (€200k).



**EuroHPC**  
Joint Undertaking

Dr Regan was awarded 20 million core hours, via the EuroHPC framework, on the Karolina supercomputer

Dr Regan also organised a very successful Enzo-E development workshop in June 2022 using funding received from the Irish Research Council New Foundations Scheme. The workshop, held in Maynooth University, brought research from around the globe for a week of intensive code development on the new exascale class code Enzo-E. Additionally, he was awarded 20 million core hours, via the EuroHPC framework, on the Karolina supercomputer. Two new PhD students started under his supervision in October 2021 under John & Pat Hume scholarships.

Dr Paul Watts was involved in research projects on *Modified null hypothesis testing using finite-variance distributional null rather than delta-function* and *Modification of standard SEIR epidemiological model to include dissemination of information*. He published an article in the journal *Decision* in 2022 (*Decision* 9(3) (2022) 215-217) and submitted two further papers which were published in 2023.

Dr Graham Kells' research was focused on developing models in the context of open quantum systems and measurement dynamics. He published three refereed scientific papers in 2022, in *Physical Review B* and in *New J. Phys.* A key highlight of his work in 2022 was a project on measurement-induced dynamics which has in the meantime led to the paper *Topological transitions in weakly monitored free fermions*, published as *SciPost Phys.* 14, 031 (2023).

Professor Jiri Vala's research focused in 2022 on physical and algorithmic aspects of quantum computing, both conventional and topological, and also on quantum control theory. His group developed a software library Stochastic Optical Quantum Circuit Simulator (SOQCS) for simulation of integrated photonic quantum information systems which is copyrighted to Maynooth University. They also contributed to a development of a novel approach to quantum control in collaboration with partners in USA, UK, and Czech Republic, which has been submitted to *Physical Review Letters*. They also studied quantum algorithms for both quantum computing and quantum simulations in collaboration with IBM and Fidelity Investments.

Professor Vala received external funding through the following projects:

- 'Quantum Computing in Ireland: A Software Platform for Multiple Qubit Technologies' (QColr) which is funded within DTIF framework by Enterprise Ireland with the total budget over €11 million, and which is coordinated by IBM Ireland with the other partners besides Maynooth University being UCD and Tyndall National Institute, and industrial partners MasterCard, Equal1 and Rockley Photonics.
- 'Building a National Quantum Communication Infrastructure for Ireland' (IrelandQCI) which is funded jointly by the European Commission and the Government of Ireland with the total budget of €10 million, and which includes a number of academic as well as industrial partners.



Professor Vala received external funding through 'Building a National Quantum Communication Infrastructure for Ireland' (IrelandQCI)

Dr Joost Slingerland works on low dimensional condensed matter physics, particularly on topological phases of matter. His research received ongoing research funding from Science Foundation Ireland through an SFI Investigator Grant, which also funded a PhD student (Gert Vecleyen) and a postdoc (Alexander Bullivant) during 2022.



Dr Slingerland's research this year focused on projects related to:

- Software tools for topological field theory
- Graph braiding, Exchange statistics of particles on graphs
- Correlation functions of fractional quantum Hall wave functions
- Vortices in Spinor Bose Einstein condensates (Research Msc project completed with Nathan Fox)

All of these projects led to preprints and 2022 which have appeared as refereed publications in 2023. In 2022, Dr Slingerland also published a paper in collaboration with Dr Graham Kells in *Physical Review B*.

Dr Jonivar Skullerud is part of an international consortium working in non-perturbative approaches to particle physics, which receives significant resources in computing time on supercomputers. This year, he was an author on one peer-reviewed journal paper and on 11 conference proceedings. One of these was a single author proceeding of and invited plenary talk at a 2021 conference. Dr Skullerud's PhD students (Dale and Jesuel) were also primary authors on two of these proceedings.



Dr Jonivar Skullerud, Department of Theoretical Physics and Hamilton Institute

Professor Peter Coles' work focused on statistical cosmology, largely focused on developing and testing methods for the analysis of relevant data sets in preparation for the European Space Agency's Euclid mission. The launch of Euclid was due in 2022 but was postponed and performed successfully in 2023. Euclid will be used to probe the nature of dark matter, dark energy and the geometry of the expanding Universe. Professor Coles is a full member of the Euclid. Together with a Maynooth PhD student (Gallagher), he studied the evolution of largescale structure in theories with ultralight dark matter. In 2022 Professor Coles published two refereed journal papers in the *Open Journal of Astrophysics*, a successful Astrophysics Journal published by Maynooth Academic Publishing of which Professor Coles is also the founding managing editor. These papers were on projects involving Evolution of Cosmic Voids (with PhD s) and on Gravitational Stability of Vortices Dark Matter.

The Department was also involved in organising the Irish Theoretical Physics 2022 conference, which took place at the Dublin Institute for Advanced Studies in late May. In particular, Dr Slingerland and Dr Kells were on the organising committee.

## Engaged Research

Professor Jiri Vala represents Ireland in the Governance of the Quantum Technologies Flagship and in particular its Quantum Community Network Board, is also a member of the Strategic Advisory Board of QuantERA, the ERA Net in Quantum Technologies. He also served as the Chair of the National Advisory Forum for Quantum Technologies, established by SFI.



Professor Jiri Vala, Department of Theoretical Physics and Hamilton Institute

Through Professor Vala, the Department is also involved in two research projects with industrial partners, including IrelandQCI and QCOIR, which is coordinated by IBM Ireland with further industrial partners MasterCard, Equal1 and Rockley Photonics.

The Department also has a significant outreach profile through a.o.

- The annual International Particle Physics Masterclass for secondary school students, organised in association with CERN by Dr Skullerud. This involves the students working on real accelerator data in our computing lab.
- The Astrophysics & Cosmology Masterclass for leaving cert students, organised by Professor Coles and Dr Regan. This has reached several thousand remote participants.

# Faculty Highlights

## Faculty of Social Sciences



## Applied Social Studies

The Department of Applied Social Studies encompasses the three disciplines of Community and Youth Work, Social Policy, and Social Work, united in a shared mission of advancing understanding of policy and practice in areas of social justice, human rights, sustainability and equality.

The Department of Applied Social Studies comprises 14 academic staff and 327 students, with over 100 post graduate students. For the year 2021–2022 there were:

- 18 doctoral students (17 ongoing, 1 new)
- 43 publications produced by staff in 2021–2022
- Four research grants received in total, and
- €111,133.33 in grant monies received.

Research activities and achievements in the Department of Applied Social Studies in 2021/22 continue to illustrate the disciplinary, interdisciplinary, and multidisciplinary nature of the Department's scholarship. Research achievements also illustrate the broad range of academic, professional, and public contribution interests and commitment of Departmental staff.

The scope and calibre of the Department's scholarships is reflected in the international peer-reviewed journals in which articles authored or co-authored by Applied Social Studies staff were published together with the Handbooks, edited collections and monographs which staff had published. These included *Qualitative Social Work* (Dr Ciara Bradley), *Housing Studies* (Dr Rory Hearne), *Cyberpsychology* (Professor Maurice Devlin), *The Routledge International Handbook of Fieldwork Education in Social Work* (Dr Niamh Flanagan), *Journal of Participatory Research Methods* (Dr Johanna O'Shea), Harper Collins (Dr Rory Hearne) and Bristol University Press (Dr Seamus Taylor).

During the year 2021/22 Dr Ciara Bradley co-edited the *Reader, Research for Social Justice: advancing Methodologies for Social Change* which will be published by Policy Press in 2023. This Reader was co-edited with our adjunct colleagues, Dr Kathryn Mc Garry, and Dr Gloria Kirwan. Also, during the year 2021–22 Professor Maurice Devlin was commissioned by Elgar Publishers as the sole editor of the first *Encyclopaedia of Youth Studies* and work has commenced on this groundbreaking encyclopaedia.



Dr Ciara Bradley, Department of Applied Social Studies

A particularly creative research project in 2021–2022 was a participative engaged project where a cohort of second level students in Dublin undertook a survey of their school community to examine the prevalence

and nature of racism in the school. Students presented the findings of the study at the European Social Work Research Conference in Amsterdam in April 2022. This project is lead by Dr Niamh Flanagan and supported by Dr Elaine Wilson, UCD and Tonye Benson Olatunde, MU. A journal article based on this study will be published in the European Social Work Research Journal in March 2023.

Dr Ciara Bradley embarked in 2021/22 upon a number of creative community partnership and engaged research projects with the Traveller and Roma community and in the area of mental health. These projects included collaborative research with Pavee Point Traveller and Roma Centre on the Experiences of Roma in Employment in Ireland. This project cuts across the research reporting years 2021/22 and 2022/23 and will be published early 2023. Dr Bradley also secured IRC New Foundations funding for a research project exploring the experiences of pregnant Traveller women and their families during the COVID-19 period. This was again a community partnership project with Pavee Point entitled, *Pavee Mothering in COVID-19*. Dr Bradley also embarked on a collaborative community development research project into the way the Gateway Peer led Mental Health Project in Rathmines, Dublin adapted to the COVID-19 pandemic and the effects on the ethos of the organisation. This project also cuts across research reporting years, and it is due to report in June 2023.



Dr Rory Hearne, Department of Applied Social Studies

Dr Rory Hearne has continued to contribute nationally and extensively to the debate on housing policy in Ireland, and in particular the current housing crisis and homelessness. Dr Hearne's book, *Gaffs: Why No One Can Get a House and What You Can Do About It*, was published in September 2022 by leading publishers HarperCollins Ireland. In *Gaffs*, Dr Hearne provides a unique insight and conceptualisation of the psychosocial role of housing as home, the psychological impact of the various aspects of the housing crisis on mental health, belonging, and community connection. Dr Hearne also uniquely identifies and explains newly emerging sociological phenomena in Ireland, which he names, Generation Stuck at Home, and Generation Locked Out, and their social, economic, and psychological implications. A unique contribution Dr Hearne makes in *Gaffs* is how he explains theory, concepts, policy in ways that the broader public can grasp and relate to. He also provides policy solutions, and pathways for citizens to engage in action, so that the research and policy knowledge is contributed as a form of practical praxis, so that the public can better understand what is happening in housing, how can it change, and be changed, and therefore understand and envision a role for themselves in realising their power as active citizens.

# Faculty Highlights

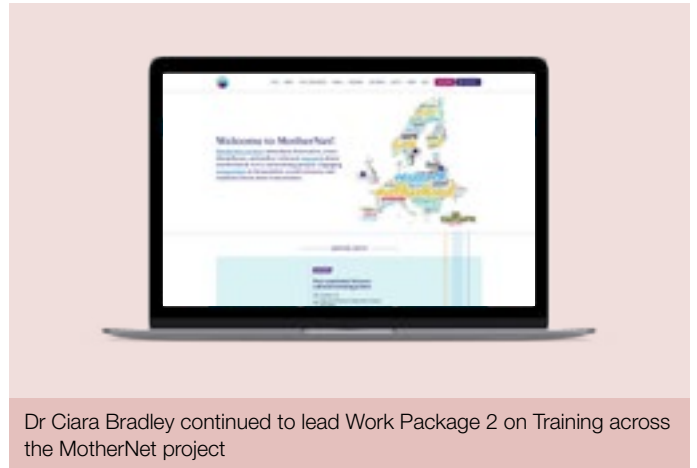
## Faculty of Social Sciences

*Gaffs* is now a best-selling, critically acclaimed, award-nominated book. The review by Fintan O'Toole in the Irish Times described it as, 'clear, cogent and persuasive.' The review for the Irish Independent described *Gaffs* as 'very well put together into a readable and clear narrative of how exactly we ended up here, who is the blame and what should be done about it.' In recognition of this book's contribution it was one of just five books shortlisted for the An Post Non-Fiction Book of the Year Award 2022.

Linked to the publication of *Gaffs* and to Dr Hearne's wider research agenda on housing inequality and housing rights he was invited to deliver a number of keynote contributions in 2021–22. These included to the Sociological Association of Ireland Conference 2022 on the concept of Home; the Irish Social Housing Conference 2022; the Irish Social Work Conference 2022 and the Irish Aftercare Conference 2022 and the Irish government's Housing Commission conference on inserting a right to adequate housing into the constitution.

Dr Hearne continued to publish academic journal articles, policy focused reports and opinion pieces for national media over the past year on the themes of housing inequality, housing rights and housing policy. Dr Hearne co-authored an article in *Housing Studies Journal* on Housing financialisation and the creation of homelessness in Ireland. Dr Hearne co-authored a peer reviewed policy report on research undertaken into the impact of the marketised form of social housing, HAP, on discrimination (Hearne & Walsh, 2022) published by the Irish Human Rights and Equality Commission. Over the course of the year 2021–22 Dr Hearne delivered 10 conference contributions, seven of which were invited keynote contributions. He also wrote four opinion pieces for national newspapers on aspects of the current housing crisis.

Reflecting the continued development of Social Work teaching and research within the Department, Dr Johanna O'Shea gave a range of refereed conference papers including to the Public and Patient Involvement Conference, Galway University, European Conference for Social Work research in Romania, and to the International Society for the Scientific Study of subjectivity (ISSS) in France. Particularly noteworthy is that Dr O'Shea's PhD thesis has been nominated by the independent chair of her PhD viva voce, supported by her external examiners and internal supervisors for best PhD thesis in Ulster University (2023). Dr Calvin Swords took over the role of PI for a project, Meeting the needs of children in Direct Provision from a Best Practice Perspective: an in-depth literature review from Dr Gloria Kirwan, now adjunct. This literature review was produced by Dr Kirwan, Dr Swords, and Breda O'Driscoll. The team are producing a handbook for professionals working in this field and have delivered a training programme and learning tools and resources. Also, in the year 2021–22 Breda O'Driscoll delivered an oral presentation at the Joint World Conference on social work education and social development which was held in South Korea. She presented a summary of findings of a study, Standing Tall with children, social workers experience of involving children in decisions in the context of child abuse and neglect. In this reporting year Dr Swords also produced what has proven a very popular contribution to RTÉ Brainstorm on Mental Health and Mental Illness drawing on his earlier research on this area.



Dr Ciara Bradley continued to lead Work Package 2 on Training across the MotherNet project

Reflecting the Department's scholarship in gender equality studies and our commitment to university wide research collaboration Dr Ciara Bradley continued in 2021–22 to lead Work Package 2 on *Training* across the MotherNet project as part of Horizon 2020 Marie Curie research and innovation programme, Twinning. This is a substantial part of the overall MotherNet project. Dr Bradley also serves on the MotherNet Project Steering Committee and on the Mother Net Research Ethics Committee.

Senior colleagues, Professor Maurice Devlin and Associate Professor Hilary Tierney continued to actively contribute to research on youth work, both European funded and Ireland funded. Professor Devlin and Associate Professor Tierney co-directed ongoing research on the experiences of minority ethnic young people in Balbriggan, County Dublin, commissioned by the National Youth Council of Ireland. Carried out with colleagues in the Centre for Youth Research and Development (Tonye Benson Olatunde, Aidan Farrelly and Reuben Hambakachere) and in close collaboration with local communities, young people and organisations, this study is the first of its kind in Ireland and is identifying important lessons and recommendations for both policy and practice.

Professor Devlin and Associate Professor Tierney also began work (with colleagues Dr Kathryn McGarry (adjunct) and Dr Niamh Flanagan) on the Erasmus plus funded project, Measuring the impact of Youth Organisations (MIYO). MU is the academic lead for this collaboration with the World Organisation of the Scouting Movement (WOSM), the European UMCA Alliance and national organisations in Belgium, Czech Republic, Ireland, Netherlands, North Macedonia, and Sweden, as well as a number of global partners. The MIYO research project will result in innovative open-source digital tools to enable youth organisations to assess the difference their work makes in the lives of young people.



Professor Maurice Devlin, Department of Applied Social Studies and Assisting Living and Learning (ALL) Institute

Professor Devlin commenced work as the invited Editor of the *Elgar Encyclopaedia of Youth Studies*, to be published by Edward Elgar Publishing. It will be the first encyclopaedia in this field.

Professor Devlin acted as consultant for the preparation of the National Youth Council's Vision for Youth Work. This is the first major collective vision statement from the entire Irish voluntary youth work sector (NYCI has 50 plus member organisations) in almost 30 years.

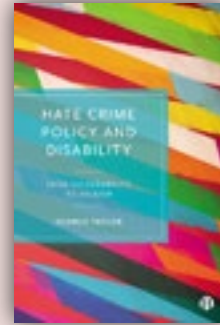
Professor Maurice Devlin continued to serve as the Irish correspondent (appointed by the Department of Children, Equality, Disability, Integration and Youth (DECEDIY) for the European Knowledge Centre on youth policy established by the Council of Europe. Professor Devlin also served as a member of the National Working Group for the European Union Youth Dialogue convened by DCEDIY as part of the European Union Youth Strategy.

Professor Devlin has also served in 2020-2021 as External Reviewer for the Research Grants Council of Hong Kong and on the Advisory Board of Youth and Globalisation (Brill).

Professor Devlin served a final year as Director of LGBTI plus youth service BeLong To. During the year he also stepped down as Joint Chairperson of the North South Education and Training Standards Committee for Youth Work (NSETS), of which he had been a founding member in 2005.

Professor Devlin was a member of the Assessment Panel for the Children's Rights Alliance Report Card 2022, an annual assessment of the Government's progress in developing and implementing effective and appropriate policies and services for children.

Aligned to her European research involvements and European level expert advisory work Associate Professor Hilary Tierney gave a number of conference contributions including to the Future Fit Youth Work conference in Berlin; a keynote address to a conference in Sarajevo on Strengthening the Youth Work European Youth Work Agenda in Eastern and Southeastern Europe and a joint keynote, Rethinking Professionalism in Youth Work at a conference in Tallinn with Dr Ilona Ranalla.



*Hate Crime Policy and Disability: from vulnerability to ableism* by Dr Seamus Taylor was published with Bristol University Press

Reflecting the research on hate crime and policy making in the Department, Dr Seamus Taylor published a book, *Hate Crime Policy and Disability: from vulnerability to ableism* with Bristol University Press. This book is the first comprehensive study of how hate crimes targeting disabled people came on the policy agenda and secured legal protection in Britain in recent years. Dr Taylor's book has received critical acclaim following publication including from leading academics in the field of hate studies and from leading policy makers and activists. Leading Hate Crime scholar, Professor Mark Walters (Sussex University) described it as 'this must-read book which provides original insight into the policy progress or lack thereof, in tackling Disability Hate Crime. It implores the reader to reconsider how ableism informs this odious form of victimisation'. Keir Starmer MP and Leader of the Labour Party in Britain welcomed the book stating that 'this book is long overdue; a welcome account of the development of Disability Hate Crime and a timely challenge on the way forward'. Most recently Dr Taylor's book has been nominated for Social Policy Book of the year award hosted by the Social Policy Association (Britain). Alongside and following publication of this book Dr Taylor has been seeking to make an evidence-based contribution to the development of the Hate Crime Bill going through the Oireachtas at present. Following a submission and the giving of evidence to the Oireachtas alongside NGOs the government have included in the Hate Crime Bill a key proposal from Dr Taylor regarding the legal test of proof to be used in hate crime cases. The Hate Crime Bill continues to journey through the legislative stages and Dr Taylor remains engaged with the development of this legislation.

More generally, partnerships with civil society and direct public contributions to the policy and practice domains continued to be key aspects and defining strengths of the Department's scholarships.

Dr Brian Melaugh served as Board level Director with Merchants Quay Ireland, Belong To Youth Service, GP Care for All, North Inner City Drugs Task Force – inter Agency Drugs Project and Cumas Drug Project. Through these directorships Brian continued to contribute to policy and service developments to improve the lives of people who use drugs and to improve health outcomes for marginalised groups. Linked to this engagement with the drugs sector Dr Melaugh delivered a seminar for Community Work Ireland on Drugs and Drugs Policy.

# Faculty Highlights

## Faculty of Social Sciences

Dr Marianne O'Shea continued to serve on the Policy and Practice Working Group of Community Work Ireland over the past year, as well as on the Community Work Educators Forum of the All-Ireland Endorsement Body for Community Work Education (AIEB). Dr O'Shea also continued to serve as a board member of the Liberia Solidarity Group.

Dr Ciara Bradley chaired the Maynooth University Social Justice Committee in 2021–22 and oversaw a highly successful programme of events. Dr Ciara Bradley also continued to serve as a member of the board of the All-Ireland Endorsement Body for Community Work Education, as a member of the Community Work Ireland Centre Group, as a member of the Community Work Ireland Climate Justice Working Group and as a member of the Pavee Point Traveller and Roma Centre Research Committee.



Dr Niamh Flanagan, Department of Applied Social Sciences

Dr Niamh Flanagan built on her existing contributions and involvements in child and family research in the past year through becoming convenor of the MU Anti Trafficking in Humans Network, through her involvement on the Advisory Board of the Children's Research Network and through her membership of the Children's Rights Alliance.

Dr Rory Hearne served on the steering group of The Right to Housing campaign – Home for Good. Dr Hearne also served on the board of the Raise the Roof Campaign, and Dr Hearne also continued to host a weekly podcast Reboot Republic.

Two new academic colleagues joined the Department of Applied Social Studies in Summer–Autumn 2022, Dr Mags Crean in Social Policy and Dr Sinead McMahon in Community and Youth Work. We look forward to reporting on their research contributions more fully in future research reports. In the meantime, Dr Crean contributed to the Children's School Lives research report series with former colleagues in UCD and she delivered a conference contribution on Social Class, COVID and Care to the Educational Studies Association of Ireland. Dr Crean also co-authored in 2021 a highly rated and cited article with Professor Kathleen Lynch and Dr Manolis Kalaitzake on Care and affective relations. This journal article was one of the highly commended articles in the judging for The Sociological Review Journal Article of the year, 2021. The article has a citation rate of 37. Dr McMahon together with Dr Sasha Noonan delivered a seminar to the Sociological Association of Ireland on the theme of

exploring values and emotional labour at the heart of professional practitioner motivation, entitled '*Home is where the Heart is*'. Dr McMahon also undertook book reviews for the *Journal of Ethics and Social Welfare* over the past year and alongside this she co-authored teaching and learning guidance on using biography as an innovative assessment in Social Policy. Dr McMahon also served with Tipperary Education and Training Board as a member of the Youth Work Committee.

Dr Seamus Taylor served as chair of the board of the Irish Penal Reform Trust, Ireland's leading NGO in penal reform and prisoners rights. Dr Taylor served on the Department of Justice Review on the role of the police in criminal prosecutions. Dr Taylor also served as a member of the Government's Expert Group on Equality Budgeting. Dr Taylor also served on the follow up implementation review of the Windrush Lessons Learned Review in Britain which was reported in 2022.

### Engaged Research

- Exploring the benefits of a mental health service users social club (2020) Dr Gloria Kirwan and Dr Calvin Swords
- Engaged research with Gateway Peer led Mental Health Project, Rathmines, Dublin. This was a collaborative community development research project into the way Gateway Peer led Mental Health Project adapted to COVID-19 pandemic and the effects on the ethos of the organisation.
- Exploring issues of social inclusion and racism in a 2<sup>nd</sup> level school. Based on participative research design involving students as part of research team. Dr Niamh Flanagan, Tonye Benson–Olatunde, and Dr Elaine Wilson (now completed).
- Ongoing engaged research with Pavee Point Traveller and Roma Centre on Pavee Mothering in the COVID-19 pandemic. Dr Ciara Bradley (now completed).
- Roma in Ireland: Access to Fair and Decent Work. This is a collaborative research project with Pavee Point Traveller and Roma Centre on the experiences of Roma in employment in Ireland. This was an ongoing research project in 2021–22 and due for publication in 2023.
- Professor Maurice Devlin, membership of the research Assessment Panel for the Children's Rights Alliance, Annual Report Card 2021.
- An ongoing engaged research project on the experiences of minority ethnic young people in north County Dublin. Commissioned by NYCI. Led by Professor Maurice Devlin and Associate Professor, Dr Hilary Tierney and being carried out with colleagues from the Centre for Youth Research and Development (Dr Jamie Gorman, Aidan Farrelly, Tonye Benson–Olatunde and Reuben Hambakachere) and in close collaboration with local communities, young people, and local organisations.

## School of Business

The School of Business employed 56.5 academic staff members during October 2021–September 2022.

In 2022, School faculty published 90 peer-reviewed journal articles, one textbook, eight book chapters, two conference publications and 26 other publications such as journal editorials, edited books, published reports, book review articles, policy reports, mass media articles and blog posts. The faculty presented 79 papers at various leading international conferences.

The Chartered Association of Business Schools (CABS) Academic Journal Guide is a leading international benchmark of the quality of business and management journals. 1,700 journals are ranked from 4\* to 1. CABS 4\* is reserved for 43 journals of distinction which are recognised worldwide as exemplars of excellence (top 2.5%). CABS 4 journals (top 5.6%) publish the most original and best-executed research and have high submission and low acceptance rates. CABS 3 journals (next 18,5%) are considered excellent.



52% of all journal articles published by the School of Business faculty in 2022 appeared in CABS ranked journals

### Publications

In 2022, 65 of the 90 peer-reviewed journal articles from the School of Business were published in ABS ranked journals, with 8 in CABS 4\* and 4 journals and 39 in ABS 3 journals.

In summary:

- 52% of all journal articles published by the School of Business faculty in 2022 appeared in journals that are classified as publishing original and well-executed research (CABS 3, 4 and 4\*),
- 9% appeared in the outlets that publish the most original and best-executed research in the field (CABS 4 and 4\*).
- One editorial article was published in CABS 4\* journal

In total nine of our publications (or 10%) appeared in ABS 4 and 4\* journals. This is an excellent outcome relative to international counterpart Business Schools.

These CABS 4 and 4\* peer-reviewed journal articles are (in alphabetical order with Mayoorth colleagues in bold):

#### CABS 4\*

- Fu, N., Keegan, A., **McCartney, S.** (2022) 'The duality of HR analysts' storytelling: Showcasing and curbing'. *Human Resource Management Journal* (UK)
- **Ryazanova O.**, Jaskiene J. (2022) 'Managing individual research productivity in academic organisations: A review of the evidence and a path forward'. *Research Policy*, 51 (2)

#### CABS 4

- Dungey M., **Flavin T., O'Connor T.**, Wosser M. (2022) 'Non-financial corporations and systemic risk'. *Journal of Corporate Finance*, 72
- Ferraris, A., Degbey, W., **Singh, S.K.**, Bresciani, S., Castellano, S., Fiano, F., & Couturier, J. (2022) 'Microfoundations of strategic agility in emerging markets: Empirical evidences of Italian MNEs in India'. *Journal of World Business*, 57 (2)
- **Gruda D.**, Karanatsiou D., Hanges P., Golbeck J., Vakali A. (2022) 'Don't Go Chasing Narcissists: A Relational-Based and Multiverse Perspective on Leader Narcissism and Follower Engagement using a Machine Learning Approach'. *Personality and Social Psychology Bulletin*
- **Mockaitis A.I.**, Butler C.L., **Ojo A.** (2022) 'COVID-19 pandemic disruptions to working lives: A multilevel examination of impacts across career stages'. *Journal of Vocational Behavior*, 138.
- O'Higgins, C., **Andreeva, T.**, Aramburu, N. (2022) 'The hows and whys of foreign operation mode combinations: The role of knowledge processes'. *Journal of World Business*, 57 (2)
- Terpstra-Tong, J., Ralston, D.A., Treviño, L., Karam, C., Furrer, O., Froese, F., Tjemkes, B., Darder, F.L., Richards, M., Dabic, M., Li, Y., Fu, P., Molteni, M., Palmer, I., Tucková, Z., Szabo, E., Poeschl, G., Hemmert, M., Butt, A., de la Garza, T., Susniene, D., Suzuki, S., Srinivasan, N., Gutierrez, J.R., Ricard, A. Buzády, Z., Paparella, L.S., Morales, O., Naidoo V., Kangasniemi-Haapala, M., Dalgic, T., Alas, R., Potocan, V., Dharmasiri, A.S., Fang, Y., Burns, C., **Crowley-Henry M.** (2022) 'The impact of gender-role-orientations on subjective career success: A multilevel study of 36 societies'. *Journal of Vocational Behavior*, 138.

These successes demonstrate that the broad field of Management is a particular area of research excellence at the School of Business.

Publication trends in the school since 2014 indicate a steady shift towards a higher share of peer reviewed journal publications, and a shift towards a higher share of CABS 3 and 4 papers, which is an explicit strategic goal of the school.

# Faculty Highlights

## Faculty of Social Sciences

### Research Funding and Awards

External funding secured by members of the School exceeded €5,000,000 in 2021/2022, with successes with the EU Horizon Europe funding listed below.

- “Leadership for Sustainable Digital Transformation in Europe” project by Professor Markus Helfert
- “RES4CITY” project, aimed to promote sustainable and renewable energy systems in urban areas, by Professor Fabiano Pallonetto in collaboration with Dr Emmanuel Kypraios
- “Flexible Energy Systems by leveraging the optimal integration of EVs and their users” project by Professor Fabiano Pallonetto, and
- “GoGreenRoutes” project by Dr Brendan Keegan.



Professor Fabiano Pallonetto in collaboration with Dr Emmanuel Kypraios secured funding for RES4CITY

Our faculty also secured funding for several projects from Science Foundation Ireland, including:

- EMPOWER Spokes project by Professor Markus Helfert
- “NexSys: Next Generation Energy System” project by Professor Fabiano Pallonetto, and
- “CONNECT Phase II: Neutral Host Business Models” by Dr Niall Connolly.

Professor Brian Donnellan secured funding from Lero Research Centre and Health Research Board. These successes demonstrate the strength of the Management Information Systems area in the School of Business in attracting external funding.

School of Business faculty actively engage with industry and the broader community through collaborative research with industry and the dissemination of research to the wider community through various forums. This includes participation in policy development, organising workshops for various stakeholders, membership in various industry bodies and committees and consulting for industry. Our dissemination efforts include a wide range of invited presentations at different practitioner-focused forums and media appearances, including 15 opinion pieces published in various mass media (with the article in the *Times Higher Education*, a leading international magazine), three mentions in the leading Irish newspapers such as *Irish Times*, one radio interview and seven podcast interviews.

Our faculty are regularly invited to speak about their research at various forums for practitioners. Recent examples are invited talks by Dr Kiera Dempsey-Brench in Germany (Phineo) and Austria (Austrian Fundraising Association – Fundraising Verband Austria), where she discussed best practice in partnership formation and co-creation in volunteer programme development, based on her research on employee volunteering. Dr Michael Hayden participated in the Expert Panel Discussion on Farm

Health and Safety, Wellbeing and Farm Families by Agriland; and Dr Jean Cushen, Kim Coogan and Dr Marian Crowley-Henry presented at Ireland Business Leaders Forum panel on ‘Post Covid Evolution of Working: The Where, When and How of future working’.

As an acknowledgement of his research outreach activities, Dr Emmanuel Kypraios was a Runner-up for the ONE-SIM Outreach Award 2022 that honours management scholars who work on sustainability, and who have done exceptionally well to reach out and communicate their insights to broader audiences.

However, the growth of our research dissemination efforts is lagging behind our academic research publications, indicating that the lack of time for dissemination activities may be challenging for developing our research impact.

A range of the industry engaged projects of our faculty have turned into long term regular collaborations, so in the examples below we focus on the new, recently started collaborations. One example is the collaboration by Dr Tatiana Andreeva with Bruegel, a Brussels-based think-tank, on a policy contribution that explores why organisations are implementing hybrid work arrangements and how they manage it, as a part of the “Future of Work and Inclusive Growth” project. Another example of School of Business research engagement with external stakeholders and wider community is a project by Dr Jean Cushen in collaboration with Business in the Community Ireland (BITC), a movement for sustainable change in business, patroned by President Michael D. Higgins. Dr Cushen worked with BITC to produce a ‘Sustainability Guide’, aimed at supporting sustainability practitioners in setting and delivering strategic objectives relating to Economic, Environmental, Social and Governance (EESG) topics. One more example is Dr Marian Crowley-Henry being an invited panel member of the Equity, Diversity and Inclusion committee of the Fulbright Commission, Ireland. In this role, Dr Crowley-Henry advises the Fulbright Commission on widening and improving the participation and inclusivity in Fulbright student and scholar awards across under-represented cohorts (particularly across race, sexual orientation, and social class).

### Engaged Research

School of Business faculty actively engage with various external stakeholders in their research and research outreach activities. Between October 2021 and September 2022 these included:

#### Appearance in Media

- Andreeva, T. (2022). New research into the effects & challenges of hybrid working. Insight HR podcast, Episode 64
- Cushen, J (2022) 350 people expected to lose their jobs at Meta’s Irish base. RTÉ Morning Ireland, Radio Interview.
- Gruda, J. (2022). Anxiety Detection & Social Media. Overpowering Emotions Podcast: Helping Children and Teens Manage Big Feels, Canada
- Gruda, J. (2022). If You Only Knew The Power of the Dark Side: Elon Musk, Narcissistic Leadership & The Dark Triad. 15 Minute Coffee Podcast
- Gruda, J. (2022). The Life of a Professor with Dr Jon Gruda. 15 Minute Coffee Podcast
- Hayden, M.T. (2022) Maynooth University Sustainable Futures Programme on the topic of Sustainability, Accounting and Farming.
- Fernández De Ossó Fuentes, M. J., Keegan, B. J., Jones, M. V., & MacIntyre, T. (2022, April). Can digital placemaking improve mental health through nature? [Micro talk video]. The Nature of Cities Festival



### Published Industry Reports

- Clark Recruitment, Maynooth University, Grant Thornton, Kildare Chamber of Commerce (2022) Workforce Survey 2022. Clark Recruitment
- Hayden, M.T., McNally, B. and Kinsella, A. (2022) State pensions: 'Stark reality' that low-income farmers may not qualify. Published by Agriland. Electronic Publication

### Publications in Media

- Gruda D., McCleskey J. (2022) Are narcissistic bosses good at raising cash? RTÉ Brainstorm. Online news article
- Gruda D., Ojo A. (2022) Has the pandemic impacted more on introverts or extroverts? RTÉ Brainstorm, Online news article
- Gruda D., Psychogios A., Ojo A. (2022) Anxious leaders can influence their followers' anxiety even when communicating online, study finds. PsyPost. Online news article
- Gruda D., Ojo A. (2022) Has the pandemic impacted more on introverts or extroverts? RTÉ Brainstorm, Online news article.
- Hayden, M.T., (2022) – Farmers need to focus on economic and environmental sustainability. Irish Farmers Journal online news article.
- Hayden, M.T., (2022) Can farmers balance economic and environmental sustainability? RTÉ Brainstorm. Online news article.
- Hayden, M.T., (2022) Tackling the 'Pension Gap' challenge for farmers. Irish Examiner. Online news article.
- Hayden, M.T., (2022) Farmers need to be 'more active' with succession planning. Irish Farmers Journal. Online news article.
- Hayden, M.T., (2022) 'It's hard to be green, when in the red – balancing economic sustainability with environmental sustainability' Research, Published by Teagasc
- Mockaitis, A., (2022) Equity and Fairness in International Business through the Lens of Global Migration. BLOG
- Rake, B. (2022) What Viagra tells us about sustainability and repurposing. RTÉ Brainstorm. Online news article
- Fedi, L., Faury, O., Rigot-Muller, P., Montier, N. (2022) Shipping alliances and container port development over the COVID-19 pandemic. The Maritime Economist. Issue 2, 2022 (No.10). Magazine Article
- Ryazanova, O., and Jaskiene, J., (2022) Managing individual research productivity in academic organisations: seven key insights. Times Higher Education. Electronic Publication.
- Smith-Auchmuty, A & Delahunt, A (2022) Will cinemas and streaming services be able to co-exist? RTÉ Brainstorm. Online news article.

### Engagement in Consulting with Industry/Practice

- Yu, M., Consultant for research and marketing for Non-profit. CampusImpact.
- Yu, M., Consultant for research and marketing, US games developer. SunSpear Games, Inc.

### Other Partnerships with External Stakeholders

- Cushen, J., Judge at the BT Young Scientist and Technology Exhibition. British Telecom

### Memberships in Various Committees and Networks

- Cullen, J., Member of working group and research lead of Climate Action Regional Offices Economic Opportunities Project. Maynooth University.

- Cullen, J., Member of steering group and research lead of Climate Action Regional Offices Economic Opportunities Project. Maynooth University.
- Doris, F., Independent non-executive director on fund board. Franklin Templeton Investments.
- Galavan, R., Charity Trustee and Treasurer. Maynooth University.
- Galavan, R., Board member and Company Secretary – Sports Club and Facilities. Maynooth University.

### Participation in Policy Development/Analysis in Partnership with Practice

- Crowley-Henry, M., EDI Committee, Fulbright Ireland Commission.
- Cushen, J., National Indicators of Quality Employment. Economic Social Research Institute.
- Rigot-Muller, P., Invited expert. Maritime Affairs and Fisheries.

### Membership in Industrial Bodies

- Casey, A., Fellow of Chartered Accountants Ireland.
- Casey, A., Member Irish Accounting and Finance Association.
- Chow, D., External advisory member. Association of Chartered Certified Accountants.
- Doris, F., Fellow of Chartered Accountants Ireland.
- Hayden, M., Fellow of Chartered Accountants Ireland.
- McNally, B., Fellow of Chartered Accountants Ireland.
- Rigot-Muller, P., Chartered Institute of Transport and Logistics Ireland (CILT) Ireland membership.

### Invited Presentations at Practitioner-Focused Forums

- Cushen, J., Coogan, K. and Crowley-enry, M. (2022) 'The Future Worker'. Invited Presentation at ACCA Ireland Business Leaders Forum panel on 'Post Covid Evolution of Working: The Where, When and How of future working'.
- Dempsey-Brench, K. (2022) Invited Presentation for international government and non-profit conference. Austrian Fundraising Association – Fundraising Verband Austria (FVA).
- Dempsey-Brench, K. (2022) Invited Presentation to German-based non-profit. Phineo, Germany.
- Hayden, M.T. (2022) Agriland – Contributor to Expert Panel Discussion on Farm Health and Safety, Wellbeing and Farm Families.
- Mountford, N., Cai, Y.Z. (2022). Institutional logics in higher education research.

### Student Involvement in Engaged Research

The Business Consultancy Project (BCP) is an element of our MSC programmes that provides a significant opportunity for students, supervised by faculty, to gain real world experience of a business issue. This is an important method through which the research informed, practice engaged values of the School of Business are brought to life and how we seek to live our mission of providing both developing critical thinkers and impactful knowledge for society. The BCP enables students and faculty to apply their research and practice skills to a problem that a client organisation faces. Postgraduates at the School of Business carry out research on any one of a wide number of business areas of strategic importance to organisations. This year we had 105 BCPs across 57 organisations in a range of industries including Tourism, Consultancy, Sustainability, Education, Fashion and Technology.

# Faculty Highlights

## Faculty of Social Sciences

### Design Innovation

The Design Innovation Department comprises of six academic staff. The Maynooth Innovation Lab pilot, coordinated by Trevor Vaugh (Assistant Professor, Design Innovation) and Dr Threase Finnegan-Kessie (Assistant Professor Department of Design Innovation) concluded in November 2022, with many successful research outputs achieved. In February 2022, the National Recognition of Prior Learning Project launched the *Book of Discovery* completed by Mi:Lab, which tracked the challenges and opportunities for RPL in Irish Higher Education Institutions. In collaboration with an animator, Mi:Lab produced a video documenting the experiences of students engaging with the RPL route. Featuring the voices of real students sharing their experiences, this video has been shared on Institutional websites across the country, highlighting the importance of the RPL route to Higher Education.



Dr Ian Marder, Dr Threase Finnegan-Kessie (Mi:Lab), Trevor Vaugh and Layne Aston hosted the Maynooth Summer Institute in Restorative Justice and Design Innovation in August 2022

Mi:Lab were invited by the Irish Universities Association to conduct research on the national reporting survey for first year, final year and postgraduate students in Irish Higher Education Institutions, StudentSurvey.ie. In a piece of Design research which ran from March–November 2022, Mi:Lab responded to the question ‘What’s next for StudentSurvey.ie?’ by hosting a series of online and in-person workshops with student and staff stakeholders from across Higher Education. The research culminated in a co-design workshop hosted by Dr Threase Finnegan-Kessie as part of the Quality Qualifications Ireland 10<sup>th</sup> Anniversary conference in Croke Park in November 2022. Their involvement in this work saw PI Trevor Vaugh invited to speak on the Irish Universities Association podcast ‘Two Talk To’ hosted by Director General Jim Miley ([www.youtube.com/watch?v=e34wSjpG8q4](https://www.youtube.com/watch?v=e34wSjpG8q4)).

In collaboration with Dr Ian Marder in MU School of Law and Criminology, Mi:Lab hosted the Maynooth Summer Institute in Restorative Justice and Design Innovation. The event brought together 28 Academic Fellows and members of the Restorative Justice Pedagogy Network from sixteen countries (Argentina, Belarus, Belgium, Brazil, Czech Republic, Ireland, India, Mauritius, the Netherlands, New Zealand, Nigeria, Singapore, Spain, Tanzania, the United Kingdom and the United States). The goal was to investigate how better to communicate restorative justice to different audiences, with a particular focus on public education. The organisers delivered three days of immersive workshops, using techniques from design innovation and restorative practices to help Fellows work together

to research, identify and prototype new ways of achieving this goal. The outcomes from this summer institute are currently being investigated by the Fellows to explore routes to market.

Finally, Mi:Lab played an important role in gathering student and staff experience data to inform the development of the Maynooth University Strategic Plan 2023–2028. The Mi:Lab team facilitated 30 design-led workshops with 326 members of the Maynooth University community being involved in these sessions. These design workshops were developed to help students and staff develop ‘Big Ideas’ for the future of Maynooth University, which helped inform the direction of the new MU Strategic Plan.

With the Mi:Lab concluding in November 2022, Trevor Vaugh (PI) and Dr Threase Finnegan-Kessie continue to work on disseminating the findings from this pilot project. Several journal articles are currently under peer review which will illuminate the value of Design-Led Innovation in the Higher Education space. One such article was published in the Higher Education Research and Development’s 40<sup>th</sup> Anniversary Special Issue in February 2022. This special issue was dedicated to reflecting on the scholarship of the journal over the previous 40 years, with Vaugh et al.’s ‘*Introducing Strategic Design in Education (SDxE): an approach to navigating complexity and ambiguity at the micro, meso and macro layers of Higher Education*’ being selected by the editors for inclusion in this issue as an “approach to navigating change in the future.”

Dr Linzi Ryan continues working in the space of elderly and dementia care, with conference papers presented at the SDinGov 2022, and Intergenerational Week organised by UCD’s Age Friendly University Network. Additionally, Dr Ryan’s timely research on organisational and behaviour change within public sector workplaces has been presented at the ComplianceNet Conference, and the DesignOps Global Conference. Finally, Dr Ryan serves as co-supervisor for PhD students Yuening Li with Professor Aphra Kerr, and Jón Bjarki Magnusson with Professor David Prendergast.



Dr Iain Macdonald, Design Innovation Department

Dr Iain Macdonald is pursuing two major research avenues that involve different international research partners: HPV (Human Papilloma Virus) Education among teens with colleagues in Edinburgh Napier University and the Irish Cancer Society, and a History of BBC Motion Graphics with Ravensbourne University, London. He is also on the Editorial Committee of the *International Journal for Art & Design Education*.

## HPV Education Powered by STEAM: Exploring Peer-to-Peer Creative Critical Engagement

This project is funded by a €49,900 Science Foundation Ireland Discover Programme grant and involves researchers from Maynooth University (Dr Macdonald, Design Innovation, and Dr Healy, Education) and Edinburgh Napier University (Dr Malone, Dr Firth and Dr Gray Brunton) in collaboration with the Irish Cancer Society. The project involves new ways of bringing the arts into science education, using Science, Technology, Engineering, Art, Maths (STEAM) approaches to develop students' awareness and understanding of immunology, and HPV vaccination. The aim is to empower young people to critically analyse information and perceptions around the HPV vaccine in order to promote informed choices around HPV vaccination, and thus develop confident advocates for HPV immunisation. Building on previous Irish Research Council funded project titled 'HPV Immunity Community – Raising HPV Awareness', this research uses a multi-stage process involving a multimodal approach. There have been several international conference presentations over the year at CUMULUS Detroit, ESAI Belfast and Horizons in STEM Higher Education Conference London, as well as a peer reviewed journal publication in *Studies in Higher Education* titled: 'How can Scientists and Designers find better ways of working together? A case study of Playful Learning to Co-Design Visual Interpretations of Immunology Concepts'.

## History of BBC Motion Graphics

In a different avenue of research Dr Macdonald collaborating with co-editor, Paula Williams at Ravensbourne University a book on the History of BBC Motion Graphics to be published by Bloomsbury BFI in 2024. His motion graphics research is focussed on children's programming where two of television's most iconic programmes have come: *Blue Peter* and *Doctor Who*.

Trevor Vaugh currently sits on Ireland's public service innovation advisory board and is co-chair of the Design in Government expert working group. Over the last year, Vaugh led the team of experts in the design and development of Ireland's first set of design principles for government in Ireland and the accompanying report *Designing Our Public Services – Design Principles for Government in Ireland*, which was launched on Friday 28<sup>th</sup> October during the 'Design in Government – Impact for All' conference. The conference was supported by Creative Ireland, and delivered by the Institute of Designers in Ireland, in partnership with the Department of Public Expenditure and Reform.

Vaugh collaborated with newly appointed Assistant Professor of Design Innovation, Dr Threase Finnegan-Kessie to engage final year students on the BSc in Product Design engage in research and product development based on the findings from the Government of Ireland's 'Creating Our Futures' report. This report, which was conducted by Science Foundation Ireland focusses on understanding the needs of the Irish public. Dr Finnegan-Kessie serves as co-supervisor for Jared Gormley's PhD, alongside Dr Mary Galvin (MTU Cork) and Dr Susan Rea (Nimbus Research Centre). Threase also supports a number of active research projects from a Design and Ethnographic perspective, including the HSE Spark programme, and the 'Restore Uvalde' project co-ordinated by the University of Texas.

## Economics Finance and Accounting

The Department of Economics is a vibrant diverse group of academics with an international reputation for excellence in research. In 2021/22 the Department employed 12 academic staff members. The faculty members published seven peer-reviewed journal articles and book chapters, and several mass media articles, working papers and policy reports. The faculty also presented their research at leading international conferences.

Professor Donal O'Neill passed away following a short illness while this report was going to print. Our thoughts are with his family, friends and many colleagues at this time.

In 2021/22, the Research Papers in Economics consortium ranked the Department in the top eight percent of economics research departments/institutions worldwide. Among economics departments in Ireland, this put MU among the top three with UCD and TCD. Our position in research rankings in economics is a natural reflection of the Department's commitment to high quality research.

The Department published in journals ranked as internationally excellent. These papers below are in alphabetical order with Maynooth colleagues in bold.

- Berri, D, **A. Farnell** and R. Simmons (2022) «The determinants of Black quarterback pay in the National Football League», *Managerial and Decision Economics*.
- **Morando, B** (2022) "Aggregate productivity and inefficient cropping patterns in Uganda" forthcoming *Journal of Productivity Analysis*.
- Eibich, P., Lorenti A. & **Mosca, I.** (2022) Does Retirement Affect Voluntary Work Provision? Evidence from Europe and the U.S., *Labour Economics*.
- Pastine, I. and **T. Pastine** (2022), «Equilibrium Existence and Expected Payoffs in All-Pay Auctions with Constraints,» *Economic Theory*.
- **Doris, A, O'Neill, D and O. Sweetman**, (2022) "Good Schools or Good Students? The Importance of Selectivity for School Rankings," *Oxford Review of Education*.
- Eoin McLaughlin, **Rowena Pecchenino** (2002) Fringe banking and financialisation: Pawnbroking in pre-famine and famine Ireland," *The Economic History Review*.

Dr Irene Mosca's joint work with Robert E. Wright "*Economics of Marriage Bar*," Economics Department Working Paper, 2021: n310.21, appeared as a chapter in the *Handbook of Labor, Human Resources and Population Economics* by Springer Nature which is one of the world's leading global research, educational and professional publishers.

In addition, Dr Irene Mosca, was awarded the Novartis prize for best health economics paper at the 2022 Irish Economics Association Conference. Dr Mosca's work focusses on the area of health and labour economics and her prize-winning paper with Dr Anne Nolan examines the impact of the rubella outbreak in Ireland on those in utero at the time. Matching the outcomes of individuals born in 1955 to 1958 who are in the 2016 Irish Census to the county-level rubella incidence rate that was prevailing when respondents were in utero, they find that a 1% increase in the rubella incidence rate when in utero is associated with a 0.03% to 0.17% increase in the probability of having lower levels of educational attainment, being in poor health and having a disability in later life.

The maintained success in publications in top ranked international peer reviewed journals and associated awards reflects an explicit strategic goal of the Department to target high impact research.

# Faculty Highlights

## Faculty of Social Sciences

### Membership in External Committees

Dr Olive Sweetman is the Chairperson of the Economic and Social Studies. Economic and Social Studies fosters and promotes education in the social and economic sciences. The journal *Economic and Social Review* is in its remit. The journal publishes papers, both theoretical and applied research in all areas of social science.

Dr Aedín Doris and Dr Gerda Dewit served as Managing Editor and Associate Editor respectively, of *The Economic and Social Review*, Ireland's leading peer reviewed international journal for economics and applied social science.



Dr Aedín Doris and Dr Gerda Dewit, Department of Economics, served as Managing Editor and Associate Editor respectively, of *The Economic and Social Review*

Dr Doris is a Council Member of the *Statistical and Social Inquiry Society of Ireland* and an Associate Editor of the *Society's* journal.

Dr Irene Mosca is an Executive Committee Member of the Irish Society for Women in Economics (ISWE). ISWE is a platform seeking to inspire, empower and increase women's visibility in economics in Ireland to ensure that the role of economists in public debates, policy decisions, and education is more representative of Irish society.

The Department members' consistent reach for excellence in economics research translates into external recognition. Dr Dermot Leahy and Dr Gerda Dewit are affiliated senior researchers at the Leuven Centre for Irish Studies (LCIS) at the Catholic University of Leuven. Their group conducts research on aspects of small open economies, like Ireland and Belgium, and their role in the European Union and the global economy.

Dr Irene Mosca is and the late Professor Donal O'Neill was a research fellow at the IZA Institute for Study of Labor. IZA is the leading international platform that links and disseminates cutting-edge research in labour economics. Dr Irene Mosca is also a research fellow at the Global Labor Organisation (GLO). The GLO functions as an international network and virtual platform for researchers, policy makers and practitioners interested in scientific research and its societal implications on global labour markets, demographic challenges and human resources. Both IZA and GLO's networks of selected research fellows are distinguished by their excellence in research contributions.

### Engaged Research

The Economics Department made key contributions to social and economic policy in Ireland during the academic year 2021/22.

Dr Aedín Doris, Professor Donal O'Neill and Dr Olive Sweetman conducted grant-funded research for the Department of Enterprise, Trade and Employment and the Low Pay Commission, reviewing the national and international evidence on the impact of the introduction of a living wage on employment, hours of work and consumer prices. It also examined the impact of a living wage on inequality, in-work poverty, and employer costs, as well as the possible interactions between a living wage and other policy instruments, such as tax rates, social insurance rates, social policy health, education, and housing policy. The report, *Research on the Introduction of a Living Wage in Ireland*, was published in March 2022. The recommendations that followed from the report were adopted by the Government in November 2022, with the Government announcing that a new National Living Wage will be set at 60% of hourly median wages and will be introduced over a four-year period to be fully operational by 2026, at which point it will replace the National Minimum Wage.

Dr Aedín Doris is engaged in a funded collaboration with researchers in the Central Bank of Ireland, under the Bank's External Experts programme. The project is to examine the gender gap in wealth across EU member states.

Professor Rowena Pecchenino is a Council Member in the ESRI. This is an influential position as the Institute gives evidence-based policy recommendations to the Government on the most difficult and pressing social and economic problems Ireland faces.

Professor Donal O'Neill was a member of the Labour Market Advisory Council Evaluation Committee. The Labour Market Advisory Council evaluates the impact, effectiveness and efficiency of measures implemented as part of the Pathways-to-Work Strategy, and alternative labour market programmes and policies aimed at supporting unemployed individuals to access employment, ensuring that they align with sectoral needs. The evaluation committee oversees and advises on research conducted on behalf of the Minister for Employment Affairs and Social Protection by agencies such as the OECD and ESRI, as well as internal research conducted by the Department of Social Protection.



Professor Donal O'Neill, Department of Economics



Dr Aedín Doris, Department of Economics, Finance and Accounting

Dr Aedín Doris is a member of the External Advisory Group (EAG) of IGEES, the Irish Government Economic and Evaluation Service. The EAG gives advice to IGEES management on the structure and human resources development of the Service and facilitates lines of communication between the academic and policy making communities.

Dr Bruno Morando gave a presentation on developing lines of inquiry with a sound economic focus for the teacher webinar.

### Policy Reports

Doris, A., D. O'Neill and O. Sweetman (2022), Research on a Living Wage in Ireland, [www.gov.ie/pdf/?file=https://assets.gov.ie/226963/abf64971-90ba-4f77-966e-4e403ca4fd65.pdf#page=null](https://assets.gov.ie/226963/abf64971-90ba-4f77-966e-4e403ca4fd65.pdf#page=null)

### Research Outreach: Media Participation

Dr Aedín Doris, Professor Donal O'Neill and Dr Olive Sweetman were interviewed about their work on School choice by Peter McGuire, The Irish Times on January 7<sup>th</sup> 2022 "What's stopping better information in Schools?" [www.irishtimes.com/news/education/what-s-stopping-better-information-on-schools-1.4761325](https://www.irishtimes.com/news/education/what-s-stopping-better-information-on-schools-1.4761325)

Dr Aedín Doris from the Department of Economics at Maynooth University was interviewed on Newstalk's The Hard Shoulder show about the government proposal to link jobseeker's benefit to past earnings.

## Education

The Department of Education is home to 16.9 full-time academic staff members in 2021/22 and 851 students across 10 major programmes. Approximately 700 students are studying at the Postgraduate level from Postgraduate Diplomas to Master and Doctoral degrees. The Department has an extensive doctoral level commitment, with 74 pursuing research degrees (28 PhD, 46 EdD and two MLitt).

Collectively, the Department has published across a range of venues, both scholarly and professional, with books, peer-reviewed articles, book chapters, and refereed conference proceedings the bulk of our research outputs. For 2022, we published a total of 54 publications. Publications for the Centre of Public Education and Pedagogy (CPEP) totaled 17. While we have a number of ongoing research grants, for 2021–2022, we were awarded a total of five awards, representing an overall value of €109k in university funding.

Notable achievements in 2022 saw the publication of three new books within the Department.

- Dr Thomas Walsh co-edited: *History of Early Childhood Education and Care in Ireland 1921-2021* with colleague Professor Noirin Hayes from Trinity College Dublin (Peter Lang).
- In STEM education, Dr Tom Delahunty with Maire Ní Riordáin from University College Cork co-edited collection titled: *Perspectives in Contemporary STEM Education Research* (Routledge).
- Dr Majella Dempsey provided an invaluable guide on an emerging assessment trend: *Undertaking Capstone and Final Year Projects in Psychology: Practical Guide for Students* (Routledge) with colleague Dr Jolanta Burke from Royal College of Surgeons in Ireland.

The Department continues its impressive output in publishing in peer reviewed journals. Some highlights include Professor Sharon Todd's two articles in top ranked journals in her area, focusing on the importance of embodiment and the senses for teaching article titled: 'Reframing Education Beyond the Bounds of Strong Instrumentalism: Educational Practices, Sensory Experience, and Relational Aesthetics' in *Educational Theory*, and 'Teaching as bodily enactment: relational formations of touch and movement' in *Discourse: Studies in the Cultural Politics of Education*.



Professor Sharon Todd, Department of Education and Centre for Public Education and Pedagogy

# Faculty Highlights

## Faculty of Social Sciences

Overall Department of Education colleagues publish actively in Philosophy of Education. For example: Dr Ciarán Ó Gallchóir's and Dr Oliver McGarr's (University of Limerick) collaboration led to a number of peer-reviewed articles including 'An Irish perspective on initial teacher education: How teacher educators can respond to an awareness of the absurd.' in *Educational Philosophy and Theory*. Dr Catriona O'Toole's work on trauma-informed education led to several publications including: 'When trauma comes to school: Toward a socially just trauma-informed praxis' in *International Journal of School Social Work*.

Several colleagues gave invited keynote addresses in prestigious conferences this year. For example, Professor Sharon Todd was invited as keynote speaker to the Korean Philosophy of Education Society where she spoke about Digital Educational Encounters as Sensory Encounters. In her position as President of the International Network for Philosophers of Education, she also delivered a plenary response at their bi-annual conference in Copenhagen. Dr Catriona O'Toole addressed the International Network for School Attendance in Egmond aan Zee, The Netherlands, October 5<sup>th</sup> with a title: The tip of the ice-berg: Why we need trauma-informed responses for school attendance difficulties. Dr Bernie Grummel gave a keynote address: 'Inclusion of adult literacy in Further Education and Training in Ireland' in Annual Adult Literacy Organisers' Association conference in Athlone.

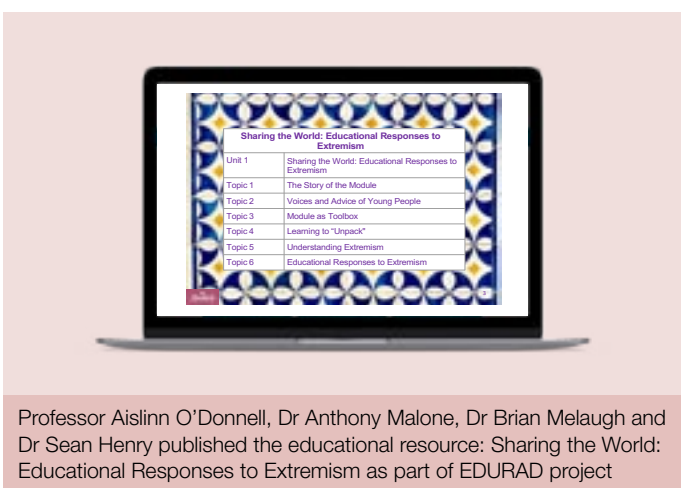
Colleagues in the Department engage actively with varied audiences through different types of publications such as newspaper articles, podcasts and various online resources. For example, Professor Aislinn O'Donnell, Dr Anthony Malone together with colleagues Dr Brian Melaugh, and Dr Sean Henry published an extensive open access manual and educational resource titled: *Sharing the World: Educational Responses to Extremism*. The resource was developed as part of EU funded EDURAD project.

The Centre for Public Education and Pedagogy (CPEP) has been very active in 2022. In addition to its three currently active funded projects from the EU and the Swedish Research Agency, and its Friday Seminar series, both the director, Professor CA Säfström, and Professor Gert Biesta have collectively published 11 peer-reviewed articles, along with several keynotes and conference presentations. Highlights also include Professor Biesta ranking in the top 2% percentile of scholars in the field of education worldwide, with six translations of his books coming out this year, and Professor Säfström has co-edited a timely special issue of the *European Educational Research Journal* on the topic of "Public Pedagogy and Sustainability Challenges."



Professor Carl Anders Säfström, Director of the Centre for Public Education and Pedagogy

CPEP was host to the successful second Annual International Doctoral Conference on Public Education. Twenty-five PhD students from seven different countries presented and discussed their projects over five days. CPEP also initiated two book projects: *The New Publicness of Education* edited by Professors Säfström and Biesta (Routledge, due out in early 2023) was completed after a series of seminars on chapters written by representatives from four different Departments at Maynooth University.



Professor Aislinn O'Donnell, Dr Anthony Malone, Dr Brian Melaugh and Dr Sean Henry published the educational resource: *Sharing the World: Educational Responses to Extremism* as part of EDURAD project

Over the course of the year, Dr Margaret Flood published a 12-episode podcast "Talking about all things inclusion" which is available on Apple Podcasts. Colleagues also wrote newspaper articles, for example Dr Tom Delahunty and Dr Aoibhinn Ní Shúilleabháin's (UCD) piece in The Irish Times: It is time to financially support student teachers' education.



*The New Publicness of Education* edited by Professor Carl Anders Säfström and Professor Gert Biesta

A symposium preparing for an edited book on *Art, Education and Sustainability* (Routledge) was arranged by Professor Säfström and Dr Glenn Loughran (TUD) in November and was funded by the research network "Manners of teaching about controversial sustainability issues" to which the Centre belongs.

Professor Biesta was appointed by the Dutch government for a four-year term as member of the Education Council of the Netherlands, the advisory body for educational matters for the Dutch government and parliament (<http://www.onderwijsraad.nl>) and Professor Säfström became Affiliated Professor at the Childhood, Education and Society Department at Malmö University.

We recently identified new Departmental research themes that capture the research we conduct. Those include:

### Professional Studies

Our research in the area of Professional Studies is recognised both nationally and internationally and focusses on the fields of Teacher Education, Guidance Counsellor Education, Educational Leadership, and Professional Development. Publications and projects centre on teacher autonomy and agency, school leadership and diversity and inclusion. Researchers under this strand seek to understand and critically interrogate the complex network of professionals and stakeholders that together make education possible across the lifespan.

### Transformative Pedagogies

This theme forefronts the conception of education as a distinctly relational encounter concerned with purposes of qualification, socialisation, and subjectification. Researchers under this strand are concerned with investigations into innovative pedagogical practices and ecologies that promote socioculturally sensitive encounters. Researchers here are interested in critical approaches that aim to challenge inequalities and oppression through a variety of stances such as those drawing on critical race theory, decolonial studies, and feminist theories, among others, through research on pedagogies of discomfort and disruption, inclusive practices, brave spaces, innovative technologies, and democratic participation.

### Education, Culture and Social Justice

This theme emphasises the role of education in the societal transformation. Issues of diversity, equality and participation are key themes. Researchers under this strand are seeking to promote and enhance education for global justice. This strand also focuses on the formation of the identities of education practitioners and learners within the social context of education and educational policy. In this area we are interested in culture and social contexts that shape education's everyday experiences in relation to democracy, well-being, health, identity, diversity, social justice, migration, sustainability, peace, race and human flourishing.

### Engaged Research

The Department is involved in a number of projects that stretch across schools, regulatory bodies, and community organisations.

A number of our staff are engaged with civic bodies and governmental organisations, such as the NCAA and ALOA. For example:

- Dr Thomas Walsh's work with international scholars on the NCCA Advisory Panel for the redevelopment of the primary school curriculum has led to a number of policy publications and contributions
- Dr Majella Dempsey is chair of the NCCA Biology Development Group and is IUA representative on the NCCA Board for Senior Cycle.
- Dr Bernie Grummel completed national research on adult literacy in Ireland for the Adult Literacy Organisers' Association.
- Dr Celine Healy sits on a number of boards and committees including DES Steering Committee for CLIL provision in the Irish Education system, Foreign Languages Advisory Group (FLAG) to oversee and monitor the implementation of the Languages Connect Strategy, Management Committee Member (ITE) for the Post-Primary Languages Ireland, Post-Primary Languages Committee: PI on national roll-out of CLIL (Modern Languages). In addition, she chairs the NCCA Development Groups for Polish, Lithuanian, Portuguese, Mandarin Chinese and Arabic.
- Dr Zerrin Doganca Kucuk leads the Global Citizenship Education Project funded by the Ubuntu Network. The project aims to embed GCE themes into initial teacher programmes.
- Dr Liz Meade's current research also focuses on critical Global Citizenship Education, with particular focus on democracy and education, public pedagogy, and reimagining educational spaces and pedagogies to extend access to people who are marginalised in our society with second level schools.
- Dr Majella Dempsey is a Teaching Council Researcher in Residence in two post-primary schools for the school year 2022–2023. Her work with the schools focusses on curriculum and pedagogical change. With funding from County Kildare Children and Young People's Services Committee, Dr Catriona O'Toole is working with professionals in County Kildare to develop good practice principles for responding to children and young people who experience difficulties with school attendance. The collaboration also aims to identify local pathways of support for County Kildare schools and services. Dr Celine Healy is an expert member on the FLAG Post-Primary subcommittee.
- Dr Anthony Malone leads the TL21 project and in 2021–2022 our Department worked with 10 Education Support centres across Ireland. The programme represents a partnership between us, the Education Support Centres and the Department of Education. In 2023 the project will be running for 20 years with lots of plans to celebrate the fruitful research partnership in the coming year.
- Dr Thomas Delahunty is a member of the Research, Application, and Inclusion in STEM Education (RAISE) Research Group, formed by academics working in a variety of areas of STEM education across several higher education institutions in Ireland. RAISE worked with Boston Scientific in establishing the first national bursary for student teachers in STEM. This bursary, open to student teachers qualifying to teach STEM subjects in their penultimate year of study, was awarded to Leanne O'Connor from Maynooth University based on her essay 'My role as a STEM educator and advocate' in 2022.

# Faculty Highlights

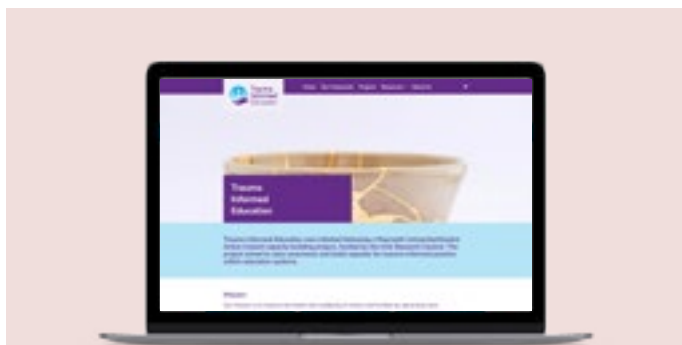
## Faculty of Social Sciences

A number of our staff lead national and international research networks.

- Professor Sharon Todd is the President of the International Network for Philosophers of Education.
- Dr Celine Healy is the President of the Educational Studies Association of Ireland and the Irish representative on European Educational Research Association Council.
- Dr Catriona O'Toole is co-convenor for the ECER Health and Wellbeing Education Network.
- Dr Majella Dempsey is the incoming link convener for the ECER Curriculum network. She is also the lead for the ESAI funded Curriculum Studies Special Interest Group, a group of researchers across five universities working on mapping the field of curriculum studies research.

Dr Anthony Malone works on the Study of Adolescent Lives after Migration, a collaborative school-based project being conducted as part of a larger programme of research called 'SALaMA' (Study of Adolescent Lives after Migration to America), which is led by Washington University, St Louis (USA) in partnership with QFI.

Dr Catriona O'Toole was awarded an Irish Research Council New Foundations grant to support research and advocacy in trauma-informed education with charity partner, Alcohol Action Ireland. She has designed a bespoke website (<http://www.traumainformededucation.ie>), providing researchers and practitioners with a go-to site for trustworthy information and accessible, high-quality resources, and to build collaborations nationally and internationally.



Trauma Informed Education was developed by Dr Catriona O'Toole to provide a go-to website for trustworthy information and accessible, high-quality resources

## Adult and Community Education

The Department of Adult and Community Education is comprised of eight academic staff and three administrative staff. We had three part-time research assistants and one postdoctoral post in 2022. There are also two academic staff and one administrator working on the HEA funded 'Turn to Teaching' project. There were 38 research students on its doctoral programmes in 2022.

In 2021/22, staff in the Department authored 29 publications and gave 28 academic and public presentations. We are involved in 11 funded research projects (international and national). We were awarded funding for five new research projects in 2021/22 (to value of €192,249).

Our research in 2022 explored a diverse range of themes:

- inclusion and adult literacy
- access and widening participation to higher education
- Further Education-Higher Education pathways and partnerships
- initial teacher training and teacher diversity
- transformative learning
- popular education
- feminism, mindfulness
- participatory and arts-based methodologies
- adult career guidance
- migration
- racism
- military peacekeeping,
- the politics of fear
- Irish Protestant experience and
- precarity and professionalism in the Further Education and Training sector.

The diversity of areas of research interest reflects the complexity of adult education and learning as a field but nevertheless the major research foci of the Department is well-established, and we have a clearly defined and mature research agenda. Our research seeks to support democratic and transformative approaches to adult education underpinned by a commitment to equality and social justice.

Specifically, the Department continues to lead nationally and is a key contributor internationally on research on;

1. further, adult and community education;
2. widening access and participation; and
3. critical pedagogy, popular education, and transformative learning.

In each of these three key areas our scholarly work is closely related to our engaged research with practitioners, stakeholders, and communities and what they deem is important to them. In the overview below we will indicate how our various strands of research are connected.

Our collaborative and participative approach to research with communities is central to our research and resonant with the university's inclusion and civic engagement objectives and supports the ethos, reputation, and strategic goals of Maynooth University.



## Further, Adult and Community Education

The Department has been integral to the development of research and policy on Irish adult education over the past five decades.

We continue to be involved in key policy developments in adult education, including on the National Advisory Committee for the *Learning for Life* national adult literacy strategy (2021), and developed a series of briefing papers on adult literacy for National Adult Literacy Agency (NALA), the National Further Education and Training Agency (SOLAS) and Education and Training Boards Ireland (ETBI). This research and subsequent policy dissemination has been central in developing a research basis to inform strategic developments in adult literacy at a national level. As a result, staff were invited to give keynote addresses in 2022 at the Adult Literacy Organisers' Association National Conference and the National Adult Literacy Agency Annual Tutors Forum.

Staff in the Department have been key in conducting research with educational practitioners and learners to inform strategic developments across Further Education and Training (FET), for example:

- on community education in North East Inner City Dublin,
- wellbeing amongst Youthreach staff nationally,
- the role of non-permanent educators in post-compulsory education,
- inclusion of adult literacy across the FET sector and curriculum development. and
- partnerships with ETBI further education support services.

This engagement develops an evidence base mapping of what is occurring in these areas and informing the considerations and strategic responses of practitioners.

## Widening Participation

The Department has been conducting research on access and widening participation in higher education since the early 1990s and has conducted extensive empirical research on the topic producing multiple reports, articles, handbooks, policy submissions, empirical research, and the first full length book on access in Ireland.

In 2022 the Department published four book chapters on access with a particular focus on teacher training:

- 'No One Sees a Traveller at the Top of the Class' and 'Going the extra mile' Working class teachers and their engagement with parents' both in: *Diversifying the teaching profession: Dimensions, dilemmas, and directions for the future*
- 'Widening participation in teacher education' *Reflections from an adult education-led project in Ireland*
- 'Becoming and Transforming, the role of critical and diverse communities of practice in challenging and transforming teacher education through Maynooth University's Turn to Teaching project', *Ireland's Yearbook of Education 2022*.

These publications aim to support the practical efforts in co-developed curricula with disadvantaged communities and with non-traditional students, developing outreach initiatives and most recently supporting Turn to Teaching (more detail is given in the engaged research section).

## Critical Pedagogy, Popular Education, and Transformative Learning

Alongside research on equality and access the Department continues to publish on critical pedagogy, popular education, and transformative learning, with publications in 2022 including:

- 'Critical Education in the Irish Repeal Movement' in *Studies in the Education of Adults*
- 'Towards, critical, engaged, antiracist learning environments' in *The Adult Learner: The Irish Journal of Adult and Community Education*.
- 'The pulse of freedom and transformative learning: Winding paths, blind alleys and new horizons' in the *Palgrave Handbook on Learning for Transformation*
- 'Living theory in transforming times' in *Transformation theory and praxis: New and old perspectives*
- 'Migration and Transformative Adult Education: Reflections on complexity, criticality and counter-publics in the age of superdiversity' and 'A dialogue on migration, critical auto/biographical research and transformative education' both in *Adult Learning in a Migration Society*.

Again, these publications built on longstanding engagement through participatory and engaged research with activists inside and outside the university. It is a crucial feature of the Department's work that theoretical elaboration and empirical exploration in academic work is built upon extensive engagement with activists over time. The Department also continued to enhance its reputation as a centre for participatory and arts based critical research through the ongoing work of staff, doctoral graduate, and current doctoral students. Two staff presented on this topic to the international Association of Transformative Learning.

We also organised a very successful weeklong international PhD school on adult education and transformative learning in May 2022 in Klagenfurt in collaboration with Austrian and German universities. A staff member has also been invited to serve a third three-year term as editor of the *International Journal of Transformative Education*. During 2022 staff also prepared two special issues of journals related to this strand of our research work – Transformative learning in *New Directions in Adult Education* and on radical popular education *European Research Journal on the Education and Learning of Adults*. Both special issues have been published in early 2023.



The special issue of the *European Research Journal on the Education and Learning of Adults* on radical popular education was prepared by members of the Department

# Faculty Highlights

## Faculty of Social Sciences

### Research within a New Educational Policy Context

The creation in 2020 of the Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) has significantly altered the adult education policy landscape. There is increasing policy and public interest in developing a more integrated tertiary education system with an increased emphasis on FE-HE pathways. Our research and partnership activities with and across the FE sector over decades alongside the Department's longstanding interest in access and equality means we are uniquely placed to contribute to these sectoral and policy changes. The Department of Adult and Community Education has established a dedicated FE-HE Partnership Group which is developing collaboration and undertaking research which is relevant to policy development. This integrated and holistic approach underpins the submission made by the Department to DFHERIS in 2022 *Progressing a unified tertiary system for learning, skills, and knowledge*.

An important element of this work is ensuring that there is appropriate and flexible adult guidance developed across the tertiary system and staff are very involved in engaged and scholarly work on this topic and as part of this there will be a special issue on Praxis in Guidance Counselling in *British Journal of Guidance Counselling*.

### Awards

The Department received two research ally awards from the Irish Research Council. A staff member also won James S Donnelly Sr book award for contribution to History and Social Science by the American Conference for Irish Studies. Two of our current PhD students are Irish Research Council award holders.

### Events and Papers

In October 2022 the Department hosted Foundations for Futures Europe conference. Staff made seven presentations, including two symposia, at the Triennial conference on European Association Research on the Education of Adults in October 2022. We were invited to give keynotes and public lectures to the British Sociological Association Bourdieu Study Group, at Milan University and Department staff also gave presentations to Finnish Adult Education Association, the European Association for the Education of Adults on sustainability and transformative learning and at European EPALE Life Skills at a Focus in Adult Education conference.

We presented nationally at the Educational Association of Ireland 2022 Annual Conference, National Adult Literacy Organisers' Association conference, National Adult Literacy Tutors forum and locally during Maynooth University Research week 2022. Our doctoral students presented their research at the annual postgraduate research forum we organise each February. We co-hosted a public seminar on Care and Capitalism with Kathleen Lynch with the Department of Applied Social Studies.

### Engaged research with Further, Adult and Community Education

In line with the policy development and engagement work we have been involved in adult literacy and adult education at a statutory level, we have been working with practitioners and learners who are implementing and practising the implications of these policy shifts in their daily work. As described earlier, this has involved extensive engagement with adult literacy representative groups, literacy staff and learners (including Adult Literacy Organisers' Association, National Adult Literacy Association, SOLAS and Education Training Boards Ireland, Community and Adult Education groups in Northeast Inner City Dublin for City of Dublin Education and Training Board, and for national Youthreach centres).

Through our Erasmus research projects, we have engaged with a range of communities including supporting young adults from remote and isolated rural communities to return to Vocational Education and Training (VET project) and identifying the training needs for the digital education of rural women entrepreneurs (DEW project).

Our relationship with AONTAS, the national adult learning organisation remains strong, and we worked as research consultant on their National Learner Voice Forum project (a policy initiative to ensure learners' voices are listened to in Further Education Developing the Learner Forum – ongoing research on developing learner feedback fora and staff training in the Education and Training Boards, led by AONTAS the national organisation of Adult Education. This project is now fully embedded in national policy and involves over a thousand further education learners.

We continue to respond to emergent issues and are currently engaged in consultation with guidance professionals which has led to the development of a new course aimed at meeting CPD needs and are mapping needs in the field of addiction studies.

### Engaged Research on Access and Participation

Turn to Teaching is strongly involved in engaged research. For example, it recently has established a cross-institutional further education FE-HE collaboration with Dunboyne College of Further Education that is focused on creating diverse and differentiated programmes and pathways into teaching. The creation of this partnership is responsive to the learning from evaluations of the work of Turn to Teaching to date, which indicates that the creation of further education pathways into Initial Teacher Education would benefit many applicants and potentially widen the diversity profile of the profession. This work is also congruent with current and emerging policy and legislative contexts which increasingly look for ways in which HE and FE can work together more coherently to create meaningful pathways through the further education sector (DES, 2020; DFHERIS, 2022a, 2022b).

Supported by a rich and diverse community of practice made up of FE teaching staff and learners, teacher educators, and access staff, Turn to Teaching is in the process of establishing an action research project which is focused on telling the story of this partnership as it develops.

## Engaged Research on Citizenship and Activism

Foundations for Futures Europe project, has the aim of widening participation and promote citizen engagement towards democratic emancipatory education. This is a consortium of six partners, three universities and three civil society organisations, from across the European continent to engage students and members of the public in the conversation on social Europe. The Foundations for Futures Europe project was designed on the model of the ComMUniversity and provided space for people to consider issues concerning poverty, disability, migration, identity, employment, education, and climate etc.



The Foundations for Futures Europe project is a consortium of six partners, three universities and three civil society organisations

A Department member, along with a colleague in Sociology, has been working on Movement Learning Catalyst project which brings together four important networks of social movement training and radical adult education: the Ulex Project (Catalunya), the European Community Organising Network (Slovakia), and European Alternatives (Paris/Berlin). Together we are working on developing a pan-European training approach focussing on making connections across different movements and across borders. In October 2022 we held an intensive weeklong residential course on strategy, movement learning and critical reflection for fifty activists and have since planned and enrolled over sixty students for our year-long hybrid training course which began in January 2023.

A member of staff designed critical feminist education programme for reproductive rights activists across the country producing a report entitled *Feminist Pedagogy and Reproductive Rights as well as curricular and pedagogical materials*. This work is ongoing and builds on the publication of a prize-winning book on the Repeal movement last year and decades of work with and on feminist community education.

During 2022 another Department of Adult and Community Education academic conducted field research conducted with activists from working class communities in Ireland on the use of political fear in the context of the Irish anti-water charges campaign. This builds on longstanding relationships with community and political activists and is, again, ongoing.

## Froebel Department of Primary and Early Childhood Education

There were 23.5 academic staff employed in the Froebel Department of Primary and Early Childhood Education in 2021/22. 528 students were enrolled across a range of undergraduate and postgraduate programmes.

During the 2021/22 calendar year, Departmental staff:

- produced two books,
- wrote and co-wrote two book chapters in edited collections,
- wrote and co-wrote eight peer-reviewed journal articles,
- delivered 23 conference presentations, talks, and workshops,
- produced and co-produced five multimedia and public outputs, and
- co-wrote three reports.

During that academic year, Departmental staff successfully secured three research grants valued at €47,515.

Research achievements and activities in the Froebel Department of Primary and Early Childhood Education during 2021/22 illustrate a rich and broad range of academic, professional, and civic engagement interests and commitments from Departmental faculty and staff. The Department's research goals focus on enhancing, through research and engagement with relevant agencies, the development of early-years and primary education as scholarly and practice-based disciplines, and contributing through research, scholarship, reflection, and strategic engagement to national and international educational initiatives.

Informed by Froebelian values, the Department aims to contribute through research and scholarship to the development of an education system and a society that promotes the values of human rights, social justice, and equality.

Arising from the Department's 2018–2023 research strategy, the Department has identified key areas of interest which include:

- Pedagogy of Teacher Education and Educator Professional Development, with particular emphasis on Froebelian philosophy and methods;
- The Purposes, Practice and Quality of Primary Education, Early-Childhood Education and Teacher Education;
- Language Arts and Arts Education;
- Global Citizenship Education, Social Justice, and Inclusion; and
- Practitioner-Based Research and Engaged Research.

Some of the highlights from the research and scholarship of Departmental faculty in 2021/22 are listed on the next page.

# Faculty Highlights

## Faculty of Social Sciences

### Books

Dr Leah O'Toole's co-written book, *Introducing Bronfenbrenner: A Guide for Practitioners and Students in Early Years Education*, was published in a second edition by Routledge during this period. This re-issuing as a second edition speaks to the book's impact and significance for early-childhood practitioners and researchers and for enhancing early educational pedagogy and practice.



*Introducing Bronfenbrenner: A Guide for Practitioners and Students in Early Years Education* co-written by Dr Leah O'Toole, Froebel Department of Primary and Early Childhood Education

Dr Suzanne O'Toole's monograph, *Masculinities and Teaching in Primary Schools: Exploring the Lives of Irish Male Teachers*, was published by Palgrave as part of the Palgrave Studies in Gender and Education series. Exploring the everyday realities of teachers across school, home, and community, the book provides a platform for male teachers to share how their professional and personal identities are enacted in Irish classrooms.

### Book Chapters

During 2021/22, Departmental faculty individually and collaboratively published chapters in a range of books illustrating a rich breadth of research interests across the Department.

Dr Máire Nic An Bhaire wrote the chapter, 'Grúpa Oibre na nInstitiúidí Oideachais do na Tréimhsí Foghlama sa Ghaeltacht 2011-2021' as part of the edited collection on the history of Irish-language teaching and learning, *Oide na Ceirde*, published by Marino College of Education, Dublin.

Niamh Fortune co-wrote the chapter, 'Writing Transitions between Academic and Professional Settings' for the edited collection, *Writing Beyond the University Preparing Lifelong Learners for Lifewide Writing*. This open-source book discusses how to teach writing and teach with writing across academic disciplines and in a variety of co-curricular spaces, such as student life, student employment, and career services, and in internship, co-ops, and work-integrated learning opportunities.

### Peer-Reviewed Publications

Departmental faculty wrote various peer-reviewed articles for Irish and international journals.

A shared thread in some of these articles involved the importance of wellbeing, community, professional learning, and supports for teachers as well as student teachers.

- Lorraine Connaughton co-wrote the article, 'The CPD Needs of Irish-Medium Primary and Post-Primary Teachers in Special Education' for the journal, *Education Sciences*.
- Dr Máire Nic An Bhaire co-wrote the article, 'Teachers' opinions on the supports they have received and require to aid the implementation of the Primary Language Curriculum, with implications for future curricular implementation in primary schools' for the *Irish Teachers' Journal*. She also wrote the article, 'Teaching for social justice and sustainable development across the primary curriculum' for the journal, *Irish Educational Studies*.
- Dr Niamh O'Brien co-wrote the article, 'Physical education student teachers' wellbeing during COVID-19: Resilience resources and challenges from school placement' for the *European Physical Education Review*.

Other journal articles by Departmental faculty focussed on exploring and developing disciplinary knowledge and meaningful links between theory and practice.

- Dr Bernadette Wrynn co-wrote the article, 'Inquiry-Based Science Education' for the *Irish Teachers' Journal*.
- Professor Carol Rees co-wrote the article, 'Inquiring together: Teacher candidates, teacher mentors and faculty share ideas for a coteaching practicum model' for the journal, *Teaching and Teacher Education*.
- Dr Leah O'Toole co-wrote the article, 'Bored of the rings: Methodological and analytic approaches to operationalizing Bronfenbrenner's PPCT model in research practice' for the *Journal of Family Theory & Review*.
- Dr Patricia Kennon co-wrote the editorial as part of her first issue as General Editor of *The International Journal of Young Adult Literature* (the only journal dedicated to scholarship on young-adult literature).

### Presentations, Talks and Workshops

During 2021/22, Departmental staff delivered 23 conference presentations, talks, and workshops on a rich range of educational issues and topics at national, and international events, many of which in were online format due to COVID-19 restrictions. The Froebel Department is committed to the promoting the importance of the arts, creativity, and language in young people's lives and Departmental faculty presented on a range of associated research areas.

- Dr Máire Nic An Bhaire presented on 'Douglas Hyde and his Inner Conflicts' at the Annual Conference of the Society for the Study of Nineteenth-Century Ireland.
- Dr Patricia Kennon gave a range of presentations on these issues including: a workshop on 'Cultural Diversity and Inclusion in Youth Literature' at the National Educational Psychological Service Annual Conference; an invited talk 'Reading and Wellbeing: Mental Health and Literature for Children and Young Adults' as part of the 'Parenting Programme: Supporting Reading' series of talks, Kildare Libraries. She was a panellist for the seminar 'Children's and YA Literature in Ireland – Developments & Challenges' for the Irish Society for the Study of Children's Literature seminar series; and she participated in three roundtables at the Young Adult Studies Association conference: 'Publishing with The International Journal of Young Adult Literature'; 'Perspectives on YA Studies Publishing'; and the 'Editors' Roundtable'.

- Dr Liam Mac Amhlaigh presented on 'Saolré COMHAR san aois dhigiteach comhaimseartha' at the Comhdháil ar litríocht agus cultúr na Gaeilge conference.



Dr Liam Mac Amhlaigh, Froebel Department of Primary and Early Childhood Education

Equity, inclusion, social justice, diversity, and teacher identity are key values of the Department's research community and Froebelian educational philosophy.

- Dr Patricia Kennon gave the following presentations: 'MU Teaching and Learning and the Sustainable Development Goals' at the Maynooth Green Day 2022; 'The Sustainable Development Goals: Teaching and Learning Contexts' as part of Maynooth University Social Justice Week 2022' and "Impacts of COVID-19 on Scottish and Irish Child and Young Adult Readers' at the UCD CHILD-RC and Children's Research Network conference.
- Niamh Fortune presented on 'All Work and No Play – reconceptualising senior primary school literacy practices' at the 46<sup>th</sup> Literacy Association of Ireland Conference 22<sup>nd</sup> European Conference on Literacy. Dr Lorraine Connaughton co-presented on 'Language Portraits and Reflective Language Diaries: An Insight into Polish-Irish Children's Views on their own Bi-/multilingualism and Language Practices' at the Multidisciplinary Approaches to Migration and Multilingualism conference. She also gave two presentations, 'It's more the invisible benefits: Dearcthaí Tuismitheoirí Ilteangacha ar an Oideachas Lán-Ghaeilge' and 'Cúrsa FGL san oideachas speisialta a fhorbairt do mhúinteoirí atá ag teagasc trí mheán na Gaeilge' at the Comhdháil Taighde Uile-Oileánda ar an Tumoideachas conference.
- Dr Leah O'Toole gave a range of presentations including: 'Back to the Future – Reconnecting partnerships with your parents is the "lightening rod" to better futures for the children in your school!' at the Irish Primary Principals' Network Annual Conference; 'Contested Childhoods in Education' at the Sligo School Project Symposium; and 'The Ethics of Research with Babies, Toddlers and Young Children' at the National Council for Curriculum and Assessment Annual Research Day.
- Tony Sweeney delivered a presentation on the multi-institutional research project, 'Value Orientations of teacher Educators in Physical Education (VOTE-PE)' at the AIESEP International Congress and the presentation 'Meaningful Engagement in Self-study: learning about practice in PE and sport' at the PE PAYS Forum 2022.

## Multimedia Outputs, Outreach and Public Engagement

Sharing research with wider audiences outside of academia is key for the successful integration of research into society and the Froebel Department is committed to the dissemination and sharing of knowledge, innovation, and good practice. During 2021/22, Departmental faculty produced and co-produced five multimedia and public outputs and co-wrote three reports.

- Dr Máire Nic An Bhaird wrote the magazine article, 'Community Engaged Learning in Action in the Froebel Department' for Macnamh and she co-wrote two electronic publications, 'Finding Beo' and 'Tóraíocht Bheo'.
- Dr Patricia Kennon wrote the magazine article, 'Youth Literature: A Rich Tapestry of Storytelling' for the Royal Society of Edinburgh's ReSource Magazine.
- Dr Triona Stokes wrote the electronic publication, 'Draft Principles for Engaging with the Arts in Early Learning and Care', which was published on the Department of Children, Equality, Disability, Integration and Youth website.



Dr Triona Stokes, Froebel Department of Primary and Early Childhood Education

The three reports published by Departmental faculty share a commitment to the Froebelian values of diversity, inclusion, and children's rights regarding access to the arts.

- Dr Triona Stokes wrote a 'Discussion Paper on Facilitating the Arts in Early Learning and Care: Towards Best Practice Principles' as part of research commissioned by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY).
- Dr Patricia Kennon co-wrote the report, 'Building A Youth Literature Community Resilience Framework: Scottish and Irish Children's and Young Adult Literature and Sustainable Wellbeing Post-COVID-19' which draws on the findings from a transnational project funded by the Royal Society of Edinburgh and the Royal Society of Ireland.
- Lorraine Connaughton co-wrote the report, 'Ag tacú le daltaí a bhfuil riachtanais speisialta oideachais acu i scoileanna Gaeltachta agus lánGhaeilge' which was published on the National Council for Special Education website.

# Faculty Highlights

## Faculty of Social Sciences

### Other Research Contributions

Froebel Department faculty contribute to research and scholarship in the early-years, primary-education, and teacher-education sectors and relevant disciplinary sectors at national and international levels.

- Dr Leah O'Toole sits on a Peer Review Committee for the Relation-Centered Education Network Conference in Sacramento State University.
- Dr Patricia Kennon became the General Editor for The International Journal of Young Adult Literature (the first-ever journal dedicated to scholarship on young-adult literature). She acts as a regular reviewer for Children's Literature Association Quarterly, Children's Literature In Education, The International Journal of Young Adult Literature, and Papers: Explorations Into Children's Literature. She is the co-chair of the Faculty of Social Sciences Research Committee, a member of the Maynooth University Research Committee and Graduate Education Committee, and chair of MU SexGen, a scholarly network supporting MU faculty's, researchers', and students' scholarship and research in the areas of genders and sexualities.
- Dr Máire Nic an Bhaird is a reviewer for Gill Education, Léann Teanga: An Reiviú, and the Irish Educational Studies Journal.
- Dr Liam Mac Amhlaigh sits on two award panels for major literary awards in the Irish language.
- Dr Suzanne O'Keeffe contributes as a member of the Faculty of Social Science Ethics Committee at Maynooth University. She also sits on the editorial board for the *Springer SN Social Sciences Journal*, and acts as a regular reviewer for the journal, *Irish Educational Studies*.

The Froebel Department is committed to supporting and empowering students' identities and capacity as teacher-researchers and the Departmental calendar involves regular activities and events centring students as researchers. For example, in partnership with the Irish Froebel Network and with support from the Network for Educational Action Research Ireland (NEARI), the Froebel Department held an online seminar in November 2021 on 'Play-Rich Learning Environments Throughout Childhood' with presentations by Froebel Department graduate students. During 2021/22, the Department's Master of Education (Research in Practice) programme was in its fifth year. A wide range of topics on educational areas in early-years and primary education were presented by MEd students at an online seminar during the 2021/22 second semester.

### Grants Awarded

A team led by Dr Leah O'Toole was awarded a tender and commissioned by the National Council for Curriculum and Assessment (NCCA) and National Parents' Council (NPC) to investigate experiences and practices around parental involvement in Ireland. This national 'Evaluation of the Partnership Schools Ireland Initiative' (€29,969) is based on the work of Joyce Epstein on best practice for parental involvement. Dr Triona Stokes was appointed as research consultant for an Arts in Education project in partnership with Technological University Dublin, the Civic/Ready, Steady SHOW!, and Monkeyshine Theatre Company. This project (€3,251) explores both theoretically and practically the pedagogies that would support appropriate methods of engagement in theatre with young people, and that create an environment conducive to the child partnering with the artist on their own terms from an equal, neutral space.

Dr Patricia Kennon's engaged-research project (funded by a Royal Society of Edinburgh/Royal Irish Academy Ireland-Scotland Bilateral Network Grant) explored the impacts and challenges posed by COVID-19 on the children's and young adult creative, cultural, and reading communities in Ireland and Scotland. The research (€14,295) brought together perspectives from a sample of children and teenagers, adult creators of children's and young adult literature, and cultural organisations in Ireland and Scotland.

Dr Leah O'Toole acted as the PI for Maynooth University for a National Council for Curriculum and Assessment-funded 'Consultation with Babies, Toddlers, and Young Children' (€69,418). This collaborative consortium involved Froebel Department staff members, Dr Triona Stokes, Deirdre Forde, and Patsy Stafford, and two partner HEI's: Stranmillis University College Belfast; and Early Childhood Ireland.



Dr Máire Nic An Bhaird, Froebel Department of Primary and Early Childhood Education

Dr Nic an Bhaird submitted six new H2020/Horizon-Europe research bids as Maynooth University PI in the 2021/22 academic year (total of €1.3 million). The project BioBeeo was funded (€250,000) and three of Dr Nic an Bhaird's research bids proposals were put on the reserve list. Dr Nic an Bhaird took a leading role in this funded €2 million bioeconomy education project for primary and secondary students across Europe and will lead an international team specialising in the development of education programmes to address the interconnections between science and society. The multi-partnership project comprises a pan-European consortium of 15 partners from across education, science and technology and the wider society. Specifically, BioBeeo is a 24-month project with the overall aim to develop and deploy an education programme that will enhance understanding and engagement across society regarding 'circularity' and the bioeconomy, using five bioeconomy themes – interconnectedness, outdoor learning, forestry, life below water, the food loop.

Dr Nic an Bhaird and Dr Laoise Ní Chléirigh were awarded also €7,800 from COGG – An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta for their Irish-language publication *Draíocht Dara* which connects nature and language learning through a pedagogy of place and for embedding the Sustainable Development Goals into second-language acquisition.

Deirdre Forde acted as a lead in attaining a range of successful and international funding relating to inclusion and special educational needs. She is the principal investigator for a three-year Erasmus Plus Programme project (€300,000) which aims to develop a cutting edge, innovative OpenTextbook, "All means All", to respond to the growing need to support

educators in addressing the needs of diverse learners in classrooms, schools, and communities. This resource will be an accessible, interactive multimedia open educational book for students in Initial Teacher Education. Its central aim is to address structural disadvantages based on gender, sexual orientation, dis/ability, class, economic, social & cultural background (incl. indigenous people), race, languages, health, age, belief, and religion.



Deirdre Forde is the principal investigator for a three-year Erasmus Plus Programme to develop the innovative OpenTextbook, "All means All"

Deirdre Forde secured a position on a Multi-Supplier Framework for the Provision of Services to the Department of Children, Equality, Disability, Integration, and Youth across three lots of funding streams i.e. Lot A – €50,000, Lot B – €150,000 and Lot C – €250,000. She has been instrumental in ensuring that researchers are recruited in accordance with the expertise required in the tender process within the framework. She also was a Co-PI on the €150,000 project, 'UNITES (Universal and Inclusive Targeted Early Supports for families)', under this same Framework with Professor Sinéad McGilloway in the Maynooth University Psychology Department.

### External Engaged Research

Partnership with civil society, engaged research, and direct engagement with external stakeholders and agents of policy and practice continue to be key aspects of the Froebel Department's scholarship and research.

Dr Patricia Kennon's engaged-research project (funded by a Royal Society of Edinburgh/Royal Irish Academy Ireland-Scotland Bilateral Network Grant) explored the impacts and challenges posed by COVID-19 on the children's and young adult creative, cultural, and reading communities in Ireland and Scotland. The research brought together perspectives from a sample of children and teenagers, adult creators of children's and young adult literature, and cultural organisations in Ireland and Scotland.

Dr Liam Mac Amhlaigh continued as the PI for the five-year, engaged-research 'Léitheoirí na Gaeilge/Read in Irish' initiative funded by Foras na Gaeilge to create an all-Ireland strategy for the promotion of reading in Irish-language literature, and continued as editor of the *Portráidí na Scríbhneoirí Gaeilge/Portraits of the Irish-language Writers* engaged-research project working in partnership with *Áisíneacht Dáilíúcháin Leabhar (ÁIS)* (responsible for the distribution of Irish-language reading material), to initiate and develop the nature and concept of both the research-driven basis for the project together with the high-level digital and print outputs. This research on Irish-language writers showcases, by way of digital exhibition, the living legacy that they bestow on the reading public. As such, it has significantly helped ÁIS to persuade the English-language book/reading community to normalise their Irish-language counterparts.

## Geography

The Geography Department consists of 19 academic staff, one technical staff member, one full-time and one half-time administrative staff and 22 postdoctoral researchers. In addition, there are three academic staff in research institutes that are affiliated with the Department of Geography (Dr Credit and Professor Brunsdon, NCG, and Professor Kitchin, MUSSI). There are 27 doctoral students, with three doctoral students graduating in 2022: Drs Hannah Grove, Paul O'Connor and Christopher Phillips.

In calendar year 2022, researchers in the Geography Department published 58 peer-reviewed articles, two books, 13 book chapters, and 32 other publications. Professor Murphy was particularly prolific with 16 peer-reviewed publications in 2022. Two books were published by Professor Rob Kitchin and Professor Mark Boyle.



Professor Rob Kitchin, Department of Geography and Social Sciences Institute (MUSSI)

The Department of Geography were responsible for the top two most impactful research publications from Maynooth University in 2022 as measured by Altmetrics, with contributions to the top ranked publication "*Growth and retreat of the last British-Irish Ice Sheet, 31,000 to 15,000 years ago: the BRITICE-CHRONO reconstruction*" by Dr McCarron and first-authorship of the second ranked publication "*A regional (land-ocean) comparison of the seasonal to decadal variability of the Northern Hemisphere jet stream 1871–2011*" led by Dr Hallam.

Of the six FSS scholars ranked for 2022 in the top 2% of scholars worldwide, three were associated with the Department of Geography: Professor Brunsdon, Dr Foley, and Professor Kitchin. Of the six books shortlisted for the Geographical Society of Ireland Book Award awarded in 2022, four were by Maynooth Geographers as authors or co-editors (Professors Gilmartin and Till, Professor Kitchin and Drs Foley and Fraser) including the prize for best edited book awarded to Professor Till.

There was a total of 21 research grants funded in the Department totalling over €3.8m. Prestigious international and national funding has been secured in the Department. The European Research Council has granted a €2.4m Advanced Investigator Award to Professor Kitchin for his project 'Data Stories: Telling Stories About and With Planning and Property Data' (2022–2027). Dr Orme (€400,000) won an IRC Starting Laureate Award that will investigate long-term patterns and variations in storms over the last 7000 years to understand how they might change under a future warming climate. Professor Thorne secured further funding (2 projects) from Copernicus Climate Change Service (€700,000).

# Faculty Highlights

## Faculty of Social Sciences

The Geography Department had five postgraduate scholarships funded (Professor Till, Dr Cahalane, Professor Murphy, Dr McCarthy) and one postdoctoral scholarship (Dr Bresnihan) from three separate funding bodies: Science Foundation Ireland, Marine Institute and the Irish Research Council.

A wide breadth of smaller projects were also funded including French-Irish exchange (two projects: Dr Fitzgerald and Dr Caesar), Migration studies (Professor Gilmartin x 2), societal transformation (Dr Bresnihan), Creative Climate Action: Linte na Farrage (Dr McCarthy), and climate research (Professor Murphy, Professor Thorne, Dr Orme) from a range of funders (Environmental Protection Agency Ireland, Community Foundation for Ireland, Geological Survey of Ireland, Creative Ireland, Irish Research Council, Manchester Metropolitan University, Immigrant Council of Ireland, Irish Research Council, French Embassy in Ireland, National Economic and Social Council research).

According to Clarivate Web of Science, of the 55 'highly cited' papers in years 2018-2022 where 'Maynooth University' is the affiliation, 10 are written by current Geography staff members (Dr Fraser x 2, Dr McCarthy x 3, Professor Kitchin x 3, Dr Murphy x 2). Among the wider academic service of colleagues, Geographers are widely represented at the highest level of international peer-reviewed publication editing and journal production including:

- Professor Boyle who serves as Editor in Chief of *'Space and Polity'* (3.0 CiteScore in 2021);
- Dr Foley on the Editorial Board of *Health and Place*; Professor Murphy was Editor of a Special Edition of *'Frontiers in Earth Sciences'* (3.2 CiteScore,) on Drought;
- Professor Gilmartin is on the Editorial Board of *'Social and Cultural Geography'* (5.7 CiteScore) and
- Professor Kearns is on the Board of *'Journal of Historical Geography'* (2.2 CiteScore).

Other notable service and recognition of ongoing research contributions and status came in the form of Professor Till elected to the Council of the Royal Irish Academy and Dr van Egeraat secretary to the Irish Section of the Regional Studies Association. Professor Kearns is the Irish Delegate for the International Geographical Union, and Dr Murphy is a Member of the National Climate Change Adaptation Committee with Professor Thorne Chairing the Committee in 2022. A Significant Contribution to Regional Studies accolade was awarded to Professor Emeritus Jim Walsh.

Dr Lisa Orme's breakthrough this year, including the already listed IRC starting laureate award: HoStr Holocene storminess in Ireland, has been significant. Additionally, she has won funding for a GSI Equipment Award (with Drs Scroton and Shaw).



Dr Lisa Orme, Department of Geography and ICARUS

Professor Rowan Fealy is a PI on the TerrainAI project that won the Sustainability Award 2022 from the American Chamber of Commerce Ireland.

Dr Nick Scroton's research on Global Megadrought 4,200 years ago that is attributed to the collapse of civilisations such as the Akkadian Empire, the Harappan Civilisation in the Indus Valley, and the Old Kingdom of Egypt was featured in Nature.

### Engaged Research

Professor Till led an IRC-funded 'New Foundations Engaging Civic Society' research partnership with Pavee Point Traveller and Roma Centre and TravAct Coolock (2020–2022) leading to a digital StoryMap based on the community mapping workshops includes audio, video, two new maps, and testimony supported by research in the areas of Traveller health, accommodation, education, employment, and surveillance.



Professor Karen Till led an IRC-funded 'New Foundations Engaging Civic Society' research partnership with Pavee Point Traveller and Roma Centre and TravAct Coolock (2020–2022)

The collaborative research field of Art and Geography saw catalogue essays by Professors Till and Kearns, gallery talks by Professor Kearns, and a significant exhibition by Eamon Colman in Solomon Gallery, Dublin, organised around artwork that came from these collaborations, including 'Dreamwalking' with Professor Kearns talking about weathering and erosion.

Dr Fiadh Tubridy, in her work with Community Action Tenants Union Ireland (CATU), was involved in the commemoration of the 50<sup>th</sup> anniversary of the start of the rent strike in Dublin in 1972 with a launch event in the Project Arts Centre in Dublin which was part of their 'Clear Away the Rubble/Glan a Spallaí ar Shiúil' series.

Dr McCarthy was a co-Investigator on Linte na Farrage—a set of visual light installations placed across Irish coastal sites in Counties Dublin, Wexford and Galway in 2022/23 illustrating future sea level rise. Linte na Farrage project has had a sweeping national impact with the stunning imagery being selected for the cover of the Government's 2023 Climate Action Plan Summary Document and Creative Ireland's Creative Climate Action 2023 fund. The installations featured in 22 news items including RTÉ (Morning Ireland, Six One, and 9 o'clock news), the Irish Times, and TG4 Nuacht.



In early 2022, Dr Van Egeraat was appointed as an independent member to the National Economic and Social Council for a 2022–2027 term of office. He was a member of the Organising Committee of the fifth Global Conference on Economic Geography, the Regional Studies Association Irish Branch Annual Conference, and the RSA-Irish Section Workshop – Rural Regeneration.

Dr Foley continued a number of external research engagements including An Exhibition Talk on the topic of, *The Wide Blue Sea: Creativity, Ritual and Wellbeing*, a podcast on 'How has water shaped the IMMA site' and as a Discussant and Member of the Scientific Committee of the first ever Annual Online Health Geography Symposium of Postgraduates.

Dr Cahalane's 5\*S: Space, Surveyors and Students: STEM and the Sustainable Development Goals project was refunded in 2022. This Geography-led SFI Discover outreach programme has already reached approximately 15% of secondary schools in Ireland.

## International Development

In 2021/22, the Department of International Development deepened its focus on developing engaged research, on learning and awareness raising relationships, and on developing opportunities for research and collaboration with international development organisations, networks, activist groups and educational institutions.

### Research, Engagement and Practice Series (REAPS)

Developing the research reach and capacity of staff, and linking with MU research initiatives and supports, was central to the Department's work in 2022. To this end, Dr Kieran Doyle organised a new series of Department research seminars in 2022. Featuring the research of staff, in collaboration with development practitioners and engaged researchers, the series of four seminars involved 1-hour conversations reflecting on our research and its implications for practice around a number of emergent themes in international development.

The seminar series began on 22<sup>nd</sup> March 2022 with Dr Eilish Dillon joined by Dr Aoife Tittley & Laura Thornton of the Maynooth University Froebel Department of Primary and Early Childhood Education to discuss Global Citizenship Education in a seminar entitled 'Shifting Perspectives – From North-South to the Global in GCE'. This first event in the series coincided with MU Social Justice Week 2022.

The series continued with three further seminars:

- 8<sup>th</sup> April – Paddy Reilly was joined by Ntombi Nyathi of the Grail Training for Transformation, South Africa, and Peter Dorman of the Community Action Network, Ireland, to discuss critical education with a theme of "The Future of Freirean Education: A Further Conversation".
- 13<sup>th</sup> April – Niamh Rooney explored some current approaches to development planning and management with Nisha Lama Karki and Caroline Nkirote from Action Aid in a seminar titled "From 'Results Based' to 'Adaptive' Approaches... Reflections on experience, challenges and opportunities".

- 29<sup>th</sup> April – The Department's strategic theme of Climate Action – Responses to Climate Change and Development Challenges was addressed by Dr Tom Campbell in conversation with Dr Ann Waters-Bayer, University of Hohenheim, Germany and Dr Hussein Tadicha Wario, Ex. Director, Centre for Research and Development in the Drylands, Kenya. The theme for this seminar was "Beyond Climate Change: The politics of economic transformations and green energy investments in Africa's pastoral rangelands". Dr Campbell's presentation was entitled '*Climate Change Policy Narratives and Pastoralist Predicaments in the Horn of Africa: Insights from Ethiopia and Kenya*'.

## Research Themes

Research themes of particular interest to staff at the Department included critical global education, peacebuilding, climate change policy and pastoralism in the Horn of Africa, higher education provision in refugee camps and ethical global development communications.

Among the achievements of the Department in research and publications in these areas in 2022 were the following:

### Critical Global and Transformative Education

In the area of critical global and transformative education, papers arising from a major conference organised in 2021 to mark the 100<sup>th</sup> anniversary of Paulo Freire's birth were published in a report in 2022 on Maynooth University's MURAL open access research site. Edited by Paddy Reilly and Dr Mags Liddy, the report explores the theme of 'Looking back and looking forward: Conversations on Freire's Influence on Global Development Practice', and includes contributions by a range of international and Irish-based educationalists, community development practitioners and Freirean scholars. drawn from the sectors of development practice, community development and higher education. These papers include the introduction and afterword by Paddy Reilly, a keynote paper by Dr Eilish Dillon on 'The Relevance of Paulo Freire's Work for Higher Education Today: Towards a Critical Pedagogy of Global Connection', and workshop summary papers by Patrick Marren and Niamh Rooney.



*Looking back and looking forward: Conversations on Freire's Influence on Global Development Practice* edited by Paddy Reilly and Dr Mags Liddy

# Faculty Highlights

## Faculty of Social Sciences

Dr Eilish Dillon contributed to a number of conferences, seminars and workshops on critical global education in 2022. She was a keynote speaker at the DICE (Development and Intercultural Education) Annual Conference for teacher educators and others involved in global citizenship education at primary level in Ireland. Her paper, titled 'What's Critical About Global Education?' was video recorded and is available on the DICE website. She was an invited plenary discussion panelist at the Worldwide Global Schools School Management Symposium where she focused on the importance of critical and hopeful Global Citizenship Education in schools. Highlighting the role of school managers and the importance of asking difficult questions and challenging exclusionary cultures, her contribution encouraged managers to address the deep and critical training and learning needs among teachers in this area. Dr Dillon was also invited to present a paper at the Development Studies Association of Ireland Annual Conference in November 2022. Entitled 'How Critical is GE in Ireland? A Review of Irish Government Strategic Plans', her paper provided a content analysis examining policy priorities, (dis)connections and absences in Irish government strategies on global citizenship education and education for sustainable development since 2007. Earlier in 2022, she published an article in the *Journal of Transformative Education*, entitled 'Making Connections in Challenging Times: The Transformative Potential of Poetry for Critical Global Education'.

Niamh Rooney's Doctoral research, which she is conducting through the Department of Adult and Community Education at Maynooth University, aims to add to the fields of epistemic justice/knowledge democracy and transformative education. Through a critical examination of development practice, she is exploring the opportunities and limitations of development programmes in transforming communities and contributing to sustainable development. Her research, which is focused on development practice in Zambia, explores processes of knowledge production, participation, and empowerment to understand the depth and scope of changes that occur.

### Peacebuilding

In the area of peacebuilding, Dr Kieran Doyle has continued his research on a number of fronts, especially in relation to the work of the EU.

He contributed to a number of conferences in 2022 on the topics of 'New Peace Operations as a Stabilizing Factor for the European Union', 'Prevention of Conflict and Protection of Minority Rights' and 'Transformational Approaches for Working with Fragile and Conflict Affected Communities'.

In 2022, he published a monograph entitled 'EU Peacebuilding Missions: Developing Security in Post-conflict Nations (Palgrave Studies in Compromise after Conflict)'. This publication explores the EU's approach to peacebuilding and questions the EU global role as crisis manager and capacity builder. It highlights the significant contributions of the EU to civilian peacebuilding and also critically evaluates the activities of the EU Common Security and Defence Policy (CSDP) within their rule of law and human rights peacebuilding missions.



*EU Peacebuilding Missions: Developing Security in Post-conflict Nations* (Palgrave Studies in Compromise after Conflict) by Dr Kieran Doyle

Dr Doyle was awarded a grant of €55,000 by the Department of Foreign Affairs and the Department of Defence for a project entitled 'EU Common Security and Defence Policy and Civilian Mediators'. His research with the EU External Action Service and Department of Foreign Affairs and Department of Defence (2013–2022) informs the European Union's approach to the use of mediation, negotiation and dialogue in fragile states as an active operational tool. This project draws on joint funding from two government Departments, which reflects the approach of linking security, diplomacy and development and the morphing approach of the EU to external intervention. Governed by quarterly review, the impact of this engaged/partnership research is that Ireland promotes a dialogical aspect to EU interventions, informed by this applied research. This research is now being actively considered by policy makers in the European External Action Service.

Adopted in a rapidly evolving and geopolitically complex security landscape, the EU's Strategic Compass for Security and Defence calls for a new impetus for civilian Common Security and Defence Policy (CSDP). An effective and flexible approach is necessary to adapt to the fast-changing needs on the ground and security requirements. A new Civilian Compact to operationalise the Strategic Compass in the areas of human rights development and rule of law in fragile environments should be adopted by EU Member States in May 2023. Recommendations for this new Civilian Compact emanating from a consortium of think tanks and NGOs advocating for stronger EU civilian capacities were drafted in 2022 and presented to the EU Committee for Civilian Aspects of Crisis Management (CivCom). These recommendations gathered the views and reflections of various experts specialised in the European Union's Common Security and Defence Policy with a focus on its civilian missions and included a contribution from Dr Kieran Doyle. They now inform the ongoing reflections on the new Civilian Compact and will also be published as a book in May 2023. Specifically, Dr Doyle wrote there can be a misalignment between risk management, mission capacity and local citizen expectations, and that the EU should negotiate a more psycho-social interaction type of civilian CSDP mission. These missions should have much more focus on cultivating depth of relationships and human security on the ground, greater understanding of risk perception allied to the potentials for negating the drivers of future conflict.

### Climate Change Policy and Pastoralism in the Horn of Africa

In the area of climate change policy and pastoralism in the Horn of Africa, Dr Tom Campbell published an article entitled 'Climate Change Policy Narratives and Pastoralism in Ethiopia: New Concerns, Old Arguments?' in the journal *Nomadic Peoples* in February 2022. A related online blog, entitled 'Climate change policy processes and pastoralism in the Horn of Africa: Old wine in new bottles?' was published by the organisation PASTRES (Pastoralism, Uncertainty and Resilience: Global Lessons from the Margins) in March 2022 (<https://pastres.org/2022/03/11/climate-change-policy-processes-and-pastoralism-in-the-horn-of-africa-old-wine-in-new-bottles/>).

### Education Provision in Refugee Camps

Following the publication of two book chapters earlier in 2022, in September, Dr Paul O'Keeffe published a paper in the *Comparative Journal of Curriculum, Learning and Assessment*, with Thibault Lovey, entitled 'Meaningful higher education in Kakuma refugee camp: A case study of why context and contextualisation matter'. This paper draws on research which looks at the importance of developing and enabling relevant and relatable higher education programmes in refugee contexts. The research was part of a 4-year long medical education programme developed and managed by Dr Paul O'Keeffe in Dadaab and Kakuma refugee camps in Kenya. This publication compliments and builds on Dr O'Keeffe's wider research interests in developing innovative and transformative pedagogical solutions for refugee communities.



Dr Paul O'Keeffe, Department of International Development

For research week on October 26<sup>th</sup> 2022, Dr Paul O'Keeffe presented his interdisciplinary research on programme leadership in development and enabling education programmes in refugee camps. This public seminar focused on Vijana Twaweza Club in Kakuma Refugee camp in Kenya, which brings young people from different communities together to raise fish, fowl, crickets and vegetables in an effort to combat malnutrition, climate change and food dependency. The project won the World Food Programme's Young Innovator East Africa Award and the UK Permaculture Award in 2021.

### Ethical Global Development Communications

In 2022, Dr Eilish Dillon held two consultation meetings on training and ethical global development communications with organisations within the Irish international development sector. This was a follow-up to her 2021 Irish Research Council-funded research 'Shifting the Lens on Ethical Communications in Global Development – A Focus on NGOs in Ireland' with particular attention on training and learning needs and opportunities in the sector. She also published a blog, on the Department's blog site, in April 2022 on the topic and her research, entitled 'Time and Crisis Responses: Towards a Long-Term View'.

### Engaged Research

As indicated above, external engaged research is central to the Department of International Development's approach to research. We see active engagement with those involved in international development policy and practice as central to enhancing the quality, relevance and reach of our work at the Department. As such, we have developed partnerships with organisations in Ireland and internationally. As part of its wider engagement work, the Department of International Development continued its solidarity relationship with Comhlámh, the Irish Association of Development Workers and Volunteers, strengthened its blog series, developed a new 'Change Makers' video interview series and continued its involvement with networks important to the work of the Department.

Actively engaging with the Irish development sector, as well as with networks and other academic institutions, offers us opportunities to enhance the quality, relevance and reach of our work at the Department. In 2022, staff have maintained their on-going engagement with and membership of networks and bodies such as the Irish Development Education Association (IDEA), Dóchas, the Development Studies Association of Ireland (DSA) and the European Association of Development Institutes (EADI). In 2022, Dr Eilish Dillon was appointed the IDEA representative to the Department of Further and Higher Education Advisory Group on Education for Sustainable Development.



Dr Eilish Dillon, Department of International Development

# Faculty Highlights

## Faculty of Social Sciences

### Comhlámh First Wednesdays

Recognising the importance of engaged research and motivated by shared values, the Department of International Development and Comhlámh continued their long-standing partnership of mutual support and solidarity through collaboration on various events, actions and campaigns. In 2022, Department staff moderated a range of Comhlámh First Wednesday public engagement events. The Spring 2022 debates were developed in response to the themes of Conflict and Migration Through the Lens of Solidarity.

The specific topics were:

- Solidarity with Ukraine, April – Dr Kieran Doyle;
- Solidarity in Crisis, May – Patrick Marren; and
- Criminalisation of Humanitarians on the European Borders, June – Niamh Rooney.

The First Wednesdays Autumn 2022 Series focused on the theme of “The Struggle for Democracy: Exploring Commonalities in Global Citizenship and Activism”.

Specific topics were:

- Struggle as Acts of Citizenship, October – Niamh Rooney;
- The Struggle for the Earth: The Global is Local, November – Dr Tom Campbell; and
- Unpacking Commonalities in Struggle, December – Dr Paul O’Keeffe

### Blog Series, ‘Stories of Change – From Knowledge to Action’

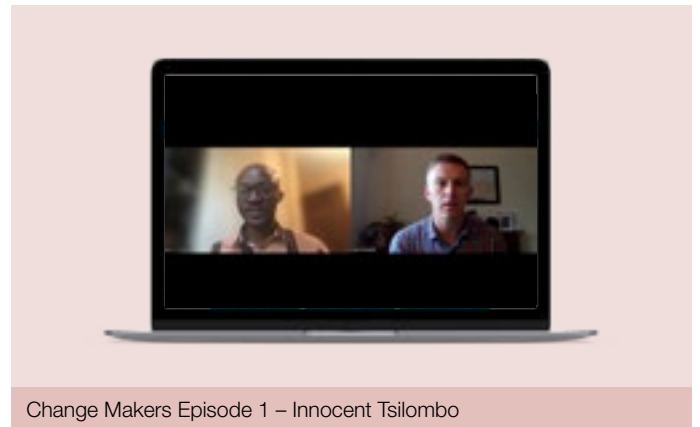
In 2022, the Department published blogs on the following topics:

- You Live and Learn: Reflections on the Need for a More Inclusive and Supportive Learning Environment in Development Education, Clara Perras, MA Erasmus Participant;
- Time and Crisis Responses: Towards a Long Term View, Dr Eilish Dillon; and
- The Ethnic Identity Crisis of First and Second Generation of Immigrants, Lanna El Hussein, BA Erasmus Student

### Change Makers Conversations

In 2022, two Department of International Development staff members, Niamh Rooney and Dr Paul O’Keeffe collaborated on the development of a series of conversations with activists and people engaged in change from around the world entitled the ‘Change Makers’ series. These video-recorded episodes aim to explore and share stories of success and challenges from projects that are creating change for people around the world, as well as activists’ experiences and learning from these processes. Conversations also explore ways in which education can act as a catalyst for transformational change in the context of contemporary global challenges.

The series began in November 2022 and had published the following three episodes by the end of the calendar year on the theme of education provision and change in refugee camps.



In Episode 1, Innocent Tsilombo, the co-founder and managing director of Kakuma Ventures, speaks with Dr Paul O’Keeffe from Maynooth University about his organisation’s approach to providing vital services to people in Kakuma refugee camp in Kenya. Having previously worked together on various engaged research and higher education initiatives in Kakuma, the contributors explore the role academia plays in enabling refugee empowerment and how it has acted as a catalyst for Kakuma Ventures’ work. This refugee-led network of humanitarians, social workers, entrepreneurs, and applied human rights activists is breaking down barriers and helping the people of Kakuma to create their own solutions for the problems they face in exile.

Episode 2 with Dieu Merci Luundo, Christian Mabuku and Dr Paul O’Keeffe delves into the role education has played in creating Vijana Twaweza Youth Club in Kakuma Refugee Camp in Kenya. The club brings young people together to raise fish, grow vegetables and learn about permaculture in an effort to combat climate change, inequality and malnutrition.

In episode 3, Dr Paul O’Keeffe speaks with Lorraine Charles, the founder of Na’amal, an organisation that is changing the narrative around refugees and employment. Na’amal develops soft skills and digital training for refugees all over the world and helps them to connect with remote working opportunities. The contributors have previously worked together on a book about academic responses to the Syria crisis.

## Anthropology

In the academic year 2021/22 the Department was managed by nine academic staff and had two postdoctoral researchers. Five PhD students graduated and one new student commenced their doctoral studies.

The members of the Department published one book, three edited journal issues, six journal articles, six book chapters, and participated in approximately 40 conferences, research seminars and roundtables during 2021/22.

## Publications

A notable highlight was the success of the 2021 book *The Global Smartphone* co-authored by Dr Pauline Garvey. This received widespread international attention and featured in newspapers from Europe to Asia, including full-page features in newspapers such as *The Guardian*, *The Sunday Times* and the *World Economic Forum*. Irish radio picked up on the Irish contribution in interviews on Drivetime (RTÉ Radio 1), Sean Moncrieff (Newstalk) and Clare Byrne Live (RTÉ Radio 1). A further publication includes “What Smartphones Teach Us about Ageing” on RTÉ’s Brainstorm (Garvey 2021).



Dr Pauline Garvey, Department of Anthropology

Professor Mark Maguire published an article on security by design in contemporary airports in the journal *Anthropology Now* (a collaboration with legal scholar David A. Westbrook). He also published a commentary on new work on the use of genetic “fingerprinting” in criminal cases in the journal *Cultural Anthropology* and a co-authored essay on “Seeing like an Airport,” which explores high-tech counterterrorism and identification systems in modern airports, in the volume *Bioinformation Worlds and Futures*.

Professor Hana Cervinkova’s research resulted in the publication of three peer-reviewed articles, two book chapters and two co-edited thematic journal issues in 2021/22. Her co-authored articles on doctoral education reforms in Central/Eastern Europe drawing on the 2015-2019 Horizon 2020 project were published in the journals *Critical Education* and *Educational Forum*. Together with colleagues in the Centre for Public Education and Pedagogy at MU and Pedagogies for Social Justice Research Group at the University of South Australia, she explored new ways of conceptualizing the public sphere and education (published article in the journal *Educational Philosophy and Theory* and forthcoming

chapter in *The New Publicness of Education*, Routledge). She co-edited a thematic issue of *Educational Forum* focused on international doctoral education and a special issue of the *Journal of Social Science Education* on classroom ethnography. Her work on material heritage, cultural activism and memory of racialised communities in post-socialist cities appeared in an edited volume on urban Diversity in East-Central European Borderlands (Stuttgart: ibidem-Verlag). She also published a chapter on leadership during the COVID-19 Crisis in an edited collection *Corona Chronicles 3.0* (Dio Press).

Dr Chandana Mathur co-edited a Thematic Section titled “Economic nationalisms in a world on fire” with Ann Kingsolver and Gustavo Onto that appeared in the journal *Anuac: Rivista della Società Italiana di Antropologia Culturale*. She was the co-author, with A. Kingsolver and G. Onto, of the extended introduction to this collection of articles. Her published research essays in 2022 included a chapter titled ‘A Strike to Remember: Ethnographic Reflections on the Conditions of Possibility for Labor Resistance in the US Heartland’ for *The Routledge Handbook of the Anthropology of Labor* edited by Sharryn Kasmir and Lesley Gill. She published a co-authored research article on the key findings of the first ever Global Survey of Anthropological Practice, with P. McGrath, G. Acciaioli et al, in the journal *VIBRANT: Virtual Brazilian Anthropology*. Also for *VIBRANT*, she co-wrote a second piece, with V. Vucinic et al, on the history of the Global Survey of Anthropological Practice. An obituary authored by her appeared in the journal *Social Change*. As the first author of the *Report synthesizing secondary data on sources of conflict over water in India* for the EU Horizon 2020 funded PANI\_Water project, she led in the revision and final submission of the report. She was also a co-author of two other PANI\_Water project reports that were finally submitted in 2022.

Dr Steve Coleman published a book chapter, “Sí Teanga na Muintire a Shlánós an Mhuintir: Ó Cadhain, Rhetoric, and Immanence” in the edited volume, *Tropological Thought and Action: Essays on the Poetics of Imagination*, published by Berghahn. He also collaborated with Sally Ness (UC Riverside) to produce the chapter, “Semiotics in Anthropology and Ethnography” published in the volume, *Bloomsbury Semiotics*.

Professor David Prendergast, Dr A. Jamie Saris, and Dr Katja Seidel co-authored a 65,000-word report for the *Horizon 2020 Smart & Healthy Ageing through People Engaging in Supportive Systems (SHAPES) Innovation Action*. This was reviewed and submitted to the EU in November 2021 and a contract has been signed with Berghahn Books to develop this into a monograph ‘*From Legacies to Futures: Lifeworlds of Older Adults in Europe*. Vignettes from this research, edited by Professor Prendergast, Dr Saris and Dr Seidel continue to be published at Shape Stories website (<https://shapes2020.eu/shapes-stories>) and the team contributed with Shapes partners to the *Open Research Europe* journal article ‘Implementation of a pan-European ecosystem and an interoperable platform for Smart and Healthy Ageing in Europe: An Innovation Action research protocol’. Dr Saris’ work also figures prominently in a special edition of the *Irish Journal of Psychological Medicine* dedicated to Medical Anthropology, including his own article “The dialectics of heroin and methadone in Ireland”.

# Faculty Highlights

## Faculty of Social Sciences

Dr Ana Ivasiuc's research resulted in five publications in 2022. She published two peer-reviewed single authored articles in international journals "The State Cannot Protect Us": How Vigilance (Un)Makes the State in Western Europe" in *Conflict and Society* and "Provincializing Security: Materiality and Sensoriality" in *Critical Studies on Security*. In addition, she co-wrote the introduction to a special issue that she co-edited with Professor Eveline Dürr and Dr Catherine Whittaker. Dr Ivasiuc also published two book chapters "Spatial Mobility as a Threat to Social Mobility: Roma in the Peripheries of Rome and the NIMBY Politics of campi nomadi." In Heidi Hein-Kircher and Werner Distler (eds.). *The Mobility-Security Nexus and the Making of Order. An Interdisciplinary and Historicizing Intervention* and "Desires and Fears in the Eternal Invisible City: An Ethnography of All Urban Ethnographies." In *Invisible Cities and the Urban Imagination*, edited by Benjamin Linder.

### Research Projects

Professor David Prendergast and Dr Jamie Saris are Co-PIs in the H2020 SHAPES Project, which includes 36 institutional partners and has a total funding value of €21 million. Professor Prendergast and Dr Saris (with senior postdoctoral researcher Dr Katja Seidel) led the work task responsible for conducting ethnographic research into the life worlds of older adults in 94 community dwelling older adults in ten localities across Europe. This work continued during 2022 with the resumption and completion of in-person ethnographic fieldwork in Spain by Dr Seidel.



Professor David Prendergast, Department of Anthropology and Assisting Living and Learning (ALL) Institute

Dr Saris continued to participate in the "Medical Professionalism in Practice – developing and understanding relationship-centred professionalism in medicine for the public, students, teachers and clinicians" [Med PiP], which has now evolved into a broader project "Professionalism Across the Professions". He has also continued to develop his research on Reactionary Politics and Public Health. He is currently consulting with Uisce (the Methadone Users Group and SafetyNet (a primary care organisation working with marginalised people in Irish Society) on a project focussed on Recovery from Addiction.

Dr Pauline Garvey is a collaborator in the ERC funded research Anthropology of Smartphones and Smart Ageing ([www.ucl.ac.uk/anthropology/assa/](http://www.ucl.ac.uk/anthropology/assa/)), a multi-sited research project based at UCL

Anthropology, primarily funded by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme. In addition to two books and multiple articles, the ASSA team created a Youtube channel with short films from the fieldsites and have a website and blog. In 2021 the group launched a MOOC (Massive Open Online Course) based on research findings hosted on the FutureLearn platform. In 2022 Dr Garvey won proof-of-concept funding from MaynoothWorks and is PI on a pilot project on social prescribing in which she collaborates with Dr Joseph Timoney (Computer Sciences, Maynooth University).

Dr Steve Coleman collaborated with colleagues in UCC, TCD and elsewhere to set up an online research and discussion group in semiotics and anthropology. This group now has members in several countries on three continents and has resulted in a publication (Ness & Coleman 2022).

Dr Chandana Mathur continued to participate in the PANI\_Water project (2019–present), which was granted €4,969,749 under the EU Horizon 2020 Scheme. Professor Honor Fagan and Dr Mathur are the two Maynooth University based PIs. Dr Mathur was a recipient of a conference grant of US\$20,000 from the Wenner Gren Foundation for Anthropological Research, New York, to organise a symposium titled 'Decentering Anthropology by way of Malinowski' at the Free University of Bozen-Bolzano, Italy. The award was made jointly to Professors Dorothy Zinn and Elisabeth Tauber (Free University of Bozen-Bolzano) and Dr Mathur, and the symposium took place in September 2022.

Professor Hana Cervinkova is the PI on the IRC GOI 2-year Postdoctoral Fellowship awarded to Dr Grace Zhou for the project, Theorizing Settler Socialism: Economy, Identity and Power in Post-Socialist Central Asia. Together with Dr Zhou, she is leading a research and publication project on race and racism in East/Central Europe, the Balkans and Eurasia (funded by the Centre for European and Eurasian Studies and MUSSI).

Professor Mark Maguire continues to work with international colleagues on the Global Foresight project funded by the Riksbankens Jubileumsfond and coordinated by the Swedish Collegium for Advanced Study. Drawing on their research on how the future is produced in complex organisations and sites, they are currently coauthoring a monograph on Consulting the Future: Security, Finance, and the Search for Certainty.

In 2021–22 five PhD research students completed their doctoral studies in the Department of Anthropology:

- Aideen Elliott *Making Migration Policy to Save Europe*. Supervisors: Professors Mark Maguire & John O'Brennan
- Kevin Flanagan *Commoning the City*. Supervisor: Dr Steve Coleman
- Louise Veling *Producing Humans: An Anthropology of Social and Cognitive Robots*. Supervisors: Professor Mark Maguire & Dr Steve Coleman
- Matjaz Pinter *Transformations of Political Consciousness in the Process of State Formation in Nepal*. Supervisor: Dr Chandana Mathur
- Stuart Lang *The Agri-Cultural Imagination: Present and Future Imaginations of Alternative Agriculture, the Human-non-Human Relationship, and the Impact of Time*. Supervisor: Dr Steve Coleman

## Conferences

Professor David Prendergast gave a keynote talk on *Ethnography and Technology Design* at the 10<sup>th</sup> annual conference 'Re/generation: Why the World Needs Anthropologists' in Berlin in 2022. He also presented a paper 'Thrills, Pills, and Spills: Ethnography, Design and Ageing in Place' for Irish Anthropology Day in Dublin. Together with Drs Katja Seidel and Jamie Saris, he presented the paper 'You need something to look forward to' at the European Association of Social Anthropologists conference in Belfast as well as a screening of his documentary film 'Circuits of Care'. Other public talks included a panel on *Digital/Analog* for the Society for Visual Anthropology Film and Media Festival in San Jose, USA, and a talk sponsored by the Japan Research Centre in SOAS, London. Film screenings were also given to PhD students on the VisuAAL doctoral training programme, as well as the MSc 'Determinants of Health' module at Trinity College Dublin. Professor Prendergast participated and presented at the *Anthropology of Comparative Ageing Workshop* held at University College London.

Professor Mark Maguire gave invited presentations to the International Security and Anthropology seminar in Northeastern University and the anthropology seminar series in the University of Copenhagen. He also co-presented papers at the Situated AI conference in the Max Planck Institute for Social Anthropology, Germany, and the American Anthropology Association's annual conference in Baltimore, USA.

Professor Hana Cervinkova led the organisation of the Irish Anthropology Day (Dublin, May 2022), a conference dedicated to the anthropology on/ of the island of Ireland. The event was the latest in a series of meetings featuring anthropology of different country and regional traditions organised by the Royal Anthropological Institute of Great Britain and Ireland. She is currently preparing (together with Mark Maguire) a publication of an edited volume based on the conference for the RAI Country Series published by Sean Kingston Press. In addition, she was an invited keynote speaker at the Czech Association for Social Anthropology Annual Lecture in Prague and at the annual Memory Studies conference, *Suspended Present: Downloading the Past and Gaming the Future in a Time of Pandemic*, organised by the Memory Studies Group at the New School, New School for Social Research, New York. Together with her colleagues from MU Department of Education and the University of Southern Australia, she also participated in the 2021 AARE Conference and gave a paper on Pedagogies of Memory in the special symposium *Recharting Solidarities with/as Education*.



Professor Hana Cervinkova, Department of Anthropology

Dr Chandana Mathur was a Visiting Professor at the University of Vienna in June 2022, and a featured speaker in the lecture series of their Department of Social and Cultural Anthropology. She was a speaker at the launch event for the Higher Education Authority's Race Equality Implementation Plan (2022-24), where she discussed the work of the National Intersectionality Working Group, on which she had served as an academic expert. At the 2022 American Anthropological Association conference, Dr Mathur was an invited speaker on a panel entitled 'The Anthropology of Labor', and a discussant at a session entitled 'Ethical Fields in Settler Landscapes: On Non-Extractive Research, Security States, & Occupied Territories'. As the then Vice-President of the European Association of Social Anthropologists (EASA), she had served as a member of the Scientific Committee for the July 2022 EASA conference in Belfast (<https://easonline.org/conferences/easa2022>). With a conference grant awarded by the Wenner Gren Foundation for Anthropological Research, New York, and alongside her fellow grant recipients Professors Dorothy Zinn and Elisabeth Tauber, she co-organised a symposium titled 'Decentering Anthropology by way of Malinowski' at the Free University of Bozen-Bolzano, Italy, in September 2022 ([www.unibz.it/en/events/140785-symposium-decentering-anthropology-by-way-of-malinowski](http://www.unibz.it/en/events/140785-symposium-decentering-anthropology-by-way-of-malinowski)). With Dr Avishek Ray (a Visiting Fellow at the MU Arts and Humanities Institute, for whom Dr Mathur had served as the MU sponsor), she co-organised a two-day international symposium on 'Mobility and/as Resistance: The Political Project of Nomadism' in 2022 ([www.maynoothuniversity.ie/faculty-arts-celtic-studies-philosophy/news/call-papers-mobility-and-as-resistance-political-project-nomadism](http://www.maynoothuniversity.ie/faculty-arts-celtic-studies-philosophy/news/call-papers-mobility-and-as-resistance-political-project-nomadism)). In her capacity as the Human Rights Liaison at the American Anthropological Association (AAA), she was involved in arranging a roundtable session titled 'Anthropology of Exile' at the 2022 American Anthropological Association conference.



Dr Chandana Mathur, Department of Anthropology and Social Sciences Institute (MUSSI)

Dr A. Jamie Saris presented at a day devoted to Anthropology in Ireland sponsored by the Royal Anthropological Institute. He also presented some of his work on "Reactionary Politics and the Response to Pandemics" at the Summer School on Politics and Security in Philipps-Universität, Marburg Germany".

# Faculty Highlights

## Faculty of Social Sciences

Dr Pauline Garvey presented academic papers in Queens University Belfast (February 2022), in Singapore University of Technology and Design (March 2022), where she was an invited visiting academic in the School of Humanities and Social Science. Dr Garvey also presented in the Slovak Academy of Sciences while she was a visiting lecturer (June 2022). Dr Garvey (and Professor Miller) co-hosted a panel called The Transformation of Hope in Retirement in the biennial European Association of Social Anthropologists conference (July 2022). She also presented a paper at this conference entitled “How to Leapfrog the Young: Downsizing and Transformation.”

Dr Thomas Strong presented a paper ‘After the “Diary in the Queer Sense of the Term”: (Celebrated) Works and (Shameful) Lives in Anthropology Today and Yesterday’ at the Symposium “De-centering Anthropology by way of Malinowski” at the Free University of Bozen-Bolzano in Italy.



Dr Steve Coleman, Department of Anthropology

Dr Steve Coleman presented work on the Teac Damsa dance company at two conferences in 2022: the ICTM Ireland Annual Conference and in the panel, Potentialities of Semiotic Landscapes: Language Practices, Materialities and Agency, at the EASA Biennial Conference in Belfast. He also presented two papers which critically reviewed the history of anthropology: “The ethnography of discourse and the discourse of ethnography in Ireland” at the RAI Seminar on Irish Anthropology in Dublin, and “Semiotics in anthropology and ethnography” (based on Ness & Coleman 2022) at the World Congress of Semiotics, in Thessaloniki, Greece.

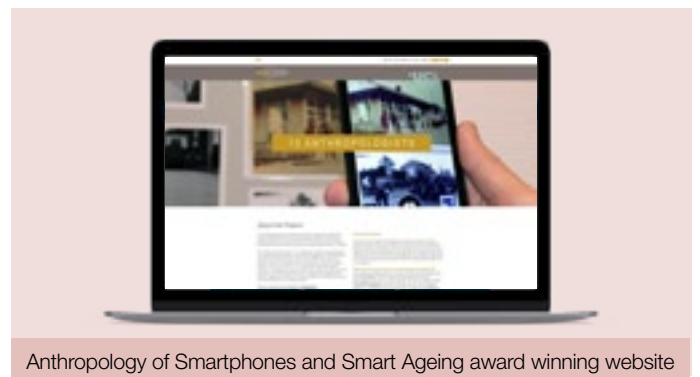
Dr Ana Ivasiuc was a member of the organising committee for the conference of the Anthropology of Security and the Anthropology of Crime and Criminalisation networks of the European Association of Social Anthropologists. Within the conference, titled ‘Anthropology of Crime and Security’, held in May 2022 at the University of Bologna, she co-organised the panel Intersecting Crime and Security: Exploring Vigilantism beyond the State, and presented the paper “Beyond the State: Space and entrepreneurship in contemporary practices of vigilantism in Italy.” During the same conference, she organised and co-led a methodology lab and a writing lab. Dr Ivasiuc co-organised the panel (In)Security: What’s the State Got to Do with It? at the 2022 EASA conference in Belfast, and presented the paper “(Un)Making the state: Informal policing in Europe”. In 2022,

Dr Ana Ivasiuc also contributed with an invited talk: “The Racial Policing of the Roma in Contemporary Italy, at the workshop Criminalisation-Surveillance-Resistance: Roma and Policing from the Holocaust to the Present”, organised by the University of Minnesota. She also participated in the round table Boundaries of European Identity, organised at the Museum for European Cultures in Berlin by the EuroStorie project from the University of Helsinki.

### Awards

Dr Ana Ivasiuc submitted a grant application for the ERC Starting Grant scheme in October 2022.

The ASSA website, from Dr Pauline Garvey’s research, which features books, videos, infographics and stories from the field recently won the AVA 2021 Award for Best Visual Ethnographic Material Addressing Ageing and the Life Course in the Multimodal category. The AVA Award is a collaborative effort of the EASA’s Age and Generations Network, Association for Gerontology, Ageing and the Life Course and EASA’s Visual Anthropology Network.



Anthropology of Smartphones and Smart Ageing award winning website

### Engaged Research

Since the onset of the War in Ukraine, Professor Hana Cervinkova who is also a member of the MU Centre for European and Eurasian Studies has been active in shaping academic response to Russia’s War on Ukraine – she has held several lectures across the university and helped organise large events, including the University Vigil and President Zelenskyi’s online address followed by an expert panel at MU. She also contributed to public debates about the War in Irish media. Professor Cervinkova serves on the editorial boards of 10 peer-reviewed journals, and she is an external reviewer on doctoral programme in Anthropology at Palacky University in Olomouc, Czech Republic.

Dr Chandana Mathur participates in the PANI\_Water (Photo-irradiation and Adsorption based Novel Innovations for Water Treatment) project (EU Horizon 2020 Scheme), which is concerned with water access for disadvantaged groups in India. The project’s research partners for the social science work package are not universities, but two prominent Indian NGOs – Development Alternatives, and TARA, Technology and Action for Rural Advancement. Dr Mathur continues to serve as a member of the Editorial Advisory Board for sapiens.org, an editorially independent



magazine of the Wenner-Gren Foundation for Anthropological Research (appointed in January 2019). This digital magazine was founded with a mission to bring anthropology to the public and contains articles by professional anthropologists directed at a general readership. Dr Mathur represents Maynooth University in the Scholars at Risk – Ireland network.

Besides publishing in RTÉ Brainstorm, Dr Saris regularly contributes regular tweets on Health and Society under various hashtags on Twitter. He has consulted with the Irish NGO Safetynet on how to research the process of making some of the Covid-forced changes in delivering care to some of the most marginalised in Irish society that turned out to be a success, permanent. He also consulted pro-bono for an architectural start-up company. Finally, he continues to serve on the International Board of Consulting Editors, for Culture, Medicine and Psychiatry (1996–present) and that of Reviews in Anthropology (2011–present).



Dr A. Jamie Saris, Department of Anthropology and Assisting Living and Learning (ALL) Institute

Dr Pauline Garvey is editor in chief of the international peer-reviewed journal *Home Cultures: The Journal of Architecture, Design and Domestic Space*, (Taylor and Francis). She sits on the editorial board of the *Nordic Journal of Social Sciences*. Since 2020 Dr Garvey has occupied the role of External Examiner for Anthropology to the School of History, Anthropology, Philosophy and Politics, Queens University Belfast, UK.

Dr Ana Ivasiuc is a member of the collective PrecAnthro, undertaking research and advocacy on issues related to precarity among anthropologists and in academia more broadly. In this quality, she regularly intervenes in debates and as a result of her engagement and achievements was elected President of the European Association of Social Anthropologists, to serve a two-year mandate (2023-2025). She has also joined the editorial board of *Conflict and Society*, continued her activity as social media editor of *Anthropological Journal of European Cultures*, and joined the editorial board of the new book series at the Central European University Press *Crisis, Conflict, and Security in Central and Eastern Europe*.

Professor David Prendergast currently sits on the advisory board of the Marie Skłodowska-Curie Project visuAAL – Privacy-Aware and Acceptable Video-Based Technologies and Services for Active and Assisted Living ([www.visuual-itn.eu](http://www.visuual-itn.eu)). He also continues to serve as a member of the Smart Dublin Advisory Network which he joined as a founder member in 2015.

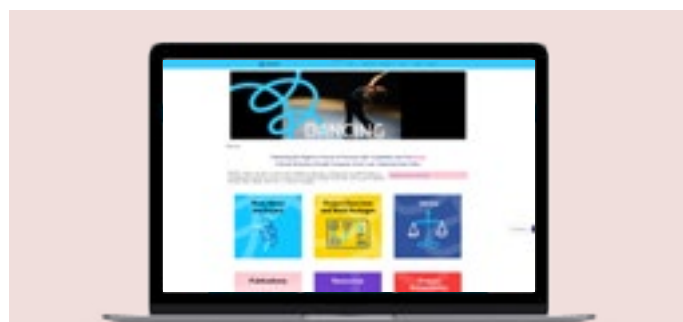
## Law and Criminology

The School of Law and Criminology is the second-largest academic unit in the Faculty of Social Science and the largest School of its kind (by student numbers) in the Republic of Ireland. It has seen considerable growth in staff and student numbers and a corresponding increase in research outputs over the past decade.

The School has continued to grow and diversify its staff base, with FTE academic staff (including university tutors) rising from 35.8 in 2020-21 to 44.0 in 2021/22. Overall, permanent whole-time academic staffing numbers in Law and Criminology have risen from 16.8 FTEs in 2017/18 to 47.8 in 2022/23. The School's impressive research outputs are particularly notable given the high student numbers (particularly undergraduate) across the School. Between 2020-1 and 2021-2, the total number of students rose from 1,517 FTE to 1,677 FTE, including 1,553 FTE undergraduates and 71.7 FTE taught postgraduates. Notably, PhD numbers have almost doubled over five years from 14.3 in 2017/8 to 26.7 in 2022/23. With staffing increases, however, staff-student ratios have gradually stabilised (from 49.2:1 in 2017/18 to 34.8:1 in 2021/22).

In 2021/22, the School generated an impressive array of publications and research outputs in diverse contexts. Specifically, staff in the School produced 6 books (monographs), four edited books, 33 book chapters, 54 peer-reviewed journal articles and 41 other publications. Colleagues were active in presenting at academic conferences and contributed to two published reports.

Colleagues in the School have been increasingly successful at attracting research funding. The School is now home to two ERC projects, ERC Dancing and ERC PatentsInHumans. The total yield of grant awards for the year 2021/22 was €2,467,485 (Inclusive of in direct costs) across 17 separate projects (set against a total of 37 award applications for the year).



The Dancing project is funded by the European Research Council

In 2022, the School of Law and Criminology consolidated its strong and growing research profile, with significant numbers of publications and strong headway made in relation to research funding.

Over recent years, the key research impacts have been

- significant growth in funding earned, with several key successes in earning external funding, and
- a steady and impressive output of research work in high quality publication outlets.

# Faculty Highlights

## Faculty of Social Sciences

The School maintained its strong publication record in 2022. Six monographs were authored or co-authored by staff in the School, as follows (Maynooth staff with asterisks):

- Dr Lynsey Black\*, *Gender and Punishment in Ireland: Women, Murder and the Death Penalty, 1922-64*, (Manchester University Press 2022)
- Dr Avril Brandon\* and Gavin Dingwall, *Minority Ethnic Prisoners and the COVID-19 Lockdown: Issues, Impacts and Implications*, (Bristol University Press 2022)
- Dr David Cowan\* (2022) *Effective Communication for Lawyers*, (Edward Elgar 2022)
- Dr Mary Dobbs\* and Ludivine Petetin, *Brexit and Agriculture* (Routledge 2022)
- Dr Bríd Ní Ghráinne\*, *Internally Displaced Persons and International Refugee Law* (Oxford University Press 2022)
- Dr Sinéad Ring\*, Kate Gleeson, and Kim Stevenson, *Child Sexual Abuse Reported by Adult Survivors. Legal Responses in England and Wales, Ireland and Australia* (Routledge 2022).



Dr Bríd Ní Ghráinne, School of Law and Criminology

In addition, one further colleague published in 2022, prior to joining the School - Karen Walsh\*, *Fragmentation and the European Patent System*, (Hart Publishing 2022).

Significantly, Alice Harrison won the Law Book of the Year Award 2021 at the Irish Law Awards for *The Special Criminal Court: Practice and Policy* (Bloomsbury 2019), while the School won the Law School of the Year award at the 2022 ILA Award ceremony.

Academic colleagues in the School also edited or co-edited four collections of essays. These included Dr Neil Maddox, Dr Oliver Bartlett, Ronagh McQuigg and Andrea Mulligan (eds), *COVID-19 and Legal Responses on the Island of Ireland*, (Northern Ireland Legal Quarterly 2022), and Dr Lynsey Black, Louise Brangan, and Deirdre Healy (eds), *Histories of Punishment and Social Control in Ireland: Perspectives from a Periphery*, (Emerald Publishing 2022).

In addition, staff members published 54 peer-reviewed journal articles in leading international peer-reviewed journals and produced 41 other

important contributions aimed at law practitioners and policy makers in Ireland and beyond. Journals in which colleagues featured in 2022 include an impressive range of international publications ranging from across the globe from Australasia to North America as well as influential national journals including *Australasian Journal of Philosophy*; *British Journal of Criminology*; *Cambridge Law Journal*; *European Intellectual Property Review*; *European Yearbook on Human Rights*; *European Journal of Criminology*; *Fordham Law Review Online*; *Georgetown Journal of Law & Public Policy*; *International and Comparative Law Quarterly*; *International Journal of Law in Context*; *International Journal for the Semiotics of Law*; *Irish Jurist*; *Irish Supreme Court Review*; *Journal of Criminal Justice Education*; *Journal of Environmental Law*; *Journal of Experimental Criminology*; *Journal of Human Rights Practice*; *Journal of Medical Ethics*; *Justice Quarterly*; *Law and Development Review*; *Laws*; *Law and History Review*; *Legal Studies*; *Medical Law Review*; *Northern Ireland Legal Quarterly*; and *Public Law*.

Similarly, staff members made 33 book chapter contributions to highly influential essay collections edited by some of most highly regarded legal scholars in the world and aimed at both domestic and international audiences. Publishers include Cambridge University Press, Edward Elgar, Hart Publishing, Routledge, and Wolters Kluwer.

Colleagues' work is regularly cited widely in prestigious outlets. Academic colleagues' work has been cited (for instance) in the Irish High Court, the Constitutional Court of Zambia, and the Delaware Court of Chancery. Our work has also been cited in an article by U.S. federal trial court judge, in articles in the *Harvard Law Review*, *Stanford Law Review*, *Sunday Times*, and in two articles in the *New York Times*. Colleagues have also written for wide-circulation media publications such as *The Journal*, *Newsweek*, and the *New York Times*, and have appeared in national and local broadcast media such as *TG4*, *RTE* and *BBC Radio Scotland*. In particular, our scholarship has featured prominently in media reports, including research on the use of Wikipedia in courts judgment, and in opinion pieces on drug policy and remote working.

### Research Funding

External research funding in the School is strong and growing, with a total annual yield from external awards standing at just over €2.4 million for 2021–22. A key funding success in 2021–22 came in the form of a second major ERC grant for the School for PatentsInHumans, led by Professor Aisling McMahon. This builds on the ongoing success of ERC Dancing, headed by Professor Delia Ferri.



PatentsInHumans, led by Professor Aisling McMahon, received an ERC grant

In the 2021 round of IRC New Foundations awards, Dr Ian Marder secured funding for his UBUNTU project (Using restorative approaches to Build UNdersTanding between yoUng adults of African descent). In the 2022 round of IRC New Foundations awards, a total of six projects from the School were funded, involving four colleagues from Law and three from Criminology with New Foundations award funding totalling over €60,000 cumulatively. (The recipients of this funding were Dr Amina Adanan, Dr Ciara Bracken-Roche, Dr David Doyle, Dr Joe Garrihy, Dr Cian Ó Concubhair, Dr Edana Richardson, and Dr Sinéad Ring).



Dr Ian Marder, School of Law and Criminology

Colleagues in the School remain actively involved in major H2020 projects, including SHAPES, Recreating Europe, and Mothernet. Smaller-scale projects have also successfully attracted funding in 2021–22 including Dr Mary Dobbs' work on Linking the Irish Environments, a cross-border project concerning environmental governance and cooperation.

The School hosted numerous high-profile events in 2022. In particular, January 2022 saw the launch of the Unlocking Potential project (2022), which aims to make higher education more accessible for people with criminal records. UP is led by the Maynooth University Access Programme (MAP) and the School, in partnership with the Maynooth Innovation Lab (Mi:Lab), the Irish Prison Service, the Probation Service, the Pathways Centre (City of Dublin ETB) and the Irish Penal Reform Trust. 2022 also saw the launch of the Law and Technology Centre within the School, alongside at least four internal research seminars. A Whistleblowing Law Webinar and a Conversation with Dr Rosaleen McDonagh, playwright and author of *Unsettled*, also featured during the year. Dr Donal Coffey co-organised a well-attended and widely reported conference marking the 100<sup>th</sup> anniversary of the signing of the Irish Free State Constitution in 1922.

## Engaged Research

The School of Law and Criminology has a strong focus on engaged research serving and carried out in cooperation with and for government agencies, NGOs, and community organisations. Colleagues are often commissioned to carry out research and write reports for government Departments and agencies, in Ireland and abroad (for instance in Scotland). Several colleagues have participated as experts before Citizens' Assemblies and have testified in an expert capacity at and have been cited in reports by Oireachtas committees.

A selection of relevant engaged research projects from 2021/22:

- Dr Ciara Bracken-Roche, Dr Joe Garrihy, Professor Claire Hamilton, Gemma Lynch, Dr Ian Marder, Rose Ryan, Trevor Vaughn, Alice Walsh, 'Unlocking Potential' project (2022) in association with Maynooth University Access Programme (MAP), the Maynooth Innovation Lab (Mi:Lab), the Irish Prison Service, the Probation Service, the Pathways Centre (City of Dublin Education and Training Board) and the Irish Penal Reform Trust.
- Dr Mary Dobbs, 'Linking the Irish Environment' (for NIEL and IEN 2022).
- Dr David Doyle, Dr Avril Brandon, Dr Joe Garrihy, Dr Amina Adanan, and Dr Denis Bracken, (2022) 'Sometimes I'm missing the words: The rights, needs and experiences of foreign national and minority ethnic groups in the Irish penal system' (Irish Penal Reform Trust).
- Dr Noelle Higgins, Professor Delia Ferri, Katie Donnellan, and Laura Serra (2022) 'Final Report on barriers experienced by vulnerable groups'
- Dr Neil Maddox and Claire McGovern (2022) 'Fertility Preservation for Children with Cancer: Legal and Ethical Challenges' SSRN.
- Dr Neil Maddox and Dr Edana Richardson (2022) 'Submission to English Law Commission Consultation on Digital Assets.'
- Dr Ian Marder et al (2021) 'Restorative justice services in Ireland – briefing for the Criminal Justice Strategic Committee' (Restorative Justice: Strategies for Change)
- Dr Ian Marder (2021) 'Using restorative approaches to Build UNdersTanding between yoUng adults of African descent' funded by IRC Foundations.
- Dr Ian Marder (2021), 'International best practice – in Adoptee voices: Report on survey results carried out by Aitheantas – Adoptee Identity Rights' (For Aitheantas).
- Dr Fergus Ryan, 'Scoping Project and Draft Legislation on Free Universal Access to Contraception' (DHR Communications and IFPA 2022).

Dr Hubert Smekal is one of the co-authors of four reports published in 2022 for the EUI RSC, namely:

- Sebastiaan Princen et al, 'Differentiated integration and flexible implementation' (EUI RSC 2022)
- Robert Zbiral et al, 'Mapping the legal scope for flexible implementation in EU directives', (EUI RSC 2022)
- Sebastiaan Princen et al., 'Is flexible implementation an effective and legitimate way to cope with heterogeneity in the European Union?' (EUI RSC 2022)
- Hubert Smekal et al, 'Flexible implementation and the Consumer Rights Directive' (EUI RSC 2022)

Brian Tobin (University of Galway) and Dr Fergus Ryan, 'Review of the operation of the provisions of the Guardianship of Infants Act 1964 as they relate to guardianship of children whose parents are neither married to each other nor in a civil partnership with each other' (for Department of Justice 2022).

# Faculty Highlights

## Faculty of Social Sciences

### Sociology

The Department of Sociology (DoS) research analyses the past, understands the present and imagines and shapes the future. The Department is committed to Public Sociology and Active Citizenship and is particularly active in public discourse and communication of sociological and political research, providing a critical voice across diverse publics. The Department's influence is wide-ranging, as sociology and politics encompass every aspect of individual and collective lives and permeate their every aspect. Staff are experts in their domains and are often invited to participate in prestigious national and international events and research related to their individual field of work.

### Research Clusters

Research in the Department fits under a number of major, intersecting themes within the broad umbrella of work that deeply informs debates regarding Society and Public Policy. These themes address key societal challenges as well as core sociological and interdisciplinary issues. The themes also contribute directly and significantly to the development of the research beacons of the university's strategic plan.

The research themes are:

#### Global Studies, Changing Cultures and Identities

We examine the ways in which the identities and cultures that define how we see ourselves are changing in a world that has become increasingly digital, globalised and polarised. This research strongly informs the university's Digital and Cultural and Heritage research beacons. Issues such as collective and individual identities and representation (Dr Paul Ryan, Professor Jane Gray, Dr Rebecca King O'Riain, Dr Pauline Cullen and Professor Colin Coulter), im/migration, in/equalities and in/securities (Professor Mary Corcoran, Dr Delma Byrne, Professor Honor Fagan, and Dr Barry Cannon), design, governance and impact of digital media (A. Kerr), as well as culture and counter cultures in digital and non-digital spaces (Professor Aphra Kerr and Dr Rebecca King O'Riain) are at the core of the Department's research work. Examples of such work can be seen in the Professor Aphra Kerr co-authored article 'Independence: an introduction to the #AoIR2021 special issue', followed by the co-edition of a special issue papers examining digital media culture and Dr Rebecca King O'Riain's paper '#Wasian Check: Remixing 'Asian+White' Multiraciality on TikTok' (viewed 7,324 times).



Professor Aphra Kerr, Department of Sociology, Social Sciences Institute (MUSSI) and Assisting Living and Learning (ALL) Institute

### Relationships and Communities

Research in this theme investigates the changing forms of social ties and communal social relationships, and how they affect the wellbeing of individuals, households and communities. This work resonates with the university's Health and Well Being beacon and includes work on urban and suburban resilience, gender, care and wellbeing, family and institutional processes and inequalities, and related topics by Dr Mary Benson, Dr Delma Byrne, Professor Mary Corcoran, Dr Pauline Cullen, Professor Jane Gray and Professor Mary Murphy. Work in this strand also focuses on understanding communal ties, cultural creativity and public spheres in urban and rural contexts (Dr Mary Benson, Professor Aphra Kerr and Professor Mary Corcoran). Examples of research in this theme include Dr Delma Byrne's co-authored ESRI working paper 'Shadow Education uptake among final year students in secondary schools in Ireland: Wellbeing in a high stakes context', Professor Jane Gray's article 'Is Resilience a Hidden Resource for Social Policy?' article and Dr Pauline Cullen's study 'From Feminised to Feminist? Trade Union Campaigns for Early Years Educators, Nurses and Midwives in Ireland', one of the earliest studies of gender equality and trade union campaigns in Ireland.



Professor Mary Corcoran, Department of Sociology

### Politics, Economics and Environmental Studies

Research in this theme investigates global transformations and crises, exploring the conditions and processes producing the many contemporary crises of global society – financial and fiscal, ecological, public health related, or political and military. In line with the university's Society and Public Policy and Climate clusters, Departmental research investigates social and political conflict mobilisation (Dr Barry Cannon, Professor Colin Coulter, Dr John Brown and Professor Laurence Cox), the eco-social aspects of commodification and consumerism (Dr Eoin Flaherty, Professor Mary Murphy and Professor Seán Ó Riain), and the varying forms of economic organisation and political and state systems (Dr Barry Cannon, Professor Mary Murphy, Professor John O'Brennan and Professor Seán Ó Riain). The research is distinctive for its exploration of these issues across local, national, regional, transnational and global levels. Examples of recent work that examines these issues in relation to the environment are Dr Eamonn Slater and Dr Eoin Flaherty's *Antipode* article 'Marx on the Reciprocal Interconnections between the Soil and the Human Body: Ireland and Its Colonialised Metabolic Rifts', Dr Eoin Flaherty's 'Does growth reduce poverty? The mediating role of carbon emissions and income inequality' co-authored article, and Professor Mary Murphy's co-authored article on eco-social policy in *Social Policy*.

### Comparative, Historical and Religious Studies

Linking with the university's Culture and Heritage research cluster, many sociological themes are best investigated as they unfold across time and space. This perspective is applied in Departmental research related to the sociology of religion and belief systems (Dr Brian Conway and Professor Laurence Cox), including work such as Dr Conway's chapter in *'The Study of Religions in Ireland: Past, Present and Future'* book and Professor Laurence Cox's keynote lecture to the European Society for the Academic Study of Religions annual conference.

### Research Methodology

The staff at the Department of Sociology are well known internationally for their significant methodological strengths and for integrating research into teaching as well as developing innovative approaches and expertise in a variety of mixed methods. The integration of research into teaching has been previously recognised by the National Forum for the Enhancement of Teaching and Learning in Education for innovative and inspiring teaching in the context of COVID-19 as five academic (Dr Rebecca King O'Riain, Dr Pauline Cullen, Professor Mary Murphy, Dr Mary Benson, Dr Eoin Flaherty) staff received Teaching Hero Awards (2021) ([www.teachingandlearning.ie/teachingheroes](http://www.teachingandlearning.ie/teachingheroes)). At the undergraduate level, the elective sociology pathways are inspired by and reflect our Departmental research interests and university strategic plan beacons. Methodological innovation is evident in the scholarship of faculty, with several significant methodologies advanced and developed by staff. Professor Mary Murphy developed the participatory action research framework PACHRA (based on human rights and capability theory), which is offered as way of developing engaged research and merging of knowledge along the lines of co-production. Professor Laurence Cox developed an approach to participatory research in social movement practice and Dr Eamonn Slater is currently developing a dialectical method of investigation based on the work of Marx and Engels, which follows a three-tiered dialectical path of investigation emphasising the determining roles of interconnecting relationships.



Professor Mary Murphy, Department of Sociology and Social Sciences Institute (MUSSI)

Drawing on the depth of available expertise in research methodologies, and after consulting with internal and external academics, and an externally conducted action market research framework with key figures in the social and policy fields, a new innovative MSc in social research methods was approved. The MSc is structured to provide the required competencies and fluency needed by students to address existing

research work deficiencies. The modules of this programme will be promoted as micro credentials. In addition, the Department's existing Masters of Societies in Transition programme provides teaching in areas that reflect the university's strategic themes, including the digital thread with Digital Societies and Work and Digital Transitions. These two masters will provide a footing for a public, private and third sector-based community of practice amongst social research practitioners with Maynooth University at its hub, and reinforces its existing research led teaching. The MSc is a natural outcome of our networks with civil society and public policy actors, many of which derive from our social activism and engagement as per below.

### Projects and Funded Research

- Professor Aphra Kerr was awarded €162,769 for the ADAPT DCC TP SmartD8 and Digital Twin projects funded by Dublin City Council and Science Foundation Ireland and €10,390 to support Coordination of an ITN research proposal from the Enterprise Ireland Horizon Europe National Support Network. With Professor John O'Brennan and Dr P. Kitchin (UU) she was awarded €196,962 from the Higher Education Authority North South Programme for the project, 'Fair Play? Assessing the exposure of young people to gambling marketing through sport on the island of Ireland (YouGAMSI, September 2022–2024).
- Professor Jane Gray received a grant of €15,883 from Enterprise Ireland for assistance in preparing an ERC application.
- Dr John Brown, in link with MUSSI, was awarded €552,500 for his 'Anti-neoliberal parties and popular movements: Andean and Southern European cases in Comparative Perspective' project.
- Dr Delma Byrne, with Professor Jane Gray and Professor Aphra Kerr has been awarded €15,051 for Child Poverty: SRFT1 consultancy tender from the Department of Children, Equality, Disability, Integration and Youth (DCEDIY). She is also working on establishing a multi-supplier framework agreement for the provision of research and evaluation services to DCEDIY.
- Dr Pauline Cullen was awarded €3,534 for the Gender Norms in Ireland consultancy tender from DCEDIY. She also has a postgraduate student awarded €55,000 IRC Scholarship to work on 'shifting social imaginaries of menstruation in Ireland'.
- Dr Barry Cannon has a postgraduate student on a €110,000 IRC Postgraduate Scholarship to work on 'Extractivism, Hybrid Citizenship and Community Governance in Rural Honduras'.



Dr John Brown, Department of Sociology and Social Sciences Institute (MUSSI)

# Faculty Highlights

## Faculty of Social Sciences

### Social Activism and Engagement

- Professor Mary Corcoran wrote “Towards a Sociological Appreciation of Hair”, as part of public engagement programme alongside The Coiffured art exhibition.
- Professor Honor Fagan continues to contribute to the Community Water Groups in Bundelkhand, India under PANIWATER project.
- Dr Pauline Cullen engages with the National Traveller Women’s Forum, Akidwa. She and Professor Mary Murphy collaborate with Family Carers Ireland and the National Women’s Council.
- Professor Mary Murphy is also a member of the Focus Ireland Research Ethics Committee, the board of Oxfam Ireland and the Council of State.
- Dr Eoin Flaherty consults on architectural projects for BothandGroup for submission to Venice Biennale 18<sup>th</sup> International Architecture Exhibition.
- Professor Colin Coulter is the coordinator of the Research for Transformation in Ireland Collective .
- Professor Aphra Kerr is the advisory group expert member of Pan European Games Information system (PEGI), which advises on the age and content ratings for games sold in Europe and MCed two ADAPT ‘Discuss AI’ public think-ins on the use of facial recognition technologies in public surveillance (in Dublin and Maynooth, Sept and October 2022).
- Professor John O’Brennan is the director of the Centre for European and Eurasian Studies since 2010, and is a member of the ‘Global Europe’ group at the Irish Institute for International and European Affairs (IIEA) and of the Irish government’s Brexit Stakeholder Group.

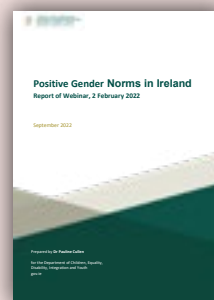
The Department is extremely active in terms of impact on research. Staff have won considerable research funding in national and international competitions, contributed to policy advising and reporting, and engaged in many civic activities as provided below.



Professor Aphra Kerr is the advisory group expert member of Pan European Games Information system, which advises on the age and content ratings for games sold in Europe

### Policy Contribution and Report Publications

- Dr Pauline Cullen wrote the *Increasing Gender Balance on Boards: The case for Legislative Gender Quotas in Ireland* report and the *Positive Gender Norms in Ireland* and co-authored the first study of ethnic minoritised women’s experience of and access to politics in Ireland for DCEDIY. She also produced the *Increasing Gender Balance on Boards: The Case for Legislative Gender Quotas in Ireland* for the National Women’s Council.
- Professor John O’Brennan co-authored a report on Ireland Sustainable Governance in the Context of the COVID-19 crisis, the ‘Ireland’ report in the 2022 Bertelsmann annual analysis of Sustainable Development Goals in Europe (2022).
- Dr Barry Cannon wrote the *‘Emerging modalities of global solidarity and active global citizenship in Ireland’* and co-authored a report on *Civil Society Strategies for Countering the Far Right in Ireland* as a university and Crosscare Migrant project.



*Positive Gender Norms in Ireland* report written by Dr Pauline Cullen

### Summary of Outputs

Academic staff at the Department of Sociology in MU have produced one book and eight book chapters, edited one book and one special issue journal, published 19 articles in peer-reviewed journals, four in other types of journals and four published reports. There was 13 conference contributions and one conference publication. The staff produced 10 other type of publication type including one online database contribution, one audio-visual material and four newspaper/magazine article along with four blogs produced. Between them, the staff submitted 31 grant applications, and were awarded 13 grants totalling €1,359,683, inclusive of overhead and third party, coming up to €7,803,148. Compared with the Faculty of Applied Social Sciences averages, the Department has exceeded the average for all outputs (except that of book editing and other journal publications). We were near faculty average in the total value of grant awards and the value of grants submitted.

# Maynooth University Library



# Maynooth University Library

During the academic year 2021/22 Library staff continued to publish in scholarly journals and present at conferences.

During the reporting period articles were published in:

- New Review of Academic Librarianship,
- Insights,
- An Leabharlann: The Irish Library,

Staff presented nationally and international at conferences such as CONUL 2022, EpiCO (Vienna) and the internationally renowned IFLA World Library and Information Congress conference which was hosted in Dublin for the first time. Additionally, several library staff appeared speaking about library collections and services in documentaries on RTÉ, Newstalk, KFM and elsewhere. Staff also contributed or led various seminars hosted by groups such as the Library Association of Ireland.

Library staff members are involved in editorial roles and professional associations including:

- Associate Editor of New Review of Academic Librarianship (NRAL), a peer-reviewed Taylor & Francis Journal
- Chair and information coordinator of International Federation of Library Associations (IFLA) Buildings Group
- President Library Association of Ireland (LAI).

The Library is represented on the following research support groups:

- Library Association of Ireland (LAI) Publishing Group
- Library Association of Ireland (LAI) Open Access (OA) Group
- Irish Research electronic Library (IReL) ORCID consortium
- Datacite DOI Consortium
- Crossref DOIs
- Irish Open Access Publishers (IOAP)
- CONUL Research Group and CONUL Research Data Management (RDM) Group
- Digital Scholarship Network Ireland
- CONUL Conference Committee (Chair and Programme Chair)

Furthermore, library staff are heavily involved in the National Open Research Forum (NORF). Library staff made substantial contributions to the National Action Plan for Open research which was published last year and are members of four of the six funded collaborative projects which will deliver this work.

## Institutional research support

### Open Access Publishing

The Library supports the Open Access publication of peer-reviewed journals in collaboration with MU staff. These include:

- The Open Journal of Astrophysics (via Scholastica)
- Journal of Military History and Defence Studies (via Open Journal System)
- Dancecult Journal of Electronic Dance Music Culture (via Open Journal System)
- Journal of Mediation and Applied Conflict Analysis (via Open Journal System).

Provision of DOIs (Digital Object Identifiers) via Crossref is part of this service.

The Library also continues to support the publishing of journal articles via a variety of Open Access agreements with over twenty publishers. At the end of the period in question, Maynooth scholars could chose to publish in over 10,000 scholarly journals, at no cost to themselves.

### Open Access repository

The Library maintains the Institutional Repository, MURAL (Maynooth University Research Archive Library), a database showcasing the research output of Maynooth University and St. Patrick's College staff and postgraduate students to the world. In the period under question, 1,618 items were added with 643,677 downloads. This figure included the deposit of 139 theses. The total number of publications in MURAL in the period noted is 15,995.

The Library also facilitated the transition of an MU authored monograph from print only to Open Access, via the publisher Liverpool University Press. This monograph, entitled *Moving Histories*, by Dr Jennifer Redmond of the Department of History is now available to all, for free.



*Moving Histories* by Dr Jennifer Redmond, Department of History is now available to all, for free via Open Access.



### Bespoke research support

The Library supports MU Research via individual consultations and group seminars on a range of topics including:

- Measuring Research Impact,
- Academic Publishing,
- Research Data Management,
- Open Access, and
- Reference Management.

Classes, Workshops and Seminars are also organised for Researchers and Academics. During the period of this report there were:

- 73 Research Classes organised by the Library with 593 attendees. These include the accredited GST2 Research Skills and Awareness classes delivered by the Library.
- Research skills workshops for Academics in April (61 attendees) and July (38 attendees).
- Lunchtime 30-minute Research Skills sessions are also presented for those who would like a quick update.

In line with the above the Library also supports the acquisition of important research software including:

- EndNote Desktop,
- Scopus,
- SciVal, and
- Altmetrics explorer.

The Research Support Librarian attends the three Faculty Research Committees and provides updates and interventions as needed. The Library also is involved in the organisation of and presents for Research Week (October) and Love Data Week (February) each year.

### Research Data Management

The Research Data Management (RDM) Librarian and the RDM Service was launched in June 2022. The RDM Service offers one-to-one consultation on all key aspects RDM, particularly the drafting of Data Management Plans (DMPs). The service also offers a DMP review service, and in the period from June to September 2022 a total of 15 DMPs were reviewed with feedback provided and follow up meetings where necessary.

### IQDA

Responsibility for the Irish Qualitative Data Archive (IQDA) was transferred from Maynooth Social Sciences Institute to MU Library during the fourth quarter of 2022. IQDA provides a data repository for both Open and Restricted Access datasets for Irish Social Scientists. The service was relaunched as an MU Library service with a presentation for Love Data Week 2023. Currently 26 distinct collections are hosted as IQDA collections on the Digital Repository of Ireland with four more in process, and a further two new datasets awaiting processing.



IQDA provides a data repository for both Open and Restricted Access datasets for Irish Social Scientists

### Visiting fellowships (with AHI)

The visiting fellowships supported by the Library, with the Arts and Humanities Institute, continue to facilitate greater research engagement in the Library's unique and distinctive collections, and to further the research mission of the Institute. Each visiting fellow produces an immediate output as part of their work, such as a seminar or blog post, while ultimately using the collection in support of their deeper research output via publication.

# Research Institutes and Centres



## The Arts and Humanities Institute

### Narrative Summary of overall research achievements

The Arts and Humanities Institute (AHI), housed in the Iontas Building, was instituted in January 2018. It replaced An Foras Feasa (AFF) as the Faculty of Arts research institute.

In line with the University's Strategic Plan 2018–22, AHI has a threefold objective:

- to support and enhance research culture in the Faculty of Arts and the University generally;
- to increase volume and quality of Faculty research outputs;
- to grow external research grant income.

### Summary of Arts and Humanities Institute (AHI) Activities 2021–2022

The Institute's research specialism is in digital humanities, particularly historical digital prosopography, data management, metadata schemas and data modelling.

During 2021–22 the Institute:

1. Continued technical development work in digital humanities programming, software development, front-end development, digital prosopography, and trouble-shooting for existing projects
2. Networked with digital research projects at home and abroad, including Nodegate (Utrecht), Beyond 2022 (Trinity College Dublin), Ireland/UK digital humanities Advocacy (Glasgow University) King's College London Digital Laboratory; Digital Repository of Ireland, Dublin; Royal Irish Academy; Queen's University-Hunter Project
3. Co-operated with MU Library on all issues relating to data processing
4. Progressed digital humanities advocacy within the Faculty and the University. This included preliminary discussion with Computer Science and other colleagues regarding the introduction of dedicated post-graduate modules in digital humanities with a view to development a full, digital humanities post-graduate offering. It also covered discussion regarding the standardisation and rationalisation of digital training for all student cohorts and for faculty staff.

### Externally Funded Research Projects Hosted by AHI

AHI hosted 10 externally funded research projects held by PIs who are members of the Faculty of Arts:

1. IRC-funded MacMorris Project
2. RIA-funded Ulster Settlers/Clericus Digital Prosopography Project
3. RIA-funded Digital Corpus of Medieval Irish Latin Inscriptions Project (EMILI)
4. ERC-Horizon 2020 Twinning-funded Motherhood Project
5. AHRC-IRC-funded Women in the Frame Project
6. AHRC-IRC-funded Full Stack Feminism in Digital Humanities Project
7. AHRC-IRC-funded OG(H)AM Project.

8. North-South Initiative-funded 'Our roots travel widely': Beyond Regionalism and Nationalism in Irish Poetry [BRAN] *New Project Sept 22*
9. SFI-IRC Pathway funded Power and Patronage in medieval Ireland: Clonard from the sixth to twelfth centuries *New Project Sept 22*
10. IRC-funded LEIGHEAS (Language, Education and Medical Learning in the Premodern Gaelic World) *New Project Sept 22*

### AHI Post-doctoral Accommodation

AHI provided desk space to three post-doctoral researchers. A post-doctoral researcher group, convener Dr Karl O'Hanlon, has been set up in the Institute to provide an intellectual and social forum for visiting scholars.

### AHI Visiting Fellows Scheme

Twenty-one scholars availed of the AHI scheme in 2021–22. AHI runs two Visiting Fellows schemes: the first, worth €2,000, is focused on research cooperation between external entities and faculty colleagues. The second, worth €3,000, is run in cooperation with the Library and funds fellows working on Library collections.

### AHI Lecture Series

AHI hosted research seminar and lecture programmes for all Faculty Departments. During Covid, the vast majority of these moved on-line. By September 2022 most were again in person.

### AHI PhD Laboratory

AHI maintained and managed the PhD laboratory, which is home to 39 faculty PhDs. They enjoy access to research, catering and social spaces in the Institute.

### AHI New Research Centres Scheme

With the Office of the Dean of Arts, AHI ran a competitive new research centres scheme in 2020, to support new research ventures in faculty. Two centres were supported in the reporting period (2021–22).

### AHI Writers in Residence

With the English Department and Kildare County Council, AHI hosted two writers in residence, Catherine Talbot and Fiona Scarlett. With the English Department and the Arts Council AHI hosted a writer in residence, Louise O'Neill.

# Research Institutes and Centres

## Details of AHI Activities 2021–22 Hosting of Funded Projects

### 1. MACMORRIS Mapping Actors and Contexts: Modelling Research in Renaissance Ireland in the Sixteenth and Seventeenth Century

**Funder:** IRC

**Consolidator:** PI Professor Pat Palmer

During the reporting period, the work of assemblage conducted during the rolling lockdowns (compiling biographies, conducting network analysis, assembling, editing, and translating our corpus of bardic poetry) took material shape in the project's website and deep map. Evan Bourke, undertaking research additional to what the project had originally envisaged, constructed a complete corpus of 5000+ works, in nine languages, related to early modern Ireland, making it the most complete, digitally accessible bibliographical resource for the period. It was also a year when our findings reached publication stage. The PI's innovative digital collection, *Early Modern Criticism in a Time of Crisis*, co-edited with Professor David Baker of the University of North Carolina (Chapel Hill) came out in November 2022. The collection was just one of the benefits of this verse that the fact that David Baker was able to spend Semester 1, 2021, in the Arts and Humanities Institute on a Fulbright Fellowship. Deirdre Nic Chárthaigh's edition, 'Marbhna ar Sheaná Ma Séamais Mheic Ghearalt (†1582)', appeared in *Celtica*; Phil Mac a' Ghoill's 'Mithidh th'athdhúsgadh, a Aodh: Dán ag brostú Aodha Uí Dhomhnaill (†1600)', too, came out in *Celtica*. Evan Bourke's 'Networking Early Modern Irish Women' was published by *Irish Historical Studies*. And Evan Bourke and Nic Chárthaigh's work on Gaelic patronage networks was accepted for publication in *Renaissance Quarterly* (to come out early in 2023).

A central aim of the project has been to break down disciplinary barriers between the study of English literature in Ireland and the study of the Gaelic Irish tradition. An early fruit of that work is the publication of Deirdre Nic Chárthaigh's 'Edmund Spenser, Donnchadh (an tSneachta) Mac Craith, and the Writing of Violence' in the *Spenser Review* (Spring-Summer 2022). Crucial to that objective, too, was the panel which MACMORRIS organised for the Renaissance Society of America conference in April 2022. From that has emerged the essay collection, *Spenser and Gaelic Ireland*, which is now in development. All members of the project were busy disseminating our findings conferences: as well as RSA, we presented at Tudor and Stuart Ireland, the Irish Conference of Medievalists, the Forgotten Histories symposium, the PI gave a talk at the Cambridge Group for Irish Studies, as well as delivering the plenary at the International Association for the Study of Irish Literature and the Paul Walsh Memorial lecture.

Full publication details of all our dissemination activities are available on the MACMORRIS website (<https://macmorris.maynoothuniversity.ie/publications-presentations/>).

### 2. Ulster Settlers/Clericus Project

**Funder:** RIA/Hunter Foundation

**PI:** Dr Richard Fitzpatrick with Professor Thomas O'Connor

This prosopographical project adapts the digital infrastructure of AHI's Clericus Database to a different population, that of settlers in Ulster in the early 17<sup>th</sup> century. The project website launched in the last quarter of 2022 (<https://ulster-settlers.clericus.ie/>).



Ulster Settlers/Clericus

### 3. The Women in Frame Project 2021–24

**Funder:** AHRC/IRC

**PI:** Dr Sarah Arnold

The Women in Focus project is funded by the IRC-AHRC Digital Humanities research grant, originally scheduled for completion July 2023, but an extension has been granted until 30 March 2024. The Irish team include Carolann Madden (researcher) and I (Co-PI) and the Irish Film Institute archive is the project partner. The UK team includes Keith Johnston (Co-PI), Paul Frith (researcher) and the East Anglia Film Archive. Work to date includes data analysis of amateur film catalogue metadata, selection of film case studies and digitisation and viewing of women's amateur film collections. Further research includes historical and biographical research on case study filmmakers (<https://ifi.ie/2021/08/the-invisible-women/>).

### 4. Full Stack Feminism in Digital Humanities 2021–24

**Funder:** AHRC/IRC

**PI:** Dr Jeneen Naji

The Full Stack Feminism in Digital Humanities (FSFDH) project (2021–2024) is a £400,000 AHRC/IRC UK/Ireland collaboration research project that will develop a feminist methodology that software teams, programme managers, database designers, digital arts practitioners, data scientists, can apply to their work, enabling them to re-evaluate the structures in which they work. FSFDH is staffed with a post-doctoral researcher, a part-time research assistant and a part-time programmer who are all based in Maynooth University Arts and Humanities Institute along with the MU Media Studies PI Dr Jeneen Naji. A part time administrator was also hired who is based with the UK partner Sussex University. A FSFDH project web site has been developed (<http://ifte.network/full-stack-feminism>) as well as a twitter account @FullStackFem with 659 Followers and Facebook page. An artists' call has been recently completed so two artists will now be

working with the project towards an exhibition in September 2023. Two outward facing events were run – one hybrid event in MUAHI on 20<sup>th</sup> May 2022 entitled *Archiving Bodies* with 50+ attendees and one livestreamed and in person high profile event in IMMA event in person with 50+ attendees on 16 June 2022 entitled *Artist's Discussion: Full Stack Feminism, Art, Intersectionality & The Digital*. A beta version of the FSFDH online toolkit will launch in early 2023.



Full Stack Feminism in Digital Humanities

#### 5. The OG(H)AM project 2021-24

**Funder:** AHRC/IRC

**PI:** Professor David Stifter

The OG(H)AM project is a collaboration of scholars from Maynooth University (Professor David Stifter, Dr Deborah Hayden, Dr Nora White) with colleagues from the University of Glasgow (Professor Katherine Forsyth, Dr Megan Kasten). The project will harness digital tools from different fields (e.g. 3D-scanning, digital groove analysis, etc.) to transform scholarly and popular understanding of ogham – an ancient script unique to Ireland and Britain. This project provides the long-awaited opportunity to complete the corpus of ogham-inscribed Irish stones begun by the Dublin Institute for Advanced Studies' *Ogham in 3D* project (2012–15, 2016–17); created by Dr White with our partner organisations, the Discovery Programme, and the Irish Government's National Monuments Service) and to extend it to include oghams in all media, including small portable objects and manuscripts up to 1850, and the many oghams outside the Republic of Ireland, especially in Scotland, Wales, and the Isle of Man.



OG(H)AM) - Harnessing Digital Technologies to Transform Understanding of Ogham Writing

#### 6. Motherhood Project: 2020-24

**Funder:** ERC

**PI:** Professor Valerie Heffernan

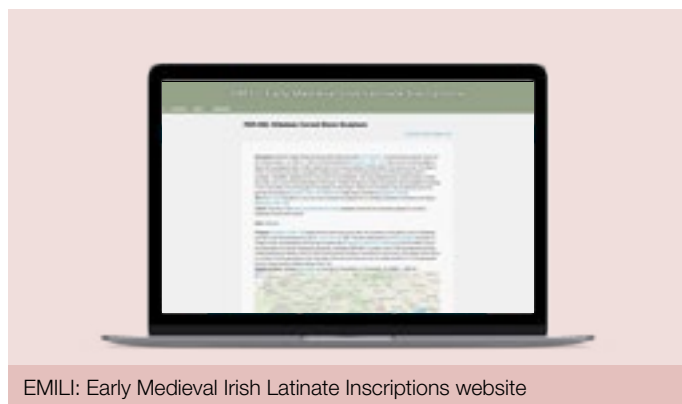
The MU Motherhood Project, a research group composed of seven researchers in the Faculty of Arts, Celtic Studies and Philosophy, and six researchers in the Faculty of Social Sciences, successfully applied for funding through the H2020 TWINNING programme in November 2019. This funded project, which involves a collaboration with Vilnius University in Lithuania and Uppsala University in Sweden, formally began on 1 January 2021 and runs until 2024.

#### 7. A Digital Corpus of Medieval Irish Latin Inscriptions (EMILI Project) 2021–22

**Funder:** RIA Nowlan Digitisation Grant

**PI:** Professor David Stifter

The aim of the project was to set up a website for an online edition of early medieval Irish inscriptions on stone and on portable objects and to create a template the data entry, using the latest standard of TEI-XML. In this initial round of the project, 31 (of estimated 600) inscriptions were entered into the database. The website (<https://emili.celt.dias.ie/>) is hosted by the Dublin Institute for Advanced Studies.



EMILI: Early Medieval Irish Latin Inscriptions website

#### Post-doctoral research Awards hosted in Institute

**Project:** A Triad of Medical Glossaries (Government of Ireland Postdoctoral Fellowship)

**Awardee:** Dr Siobhán Barrett

**Funder:** IRC

**Start/End Dates:** 01 October 2020/30 September 2022

The project was initially approved for two years from 1 October 2020 to 30 September 2022 meaning that the project began during a COVID-19 lockdown. Restrictions imposed because of this meant that travel and access to libraries was restricted during most of the first year of the project. Although the librarians in Maynooth University and in other libraries were excellent at providing digital copies of material it still impacted on the progress of my work. In August 2021 the Irish Research Council approved a no-cost extension giving me an additional six weeks and moving the end date of the project to 15 November 2022.

# Research Institutes and Centres

**Project: MACMORRIS** (Mapping Actors and Contexts: Modelling Research in Renaissance Ireland in the Sixteenth and Seventeenth Century)

**Awardee** Alan Patrick Waldron

**Funder:** IRC:

**Start/End Dates:** 01-OCT-20/30-SEP-22

**ERC:** Marie Skłodowska-Curie Global Fellowship (www.maynoothuniversity.ie/music/news/dr-joe-davies-has-been-awarded-marie-skłodowska-curie-global-fellowship-european-commission)

**Awardee:** Dr Joe Davies

**Mentor:** Professor Lorraine Bodley Byrne (Music) with University of California Irvine (2021–24)

This project, now in its second year in the Music Department at the University of California, Irvine, with the final year to be spent in Maynooth. Over the period 2021–22, activities ranged from Women in Global Music Network, to the launch of the holder's edited volume *Clara Schumann Studies* (Cambridge University Press, 2021). Current work included preparation for the International (hybrid) Conference *Women at the Piano 1848–1970*, with Professor Natasha Loges (Hochschule für Musik Freiburg) at UCI, Irvine, to take place in 2023.

**GOI postdoctoral Fellow in English Awardee**

Dr Paul Fagan

**GOI postdoctoral Fellow in History Awardee**

Dr Jack Crangle

**GOI postdoctoral Fellow in English Awardee**

Dr Edmund Chapman.

## AHI New Research Centres Scheme 2021–22

AHI and the Dean's Office collaborated in 2021 to run a competition for the establishment of two new research incubation centres, funded jointly by AHI and Dean's office, for two years @ €5,000 each per annum. The scheme facilitates colleagues in collaborative areas of research which can enhance research activity in the Faculty and lead to research funding bids and grant capture in the future. Its awardees work closely with the Research Development Office to write a bid for external funding at or before the end of the two-year period and to promote their work, to create research networks, to host a symposium or conference, and to produce at least one peer-reviewed article during the initial two-year period. Proposals involve at least three members of the Faculty from at least two separate Faculty Departments.

Award holder in 2021–22 were:

- Motherhood Project led by Professor Valerie Heffernan (German), with Dr Sarah Arnold, Dr Mercedes Carbayo Abengozar, Dr Anne O'Brien, Dr Julie Rodgers, Professor Moynagh Sullivan and Orlagh Woods.
- Storytelling Across Media, led by Dr Jeneen Naji (Media Studies), Dr Ann O'Brien and Dr Stephen O'Neill.

## AHI Public Engagement

- 2022 (15 July) MIC Limerick *Wild Geese Festival Conference*, Keynote Lecture by Institute Director
- 2022 (18 June) UCC *Eighteenth Century Ireland Annual Conference*, 'Conviction or Convenience? Early modern Irish Conversion Narratives from Portugal', Lecture by Institute Director

- 2022 (14 June) London Warburg Institute Seminar: 'Choice, necessity and laissez-faire in the conversion narratives of early modern Irish visitors to Portugal', Lecture by Institute Director (<https://warburg.sas.ac.uk/podcasts/impious-itineraries-routes-between-british-isles-and-iberian-peninsula-session-2>)
- 2022 (18 May) Benediktinerstift Admont (Austria) Kultur und Memoria Internationale Tagung: 'Irland und die religiöse Vorstellungswelt Europas: Mönchtum, Exil und Bibliotheken', Lecture by Institute Director ([https://www.meinekirchenzeitung.at/steiermark-sonntagsblatt/c-glaube-spiritualitaet/kloester-die-europa-formten\\_a35484](https://www.meinekirchenzeitung.at/steiermark-sonntagsblatt/c-glaube-spiritualitaet/kloester-die-europa-formten_a35484))

## Writers-in-Residence 2022

- Catherine Talbot
- Fiona Scarlett
- Louise O'Neill

## Visiting Fellowship Scheme 2021–22

Visiting Fellow	Home University	Academic Sponsor
Berit Astrom	University of Umeå	Valerie Heffernan
David Baker	University of North Carolina	Pat Palmer
Jelena Dureinovic	University of Vienna	J P Newman
Enrico Terrononi	IULM University	Emer Nolan
Matthew Campbell	York University	Lauren Arrington
Dawn M. Sherratt-Bado	University College Belfast	Lauren Arrington
Mark McGowan	University of Toronto	Thomas O'Connor
Bridget English	University of Illinois at Chicago	Emer Nolan
Kerry Bristol	University of Leeds	Terry Dooley
Thomas Herron	University of East Carolina	English S O'Neill
Thomas Dolan	University of York	Colin Coulter
Emily Sinar	Nashville Radio	Anne O'Brien
Christine Hamn	Bergen University	Valerie Heffernan
Sean Moore	New Hampshire University	Conrad Bunstrom
Dr Inga Hilbig	Vilnius University	Valerie Heffernan
Timothy Aaron Burns	Minnesota State University	Mette Lebech
Kimberly Campanello	University of Leeds	Karl O'Hanlon
Chris Murray	Monash University	Conrad Brunstrom
Shawn O'Hare	Carson/Newman University	Lauren Arrington
Jana Pelcova	Masaryk University	Sarah Arnold
John Haldane	University of St Andrews	Philipp Rosemann

## Hamilton Institute

During the academic year 2021/22 the institute hosted three full-time professors (A. Parnell, K. Duffy, D. Woods) and one half time professor (D. Malone); two FTE Admin; three Postdoctoral Scholars; and 40+ PhD students.

### Overview

The institute acts as a multi-departmental focal point for 47 affiliated university faculty with research expertise and interests in the numerate disciplines. In addition to its Director, it currently hosts two and a half seconded MU faculty and their research teams drawn from the Departments of Computer Science and Mathematics and Statistics, with a recruitment for one replacement professor recently completed (commencing May 2023). Affiliates of the institute participate as principal and funded investigators in several of the SFI Research Centres including CONNECT, INSIGHT, I-FORM, MaREI and LERO. The institute co-hosts the SFI Centre for Research Training in Foundations of Data Science (<http://www.data-science.ie>).



Professor David Malone is active across both the ADVANCE and Foundations of Data Science CRT, while also supervising part-time research students from industry. As part of the CONNECT SFI Centre, he applied for access to Microsoft's new Quantum Azure platform, winning access to the system for a joint project with Dr Hazel Murray of MTU. Professor Ken Duffy (on sabbatical from December 2022 and so away when this report was compiled) is continuing to work with colleagues from MIT and Boston University in developing the first ever in silicon implementation of a universal error correction decoder.

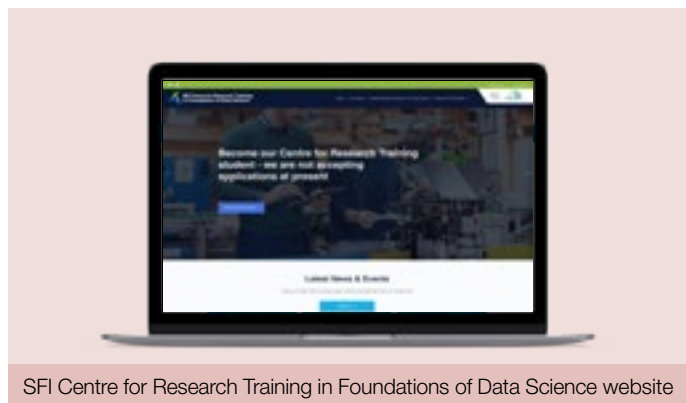
Both Professors Parnell and Woods were named as mentors/Co-PIs in SFI/IRC Pathways awards that were successful in January 2022. Professor Parnell is mentor on the project "A Deep History of Ireland for the Information Age" with post-doctoral researcher Dr Rowan McLaughlin which was awarded €484k. Professor Woods is mentor for Dr Trent Rogers in the project "Arbitrary nanoscale shapes self-assembled from a fixed monomer set", awarded €551k. Both researchers are now embedded in the Hamilton Institute and form part of the multi-disciplinary research staff consortium.

Seconded HI faculty continued to assist institute affiliates and the broader MU academic community by providing with grant proposal feedback for agencies including Science Foundation Ireland, the ERC and other European Union entities. The institute has recently recruited a Senior Strategic Grant Writing Officer to assist seconded faculty and affiliates in conceptualizing, writing, and coordinating funding opportunities (commenced September 2022).

### Research Impact

The published work of seconded faculty encompassed a broad spectrum of materials in top-tier transdisciplinary and discipline-specific venues. Examples of high profile transdisciplinary research include work by Professor Woods in the *Journal of Natural Computing*, Professor Duffy in *Nature Immunology*, Professor Parnell in *Materials and Design*, and Professor Malone in *Networks and Security*.

Professor Woods' group published a journal paper on a new theoretical model of molecular robotics (called Turning Machines), and had three submissions accepted to Track B of the DNA28 conference in New Mexico, USA. Track B is a competitive track for wet-lab based experimental work that will ultimately go to journals (only one other group achieved three accepted submissions—Qian group, Caltech). Professor



### Grants

Seconded faculty at the institute currently hold and are delivering on over €12m of active grants.

In November 2021 Professor Parnell was named both the university and faculty Maynooth University Researcher of the Year. In December 2021 he became a Co-PI on a newly funded €1.6m DAFM project called 'Mycotox-I' looking at bringing together crop science, food science, analytical chemistry, and data analytics to reduce the risk of mycotoxin contamination in food. A number of indigenous and multi-national industry partners form part of the consortium. This new grant is in addition to the 5 other funded awards on which he is currently PI or Co-PI.

Professor Damien Woods' group is running €4.16m in European and Irish funding awards. Two new SFI grants were awarded (€1.16m) during the reporting period, a €604k SFI Frontiers for the Future Project (FFP) to carry out research on nucleation and growth in DNA tile-based self-assembly; and an SFI grant to Senior Postdoc Dr Trent Rogers. In addition, other active awards include a €2.35m European Research Council (ERC) award running since 2018; and a €656k SFI award to support the ERC work (run through the RDO/VPR offices).

# Research Institutes and Centres

Woods was invited to give three keynote/invited talks in 2022, including at the conference Reachability Problems 2022 (Liverpool, UK), SFI Research Centre for Pharmaceuticals, and at the Symposium of the Leverhulme Research Centre for Functional Materials Design (Liverpool, unfortunately declined last-minute due to flu). Professor Woods sat on two PhD/HDR committees, two international conference Programme Committees, and continued his community-leading role on the Steering Committee for the International Conference on DNA Computing and Molecular Programming.

Professor Parnell's group published several landmark papers during the reporting period. In *Materials & Design* his research group, together with collaborators in the I-Form centre for Advanced Manufacturing, produced a digital twin surrogate model of a deterministic process to predict the property structure of an additive manufactured (3D printed) part directly from inputs. In work in the *Journal of Computational and Graphical Statistics* with colleague Assoc Professor Catherine Hurley (HI affiliate) their joint PhD student Alan Inglis produced a new R package to assist in the visual interpretation of Machine Learning models. The paper/package has already gained >10 citations and >8,700 downloads. In more public facing work, with colleague Associate Professor Gerard McCarthy, PhD student Amin Shoari Nejad produced an updated sea level curve for Dublin Port, showing sea level to be rising there at approximately double the global average. The work was published in *Ocean Science* and gained considerable media attention.



Dr Catherine Hurley, Department of Mathematics and Statistics and Hamilton Institute

Professor Malone has continued work on various authentication mechanisms, including publishing on the familiar, but understudied, partial PIN numbers commonly used by banks in English speaking countries. Work from 2021 on the use of quantum technology for authentication also sparked interest, with the possibility at looking at prototyping these techniques on quantum computers becoming a possibility. Interest has continued on older work on energy usage and crypto currencies, with Professor Malone submitting to the US Government's Request for Information on the Energy and Climate Implications of Digital Assets.

Professor Duffy's work on T cell immunity led to a major publication in *Nature Immunology* showing that certain types of cells that have divided less and are in a relatively quiescent state are better at fighting infections. In a landmark paper published in *IEEE Transactions on Signal Processing* (joint work with MIT) they developed a new error correcting code (ORBGRAND) that exhibits superior speed and accuracy for fixing errors

in codes. In another paper in *IEEE Transactions on Communications*, they created a new extension (GRAND-MO) which avoids the need for interleaving of errors and allow for communication systems to transmit information more reliably. Further work in this area resulted in a best research demo award at COMSNETS, 2022.

## Innovation, Industry and Enterprise

Seconded faculty at the institute maintained collaborations with industry partners. Professor David Malone's long-running relationship with IBM continues with an IBM employee working as a PhD student and taking part in discussions on new national timing infrastructure as part of an initiative by HEAnet. Novartis continued to collaborate Professor Parnell in the area of missing data analysis in clinical trials. PhD student Yong Chen Goh (jointly supervised with Hamilton Affiliate Dr Keefe Murphy) has just completed a second secondment with the Novartis Real World Evidence Team, with particular attention to the understanding of cardiovascular risk. Professor Ken Duffy's industry funded collaboration with AstraZeneca and the Walter and Eliza Hall Institute using mathematical modelling to inform the development of immunotherapies continues.

With Professor James Gleeson (UL) and Professor Claire Gormley (UCD), Professor Duffy continues to co-direct the SFI Centre for Research Training (CRT) in Foundations of Data Science. At MU, the centre currently funds 38 doctoral students registered in the institute's structured PhD programme that are supervised by a body of over 30 colleagues drawn from across MU faculty. The centre's enterprise alliance consists of sixteen entities: Alkermes, Analog Devices International, the Central Bank, the Central Statistics Office, Ericsson, Grant Thornton, Hertz, HP Enterprise, Met Éireann, Novartis, Microsoft, Pramerica, RenaissanceRe, Susquehanna International Group, UL Hospitals Group, Valeo. Members of the alliance contribute financially to the centre, and their employees have availed of over 230 training days from it. They also contribute to the training experience of students by host three-month placements that provide exposure to data science work practices in enterprise environments.

A significant number of PhD students from the CRT programme have now completed placements with companies including Alkermes, Analogue Devices, Central Statistics Office, Met Éireann, Microsoft, Novartis, Tata Consultancy Services, RenaissanceRe, and Valeo, with hosting agreements arranged by MaynoothWorks. In line with the "new normal" these placements have been a mix of in-person, remote and hybrid. The relationships formed with enterprise entities through the centre have blossomed into seconded faculty and affiliate collaborations that extend beyond the CRT, including with Met Éireann, Novartis and Valeo. The CRT programme hosted by the institute is reaching a level of research maturity where, in cooperation with MaynoothWorks, students have had organised meetings with EI to understand next options for commercialisation of their research.

Innovation and technology transfer has been a consistent element of institute activity, which currently has four licenced patents. Professor Malone's collaborations with IBM, which have resulted in four awarded US patents to date. His recent work has resulted in two additional invention disclosures to MU, one with IBM on graph algorithms in fog computing.



Professor Duffy's research on forward error correction algorithms with collaborators at MIT resulted in a further US patent (17730377) on making it simpler to identify molecules in microscopic images.

### Hamilton Institute Research Community Activities

The institute hosts two seminar programmes. One is run by graduate students for graduate students of institute affiliates and hosted >10 talks in 2022. The main seminar programme in the Hamilton Institute moved to a blended approach in 2022, with 27 speakers (44% female) from universities such as Johns Hopkins, UC Davis, Purdue, KTH Stockholm, TU Eindhoven, and UT Austin. Several industry speakers also gave talks from Stripe, Fraunhofer UKS, Intel, and Equal1 Labs.

Under the auspices of the SFI CRT in Foundations of Data Science, in late 2022 the institute and its affiliates contributed to the Foundations of Data Science modules, along with speakers from UCD and UL, as well as external academic and industry experts.

The annual Hamilton Institute Research Day brings affiliates and other faculty together to facilitate collaboration. Organised in 2021 by Professor Woods, had 19 contributed talks on a broad range of topics ([www.maynoothuniversity.ie/news-events/hamilton-institute-research-days-2021](http://www.maynoothuniversity.ie/news-events/hamilton-institute-research-days-2021)). Affiliates were from a range of Departments presented work: Computer Science, Mathematics and Statistics, Electronic Engineering, National Centre for Geocomputation (NCG), Social Sciences Institute (MUSSI), Geography, Chemistry, School of Business, and Theoretical Physics.

### Outreach and Related Activities

Institute faculty and research students contribute to outreach activities, with five PhD students presenting during MU's Love Data week. The institute's annual public lecture, the Dangerfield Lecture, resumed in-person delivery. Dr Caitriona Jackman of DIAS delivered a talk on Adventures in the Solar System to a packed seminar room Professor Malone continued to contribute to the debate on clock changes, making several media appearances. He also contributed to RTÉ's Brainstorm TV program on the leaving cert and was invited to speak at MatheMeet, a national meeting of mathematics teachers.

Professor Parnell's work on sea level rise was featured in an RTÉ Brainstorm article, as well as mainstream media articles in The Journal, The Irish Times, and RTÉ News, amongst many others. Professor Parnell was interviewed on Newstalk radio about the issue, and the subject formed part of Fintan O'Toole's weekly opinion piece, as well as the editorial in The Irish Times. Professor Parnell was interviewed on the Ireland AM TV show about climate extremes as part of the summer record temperatures being broken across Europe. Professor Parnell gave a talk and led focus groups at the National Youth Assembly on Artificial Intelligence in Trinity College Dublin.

Professor Woods was interviewed by the Molpigs podcast, a forum for young and aspiring students/others to hear about and get interested in the field of molecular program. Molpigs is run by an international collection of PhD students. Five undergraduate students joined the Woods group for summer projects to learn about DNA computing and molecular programming, one of which, Ahmed Shalaby, stayed on as a PhD student.

### Engaged Research

Through the SFI CRT in Foundations of Data Science Enterprise Alliance (EA): Alkermes, Analog Devices International, Central Bank, Central Statistics Office, Ericsson, Grant Thornton, Hertz, HP Enterprise, Met Éireann, Novartis, Microsoft, Pramerica, RenaissanceRe, Susquehanna International Group, UL Hospitals Group, Valeo. The EA and Skillnet Ireland have contributed >€1.5M in cash to the centre, with a third of that, >€500k, coming to MU. A total of 11 MU PhD students experienced 12 week placements with the Centra Statistics Office, Ericsson, Met Éireann, Novartis, and Alkermes, with hosting agreements arranged by MaynoothWorks.

Professor Malone contributed to the US Government's Request for Information on the Energy and Climate Implications of Digital Assets. Professor Malone continues to supervise the part-time PhD of an IBM employee and an employee of one SFI CRT EA member, Hertz.

Professor Parnell's work on sea level rise in Dublin Bay was assisted in part with data provided Dublin Port and the Office for Public Works. The findings from that study ([www.fingal.ie/sites/default/files/2019-08/20190812\\_fcc\\_climate\\_change\\_action\\_plan\\_final\\_0.pdf](http://www.fingal.ie/sites/default/files/2019-08/20190812_fcc_climate_change_action_plan_final_0.pdf)), that Dublin port is experiencing sea level rise of roughly double the global average, has recently made its way into climate action plans for e.g. Fingal County Council.

Professor Parnell's is continuing his engagement with the Novartis Real-World Evidence team in Dublin where his PhD student is working on missing data analysis for UK BioBank data with a current focus on understanding the effect of statins on cardiovascular risk. The student is undertaking yearly internships and having regular meetings with the Novartis team.



Professor Andrew Parnell, Department of Mathematics and Statistics, Hamilton Institute and ICARUS

Through personal contacts of Professor Duffy: AstraZeneca. Since 2017, with colleagues from the Immunology division at the Walter and Eliza Hall Institute of Medical Research in Melbourne, we have been working with AstraZeneca, using mathematical and statistical time-series models to assess the impact of novel immune-modulating interventions for cancer therapeutics. The work is supported through an EU ITN and direct funding from AstraZeneca.

# Research Institutes and Centres

## MU Social Science Institute

Maynooth University is recognised as a leading national and international centre for interdisciplinary social science research. Several social science projects, including projects collaborating with researchers in STEM and the humanities, at Maynooth University (MU) across a range of disciplines have been coordinated and conducted in MUSSI since July 1<sup>st</sup> 2016.



The Institute both incorporates and builds on the longstanding success of several existing research institutes, centres, and research active Departments at MU and has also in the last 5 years expanded its wide range and remit into new research themes.

MUSSI's current component research groups and centres include projects and PI's formerly associated with the National Institute for Regional and Spatial Analysis (NIRSA) and also the National Centre for Geocomputation (NCG), which has recently expanded (one new lecturer and over €5 million in new research projects).

The institute also consolidates, develops, and supports a number of other projects and critical national data infrastructures, which leveraged c.€12.7 million funding in 2021/22, including the:

- All-Island Research Observatory (AIRO),
- Irish Qualitative Data Archive (IQDA),
- ICLRD (Irish Centre for Local and Regional Development),
- Centre for Mental Health & Community Research ,
- Digital Repository Ireland (DRI), and
- Scholars at Risk (Europe).

Departments involved in current funded projects in the institute include:

- Psychology,
- Geography,
- Anthropology,
- Politics,
- Applied Social Studies,
- Computer Science,
- Law, Sociology,
- Innovation Value Institute (IVI), and
- Hamilton Institute.

MUSSI is very well known across the HEI sector and by social and economic stakeholders, both North and South. This is reflected in the large amount of contract research that it is asked to undertake for public and third sector agencies and it is regularly asked to partner international organisations and other HEIs as part of transnational research bids.

These awards have generated cutting edge research for policy and society in a wide range of areas including:

- Data
- Smart Cities
- Migration
- Evidence Based Planning
- Data Visualisations (Visualisation Partner for Census Ireland)
- Political Economy, Work & Working Lives
- Urban/Suburban Studies
- Urban, Regional and International Development
- Economic & Regional Geographies
- Human Rights and Equality Issues
- Gender and Sexualities
- Social Justice research
- Mental Health
- Digital Archives and humanities
- Housing
- Community and Spatial Planning in the Irish Border Region
- Spatial Planning and Territorial Cohesion Policies at Transnational Levels in Europe
- Social Policy
- Life Course and Family Studies
- Earth Observation
- Health Sciences
- Earth observation
- Technology
- Irish Language
- Public Policy
- Peace/Conflict/War
- International and local Development
- European Studies and Politics.

This report provides just a snapshot/sub sample of our activities and PI's and researchers achievements in the period 2021/22. The Institute fosters and supports research from Master through to senior PI and interdisciplinary and inter-institutional research. Resources include the All Island Research Observatory (AIRO), Irish Qualitative Data Archive (IQDA) (Digital Repository of Ireland (DRI)), Athena Swan and institutional data resources.

MUSSI significantly enhances MU profile both nationally and internationally with academic citation rates among the highest in the university. There is significant external engagement and collaboration with government, NGOs, services, policy, communities and businesses, media and national boards and advisory groups.

The institute has spun out three companies - AIRO People and Place, iGeotech and GeoAerospace.

There are 64 currently active grants of which 14 are EU/international valued at over €9m.

## Publications

Three of the Institute PIs were in the top five citation rates for Maynooth University in 2021 using Google Scholar data (Professor Rob Kitchin, Professor Chris Brunsdon and the late Professor Martin Charlton). Professor Rob Kitchin ranked 5<sup>th</sup> (out of 15,978) geographers globally for citation impact and 5<sup>th</sup> for all disciplines in Ireland in 2020 as calculated using standardised citation indicators (by number of authors, first/last author, and removing self-citations) using Scopus data, produced by the Meta-Research Innovation Center at Stanford University. Professor Chris Brunsdon was ranked 58<sup>th</sup> in Ireland for all disciplines and 144<sup>th</sup> (out of 52,403) Geological and Geomatic Engineers.



Professor Chris Brunsdon, Department of Geography, National Centre for Geocomputation (NCG), Social Sciences Institute (MUSSI) and Hamilton Institute

## Research Awards

### Digital Repository of Ireland

MU PI: Professor L. Connolly

The project is funded by a grant of €383,481.00 from the Wellcome Trust and is running over 36 months from 1<sup>st</sup> January 2021. It is led by Trinity College Dublin, Maynooth University and the Royal Irish Academy in collaboration with a number of additional content partners.

The Archiving Reproductive Health (PI Dr Aileen O'Carroll, MUSSI) project aims to:

- Ingest material from the six collaborating organisations for long term preservation in the DRI.
- Develop best practice for archiving social media.
- Create a registry of at-risk reproductive health archives and support further ingest to the DRI.
- Carry out social science research into best practice, ethics and legalities of archiving this material.
- Provide training and expertise to reproductive health archives in archival best practice.
- Collect and preserve additional material on the topic from the public.

# Research Institutes and Centres

## NCG

### PI: Professor Tim McCarthy

- Terrain-AI (SFI Strategic Partnership & Microsoft) – GHG Emissions Platform – Terrestrial Environments
- PREDICT (SFI/GSI) Dublin Bay & Coastal Environment
- SoMoSAT (EPA) – Soil Moisture Modelling
- MaCoBioS (H2020) – Coastal Zone Ecosystems
- MadSen (SFI LERO & Airbus) – Aerial/Drone Machine Learning
- EoDataHub (H2020 FPCUP & ESA) Earth Observation, Copernicus Academy/Relay
- CoPilot-AI (SFI Defence Organisation Challenge) Wildfire Response Systems
- FHRCI (LERO SFI) Framework for Human Robot Cognition Interaction

## Outputs

- Hosted All Island SpaceExpo at MUSSI/NGC 25<sup>th</sup> May 2022
- Hosted 8 x Workshops (T-AI, CoPilot-AI, Copernicus, SCSi etc)
- AI Award (Terrain-AI) with Professor Rowan Fealy for Terrain-AI 26<sup>th</sup> Nov 2021
- US-Ireland Research Innovation Award with Professor Rowan Fealy for Terrain-AI 25<sup>th</sup> May 2022
- Publications: 6 x Publications (4 x Journals, 2 x Conferences)
- 1 x License Safe Profile Velocity Vsp to Department of Transport (Road Performance Analysis Tool) – input into National Speed Limit Review
- 1 x License (updated) Road Pavement Survey tool using ML now commercialised by Irish SME PMS Ltd
- Member of IAA UAS Advisory Council, Co-Author of Best Practice/Governance For Drones Local Government, Chair of SCSi 'UAV Working Group', National Representative on Copernicus Committee (Brussels)



Professor Rowan Fealy, Department of Geography, ICARUS, Social Sciences Institute (MUSSI) and National Centre for Geocomputation (NCG)

## Centre for Mental Health

### PI: Professor Sinéad McGilloway

ENRICH is funded by the Health Research Board and is being conducted by a team of researchers from Maynooth University and senior academics from Queen's University Belfast, York University and the University of Ulster. The research team, led by Professor Sinéad McGilloway, is working in close collaboration with a number of community-based organisations (including the Blue Skies Initiative (ABC) Programme, the Genesis (ABC) Programme, and the Deansrath Family Centre) and stakeholders involved in programme development, delivery and implementation.

This brings together researchers and service providers from across child and family services, including social workers, Public Health Nurses, family support workers and community-based health and social care practitioners.



ENRICH is funded by the Health Research Board is led by Professor Sinéad McGilloway

## Other Active or New Projects in MUSSI 2021/22

- ADAPT 2. PI: Professor Aphra Kerr – Funding Body: Science Foundation Ireland ([www.adaptcentre.ie](http://www.adaptcentre.ie))
- Archiving Reproductive Health. PI: Dr Aileen O'Carroll – Funding Body: Wellcome Trust ([www.dri.ie/archiving-reproductive-health](http://www.dri.ie/archiving-reproductive-health))
- COPILOT – AI. PIs: Professors Tim McCarthy & John McDonald – Funding Body: Science Foundation Ireland/Department of Defence (<https://copilotai.ie>)
- CREST. PI: Dr Michael Cooke – Funding Body: Horizon 2020 (<https://project-crest.eu>)
- ECHO. PI: Dr Michael Cooke – Funding Body: Horizon 2020 (<https://echonetnetwork.eu>)
- Urban and Regional Development and Spatial Planning – ESPON (<http://espon-ireland.ie/>) and URBACT (<http://urbact.eu/urbact-ireland>). PIs: Professor Mark Boyle and Caroline Creamer
- ESPON [National Contact Point for Ireland]. PI: Caroline Creamer – Funding Body: DHLGH/ESPON ([www.espon.eu](http://www.espon.eu))
- Inspireurope. PI: Dr Sinead O'Gorman – Funding Body: Horizon Europe (<https://sareurope.eu/inspireurope>)
- Jean Monnet Centre of Excellence. PI: Professor J. O'Brennan – Funding Body: ERASAMAS+ European Union ([www.maynoothuniversity.ie/europe](http://www.maynoothuniversity.ie/europe))
- MacoBios. PI: Professor Tim McCarthy – Funding Body: Horizon 2020 (<https://macobios.eu>)
- MSCA4Ukraine. PI: Dr Sinead O'Gorman – Funding Body: Horizon Europe (<https://sareurope.eu/msca4ukraine>)

- National Autonomous Technologies Data Platform (NATDAP). PIs: Professors Tim McCarthy & John McDonald – Funding Body: Science Foundation Ireland/Industry ([www.maynoothuniversity.ie/national-centre-geocomputation-ncg/research/national-autonomous-technologies-data-platform-natdap](http://www.maynoothuniversity.ie/national-centre-geocomputation-ncg/research/national-autonomous-technologies-data-platform-natdap))
- PANIWATER. PI: Professor Honor Fagan – Funding Body: Horizon 2020 (<http://www.paniwater.eu>)
- Smart Dublin/ADAPT Digital Twin. PI: Professor Aphra Kerr ([www.maynoothuniversity.ie/social-sciences-institute/research/smart-dublinadapt-digital-twin](http://www.maynoothuniversity.ie/social-sciences-institute/research/smart-dublinadapt-digital-twin))
- Smart Dublin/ADAPT Dublin 8. PI: Professor Aphra Kerr ([www.maynoothuniversity.ie/social-sciences-institute/research/smart-dublinadapt-dublin-8](http://www.maynoothuniversity.ie/social-sciences-institute/research/smart-dublinadapt-dublin-8))
- TERRAIN-AI. PIs: Professors Tim McCarthy & Rowan Fealy – Funding Body: Microsoft/SFI/Irish Government Departments./Industry/SMEs (<https://terrainai.com>)
- Environmental Sensitivity Mapping (ESM). PI: Justin Gleeson – Funding Body: EPA (<https://enviromap.ie>)
- IEA Wind Task 41: Enabling distributed wind to contribute to Ireland's energy future. PI: Justin Gleeson Funding Body: SEAI ([www.seai.ie/data-and-insights/international-energy-agency/technology-collaboration/wind-tcp](http://www.seai.ie/data-and-insights/international-energy-agency/technology-collaboration/wind-tcp))
- YouGaMSI project: Fair Play? Assessing the exposure of young people to gambling marketing through sport on the island of Ireland. PI: Professors Aphra Kerr & John O'Brennan – Funding body: North-South Research Programme, a collaborative research scheme funded by the Government's Shared Ireland Fund and administered by the Higher Education Authority (HEA) ([www.maynoothuniversity.ie/social-sciences-institute/research/yougamsi](http://www.maynoothuniversity.ie/social-sciences-institute/research/yougamsi))

#### New Awards

- DATA STORIES. PI: Professor Rob Kitchin – Funding Body: European Research Council |Horizon Europe (<https://datastories.maynoothuniversity.ie>)
- D8 Dash. Funding body IRC PI: Dr Kevin Credit (<https://d8dash.maynoothuniversity.ie>)

#### Data Infrastructures

MUSSI continues to host a number of outstanding nationally/internationally significant data infrastructures. These infrastructures promote the social, economic, spatial, and environmental research undertaken by MUSSI members. They also enable MUSSI members to offer data services to industry/government agencies/third sector organisations/social scientific researchers across Ireland and abroad. These infrastructures include:

- Irish Qualitative Data Archive (IQDA) (PI Professor Jane Gray, to be transferred to MU Library as a repository in 2023) ([www.maynoothuniversity.ie/iqda](http://www.maynoothuniversity.ie/iqda))
- Digital Repository Ireland (DRI) (PI Professor Linda Connolly) (<http://www.dri.ie>)
- All-Island Research Observatory (AIRO) (PI Justin Gleeson) (<http://www.airo.ie>)

#### External Events and Engaged research

The institute organised and hosted many workshops and conferences throughout the pandemic. These were all hosted online and were very well attended by national and international audiences. Events were live-streamed via Facebook and recordings were also shared via Youtube for future viewing. MUSSI also has a very strong social media presence on Twitter, Instagram, Mastodon and Facebook.

Institute PI's are highly engaged in numerous academic and public presentations and media work (Irish Times columns, RTÉ radio and television, international commentary, media, documentaries, government events). The institute continued to engage with multiple stakeholders across the voluntary and public sectors. For instance ICLRD and AIRO are both engaged in community and government related research projects and high impact public dissemination events on an ongoing basis.

AIRO in this period also contributed centrally to the Department of Health's COVID data hub, with Eoin McCarthy working .6 with NPHET/DoH. Sean Ó Foghlú former head/Chief Secretary of the Department of Education joined MUSSI to work on policy and engagement strategies in MU and in the wider public arena.



AIRO contributed centrally to the Department of Health's COVID data hub

#### Internal seed funding schemes have increased research outputs

The institute continued to run its visiting Fellows scheme for pre-pandemic awards granted (some of these were postponed until 2021–22 due to travel restrictions), and an inclusive research capacity building strategy, including peer reviewed and assessed support for conferences, research bids, infrastructure, project administration, research grant management, space and small grants.

# Research Institutes and Centres

## MU Kathleen Lonsdale Institute for Human Health Research

In the 2021/22 academic year, the Kathleen Lonsdale Institute for Human Health Research had 48 Principal Investigators and their research groups, an Administrative Officer, a part-time Public Patient Involvement (PPI) Officer, a research fellow and 14 Lonsdale PhD scholars. The Institute has maintained an excellent output with 119 publications in total, including 107 peer-reviewed original research publications in international journals of high standing. Lonsdale PIs were highly successful in securing 39 new research grants with a total value of €3,133,572.

The Kathleen Lonsdale Institute for Human Health Research has a strong inter-disciplinary focus that reaches across many Departments including Biology, Chemistry, Psychology, Computer Science, Psychology and others. At the heart of the institute is the multi-disciplinary approach to improve Human Health through research spanning biological, psychological, social, physical and environmental factors across the life course. The primary focus includes healthy ageing and chronic inflammatory diseases, obesity and antimicrobial resistance.

### Publication Highlights (calendar year 2022)

PIs in the Kathleen Lonsdale Institute for Human Health Research published 107 original research publications in peer-reviewed journals. Most of these publications were in journals of high international standing (e.g. *Science Translational Medicine*, *PLoS Genetics*, *Chemical Science*, *Chemical Communications*, *Nucleic Acids Research*, *Diabetologia*, *iScience*, *Journal of Experimental Medicine*, *Microbiology*, *Journal of Ecology*, etc...). In addition, several publications have also been published other significant international journals (e.g. *Coordination Chemistry Reviews*, *Science Translational Medicine*, *Nucleic Acids Research*, *Diabetologia* & *Journal of Experimental Medicine*). A number of these publications emanated from collaborations that spanned constituent departments in the Institute highlighting the multidisciplinary nature of the Institute's research.

#### Exemplar Publications include:

- Dr Michael Daly and Dr Mark Robinson publication "Depression and anxiety during COVID-19" in *Lancet*
- Dr Andrew Hogan publication "Innate PD-L1 limits T cell-mediated adipose tissue inflammation and ameliorates diet-induced obesity." In *Science Translational Medicine*.
- Dr Hogan's publication "Suppressive effects of the obese tumor microenvironment on CD8 T cell infiltration and effector function." In *Journal of Experimental Medicine*
- Dr Lorna Lopez publication "Susceptibility to the common cold virus is associated with day length" in *iScience*
- Professor Fiona Walsh publication "Shooting hoops: globetrotting plasmids spreading more than just antimicrobial resistance genes across One Health" in *Microbial Genomics*

- Professor Andrew Coogan publication "Chronobiology of Parkinson's Disease: Past, Present and Future" in *European Journal of Neuroscience*.
- Dr Elisa Fadda's publication on 'Fine-tuning the spike: role of the nature and topology of the glycan shield in the structure and dynamics of the SARS-CoV-2 S' in *Chemical Science*.
- Dr Diego Montagner's and Dr Trinidad Velasco-Torrijos' publication on 'Metal-Tyrosine Kinase Inhibitors: Targeted metal-drug conjugates' in *Coordination Chemistry Reviews*.
- Dr Tobias Krämer was a co-author on a paper on 'Gauging the donor strength of iron(0) complexes via their N-heterocyclic carbene gold(I) adducts' in *Chemical Communications*.

#### Funding highlights:

Major grants (funding >€100,000 total costs), including the following:

- Dr Özlem Sarikaya Bayram; SFI IRC pathways project; €425,000
- Dr John Devaney; IRC COALESCE; €236,452
- Professor Fiona Walsh; Soil EIP-AGRI; €190,800



Dr John Devaney, Department of Biology

### Postgraduate Students

The Kathleen Lonsdale Institute for Human Health Research leveraged its funds to secure six new co-funded Lonsdale PhD scholars with various partners. In addition, eight Lonsdale PhD scholars continued research into their 4<sup>th</sup> years.

#### Prizes:

- Professor Carmel Breslin was awarded the Eva Philbin Award 2022, Institute of Chemistry, Annual Award for Chemistry. 'This award is for a practising chemist working in Ireland, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner.'
- Dr Robert Elmes received his Czarnik Emerging Investigator Award from the Molecular Sensors and Logic Gates International Committee.

## External Engaged Research

PIs in the Institute were involved in new and continuing research with Industry and other partners:

- Professor John Stephens is a supervisor on an IRC Government of Ireland Postgraduate Scholarship co-funded with Pfizer.
- Professor Carmel Breslin is carrying out consultancy work for CroiValve.
- Dr Roisin O’Flaherty has Enterprise partnerships with NIBRT and Agilent and has a collaboration with the charity Cystinosis Ireland.
- Dr Robert Elmes has an ongoing collaboration with Janssen/SFI SSPC.
- Dr Fergal Byrne is working with the sustainable chemistry consultancy firm Addible.
- Boehringer Ingelheim Pharma GmbH & Co. KG (Germany): MU signed a commercialisation agreement (Trial Licence) with Boehringer in October 2021.
- Ulysses Neuroscience Ltd. (Ireland): MU signed commercialisation agreements with Ulysses Neuroscience in November 2021. The company accessed (under a Service Agreement) and used SFI funded infrastructure (Award 12/RI/2346/4).
- Bioanalytical Systems, Inc. (USA, BASi Research Products): MU signed a commercialisation agreement (Trial Licence) with BASi in September 2022.
- COMPASS Pathways Ltd. (UK): MU signed a research agreement with COMPASS Pathways and the University of Bristol in May 2022.
- W.L. Gore & Associates (Germany, Ireland and USA): Staff from W.L. Gore visited MU in November 2021 (Andrea Doernhoefer, Germany & Daniel O’Shea, Ireland) and September 2022 (Nathan Friedman, Bernadette Parsons and Chris Wiley, USA).



An illustrated exploration of autism genomics research processes video series for World Autism Awareness Day

Members of the Lonsdale Institute also engaged with the general public and local organisations. These activities have strongly promoted the role of Maynooth University. Examples included:

- Participation in NeuroInsight IPPOSI Dragon’s Den
- Launch of “An illustrated exploration of autism genomics research processes” videos on our website and YouTube for World Autism Awareness Day

- Giving talks to the American Partnership for Eosinophilic Disorders (Patient advocacy group)
- Collaborating with the National Liver Transplant Centre and the Hepatopancreaticobiliary (HPB) Group at St Vincent’s University Hospital
- Women Blazing a Trail in Stem – Perspectives from Sweden and Ireland, St Brigid’s Day, Department of Foreign Affairs, Irish Embassy in Sweden
- Science Communication Research Activity for displaced Ukrainian community, Maynooth University
- Collaborating with Irish Coalition for People living with Obesity (Patient advocacy group)
- Collaborating with National Weight Management Service

Significant conferences/meetings hosted:

- The Kathleen Lonsdale Institute for Human Health Research co-hosted the largest ever Irish Society for Immunology annual conference (220 delegates). The conference had >40 presentations from invited international and national speakers, 122 poster presentations from early career researchers, and 15 industry sponsors.
- Public Meeting “Let’s Talk About Obesity: Defeating Stigma with Science” (16/11/22) Chaired by Professor Paul Moynagh (Institute Director).



The Kathleen Lonsdale Institute for Human Health Research co-hosted the largest ever Irish Society for Immunology annual conference

## Commercialisation achievements

- One Patent Application
- Two Licences/Letter of Access

## Contributions towards public policy

- Input on national clinical guidelines for obesity management (Professor Andrew Hogan)

# Research Institutes and Centres

## Innovation Value Institute

The Innovation Value Institute (IVI) employed five administrative (FTE) staff members during October 2021–September 2022. IVI had nine post-doctoral researchers, eight PhD students, and nine researchers contributing to IVI's research outputs. Over the reporting period, IVI researchers disseminated 64 research outputs across a range of channels. These outputs include 30 international peer-reviewed journals, 21 conference publications, and two working papers. They also published three book chapters and were featured in three mass media outlets.

The total amount of grant funding awarded in 2021/22, including two major EU projects, was €8,045,489. FLOW (flexible energy systems that leverage the optimal integration of EVs and their users) and Res4City (upskilling students and workforce members to prepare for a green transition) are two of the projects that are funded by Horizon Europe, with Professor Pallonetto serving as the principal investigator. In addition, IVI secured funding via the SFI Research Centres Lero and Adapt. As part of the Enterprise Ireland Innovation Voucher Program, IVI conducted research and development with 10 companies. Along with our international research activities, we also participated in eight directly funded cybersecurity and digital transformation projects (eight consultancy or tender projects that were approved). IVI's research value and its ability to attract external funding are demonstrated by these and other substantive grant awards. As a result of these projects, IVI has acquired expertise across a range of domains, including cybersecurity and digital transformation. Our knowledge and experience are indispensable in meeting the challenges of a rapidly changing digital environment.

Over the last 15+ years, IVI has been recognised as a leading, internationally connected research institute. It builds on extensive knowledge and research of the Capability Maturity Framework. IVI continues to support businesses and organisations in their digital transformation by providing research, training, and sharing the latest advances in emerging technologies and digital transformation. As digital transformation continues across all sectors, many organisations are faced with strategic repositioning of value chains and business ecosystems. Exploring digitally driven business opportunities, value chains, and innovative business models, IVI supports organisations with advice, knowledge, and research to address those significant challenges along their digital transformation paths. A major challenge over the next decade will be establishing a greener and more digital society. This is a key priority of the European Commission, which estimates the creation of 700,000 new jobs by 2030 through circular economies. The World Economic Forum estimates that digital transformation could be valued at \$100 trillion over the next decade.

Understanding strategic questions and developing sustainable options in the form of digital transformation paths are key and a core focus of our new IVI strategy. Digital transformation's economic, societal, and business implications need to be discussed with all stakeholders. The wider impacts and constraints of digitalisation need to be understood to co-create digital transformation paths to drive a greener and more digital society that benefits all. This requires a different approach that brings together multiple stakeholders across disciplines and sectors. IVI, with its 15+ years of

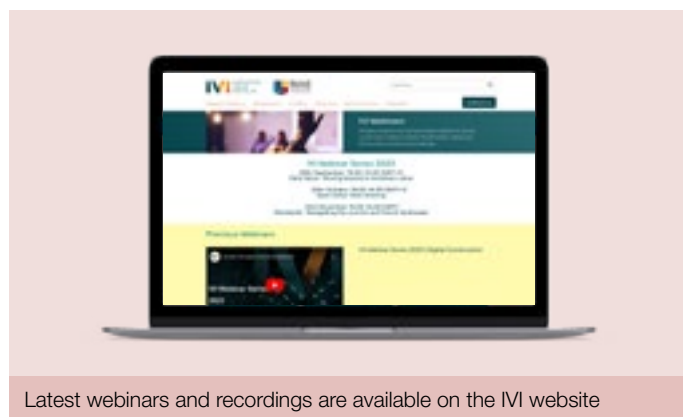
expertise in facilitating open innovation and a multi-stakeholder community, is well positioned to address those significant digital transformation challenges. Developing and co-creating innovative solutions for organisations is a core strength of IVI. We continue our mission to facilitate an open innovation community by bringing key stakeholders together to investigate, co-create, and maintain strategic guidance and knowledge.

With the new IVI strategy, we have refocused IVI's aim to provide strategic guidance to transform and architect Digital Enterprises and Ecosystems by developing Capability driven Digital Transformation Paths. We have established a range of research clusters and expanding our strategic partnerships with companies, public sector bodies, associations and the broader community to form those collaborative research clusters.

Within those clusters, IVI members have access and can participate in a number of active working groups, for example on:

- Digital Retail,
- Data Governance,
- Digital Construction,
- Agri and Food-Tech,
- Digital Health,
- Smart Manufacturing, and
- Smart Regions.

Patron members are strategic IVI partners with a seat on the steering board prioritizing industry-relevant research challenges and guiding IVI's research agenda. The repository of Digital Transformation Paths is continuously developed within the IVI working groups. The Digital Transformation Paths will be made available to the IVI members by adding to the existing IVI portal. It includes Digital Readiness Assessments and a Benchmarking tool in addition to extensive information around the Capability Maturity Model. In addition, latest webinars and recordings key events are available on the IVI website.





Innovation Value Institute staff and researchers have built strategic partnerships with IVI members (Companies and Public Sector bodies) and are actively engage with industry, the public sector, and the broader community, through a range of initiatives including collaborative research and the dissemination of research to the wider community through various channels. Engagement activities include organising workshops for various stakeholders, membership in various industry bodies and committees, and consulting for industry. Our research dissemination activities include a range of invited and guest presentations at different practitioner-focused forums, articles published in popular publications including Silicon Republic, research centre blog posts, and IVI's Webinar Series which showcases our research agenda and industry collaborations.

IVI researchers substantively contributed academically, and for civic welfare in a range of areas. Examples and summary of externally engaged research highlights include:

### Data Governance Research

IVI continues to lead and grow the EMPOWER SFI Spoke programme with an ambitious vision to establish leading practices in data governance as the pillar of a global data ecosystem that will drive innovation, research, and business with societal impact. This ecosystem will be governed effectively and will enable vast amounts of data to flow among actors within complex supply chains of information. Empower consortium's major benefit is its multi-disciplinary composition, as it tackles a range of data governance challenges. These challenges span the technological, policy, and legal fields of experts. Ireland and its data ecosystems present a valuable testbed in terms of ethical practices, stakeholder engagement, and Europe's hub for data processing. A crucial part of the development of tools and techniques that will govern future data ecosystems. This is to ensure that this aligns with the Digital Agenda for Europe and works in synergy with it. Ultimately, EMPOWER aims to drive positive outcomes for Europe and around the world that benefit mankind. A significant component of our work involves expanding collaborations between the industry and a wide network of collaborators and partners across the country and worldwide, such as the WEF, Meta, NSAI, IQVIA, Novartis, Carelon, Genesys, European Genomic Data Infrastructure, BDV, and OECD.AI.

### Leading Standards' Development and Impacting Policy Making

IVI members have significantly contributed and are active contributors to Standardisation Committees, including ISO/IEC JTC 1/SC 40 "IT Service Management and IT Governance" and NSAI/TC 047/SC 22 BIM Building Information Management. IVI members also contributed to the NSAI Top Teams – Standards in AI Working Group, the Age Friendly Ireland: Housing for All Report, the Pensions Commission Report, the Minister for Mental Health's consultation, and the Stakeholder Roundtable on the National Digital Strategy.

### Proven Company Engagement Process – Co-Developing Digital Transformation Paths

IVI's Re-Think-Re-Design programme, developed in 2021 with the Kildare Chamber of Commerce and MaynoothWorks, is one of the new services specifically designed to support small and medium-sized companies on their digital transformation journey. The programme can be fully funded (for eligible companies) through the Enterprise Ireland Innovation Voucher scheme. For other initiatives and targeted research, we provide access to a range of funding opportunities, including Enterprise Ireland, IDA, and the European Union. We also provide access to research centres, such as Lero, Adapt, and Confirm, funded by the Science Foundation of Ireland. In the reporting period, we engaged with over 10 companies.



### IVI Summit

In June 2022, we hosted the 16<sup>th</sup> annual IVI Summit, attracting 200–300 registered participants. The event brought together academic researchers and industry leaders across various sectors, strengthening the connection between industry and digital transformation researchers. With keynote addresses and parallel panel discussions, the summit discussed some of the key questions challenging digital transformation researchers and industry leaders today.

# Research Institutes and Centres

## International Advisory Board

The IVI Advisory Board members include:

- Edwina Fitzmaurice, Client Technology, Chief Customer Success Officer, Principal Partner, EY;
- Professor Jan vom Brocke, Director of the Institute for Information Systems at the University of Liechtenstein;
- John Barron, CIO, The Office of the Revenue Commissioners;
- Anne Flanagan, leads Reality Labs policy at Meta;
- Professor Iris Junglas, Professor of Information Management and Innovation in the Supply Chain, College of Charleston;
- Mathieu Gorge, Founder & CEO of VIGITRUST;
- Fin Goulding, Founder, CTO and Advisor, Enterprise Flow; and
- Professor Matthew Mullarkey, Director of the Doctor of Business Administration (DBA) Program for the USF Muma College of Business.

## Leading the All-Ireland Smart Cities Forum

Hosted at IVI, the All-Ireland Smart Cities Forum is a community of practice focused on the advancement of cities and communities in both the Republic of Ireland and Northern Ireland. Members of the forum include city officials with a wealth of knowledge and experience about smart city development and the opportunities it offers.

The primary objective is that this will be a cooperative forum for smart city agenda advancement across all partner cities. The cross-border initiative includes local authority representation from Cork, Dublin (all four local authorities), Limerick, Galway, Waterford, Belfast, Derry, and Newry, who together will explore common challenges related to implementing smart city policies and projects.

## International Academic Memberships and Research Visits

At IVI, we have re-established academic memberships to partner with leading universities and research institutions internally. The latest members include the University of Palermo and the University of Applied Science, Upper Austria. We also hosted a cohort of students from the EM Normandie Business School for their MSc Artificial Intelligence program.

## Engaged Research

### IVI Coffee&Talks

#### Digital Transformation in Healthcare for Person-Activated Health & Wellbeing presented by Dr Marco Alfano

Dr Alfano, IVI Digital Health Cluster Lead discussed the market demand, drivers, and barriers associated with person-activated health and well-being around digital health. This presentation was followed by a discussion with audience members.

#### A Value-Centric Approach for Circular Business Model Innovation presented by Dr Viviana Bastidas

Dr Bastidas from Cambridge Centre for Smart Infrastructure & Construction and formerly of IVI discussed the Irish circular economy, circular business models, and her VISION project in collaboration with the IVI titled 'A Value Centric Approach for Circular Business Model Innovation.' This presentation was followed by a discussion with audience members.

#### Technology-Enabled Interactions in Omnichannel Retail presented by Mr Rehan Iftikhar

Rehan Iftikhar, IVI Digital Retail Cluster Researcher discussed the design of technology-enabled interactions, ethical data generation, and exploration in omnichannel retail. This presentation was followed by a discussion with audience members.

#### User-centred and Explainable AI-powered Processes for Understanding Customer Behaviour presented by Mr Douglas Cirquiera

Douglas Cirquiera, discussed explainable and trustworthy artificial intelligence, customer behaviour analytics, and XAI, and explainable artificial intelligence power processes in fraud detection and retail. This presentation was followed by a discussion with audience members.

#### Semantic Blockchain: Providing Provenance for GDPR Compliance presented by Dr Mansoor Ahmed

Dr Ahmed, MSCA ELITE-S Fellow at IVI discussed the background to EU data protection laws and how semantic blockchain is enabling effective provenance for GDPR compliance, thus in turn providing individuals with control over their personal information. This presentation was followed by a discussion with audience members.

#### Consent & Consent Withdrawal presented by Dr Gabriel Hogan

Dr Hogan, Adapt and SFI researcher gave an overview of his research in consent and consent withdrawal, emphasising the importance of GDPR and the frameworks involved in consent withdrawal management. This presentation was followed by a discussion with audience members.

#### Enterprise Architecture for Transforming Public Services presented by Mrs Priyanka Singh

Priyanka Singh, IVI Smart-Cities Cluster Researcher discussed how citizens' feedback can help councils in making better and smarter decisions regarding the transformation of public services. This presentation was followed by a discussion with audience members.

**The Power and Potential of Machine Learning presented by Dr Edgar Galván**

Dr Galván, IVI Machine Learning Cluster Lead, and Senior Researcher discussed the bridging of the gap between artificial intelligence and digital transformation. This presentation was followed by a discussion with audience members.

**Digi+ MSCA Co-fund Proposal presented by Professor Markus Helfert**

Professor Helfert, Director of IVI, and Dr Zoreh Pourzolfaghar, IVI Digital Construction Lead discussed their Digi+ Marie Skłodowska Curie Proposal in leadership for a sustainable digital transformation. This presentation was followed by a Q&A and discussion with audience members.

**Digital Design Thinking presented by Dr Christian Muck**

Dr Muck, University of Vienna, and IVI Visiting Researcher discussed the challenges, concepts, and backgrounds associated with digital modelling. Furthermore, he discussed the digital design thinking behind the Scene2Model. This presentation was followed by a discussion with audience members.

**Data Spaces: A European Perspective presented by Dr Umair ul Hassan**

Dr Hassan, Maynooth University School of Business Researcher gave a presentation on how common European data spaces can benefit the areas of health, industrial and manufacturing, agriculture, finance, mobility, the environment, energy, public administration, and skills. This presentation was followed by a discussion with audience members.

**Digital Health & Responsible AI (Artificial Intelligence) presented by Dr Marco Alfano**

Dr Alfano, Digital Health Cluster Lead at IVI, discussed the responsible use of Artificial Intelligence for person empowerment in health and well-being. This presentation was followed by a discussion with audience members

**Application programming interfaces (APIs) as enablers of digital transformations and innovation presented by Dr Peter Mooney**

In this talk, Dr Mooney discussed the importance of APIs as connecting nodes of the digital society, thus a foundational component of its digital transformation. Most data exchanges and transactions in the digital era happen through APIs. EU (Digital Platforms, European Dataspaces). He focussed then more specifically on work carried out to optimise data exchange in APIs using binary data serialisation approaches.

**Artificial Intelligence to Support the Decarbonisation of our Society presented by Professor Fabiano Pallonetto**

Professor Pallonetto, Head of International Strategic Partnerships & Sustainable IT Cluster Lead at IVI presented the topic of decarbonisation of our society, highlighting the significant challenges facing the world and the crucial required action to mitigate climate change. This presentation was followed by a discussion with audience members.

**Digital Transformation of the Public Services presented by Mrs Priyanka Singh**

IVI Researcher Priyanka Singh explored the Digital transformation of public services based on the citizen's feedback and highlighted the challenges from a practitioner's perspective. This presentation was followed by a discussion with audience members.

**Understanding User Involvement in Technology Innovation presented by Professor Kathryn Cormican**

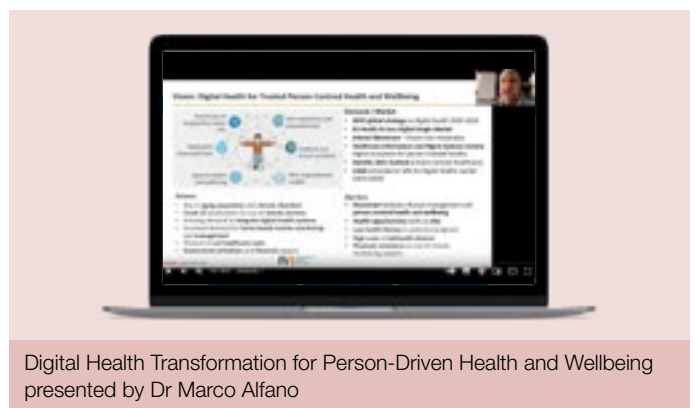
Professor Cormican from the Enterprise Research Centre at the NUIG (the National University of Ireland Galway) School of Engineering underlined the understanding of user involvement in technology innovation. This presentation was followed by a discussion with audience members.

**Ethical Data Governance presented by Assistant Professor Shane McLoughlin**

Shane McLoughlin, Assistant Professor in Management Information Systems at Maynooth University gave a presentation on problematizing the normal neat boundaries of ethical data governance for data-intensive software systems. This presentation was followed by a discussion with audience members.

**Digital Health Transformation for Person-Driven Health and Wellbeing presented by Dr Marco Alfano**

Dr Alfano, IVI Digital Health Cluster Lead gave a presentation on the digital health transformation for person-driven health and wellbeing. This presentation was followed by a discussion with audience members.



Digital Health Transformation for Person-Driven Health and Wellbeing presented by Dr Marco Alfano

As part of its research and outreach activities, IVI actively engaged with various external stakeholders between October 2021 and September 2022.

# Research Institutes and Centres



IVI & the FinTech Corridor: The Future of Digital Payments – Trust, Compliance, and Innovation

## IVI Webinars

### IVI & the FinTech Corridor: The Future of Digital Payments – Trust, Compliance, and Innovation

There was a collaboration with The FinTech Corridor to gather experts to present and discuss the future of digital payments. Facilitated by Alan Costello from Resolve Partners. In this online seminar, we heard from Michelle McGuire from Gecko Governance, Paddy Beagan from Vesta, and Liam Murphy from Wachsman. This online seminar was followed by a discussion with a panel discussion and a questions and answers session.

### Designing Digital Transformation with Enterprise Architecture – Disrupt or be disrupted in the new digital landscape?

There was a discussion on the dynamic change in technology capabilities and customer requirements to enable fluid business strategies. This online seminar offers different perspectives and practical examples of digital design with Enterprise Architecture and Enterprise Modelling from both academic and industry experts. Facilitated by John Shaw from Legato Health. In this online seminar, we heard from Sobah Abbas Petersen from the Norwegian University of Science and Technology, Beatrice Heneghan from Mayo County Council, Dr Fergal Ryan from AMD, and Dr Viviana Bastidas from IVI. This online seminar was followed by a discussion with a panel discussion and a questions and answers session.

### Safeguarding data that works for all

Co-designing the best data governance practices for the data ecosystem of the future was discussed. Facilitated by Beatrice Heneghan of National University Ireland Galway. In this online seminar, we heard from Arthur McMahon from StatSport, Aoife Sexton from Truata, Bill Hoffman from the World Economic Forum, and Professor Markus Helfert of IVI and Empower. This online seminar was followed by a discussion with a panel discussion and a questions and answers session.

### Digital Health: Responsible Use of AI for Person Empowerment on Health and Wellbeing

The policy and regulatory requirements underlying patient empowerment platforms, applications, and alliances are discussed, and how digital health benefits society. Facilitated by Joan Mulvihill of Siemens Ireland. In this online seminar, we heard from Trudie Lobban from Arrhythmia Alliance, Charles Larkin from University of Bath, Una Kearns from MyPatientSpace, Paolo Bruno from Italtel and Dr Marco Alfano from IVI. This online seminar was followed by a discussion with a panel discussion and a questions and answers session.

## Lectures

### University College London (People and Nature Lab) – #CitizenScienceForAllTalks – Invited Lecture (May 2022)

#### Topic Title: Quality of citizen science data

#### Project-level considerations

In this lecture, primarily focused on an audience of non-specialists, the public, and citizen scientists, Dr Peter Mooney delivered a lecture on how to consider 'quality' in citizen science. Citizen science projects produce some diverse, unique, and often difficult-to-collect/generate datasets. Professional scientists and other stakeholders require assurances about the data quality (such as accuracy) of these data products. What are some of the general questions, guidelines, or approaches that are common for all citizen science projects which can help ensure better quality data is produced?

### MapTime, Wellington, New Zealand (invited online expert lecture seminar) June 2022

#### Topic Title: Looking forwards and backwards at Crowdsourced Geographic Information

Crowdsourced geographic information (CGI) describes geographic data and information generated by many crowdsourced-based approaches. While CGI is, comparatively speaking, a new scientific research area, its evolution over the last 10–15 years has been immense. In this talk, Dr Mooney looked back to see where CGI travelled from in the early days of neogeography, the geoweb, and map mashups. The talk also considered the current state-of-the-art research in CGI, which clearly shows how this can now be considered a research discipline. The audience was a mixture of geospatial specialists (such as surveyors, cartographers, etc.) and academics from the Wellington, New Zealand area.

## Online training course

### EuroSDR (European Spatial Data Research) – EduServe

#### Topic Title: EduServ e-learning course ‘Working with Crowdsourced Geographic Information’

In this event, Dr Peter Mooney co-delivered an intensive 30-hour online training course on Working with Crowdsourced Geographic Information (with a focus on open-source software tools). The event was attended by experts from academic research in Europe and employees of National Mapping and Cadastral Agencies around Europe. 14 participants completed the course.

## Presentations

- Presentation of “Digital Health Transformation for Person-Activated Health and Wellbeing” by Dr Marco Alfano at the MSc in Digital Health Transformation. 18 February 2022. Online Presentation of the IVI activities on Digital Health Transformation for Person-Activated Health and Wellbeing.
- Presentation of the use case on “Responsible AI for Person Empowerment on Health and Wellbeing (RIPE)” by Dr Marco Alfano at the Ethical AI Hackathon. 16 June 2022. Online.
- Presentation of the use case on the Conversational Health Agent for Person Empowerment on Health and Well-being (CHAPE).
- Presentation of “Learnings from the Ethical AI Hackathon on a Digital Health Use Case” by Dr Marco Alfano at the Trustworthy AI Multiplier Event. 28 July 2022. Online Presentation of the output of the Ethical AI Hackathon on the use case of the Conversational Health Agent for Person Empowerment on Health and Well-being (CHAPE).
- Presentation of “Architecting the Enterprise – A Design Science Approach – by Professor Markus Helfert at the NEMO Summer School, Vienna, 21 July, 2022.
- Presentation of “Digital Transformation in Retail – Data and AI the new Gold?” by Professor Markus Helfert at the Innovation Circle, 6 December 2022.

## Summits



IVI Summit 2022

### IVI Summit – Shaping the Hybrid Future

The theme of the 2022 Summit was ‘Shaping the Hybrid Future’ endeavouring to maximise the best of both worlds; the virtual and the physical. To ensure that the shaping of the hybrid future takes place, there

were numerous debates on the challenges and opportunities by experienced industry leaders, policy-makers, academic researchers, and speakers across various sectors, with keynote addresses and parallel breakout discussions.

This summit discussed some of the key questions challenging them. This was a hybrid event where there were in-person and virtual attendees that took place on campus at Maynooth University. All registration fees were donated to support researchers in the crisis in Ukraine.

Responsible AI in Digital Health for Person Empowerment was presented by Dr Marco Alfano at the IVI Summit, 30 June 2022.

Presentation of the project on the use of Responsible AI for personal empowerment on health and well-being (RIPE).

### LERO Summit

Responsible AI in Digital Health for Person Empowerment presented by Dr Marco Alfano at the Lero Summit. 5 September 2022. Athlone. Presentation of the project on the use of Responsible AI for person empowerment on health and well-being (RIPE)

## Workshops

### 1<sup>st</sup> National Workshop on Mindful Computing (November 2022, MU)

Dr Peter Mooney was the co-chair of this first national event (with Dr Ralf Bierig in Computer Science Department). 25 delegates attended. This first national workshop provided a forum to discuss and address relevant issues of managing mindfulness in relation to computing technologies and applications.

# Research Institutes and Centres

## Centre for Ocean Energy Research

During the academic year 2021/22, the Centre for Ocean Energy Research (COER) was composed of four academic staff (PIs) a Lab Manager, five postdoctoral researchers, five honorary research fellows, nine PhD/MScEng students, 11 (7) interns and (2) visiting PhD or master's students (2) visiting academics

A total of 26 journal publications and 23 conference proceedings (October 2021–September 2022) were published, with the highest ranking “topic cluster” for scholarly output of any MU research group from 2019–2022 originating from COER (waves, water waves and wave energy) (<https://scival.com/overview/summary?uri=Institution/319004>). 68% of publications are co-authored with institutions in other countries. Funding for new research grants amounted to €2,120,163.

COER was awarded three new prestigious grants which are due to commence in late 2022 and will see the COER group expand by 10 researchers in total. These projects have attracted top academic and industrial collaborators, including:

- NREL,
- CorPower,
- Virginia Tech,
- Danish Technological University,
- University of Illinois,
- Michigan University,
- Politecnico di Torino,
- Queen's University Belfast, and
- Floating Power Plant.

In addition to this, the group saw Thalita Nazare begin her John & Pat Hume WISH scholarship. This was part of a concerted effort to encourage more STEM women researchers which also included five female interns.

The group was the recipient of a number of awards for publications and public engagement and have extended our communications and public engagement reach. The Centre director, Professor John Ringwood was also invited to act as keynote and plenary speaker at several international events.



Professor John Ringwood, Department of Electronic Engineering and COER Director

## New awards

1. SFI Frontiers for the Future: Economic wave energy through technical innovation (SeaChange). €1,074,212.
2. NSF/SFI/DfE – LEAP-HI: US-Ireland R&D Partnership: Control Co-Design for Ocean Wave Energy Conversion, Total value \$1.3m (value for COER €452,251). (partnership with University of Michigan, Virginia Tech and QUB).
3. SFI Frontiers for the Future: Simultaneous stabilisation and wave energy harvesting for a floating offshore wind/wave platform. €587,975.
4. MaREI public engagement award €725.
5. International Federation of Automatic Control (IFAC) Activities Award €5k.



COER received over €1m funding under the SFI Frontiers for the Future programme

## Ongoing projects

- SFI Investigator Award “Development of the next generation of controllers for wave energy devices” which began in 2014, concluded in December 2021.
- MaREI funded project “estimation and forecasting for wave energy devices using moment methods” which funds a PhD student for four years. It is due to end December 2022.
- MaREI PhD funded project “real time control of oscillating water columns” continues.
- EU Horizon 2020 LiftWEC (<https://liftwec.com/>) project continues. It is a three-year project with 10 consortium members. COER's focus is the development of a control strategy for a lift-based Wave Energy Converter.
- Mahdiyeh Farajvand's John & Pat Hume WISH PhD scholarship continues. Her studies concern the estimation of wave energy model uncertainty bounds in the optimal control of wave energy devices.
- The 2020 Marine Institute Eoin Sweeney PhD Scholarship for the project “Wave Powered Data Buoy” is underway.
- The U.S., NI and SFI Ireland R&D project “Control Co-Design of Heterogeneous Arrays of Wave Energy Converters” continues. It is funded by Science Foundation Ireland and the National Science Foundation (US). The project focuses on the development of numerical optimisation-based control strategies for the linear and nonlinear models of Wave Energy Converter (WEC) array.

## Education and Public Engagement – 7 events

- Research Week – Sparks presentation
- Research Week round table
- Science Night
- TY open day
- School visits x 2
- Green Week exhibition

## Communications

- COER Seminar Series (34 seminars)
- MORE/COER Wave energy workshop (co-organisers, Torino)
- LiftWEC project meeting (Torino)
- Workshop with Instituto de Ciencias Navales y Marítimas, U. Austral de Chile
- Social media

## Industrial Collaborations

- NREL (US)
- CorPower, Sweden
- Resolute Marine, USA
- TechWorks Marine, Ireland
- WaveVenture, UK
- Monterrey Bay Aquarium Research Institute, USA
- INNOSEA, UK
- WAVEEC, Portugal Floating Power Plant, Denmark

## Academic collaborations

- Imperial College London
- Quilmes University Argentina
- Universidad Nacional de la Plata
- Dundalk IT
- Queen's University Belfast
- Ecole Centrale de Nantes
- Hamburg University of Technology
- Aalborg University
- Virginia Tech (US)
- IST Lisbon
- Politecnico di Torino

## Awards

- Ice publishing award – Baker Medal
- MaREI engagement exemplar award
- Runner up best paper CAMS, Denmark

## Invited talks/presentations

- International Conference on Naval Architecture and Ocean and Marine Engineering, Shanghai (online), Dec 2021.  
Title of talk: Control co-design for wave energy systems (Keynote presentation).
- Simulation et Optimisation pour les Énergies Marines Renouvelables (EMRSim), Roscoff, France, May/June 2022.  
Title of talk: Control co-design for wave energy conversion (Keynote presentation).
- Hydrodynamics of Wave Energy Converters (HyWEC) Conference, Bilbao, June 2020.  
Title of talks:
  - Data-based modelling for WEC systems (Invited short course)
  - Data-based control of WEC systems (Invited short course)
- European Control Conference, London, July 2022.  
Title of talk: Energy-maximising control of wave energy systems (Semi-plenary talk).
- IFAC Mechatronics and MoViC Joint Conference, UCLA, Sept. 2022.  
Title of talk: Energy-maximising control of wave energy systems (Plenary talk).
- XXIV Brazilian Congress of Automation (CBA 2022), Fortaleza, Brazil.  
Title of talk: Energy-maximising control of wave energy systems (Plenary talk).
- Online Seminar Series for IFAC TC 1.2 Adaptive & Learning Systems. Energy maximising control for wave energy systems: An extremum seeking problem?

# Research Institutes and Centres

## ICARUS Climate Research Centre

The ICARUS Climate Research Centre's mission is to provide scientifically robust knowledge of national, regional and global climate changes that will inform society and policy through excellent national and international research, teaching and engagement with strategic local and global climate initiatives.

There are 15 academic staff, 13 postdoctoral research fellows and 20 active PhD candidates affiliated with the ICARUS Centre, who consistently publish research in the highest impact journals (12 publications in *Nature*, *Nature Climate Change*, *Nature Geoscience*, *Nature Communications Earth & Environment* since 2020) with a combined output in excess of 40 peer reviewed papers in each of the past 3 years.

MU's publications under the Scopus Topic Cluster 5 'Climate Models; Model; Rainfall' has an impressive field weighted impact of 2.78 over the 2017–21 year range and the Centre is also responsible for national contributions to the IPCC sixth assessment report cycle and a substantial contributor to Ireland's climate change assessment.

## Assisting Living and Learning Institute

The Assisting Living and Learning (ALL) Institute at MU, launched in November 2017, focuses on:

- **Assisting Living**

Research to help people who may be challenged by disability, chronic illness, frailty or cognitive decline to benefit from the equitable application of technological, personal, community and societal initiatives, which assist and enable them to live a full life as valued participants of their community; and

- **Assisting Learning**

Removing barriers to accessing and benefiting from education, especially at third level. We work with health and care services, civil society, and industry in Ireland; and with governments, industry, civil society and United Nations agencies across more than 50 countries.



Assisting Living and Learning Institute Staff



# MaynoothWorks

## Technology Transfer, Enterprise Partnerships and Commercialisation



# MaynoothWorks

## Technology Transfer, Enterprise Partnerships and Commercialisation

### High-risk, high-reward investment for innovation

In December, MaynoothWorks proudly announced the winners of our first Proof of Concept Fund programme, who were awarded support to demonstrate the feasibility of five new technologies targeting unmet needs in society and Irish industry. The programme, funded using license revenues from Maynooth University's IP portfolio, has supported researchers from four different Departments in the University – from Computer Science to Anthropology.

The programme was designed to provide agile feasibility funding for early-stage technologies, helping researchers pursue high-risk, high-reward experiments to conclusively demonstrate the validity of a technology in space. Each winning idea is built upon basic research to target a specific and well-documented problem hindering society or industry. Challenges addressed include the recycling of waste plastics in the developing world; code optimisation tools improve the efficiency of data centres; and machine learning-driven assessment of CT scans for cancer screening.

Although the sums provided from the Proof-of-Concept Fund are relatively modest, the validation the projects will generate will unlock much more substantial research and development funds. Enterprise Ireland's Commercialisation team have been engaged with the projects throughout, guiding them towards Commercialisation Fund support; others have moved directly towards trial in the community or the clinic. Some will inevitably fail, but this should be seen as a positive: the funding allows our researchers to be creatively brave, proposing ambitious solutions to intractable challenges. Successful pioneers will provide a pipeline of technologies and tools that will become the core of Maynooth University's programme for impact in the future.

The full list of awardees and their proposal titles is below:

Awardee	Project title
Jeff Crosbie	A Machine Learning approach to lung cancer detection from CT datasets
Erivelton Nepomuceno	Greenify your Code!
Shane Keaveney	Low cost manufacturing from recycled plastic in the developing world
Pauline Garvey	Providing a social prescribing system for the Irish healthcare sector
Ting Bi	Immersive Multiple Sensorial Media Delivery Network for the Metaverse



Dr Ting Bi, Maynooth International Engineering College

### Collaboration and co-creation

The first company to be formed through MaynoothWorks' new nose-to-tail support, AF Ltd., raised \$1m seed investment on the basis of know-how licensed from MU's School of Psychology. AF were supported in their business case development, financial modelling, and customer validation processes through partnership with MaynoothWorks and our commercial training partners, Spin-Up Science, leading to a substantial pivot in technology development pathway and route-to-market. The license deal has been structured to incentivise investment in further research within the laboratories of Professor Roche, Dr Cassidy and Dr Kirsten and other international research collaborators. As a result, the success of one supports the success of the other, creating a true symbiosis.



MU's membership of EIT Digital was ratified in January 2022

### International Enterprise Engagement

In January 2022, Maynooth University's membership of EIT Digital (<http://www.eitdigital.eu>) was ratified, formally sealing our membership of Europe's leading innovation and support agency for emerging digital industries. Closely complementing Maynooth University's expertise in applied mathematics, digital anthropology, and autonomous systems, membership of EIT Digital opens new opportunities for rapid research collaboration alongside specialist postgraduate and executive education.

The ongoing uncertainty over the UK's participation in Horizon and other funding mechanisms means that Ireland has become a safe-haven for emerging technology companies seeking to mitigate the effects of Brexit. Likewise, UK applicants to EIT Digital's funding programmes such as the Innovation Factory ([www.eitdigital.eu/open-innovation-factory-2023](http://www.eitdigital.eu/open-innovation-factory-2023)) must relocate to the Eurozone in order to receive their investment. MaynoothWorks has supported more than 20 companies in making the move across the Irish Sea since Easter 2022, and has developed specific soft landing programmes through our Business Innovation Centre to make the process as painless as possible.

### Scaling Spin-outs

Maynooth research has helped two Irish technology companies raise multimillion investment Euro rounds in 2022. Maynooth spin-out Avectas, based around the immunotherapy research of Dr Shirley O'Dea, closed a substantial round in mid-2022 to support their expansion into the US healthcare market and scaling for manufacture. Dr O'Dea's Solupore technology allows the straightforward and clinically-applicable delivery of new material into white blood cells, allowing them to be reprogrammed to hunt cancers and other critical, hard-to-treat conditions. As the company's

centre of gravity moved to the US, Dr O’Dea returned to Maynooth University’s School of Biology, and MaynoothWorks are supporting her new lines of research and entrepreneurial engagement.

Discoveries and technologies transferred from Maynooth University have helped Irish SME Hexafly to close a \$40m Series A round to scale up their production. Professor Kevin Kavanagh and Dr Anatte Margalit of the Department of Biology, alongside Hexafly, are pioneering the use of insects and insect-based products for inclusion in feeds and as plant nutrients. Our partnership has pioneered a sustainable insect-based soil enhancer that boosts soil health and significantly reduces greenfly on cereal plants.

The soil enhancer Hexafrass, derived from the waste product of black soldier flies, boosts soil health and actively promotes root development and plant growth. The research, funded by SSPC (the Science Foundation Ireland Research Centre for Pharmaceuticals), has found that plants growing in treated soil had reduced aphid infestation numbers and enhanced natural defence against disease. Barley aphids or greenfly are particularly difficult to control with traditional chemical insecticide, wreaking havoc in farms and causing substantial economic loss in agriculture. However, new research shows that Hexafrass is highly effective in fighting the pest.

Dr Paul Tyndall, MaynoothWorks Commercialisation Executive at Maynooth University, welcomed the potential commercialisation opportunities from this collaboration. *“It has been a real pleasure to bring this project full circle and successfully complete this licencing agreement with Hexafly, which is focused on a strong research and sustainable development agenda. This discovery serves as a clear demonstration of the benefits of industry and researchers working together, something that we prioritise facilitating here in Maynooth University. We look forward to working with the Hexafly team in the future as they build on the success of this project in collaboration with Professor Kavanagh.”*



Alvan Hunt, CEO of Hexafly

#### **Alvan Hunt, CEO of Hexafly**

*“The findings of this research are highly significant for us. Funding from SSPC, the SFI Research Centre for Pharmaceuticals and our collaboration with Maynooth University has allowed us to co-develop novel applications for our products that will have commercial value in the coming months and years. We look forward to continuing our partnership with Professor Kavanagh as we continue to advance our research and development program and bring more discoveries to market.”*

## **MaynoothWorks BIC**

MaynoothWorks Business Incubation Centre (BIC) provides dedicated space and support to start-up companies spinning in and out of Maynooth University and acts as a regional development promoter and knowledge centre. It has become the natural home of companies entering the Irish ecosystem to take advantage of supports such as Maynooth University’s membership of EIT Digital: companies such as Eco-Shaper Ltd (<https://eco-shaper.com>) have moved into the BIC to build out their Irish footprint, hiring Maynooth graduates as they’ve expanded.

To support a pool of clients from across the continent, MaynoothWorks has invested heavily in the tools needed to maintain clear communication and long-distance relationships across teams and communities. Our Media Suite facility has been bolstered by the development of video messaging training programmes: helping founders to script nuanced messages and capture them on video for deployment on digital platforms. We have hosted investor pitch days, “fireside chats”, instructional video sessions and community engagement events from our self-contained studio. Alongside our well-established Balanced Innovation Model portfolio of company supports, these are being rolled out to MaynoothWorks’ client companies and to our partner network including the Mid-East Local Enterprise Office and the European Space Agency BIC Ireland.



Tracey Carr, CEO of Eco-Shaper Ltd.

#### **Tracey Carr, CEO of Eco-Shaper Ltd.**

*“I started working with Dr Duncan Casey in 2022 after learning that our EIT grant had to be administered through and within Europe. Up to this point, all of our operations and networks were in the UK. I flew to Dublin for a couple of days and Duncan could not have done more to help with quality introductions and know how.*

*We completed our EIT funded project in record time and Duncan helped us recruit a graduate from Maynooth University who has become an extremely important member of our team.*

*If you are thinking about relocating to Dublin I can highly recommend working with Duncan and the supportive eco-system that exists there.”*

# Glossary

<b>AAA</b>	American Anthropological Association	<b>CS</b>	Computer Science
<b>ABS</b>	Chartered Association of Business Schools	<b>CVPR</b>	Computer Vision and Pattern Recognition
<b>ACM</b>	Association for Computing Machinery	<b>DA</b>	Development Alternatives
<b>AFF</b>	An Foras Feasa	<b>DACE</b>	Department of Adult and Community Education
<b>AHI</b>	Arts and Humanities Institute	<b>DBA</b>	Doctor of Business Administration
<b>AHRC</b>	Arts and Humanities Research Council (UK)	<b>DCEDIY</b>	Department for Children, Equality, Disability, Integration and Youth
<b>AI</b>	Artificial Intelligence	<b>DCU</b>	Dublin City University
<b>AIDS</b>	Acquired Immunodeficiency Syndrome	<b>DFHERIS</b>	Department of Further and Higher Education, Research, Innovation and Science
<b>AIEB</b>	All Ireland Endorsement Body for Community Work Education	<b>DIAS</b>	Dublin Institute for Advanced Studies
<b>AIRO</b>	All-Island Research Observatory	<b>DNA</b>	Deoxyribonucleic Acid
<b>AKIDWA</b>	African and Migrant Women's Network	<b>DOH</b>	Department of Health
<b>ALL</b>	Assisted Living and Learning Institute	<b>DOI</b>	Digital Object Identifier
<b>ALOA</b>	Adult Literacy Organisers Association	<b>DRI</b>	Digital Repository Ireland
<b>AOIR</b>	Association of Internet Researchers	<b>DSAI</b>	Development Studies Association of Ireland
<b>AONTAS</b>	Aos Oideachais Náisiúnta Trí Aontú Saorálach (National Adult Education Through Voluntary Unification) (National Adult Learning Organisation)	<b>EADI</b>	European Association of Development Institutes
<b>ASSA</b>	Anthropology of Smartphones and Smart Ageing	<b>EASA</b>	European Association of Social Anthropologists
<b>BIC</b>	Business Incubation Centre	<b>EE</b>	Electronic Engineering
<b>BIM</b>	Building Information Modelling	<b>EI</b>	Enterprise Ireland
<b>BISOU</b>	Balloon Interferometer for Spectral Observations of the Universe	<b>EMILI</b>	Early Medieval Irish Latin Inscriptions
<b>CABS</b>	Chartered Association of Business Schools	<b>EPA</b>	Environmental Protection Agency
<b>CI</b>	Co-Investigator	<b>ERASMUS</b>	European Community Action Scheme for the Mobility of University Students
<b>CIO</b>	Chief Information Officer	<b>ERC</b>	Educational Research Centre
<b>CLAF</b>	Latin American Centre for Physics	<b>ERC</b>	European Research Council
<b>CLEF</b>	Conference and Labs of the Evaluation Forum	<b>ESA</b>	European Sociological Association
<b>CNRS</b>	Centre National de la Recherche Scientifique	<b>ESA</b>	European Space Agency
<b>COALESCE</b>	Collaborative Alliances for Societal Challenges	<b>ESO</b>	European Southern Observatory
<b>COCOA</b>	Co-create Collaborate Activate – Advancing Computational Thinking Education	<b>ESRI</b>	Economic Social Research Institute
<b>COER</b>	Centre for Ocean Energy Research	<b>ETBI</b>	Education and Training Boards Ireland
<b>CONUL</b>	Consortium of National and University Libraries	<b>EU</b>	European Union
<b>COST</b>	Cooperation in Science and Technology	<b>FACSP</b>	Faculty of Arts, Celtic Studies & Philosophy
<b>CPD</b>	Continuing Professional Development	<b>FDM</b>	Frequency-Division Multiplexing
<b>CPEP</b>	Centre for Public Education and Pedagogy	<b>FE</b>	Further Education
<b>CRT</b>	Centres for Research Training	<b>FET</b>	Further Education & Training
<b>CSDP</b>	Common Security Defence Policy	<b>FFE</b>	Foundations for Futures Europe
<b>CSHIHE</b>	Centre for the Study of Historic Irish Houses and Estates	<b>FFP</b>	Frontiers for the Future Programme

<b>FPCUP</b>	Framework Partnership Agreement on Copernicus User Uptake	<b>IVI</b>	Innovation Value Institute
<b>FSFDH</b>	Full Stack Feminism in Digital Humanities Project	<b>JPEG</b>	Joint Photographic Experts Group
<b>FTE</b>	Full Time Equivalent	<b>JTC</b>	Joint Technical Committee
<b>GDPR</b>	General Data Protection Regulation	<b>JWST</b>	James Webb Space Telescope
<b>GHG</b>	Greenhouse Gases	<b>LA</b>	Local Authority
<b>GLO</b>	Global Labor Organisation	<b>LAI</b>	Library Association of Ireland
<b>GOI</b>	Government of Ireland	<b>LCIS</b>	Leuven Centre for Irish Studies
<b>GSI</b>	Geological Survey Ireland	<b>LGBTI+</b>	Lesbian, Gay, Bi-sexual, Transgender, Intersex Plus
<b>HE</b>	Higher Education	<b>LTD</b>	Low Temperature Detectors
<b>HEA</b>	Higher Education Authority	<b>MACMORRIS</b>	Mapping Actors and Contexts: Modelling Research in Renaissance Ireland in the Sixteenth and Seventeenth Century
<b>HEI</b>	Higher Education Institution	<b>MAIVV</b>	Modular AI Verification and Visualisation
<b>HI</b>	Hamilton Institute	<b>MAREI</b>	Marine and Renewable Energy Ireland
<b>HIV</b>	Human Immunodeficiency Virus	<b>MI</b>	Marine Institute
<b>HRB</b>	Health Research Board	<b>MIEC</b>	Maynooth International Engineering College
<b>IAA</b>	Irish Aviation Authority	<b>Mi:Lab</b>	Maynooth Innovation Lab
<b>IBM</b>	International Business Machines Corporation	<b>MKID</b>	Microwave Kinetic Inductance Detector
<b>ICARUS</b>	Irish Climate Analysis and Research UnitS	<b>MLitt</b>	Master of Letters
<b>ICLRD</b>	Irish Centre for Local and Regional Development	<b>MLS</b>	Mathematics Learning Support
<b>ICTM</b>	International Council for Traditional Music	<b>MSc</b>	Master of Science
<b>IDEA</b>	Irish Development Education Association	<b>MSCA</b>	Marie Skłodowska Curie Actions
<b>IEC</b>	International Electrotechnical Commission	<b>MTU</b>	Munster Technological University
<b>IEEE</b>	Institute of Electrical and Electronics Engineers	<b>MU</b>	Maynooth University
<b>IFAC</b>	International Federation of Automatic Control	<b>MUSSI</b>	Maynooth University Social Science Institute
<b>IFI</b>	Irish Film Institute	<b>NALA</b>	National Adult Literacy Agency
<b>IFLA</b>	International Federation of Library Associations	<b>NASA</b>	National Aeronautics and Space Administration
<b>IFTE</b>	Intersections: Feminism, Technology and Digital Humanities	<b>NATDAP</b>	National Autonomous Technologies Data Platform
<b>IMVIP</b>	Irish Machine Vision and Image Processing Conference	<b>NCCA</b>	National Commission for Curriculum and Assessment
<b>INSPECT</b>	Introducing the Science of Problem-solving through Education in Computational Thinking	<b>NCG</b>	National Centre for Geocomputation
<b>IPPOSI</b>	Irish Platform for Patient Organisations, Science & Industry	<b>NGO</b>	Non-Governmental Organisation
<b>IQDA</b>	Irish Qualitative Data Archive	<b>NIBRT</b>	National Institute for Bioprocessing Research and Training
<b>IRC</b>	Irish Research Council	<b>NIRSA</b>	National Institute for Regional and Spatial Analysis
<b>IREL</b>	Irish Research Electronic Library	<b>NORF</b>	National Open Research Forum
<b>IROS</b>	International Conference on Intelligent Robots and Systems	<b>NPHET</b>	National Public Health Emergency Team
<b>IS</b>	Information Systems	<b>NRAL</b>	New Review of Academic Librarianship
<b>ISSS</b>	International Society for the Scientific Study of Subjectivity	<b>NREL</b>	National Renewable Energy Laboratory
<b>IUA</b>	Irish Universities Association	<b>NSAI</b>	National Standards Authority of Ireland

# Glossary

<b>NSETS</b>	North South Education and Training Standards Committee for Youth Work	<b>UAS</b>	Unmanned Aircraft Systems
<b>NUI</b>	National University of Ireland	<b>UAV</b>	Unmanned Aerial Vehicle
<b>NUIG</b>	National University of Ireland Galway	<b>UCC</b>	University College Cork
<b>NYCI</b>	National Youth Council of Ireland	<b>UCD</b>	University College Dublin
<b>OA</b>	Open Access	<b>UCL</b>	University College London
<b>OECD</b>	Organisation for Economic Co-operation and Development	<b>UK</b>	The United Kingdom
<b>OPW</b>	Office of Public Works	<b>UL</b>	University of Limerick
<b>PEGI</b>	Pan European Games Information	<b>UP</b>	University Press
<b>PhD</b>	Doctor of Philosophy	<b>US</b>	United States
<b>PI</b>	Principal Investigator	<b>VALU3S</b>	Verification and Validation of Automated Systems' Safety and Security
<b>PPI</b>	Public and Patient Involvement	<b>VLT</b>	Very Large Telescope
<b>QUB</b>	Queen's University Belfast	<b>WECS</b>	Wave Energy Converters
<b>QUBIC</b>	Q&U Bolometric Interferometer for Cosmology	<b>WG</b>	Working Group
<b>RDM</b>	Research Data Management	<b>WHO</b>	World Health Organisation
<b>RDO</b>	Research Development Office		
<b>RIA</b>	Royal Irish Academy		
<b>RIS</b>	Research Information System		
<b>RSJ</b>	Robotics Society of Japan		
<b>SAR</b>	Scholars at Risk		
<b>SAT</b>	Self-Assessment Team		
<b>SDG</b>	Sustainable Development Goals		
<b>SEAI</b>	Sustainable Energy Authority of Ireland		
<b>SFI</b>	Science Foundation Ireland		
<b>SHAPES</b>	Smart and Healthy Ageing through People Engaging in Supportive Systems		
<b>SME</b>	Small and Medium-sized Enterprises		
<b>SMLLC</b>	School of Modern Languages, Literatures and Cultures		
<b>SOLAS</b>	An tSeirbhís Oideachais Leanúnaigh agus Scileanna (Further Education and Skills Service)		
<b>SPIE</b>	International Society for Optics and Photonics		
<b>SSPC</b>	Solid State Pharmaceutical Centre		
<b>STEM</b>	Science, Technology, Engineering, and Mathematics		
<b>TCD</b>	Trinity College Dublin		
<b>TG4</b>	Teilifís na Gaeilge		
<b>THZ</b>	Terahertz		
<b>TUD</b>	Technological University Dublin		

# Appendix

## MU publications for 2022 and external funding awards 2021/22

A full list of MU publications for 2022 can be found at

[www.maynoothuniversity.ie/research/research-and-innovation-maynooth-university/research-reports](http://www.maynoothuniversity.ie/research/research-and-innovation-maynooth-university/research-reports)

A full list of external funding awards for 2021/22 can be found at

[www.maynoothuniversity.ie/research/research-and-innovation-maynooth-university/research-reports](http://www.maynoothuniversity.ie/research/research-and-innovation-maynooth-university/research-reports)

## SFI Partner Centres



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