



Monday 20th of June 2022

9:00 am – 5:00 pm

Room 2.19

Dual delivery

Agenda

Monday 20th June 2022. Room 2.19, National College of Ireland

09:00 – 09:05	Welcome Introduction Dr Cristina Hava Muntean (<i>Interim Vice-Dean School of Computing</i>)
09:05 – 09:15	Welcome Speech Dr Horacio González-Vélez (<i>Chair of NCI Research Committee</i>)
09:15 – 09:30	Keynote Speaker: Professor John McDonald Department of Computer Science, Maynooth University
09:30 – 09:45	The influence of the global education reform movement in official education policies in Ireland Paula Zimmer De Castro (<i>School of Business</i>)
09:45 – 10:00	Do work placements matter for job quality? The case of economics graduates Dr Miguel Flores (<i>School of Business</i>)
10:00 – 10:15	Online learning predictors of mental health in third-level students during the COVID-19 pandemic in Ireland Dr April Hargreaves (<i>School of Business – Psychology</i>)
10:15 – 10:30	Utilising game design to create engaging educational environments David Williams (<i>PhD Candidate, School of Computing</i>)
10:30 – 10:45	Irish apprenticeships in financial services: Negotiating gender and navigating social justice Jonathan Brittain and Dr Corina Sheerin (<i>CELL – Apprenticeships; School of Business</i>)
10:45 – 11:00	<i>Coffee Break</i>
11:00 – 11:15	State of Ireland's mental health: Findings from a nationally representative survey Dr Roy Fox (<i>School of Business – Psychology</i>)
11:15 – 11:30	A STEM family eLearning framework to increase family engagement in disadvantaged communities Kate Darmody (<i>Early Learning Initiative</i>)
11:30 – 11:45	Measuring attitudes towards obesity from a behavioural perspective: Theory and research Dr Conor Nolan (<i>School of Business – Psychology</i>)
11:45 – 12:00	Cognitive interventions for people with early-stage dementia in Ireland Dr Michelle Kelly (<i>School of Business – Psychology</i>)
12:00 – 12:15	The effect of mindfulness practice on older adults' cognitive function and sleep quality Colm Lannon-Boran (<i>PhD Candidate, School of Business – Psychology</i>)
12:15 – 12:30	HALO: Health and loneliness in older adults Dr Caoimhe Hannigan (<i>School of Business – Psychology</i>)
12:30 – 13:15	<i>Lunch</i>

13:15 – 13:30	Keynote Speaker: Dr Tatiana Andreeva School of Business, Maynooth University
13:30 – 13:45	A Machine learning based eye tracking framework to detect Zoom fatigue Dr Anu Sahni (<i>School of Computing</i>)
13:45 – 14:00	3D reconstructed models for driving simulation and testing William Clifford (<i>School of Computing</i>)
14:00 – 14:15	An exploratory study: The introduction of an external non-family accountant into the family firm and the impact on institutional logics Theresa Mulcahy (<i>School of Business</i>)
14:15 – 14:30	Global pandemic solidarity under constraint: Technology transfer and the failed responsibility of pharmaceutical business Dr Nicole Gross (<i>School of Business</i>)
14:30 – 14:45	Early target selection and evidence accumulation is impaired in the left hemifield after right hemisphere stroke Dr Ger Loughnane (<i>School of Business</i>)
14:45 – 15:00	Brain charts for the human lifespan Dr David Mothersill (<i>School of Business – Psychology</i>)
15:00 – 15:15	<i>Coffee Break</i>
15:15 – 15:30	The making of zero curves (ONLINE) Dr Gaia Barone (<i>School of Business</i>)
15:30 – 15:45	I'm finally going to do what I want to do: The re-engagement experiences of 'older' mature learners in further education (ONLINE) Dr Conor Mellon and Karen Ryan (<i>Centre for Education and Lifelong Learning</i>)
15:45 – 16:00	Evaluation of the Parenting365 programme: Supporting children with additional needs living in an area of socio-economic disadvantage (ONLINE) Holly Dennehy (<i>Early Learning Initiative</i>)
16:00 – 16:15	AFTM: Agent based fault tolerance manager in cloud environment (ONLINE) Dr Shivani Jaswal (<i>School of Computing</i>)
16:15 – 16:30	An extensible and dynamic service description framework for mobile environments (ONLINE) Dr Rohit Verma (<i>School of Computing</i>)
16:30 – 16:45	Closing Dr Cristina Hava Muntean

Speakers

Keynote Speaker: Prof John McDonald

Department of Computer Science, Maynooth University



Dense perception for autonomous vehicles

Co-authors: Louis Gallagher, Varun Ravi Kumar, and Senthil Yogamani

Abstract: We present a number of results in the computation of dense models of a vehicle's environment providing a rich representation for facilitating higher-level scene understanding, perception, and planning. The talk will first introduce the simultaneous localisation and mapping (SLAM) problem focussing on approaches for dense mapping. We then provide details of a collaborative dense mapping system which we have developed that allows multiple agents to compute a shared map of their environment in real-time. Results will be presented for both indoor and synthetic vehicle benchmark dataset. Next we present extensions to the system for incrementally reconstructing a dense 3D model of the geometry of an outdoor environment using a single monocular camera attached to a moving vehicle. Our system employs dense depth prediction with a hybrid mapping architecture combining state-of-the-art sparse features and dense fusion based visual SLAM algorithms within an integrated framework. Our novel contributions include design of hybrid sparse dense camera tracking and loop closure, and scale estimation improvements in dense depth prediction. We provide qualitative and quantitative results for both trajectory estimation and surface reconstruction accuracy, demonstrating competitive performance on the KITTI dataset.

Qualitative results of the proposed approach are illustrated in <https://youtu.be/Pn2uaVqjskY>.

Source code for the project is publicly available at the following repository

<https://github.com/robotvisionmu/DenseMonoSLAM>

<https://www.maynoothuniversity.ie/faculty-science-engineering/our-people/john-mcdonald>

Paula Zimmer De Castro
School of Business



The influence of the global education reform movement in official education policies in Ireland

Abstract: As education systems became underpinned by economic concerns in the 20th century, the emergence of the Global Education Reform Movement (GERM) has been the way in which the current rhetoric about globalisation and economics affected education. This case study employs a Thematic Analysis to examine the influence of GERM in Irish literacy and numeracy policies developed between 2009 and 2019 with the aim to theorise about the extent to which Irish education is embracing ideological principles related to GERM and why. The GERM characteristics the policies endorse the most are *promotion of literacy and numeracy as core skills* and *adoption of an outcomes-based education model*. Although a focus on *accountability* is also a feature of GERM, the evidence suggests that Ireland's approach to accountability is not typical of the movement. Themes unrelated to GERM such as the *adoption of a partnership approach to policymaking* and *students' wellbeing and inclusion* also feature prominently in the policies. The findings indicate that Ireland have selectively adopted aspects of GERM instead of fully embracing the movement, which suggests that pragmatism functions as a value for Irish policymakers as they attempt to adapt international education agendas to the Irish context and ensure sustainable economic stability.

Biography: Paula has been interested in understanding the makings of education systems and how they might shape our subjectivity, citizenship, and society since transitioning to a managerial role in a school in 2016. As such, Paula's research interests lie on system-level educational leadership, policy making, critical discourse analysis, and post-colonial studies. Having experienced the private education sector as a student, a teacher, and a manager/leader, Paula's research advocates for the humanisation of education systems, i.e., for systems to place the human dimension of education at the core of their structures and policies.

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Dr Miguel Flores
School of Business



Do work placements matter for job quality? The case of economics graduates

Co-author: Dr Panagiotis Arsenis

Abstract: We study whether the completion of an optional work placement (i.e. year-long industry experience during undergraduate studies) enhances job quality, in terms of earnings, job security and career fit, for economics graduates. Using linear and discrete choice models, we estimate the effect of work placement on six graduate outcomes that capture job quality and use a rich data set to control for demographics, degree, graduate job characteristics, academic achievement, and school background. To account for possible self-selection bias, we use propensity score matching analysis. We find that graduates who did a work placement earn 6% to 8% higher salaries and find jobs with better career fit than non-placement graduates. However, work placement seems to have no effect on job security. The empirical findings also show that job characteristics, like location and type of industry, and educational background are important factors contributing to graduates' employment quality. Finally, we find no differences in job quality due to gender.

Biography: Dr Miguel Flores is Assistant Professor in Economics and Programme Director for Work Placements, National College of Ireland. He is Senior Fellow of the UK Higher Education Academy and Associate of The Economic Network. Miguel holds a BSc from National University of Cordoba (Argentina, 2001), an MA from ILADES/Georgetown University (Chile, 2006), and a PhD from the University of Leicester (UK, 2013), all in economics. His areas of research are industrial organisation, economics education and applied microeconomics. He has worked on market competition and consumer behaviour, and economic incentives in consumption choices and diet. His current research agenda focuses on the impact of work placements on graduate outcomes.

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Dr April Hargreaves

School of Business – Psychology



Online learning predictors of mental health in third-level students during the COVID-19 pandemic in Ireland

Co-authors: Dr Gerard Loughnane, Hau Nguyen, Dr David Mothersill

Abstract:

Objective: COVID-19 forced third-level students to transition to online learning (OL). Many students encountered issues with OL, such as accessibility. However, the relationship between OL issues and mental health during this time remains poorly understood.

Participants: Third-level students in Ireland (N = 268) completed an online questionnaire examining experiences with OL and mental health during COVID-19.

Methods: OL social, lecturer, accessibility, individual skills, and environment issues, were entered into logistic regression analyses to examine whether these variables predicted mental health outcomes and/or preference to keep OL.

Results: Students reporting more individual skills issues were more likely to attain a probable diagnosis of posttraumatic stress disorder, complex posttraumatic stress disorder, and depression ($p < 0.0083$); students who reported more environment issues were less likely to report preference to keep OL ($p < 0.0005$).

Conclusions: Given individual skills issues associated with worse mental health, future research should examine improving student perceptions of their own OL skills.

Biography: Dr April Hargreaves completed her doctorate in neuropsychology and genetics with Trinity College Dublin, where her research focused on the neuropsychological/ cognitive profile of schizophrenia risk variants identified in genome wide association studies. Further research investigated psychological therapies for psychosis, with a particular interest in remediation of cognitive deficits in schizophrenia, using cognitive remediation therapy. More recently, Dr Hargreaves led an investigation of the role of CoQ10 in cognition and fatigue for patients with Schizophrenia, and currently her research is focused on the stigmatisation of psychosis in Ireland and internationally.

Dr Hargreaves has published widely in the field, including 34 peer reviewed research articles and two books as Editor; the first titled Co-EnzymeQ10: From Fact to Fiction and the second titled Schizophrenia: Triggers and Treatments.

Dr Hargreaves currently holds the position of Vice-Dean of Undergraduate studies and Associate Professor of Psychology in the School of Business at National College of Ireland, where she is also a member of Academic Council.

ORCID ID: <https://orcid.org/0000-0003-4215-3286>

Research Gate: [April Hargreaves \(researchgate.net\)](https://www.researchgate.net/profile/April-Hargreaves)

David Williams

PhD candidate, School of Computing



Utilising game design to create engaging educational environments

Abstract: The potential value of games as a platform from designing learning scenarios and as a tool for improving aspects of teaching has been widely discussed by academics and educators alike. The positives and negatives of this integration for some is obvious but before we consider the outcome, it is essential to discuss the challenges initially faced in bringing Game Based learning scenarios into learning environments.

There has been much reported success in utilising virtual classrooms in a wide range of educational settings. Virtual classrooms afford the opportunity to enhance the teaching environment with international expert partner collaboration, whilst answering a perceived demand for more flexibility in modes of delivery.

This research presents an experience report examining learner's participation in a virtually delivered module. The experience report examines learner development and engagement over a semester in the virtual classroom by exploring how the virtual tools were applied including the behavioural and technical challenges that can arise in this learning scenario. Additionally, the paper examines feedback from lecturers and learners supported with robust quantified engagement metrics. The goal of this process is to improve understanding of learner expectations and the impact of virtual classrooms on a postgraduate learning environment.

Biography: David Williams is the Academic Director of the School of Computing at Dublin Business School. An experienced technologist and educator, with interests in bridging the gap between technology skills and innovative teaching.

David is currently a PhD Candidate in Technology Enhanced Learning with the National College of Ireland. His research is investigating a gameful method for designing educational scenarios, approaching learning how game designers develop games, building engaging scenarios. This research aims to identify and define the framework appropriate for Gameful Learning by mapping engagement using established development formats like that of Mechanics, Dynamics & Aesthetics and heuristic design to develop quantifiable metrics.

Jonathan Brittain and Dr Corina Sheerin

Centre for Education and Lifelong Learning & School of Business



Irish apprenticeships in Financial Services: Negotiating gender and navigating social justice

Abstract:

Purpose: Set within the context of International Financial Services (IFS), this research considers the demographic profile of professional IFS apprenticeship candidates in relation to gender equality and social mobility. We offer valuable insights as to the gendered nature of professional apprenticeships and explore whether these programmes provide opportunities for social mobility.

Design/methodology/approach: Implementing a quantitative approach, underpinned by a positivist stance, we analyse SOLAS national apprenticeship data relating to IFS programmes (n=841). Non-parametric tests were applied in the analysis of the gender dimension, while to analyse social mobility, the socio-economic status and spatial profile of candidates were compiled and analysed using the Pobal HP Deprivation Index (SA).

Findings: The findings show that 'new' apprenticeships have led to an increase in the number of women in apprenticeships. However, while more women are present in professional apprenticeships, as compared with, more traditional apprenticeship programmes, they are not equally represented to men in the higher-level degree apprenticeship programmes. The findings show that IFS apprenticeship candidates are in the main from socio-economic areas which are above average. This trend indicates a distinctive candidate who is more aligned to the sectoral profile of IFS than that of traditional apprenticeship programmes.

Originality/value: This study provides an important dimension to both practitioner and academic literature concerning apprenticeships. To date, there has been a proliferation of publications concerning the beneficial impact of skills and vocational-led apprenticeships. However, limited attention has been directed to professional apprenticeships and even less still within the setting of IFS. This research initiates the process of addressing that gap within an Irish context.

Biographies:

Mr Jonathan Brittain has 25+ years of experience in education. Jonathan joined NCI in 2006. He transitioned from a School of Business lecturing role in 2017 to managing the college apprenticeship portfolio. In 2019 Jonathan won NCI's President's Award for Assessment Innovation. In 2020 NCI's IFS Associate apprentices won the SOLAS Generation Apprenticeship competition, a submission led by Jonathan. In 2020 he also led the development of the Level 8 Honours degree Recruitment Executive apprenticeship. Jonathan's research interests are in vocational education and work-based learning.

Dr Corina Sheerin is a lecturer in Finance at NCI. Situated at the nexus of gender, work and organisations, Corina has published widely in ABS peer-review journals. Corina won the Monica Lee Award for Outstanding Research in 2021 from the Academy of Human Resource Development and the Emerald best paper award and highly commended awards in 2019 for both the Journal of European Training and Development and Gender in Management: An International Journal. Her current research is focused on issues of gender and space, gender performativity and gendered organisations. Corina's research profile: [Corina Sheerin \(researchgate.net\)](https://www.researchgate.net/profile/Corina-Sheerin)

Dr Robert Fox

School of Business – Psychology



State of Ireland's mental health: Findings from a nationally representative survey

Abstract:

Aims: Current information about the prevalence of various mental health disorders in the general adult population of the Republic of Ireland is lacking. In this study, we examined the prevalence of common mental health disorders, sociodemographic factors associated with meeting criteria for a disorder, and the associations between each disorder and history of attempted suicide.

Methods: A non-probability nationally representative sample (N = 1,110) of adults living in Ireland completed self-report measures of 12 mental health disorders. Effects sizes were calculated using odds ratios, and population attributable risk fractions (PAF) were estimated to quantify the associations between each disorder and attempted suicide.

Results: Prevalence rates ranged from 1.7% (Histrionic Personality Disorder) to 15.0% (Insomnia Disorder). Overall, 42.5% of the sample met criteria for a mental health disorder, and 11.1% had a lifetime history of attempted suicide. Several sociodemographic variables were associated with meeting the criteria for any disorder. Complex PTSD, Borderline Personality Disorder, and Insomnia Disorder had the highest PAFs for attempted suicide.

Conclusions: Mental health disorder prevalence in Ireland is relatively high compared to international estimates. Effective treatments/interventions for disorders such as Complex PTSD, Borderline Personality Disorder, and Insomnia Disorder are required to achieve substantial reductions in attempted suicide.

Biography: Dr Roy Fox is a Lecturer in Psychology at the National College of Ireland. Roy's research interests focus primarily on the areas of psychological responses to trauma, psychiatric comorbidity, and suicidality. This research includes applying advanced statistical models to examine areas of mental health such as complex posttraumatic stress disorder, loneliness, and attempted suicide, using large-scale, longitudinal, and nationally representative datasets.

Research profile: <https://www.researchgate.net/profile/Robert-Fox-5>

Kate Darmody

Early Learning Initiative



A STEM family eLearning framework to increase family engagement in disadvantaged communities

Abstract: STEM Family eLearning involves increasing the engagement in STEM home learning activities. STEM home learning activities range from exploring subjects such as science technology, engineering, and maths through a fun play based K12 STEM curriculum. The family are trained to act as teachers, mentors, and coaches to the K12 members. Families from educational disadvantaged areas are typically early school leavers and having the STEM capacity to support their children is a challenge. This research proposes a STEM Family eLearning framework to increase family engagement in supporting the K12 members engaged in STEM learning activities. The proposed framework combines training for volunteers and STEM learning activities provided to families. Training for volunteers focuses on how to work with families in disadvantaged communities. STEM learning activities involve providing the family with STEM programmes such as Robotic Coding Clubs, Card Challenges, eLearning Programme, STEM Play and Learn, STEM Workshops, Showcases and Events. Parent and child evaluation data indicate that the programmes stimulated interest in STEM for both children and their parents and increased confidence in STEM subjects. This research can potentially enhance the mainstreaming and extension of STEM eLearning to disadvantaged communities.

Biography: Kate Darmody is a Researcher at the Early Learning Initiative, National College of Ireland. She holds a MSc in Psychology and a BA in Psychology from University College Dublin. Prior to her current role, Kate worked as an applied practitioner within the field of early intervention and prevention. Her research interests include early intervention and prevention, child development, early childhood education and educational inequality.

Dr Conor Nolan

School of Business – Psychology



Measuring attitudes towards obesity from a behavioural perspective: Theory and research

Abstract: The IRAP is a behaviour analytic measure, used to assess how people respond to stimuli. IRAP results are often interpreted as “response biases” or “implicit attitudes”. The IRAP is an adaptable tool, which has been used to measure how people respond to a variety of socially relevant issues such as racial issues, sexuality, self-esteem, mental health issues and gender issues, to name a few. The present research looked at i) response bias towards obesity and exercise and ii) biases towards obesity in the opposite gender. In two studies, participants completed weight and obesity related IRAPs and self-report, subjective measures. Analyses looked at the relationships between IRAP and self-report measures, as well as examining gender differences. The results provide insight into biases relating to weight and how these biases inform exercise behaviours. Results also support recent theoretical advances in explaining IRAP effects.

Biography: Dr Conor Nolan is a graduate of the B.A (Hons) Psychology degree at UCD. He then went on to carry out postgraduate studies in child and adolescent mental health with the UCD School of Psychiatry. Following this, Conor completed his Doctorate of Psychological Science in behaviour analysis and therapy at Maynooth University. He lectures on the psychology degree programme at NCI and collaborates with and provides supervision for the Trinity College Dublin M.Sc in applied behaviour analysis. Conor’s research interests lie in the areas of behavioural psychology, behaviour analysis, relational frame theory, attitudes, mental health, autism, intellectual disability, language and cognition.

Dr Michelle Kelly

School of Business – Psychology



Cognitive interventions for people with early-stage dementia in Ireland

Abstract: Interventions targeting improved cognition can be of benefit to people with dementia (PwD), particularly in the earlier stages. Cognitive Stimulation Therapy (CST) and Cognitive Rehabilitation (CR) are two interventions with a substantial evidence-base, showing improvements in cognitive function and quality of life for PwD. This presentation will provide a description of CST and CR, and will include an overview of data gathered from two pilot studies with PwD in Ireland. Subsequently, the presentation will discuss more recent developments in Ireland on the interest in and availability of CST and CR, and upcoming research project plans will be described. The upcoming project aims to assess barriers and facilitators to offering cognitive interventions such as CST and CR to those with a diagnosis of dementia in Ireland.

Biography: Dr Michelle Kelly has a doctorate in Psychological Science (Behaviour Analysis and Therapy) and completed her post-doc as an Early Intervention Coordinator with the Alzheimer Society of Ireland and the Institute of Neuroscience in Trinity College Dublin. She is also a Board Certified Behaviour Analyst (BCBA-D) and an accredited Cognitive Stimulation Therapy (CST) trainer. Michelle is interested in behavioural and psychosocial interventions to promote brain health and has been involved in the research and development of evidence-based interventions for dementia for up to 10 years. She also researches behavioural approaches to measuring attitudes and stigma.

[Research gate profile here.](#)

Links to work presented:

<https://www.ucl.ac.uk/international-cognitive-stimulation-therapy/international-cst-training/cst-training-ireland>

<https://pubmed.ncbi.nlm.nih.gov/30115146/>

Colm Lannon Boran

PhD candidate, School of Business – Psychology



The Effect of mindfulness practice on older adults' cognitive function and sleep quality

Abstract: Mindfulness-based interventions (MBIs) have shown potential to improve cognitive function and sleep quality, which may have important implications for older populations at higher risk of cognitive decline. Previous research in this area has established that mindfulness practice can benefit mental wellbeing, and more recently, mindfulness has been shown to benefit brain health and cognitive health. As such, mindfulness may be protective against cognitive decline, and research has therefore begun to investigate the extent of this potential in older adults who are at risk of cognitive impairment and dementia. The PhD project aims to clarify the relationship between mindfulness and older adults' cognitive function and sleep quality and determine when and how MBI can be most effectively implemented. Currently, we are finalising a systematic review and meta-analysis (chapter 2 of the PhD thesis) investigating the effect of MBI on cognitively healthy older adults' sleep quality and cognitive function. The following chapter will use latent variable modelling to analyse a dataset of older adults with subjective cognitive decline, proposing a model with sleep quality as a mediating variable between MBI and cognitive function. These two chapters, and the chapter 1 literature review, collectively aim to inform a MBI tailored for older adults' cognitive function.

Biography: Colm Lannon-Boran is a 2nd year PhD student on National College of Ireland/Maynooth University's joint PhD programme. He holds an upper-class honours degree in Psychology from National College of Ireland. His research is investigating the relationship between mindfulness, cognitive function, and sleep quality in older adults. He is an Associate Faculty member at National College of Ireland and assists with delivering psychology tutorials and lectures to undergraduate psychology students.

Linkedin profile: www.linkedin.com/in/colm-lannon-boran-17a17419b

Dr Caoimhe Hannigan

School of Business – Psychology



HALO: Health and loneliness in older adults

Project Team: Dr Joanna McHugh Power, Professor Brian Lawlor, Professor Frank Kee, Professor Cathal Walsh, Professor Thomas Scharf, Ms Emilie Holton, Dr Paul Hanly, Dr Robert Coen, Mr Sean Moynihan

Abstract: Loneliness is commonly experienced by older adults and has a negative impact on quality of life, cognitive function, and physical and mental health. Befriending services are considered a promising intervention to alleviate loneliness, and to reduce the negative impact of loneliness on health. However, there is limited empirical evidence related to the efficacy of befriending interventions, and their impact on health is under-researched. The aim of this study was to evaluate whether a befriending service mitigates the impact of loneliness on health, and to identify mechanisms through which befriending interventions might impact health. A mixed methods design was used. The quantitative component used an AB multiple baseline single-case experimental design in sample of n= 85 new service users, to measure outcomes (health-related quality of life and cognitive function) at 13 timepoints across 6 months. The qualitative component of the study used semi-structured dyadic interviews, structured and analysed according to the principles of constructivist grounded theory. The findings of the study are currently being analysed and prepared for publication. Preliminary findings suggest that the befriending intervention reduces the negative impact of loneliness on health over time. The qualitative findings identified a range of mechanisms through which befriending might impact both physical and mental health, such as exercise, facilitating healthcare and providing advice. Next steps will be discussed, including the translation of the empirical findings into recommendations for policy and practice.

This project is funded by the Health Research Board Applied Partnership Award (HRB-APA 2017-004)

Biography: Dr Caoimhe Hannigan completed her PhD in Psychology at Trinity College Dublin. Caoimhe has significant experience in the design and implementation of research related to cognitive function, loneliness, and health and well-being in older populations. Her key research interests include cognitive ageing, modifiable risk factors for chronic health conditions and dementia, loneliness and its impact on health, brain health and dementia prevention, successful ageing, and interventions to support health and well-being in older adults. Caoimhe has received over €200,000 in research funding and has over 30 peer-reviewed publications in the field of psychology of ageing. Caoimhe is currently co-Principal Investigator for a HRB funded project (HALO) investigating the effects of a befriending intervention on loneliness and health. She is currently co-supervising a PhD candidate investigating the effects of mindfulness on sleep quality and cognitive ageing.

Link to work presented: [HALO: Study protocol for a single-case experimental design study evaluating the moderating impact of a befriending intervention on the association between loneliness and health in older adults - PMC \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/35484441/)

Keynote Speaker: Dr Tatiana Andreeva
School of Business, Maynooth University



Research at the Maynooth University School of Business and opportunities for collaboration

Abstract: Tatiana Andreeva (PhD) is an Associate Professor in Management and Organizational Behavior and Research Director at the School of Business, Maynooth University. Her current research addresses the challenges of managing knowledge in organizations. For example, Tatiana explores why do people share or hide knowledge in organisations (and why they don't)? what managers can do to facilitate knowledge sharing or prevent knowledge hiding? How the shift to remote and hybrid work influence knowledge sharing and knowledge hiding? Tatiana's work has been published in leading journals such as Human Resource Management Journal, Human Resource Management and Journal of World Business, amongst others. As a Research Director of the School of Business, she is responsible for promoting, supporting and enabling research in the School. In this talk, Tatiana will discuss the various research themes within the Maynooth University School of Business and provide some ideas for interdisciplinary collaboration and knowledge exchange within and between the schools.

Biography: Dr Tatiana Andreeva is the Associate Professor in Management and Organisational Behaviour at Maynooth University School of Business. She also serves as a Research Director in the School of Business. Her previous academic appointment was as associate professor of HRM and Organisational Behaviour at the St.Petersburg University Graduate School of Management (Russia). Tatiana's current research focuses on the intersections of knowledge management, organisational behaviour and human resource management, with a specific attention to micro-foundations of organisational processes and peculiarities of the contexts in which these processes evolve. Her research has been published in journals such as Human Resource Management Journal, Journal of World Business, Human Resource Management, Journal of Management Inquiry, Journal of Business Research, Management and Organization Review and Journal of Knowledge Management, amongst others. Her research project on the intellectual capital elements and knowledge management practices in Russian companies has received the Emerald / Baltic Management Development Association Borderless Management Research Fund research award.

Research Profiles: [Orcid](#), [Scopus](#)

Dr Anu Sahni
School of Computing



A Machine learning based eye tracking framework to detect Zoom Fatigue

Abstract: Zoom Fatigue is a form of mental fatigue that occurs in online users with increased use of video conferencing. Mental fatigue can be detected using eye movements. However, detecting eye movements in online users is a challenge. This research proposes a Machine Learning based Eye Tracking Framework (MLETF) to detect zoom fatigue in online users by analysing the data collected by an eye tracker device and other influencing variables such as sleepiness and personality. An experiment was conducted with 31 online users wearing an eye tracker device while watching a lecture on Mobile Application Development. The online users were given an exam followed by a questionnaire. The first exam was based on the content of the video. The online users were then given a personality questionnaire. The results of the exam and the personality test were combined and used as an input to five machine learning algorithms namely, SVM, KNN, Decision Tree, Logistic Regression and Ada-Boost. Results of the five models are presented in this paper based on a confusion matrix. Results show promise for Ada-Boost for detecting Zoom fatigue in online users with an accuracy of 86%. This research demonstrates the feasibility of applying an eye-tracker device to identify zoom fatigue with online users of video conferencing.

Biography: Dr Anu Sahni's research interest is to collect quantitative data about human behaviour using emerging technologies such as an eye-tracking device, and then apply machine learning models to observe patterns and get a better understanding. Currently, four MSCDA students are conducting experiments on human participants, using Eye-Tracking, along with speech analysis, facial expressions, and pupil dilations. They will apply various deep learning models to the obtained data to determine the level of cognition and the level of empathy a human possesses in a given situation. She plans to extend this work to use other emotions to improve our understanding of human behaviour.

William Clifford
School of Computing



3D Reconstructed models for driving simulation and testing

Abstract: Advances in machine vision and computer graphics over the last few decades have presented a great opportunity to render photorealistic environments that are explorable. Human testing in simulator studies benefit greatly from higher degrees of fidelity. In this presentation a specialized driving simulator environment will be presented. The creation of 3D models through dash camera footage on board a vehicle will be discussed. There will also be a presentation on how to separate foreground objects (pedestrians and cars) from the static background to enable “in the wild” capture. This pre-processing step may serve as data augmentation for recent view dependent rendering methods including neural radiance fields, a recent solution to developing photo-realism in 3D reconstructed environments. Eye tracking cameras can provide high degrees of accuracy towards the orientation of the eye while observing a desktop. Given the presence of a faithful 3D model of a real road, and a set of known transformation between each frame in a video sequence and each point within the 3D model it is possible to project eye gaze from a driver’s perspective to the 3D point and back to the original source video.

Biography: William Clifford is a researcher in the fields of human-computer-interaction, machine vision, and computer-graphics. He has developed driving simulators with an emphasis on 3D reconstruction of real roads. This was a focus for his PhD thesis. Driving simulation with high fidelity is desirable to allow for realistic experiments while keeping participants safe from potential dangers on real roads. William has carried out experiments to measure driver distraction through eye-tracking within these simulators. 3D-reconstruction, computer-graphics, and eye-tracking all contain a set of common features. These include projective geometry from 3D surfaces to a 2D plane, and interpretation of colour and light.

Research Gate profile: <https://www.researchgate.net/profile/William-Clifford-3>

Theresa Mulcahy

School of Business



An Exploratory Study: The Introduction of an External Non-Family Accountant into the Family Firm and the Impact on Institutional Logics

Abstract: When an organisation undergoes institutional change, their institutional logics are disrupted. This disruption can introduce new logics from outside the present environment. The new logics will not only interplay with existing logics but there is also the more complex question as to how the logic “fits” into the new institutional settings. Acceptance and establishment of the new logic may be inhibited because of incompatibility with existing logics but also because the logic from outside may challenge the current organisations settings. Actors find it hard, if not impossible, to change logics (Gumusay et al., 2020). Yet, research is adamant that institutional logics are not static (Ansari et al., 2013; Ocasio et al., 2015) and they can be used to examine institutional change and transformations (Gumusay et al., 2020). As such, this research will endeavour to examine the introduction of a non-family actor into the family firm setting, through the lens of institutional logics. The non-family actor selected for this study is the professional accountant. The professional accountant is portrayed in the academic literature as the most commonly used external advisor by small to medium sized family firms and as asserting significant influence and authority over these types of institutions.

The research proposes to use a qualitative methodology. Semi-structured interviews have been selected as the data collection method. Interviews will take place with non-family professional accountants, both financial accountants and management accountants, who are working at management level in a small to medium sized family firm. Interviews will also be held with family members who occupy a management role in the family firm who have hired a professional non-family accountant. This study through the proposed methodology has been designed to reveal how the introduction of an external non-family accountant into the family firm impacts institutional logics. Attention to institutional logics within a family firm and how they manifest when a non-family professional accountant is introduced has the potential to contribute to the literature by firstly providing a more comprehensive understanding of significant institutional change in a family firm. Secondly, this study will provide an insight into the disruption of institutional logics in the family firm. Thirdly, this study will contribute to the existing literature by gaining a deeper understanding of the malleability of logics within family firms.

Biography: Theresa Mulcahy is an Accounting Lecturer and Programme Director at the National College of Ireland. She holds a BSc Honours degree in Accounting from Queens University Belfast and an MBS in Accounting from Dublin City University. Theresa qualified as a Chartered Accountant with PricewaterhouseCoopers where she worked as a Manager in Audit and Advisory Services. Theresa is current studying for her PhD at the South East Technological University, Waterford, under the supervision of Dr Collette Kirwan and Prof Sheila O’Donohoe. Her research examines institutional logics in family firms particularly in the context of a non-family professional accountant entering the family firm. Theresa has presented her research at a number of doctoral seminars including the Irish Accounting and Finance Association (IAFA) and the Irish Academy of Management (IAM).

Dr Nicole Gross
School of Business



Global pandemic solidarity under constraint: Technology transfer and the failed responsibility of pharmaceutical businesses

Abstract: The Covid-19 pandemic has highlighted the importance of technologies to mitigate against the spread of the disease and improve care— saving lives. But the pandemic has also highlighted that the current biopharmaceutical business model, based on the enclosure of these technologies and on the immense accumulation of capital it enables, leads to vast inequalities in healthcare across the globe. For instance, as of February 2022 10 billion of Covid-19 vaccines have been administered globally (Zakiyah, 2022). While 63 percent of the world’s population were fully vaccinated as of February 2022, the vaccination rate in many low and middle income countries remains extremely low. We interrogate whether the prevailing shareholder-oriented pharmaceutical business model and global solidarity, which we define as a willingness to incur costs in ‘standing together’ as a global citizenry, can be made compatible. We conclude that while ample opportunities existed during the Covid-19 pandemic for firms to work towards global healthcare sustainability, these practices in our analysis have remained fragmented acts of charity at best, and mere publicity stunts at worst. In the absence of a concerted adoption of solidaristic practices by biopharmaceutical firms, the paper concludes that the institutionalization and enforcement of solidarity at a global level are necessary to strengthen resilience and know-how globally.

Biography: Dr Nicole Gross’ research interests include technology marketing especially in healthcare markets, market making and market shaping, practice-research, business models and market innovation. Her research has been published in *Organization Studies*, *Business & Society*, *Marketing Theory*, the *Journal of Marketing Management* and the *International Journal of Entrepreneurial Behaviour & Research*. Nicole teaches Marketing and Entrepreneurship here, at the National College of Ireland.

Research Gate profile: <https://www.researchgate.net/profile/Nicole-Gross-4>

Dr Gerard M. Loughnane

School of Business



Early target selection and evidence accumulation is impaired in the left hemifield after right hemisphere stroke

Co-authors: Daniel Pearce, Meadhbh B. Brosnan, Megan H. O'Neill, Renerus J. Stolwyk, Peter W. New, Redmond G. O'Connell, Mark B. Bellgrove.

Abstract: Hemispatial neglect is a common and disabling neurological syndrome defined as the inability to detect, respond to, and orient towards stimuli on the side contralateral to cerebral damage. Despite decades of behavioral investigation, we know little about how the physiological processes supporting goal-directed behaviour are disrupted in neglect. From three right hemisphere stroke patients and 27 healthy controls, we used a perceptual decision making (PDM) paradigm and EEG to acquire reaction times (RTs) for left/right hemifield targets, and to isolate the distinct neural signals underpinning visuospatial target detection. These included the N2c/N2i - ERPs known to index early target selection; and the centro-parietal positivity, or CPP - a signal associated with evidence accumulation. Behavioural results confirmed the presence of neglect in stroke patients, with significantly slower RTs for left hemifield targets. Scalp topographies within the neglect group revealed intact N2c/N2i and CPP signals for right hemifield targets, but dramatically diminished for the left hemifield. Furthermore, the slope of the decision making process measured by the CPP was shallower for left compared with right hemifield targets, impacting evidence accumulation and leading to slowed perceptual decisions for the left hemifield. These data provide a model for the use of a perceptual decision making framework for understanding the physiological basis of attention deficits after right hemisphere stroke.

Biography: Dr Ger Loughnane is Assistant Professor in Statistics on a number of undergraduate and postgraduate programmes in the National College of Ireland. He holds a BA in Computer Science (University College Dublin), a HDip in Psychology (Trinity College Dublin) and a PhD in Neuroscience (Trinity College Dublin). He gained further academic experience as a postdoctoral researcher on human decision making in Monash University Melbourne, Trinity College Dublin and University College Dublin. Most recently, Ger had worked in United Healthcare/Optum as a Senior Data Scientist, applying state of the art machine learning techniques to actuarial data. Ger's current research focusses on human decision making, using behavioural and neuroimaging techniques to discover the neural substrates of how we integrate perceptual and value-based information to arrive at decisions. An adjacent goal of this research is to aid in the understanding, diagnosis and treatment of attentional disorders such as Unilateral Neglect. This has led to a number of insights on how the human brain performs these seemingly simple tasks. Ger has published these findings in several high-profile journals such as Current Biology, eLife, and the Journal of Neuroscience.

Google Scholar profile:

<https://scholar.google.com/citations?user=CFwux3cAAAAJ&hl=en>

Dr David Mothersill

School of Business – Psychology



Brain charts for the human lifespan

First authors R. A. I. Bethlehem and J. Seidlitz, senior authors E. T. Bullmore & A. F. Alexander-Bloch.

Abstract:

Introduction: Magnetic resonance imaging (MRI) uses powerful magnets to take 3-dimensional images of the human body and is routinely used in hospitals and research studies to examine the structure of the brain. However, recent research suggests that large datasets are necessary to better understand differences in the brain between different groups and changes the brain goes through over time.

Methods: This study collected 123,984 MRI scans across the lifespan by collecting data from 100 MRI studies around the world. Brain structural changes measured using MRI were quantified to calculate growth curves showing how the brain changes over time. Working with Prof. Gary Donohoe and colleagues in NUI Galway and Trinity College, we contributed ~300 MRI scans to this study as part of our MRI research on schizophrenia.

Results: Growth curves reveal a developmental trajectory in which the brain grows rapidly during prenatal and childhood periods and then gradually shrinks during adulthood. Percentile scores calculated in the analysis revealed patterns of structural variation in groups diagnosed with neurological disorders such as Alzheimer's disease.

Discussion: Brain charts could be used in the future to quantify individual differences in brain structure and compare to standardised growth curves, which may contribute to diagnosis.

Reference:

Bethlehem, R. A. I., Seidlitz, J., White, S. R. and Mothersill, David et al. (2022) 'Brain charts for the human lifespan'. *Nature*, 604. pp. 525-533. ISSN 1476-4687. DOI: 10.1038/s41586-022-04554-y
<http://norma.ncirl.ie/5579/>
<https://www.nature.com/articles/s41586-022-04554-y>

Biography: Dr. David Mothersill is a Programme Director and lecturer in Psychology at National College of Ireland and Co-Director of the Stigma and Mental Health Ireland Laboratory (SAMI). David was awarded a PhD from Trinity College Dublin in 2014 and went on to lecture in National University of Ireland Galway, where he co-developed the successful MSc in Clinical Neuroscience in 2016. David's research uses neuroimaging and cognitive testing to better understand social cognition in schizophrenia. This research has led to 37 peer-reviewed papers in the top scientific journals in the world, including *Nature* (impact factor 49.96), and over €100,000 in grant funding from the Irish Research Council, Royal Irish Academy, and ESTHER Ireland. David has presented this research at conferences around the world, including Kyoto, Japan, and Oxford University. David also helped design the app cTOM, a test for measuring social cognition in research studies, which was released on the Apple App Store earlier this year.

Dr Gaia Barone
School of Business



The Making of Zero Curves

Abstract: Risk-free rates are ubiquitous in finance, even more after the Cox-Ross principle of risk-neutral valuation for derivatives. Simple arbitrage shows that they can be negative only if considered net of the storage cost of money. The phase-out of Libor, its replacement by overnight reference rates, and the way they are used to determine zero rates make this paper's topic relevant. Similarly to the federal funds rate, which is a weighted average of the rates in brokered transactions (with weights being determined by the size of the transaction), we advocate the construction of transaction-weighted zero curves. In particular, we highlight the role of risk-free zero curves defined by the ISDA CDS standard model in order to standardize the quotes in the market for credit default swaps.

Biography: Dr Gaia Barone is Assistant Professor in Finance at National College of Ireland (School of Business). She is Program Director for the M.Sc. in Finance. Her current research interest is on Credit Risk Models.

Before September 2018, Gaia Barone was Assistant Professor in Mathematical Methods for Economics at LUISS Guido Carli University of Rome. In July 2011 she received her Ph.D. in Money and Finance from "Tor Vergata" University of Rome. In June 2009 she received her M.Sc. in Financial Mathematics from Stanford University

She has written two books on Arbitrages, published in international journals (*Journal of Credit Risk*, *Journal of Derivatives*, *Rivista di Politica Economica*), and contributed to a book on *Derivatives – Securities Pricing and Modelling*.

Research Gate profile: <https://www.researchgate.net/profile/Gaia-Barone>

Dr Conor Mellon

Centre for Education and Lifelong Learning



I'm finally going to do what I want to do: The re-engagement experiences of 'older' mature learners in further education

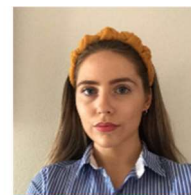
Co-author: Karen Ryan

Abstract: Undertaking a formal learning programme can be significant for any learner, irrespective of age. For mature learners, challenges and successes can however be more acute, as they bring with them a range of experiences and aspirations. Acknowledging this complexity, there are continued calls to ensure that the learning experience for such learners remains meaningful and reflective of their life stage. Older mature learners, often considered as those over 40, represent around two fifths of all learners in FE in Ireland. This study endeavoured to capture the experiences of this group as they undertook their learning journeys through further education, so as to better understand their needs, aspirations, and motivations. Six participants, aged over 50, in an Irish FE college, participated in a phenomenological arts-based project, where they created 'identity boxes' that told the story of their re-engagement. The boxes then formed the central stimulus for in-depth interviews. Three distinct themes emerged. Resilience, in the face of past and present challenges, was key to their re-engagement. A sense of belonging and the supports that underpinned their experience was also evident, as was a clear sense of renewal, as they developed a reconstructed learner-self, bolstered by feelings of success, determination, and a focus on future paths.

Biography: Dr Conor Mellon teaches in the Centre for Education and Lifelong Learning, and is Director of the Masters in Educational Practice, and PGDip in Educational Practice in Teaching for Further Education. His research interests include inclusion and diversity in education, educator professional learning, and educator identity.

Holly Dennehy

Early Learning Initiative



Evaluation of the Parenting365 Programme: Supporting Children with Additional Needs Living in an Area of Socio-economic Disadvantage

Abstract: More than one third of children engaging with ELI's Home Visiting programmes nationally are presenting with developmental delays. Although early diagnosis and intervention is seen as effective, families in Ireland wait years to receive an assessment of need or the adequate support needed. Furthermore, ELI programme families do not have the means to access private services or therapies available to more affluent families. The Parenting365 programme is a supportive programme for 1-4 year old children at risk of developing disabilities and their parents. It aims to empower parents as their child's first and best teacher and advocate, while providing the children with a creative and safe play space to explore. Furthermore, it aims to offer families living in an area of socio-economic disadvantage facing the challenge of disability the chance to connect, support and resource each other going forward, with initial input from ELI. The current research study seeks to evaluate the effectiveness of the Parenting365 programme in supporting children with additional needs and their parents. Preliminary findings are discussed along with policy and practice implications.

Link to the Parenting365 programme:

<https://www.ncirl.ie/About/Early-Learning-Initiative/Dublins-Inner-City-Programmes/Support-for-Parents/Parenting-365-Pilot-Programme>

Biography: Holly Dennehy is a research assistant working on the Parenting365 Project at the Early Learning Initiative. She has previously worked as a research assistant at the Trinity Centre for Ageing and Intellectual Disability. Prior to joining the Trinity Centre for Ageing and Intellectual Disability, Holly worked as an assistant psychologist for Studio III Clinical Services and as a Special Needs Assistant. She is currently completing her MSc in Health Psychology from Ulster University. Her research interests include autism, early years learning and development, health promotion, and intellectual disability.

Dr Shivani Jaswal
School of Computing



AFTM : Agent based fault tolerance manager in cloud environment

Abstract: As the number of cloud users are increasing with times, the probability of failures also increases that takes place in any cloud virtual machine. Failures can occur at any point of time in service delivery. There are numerous techniques for reacting proactively towards these failures. In this framework, a service provider is allocated to the user based on ranking of the service provider. This ranking is done by considering parameters such as trust values (calculated by feedback mechanism), checkpointing overheads, availability, and throughput. Checkpoints are beneficial in triggering savepoints so that minimal loss of data takes place if any failure occurs. This paper has also compared the proposed framework with OCI framework which is based on triggering checkpoints on constant rates. Results have proven that AFTM has 33% to 50% better efficiency results as compared to optimal checkpoints interval (OCI) framework. The results shown in paper demonstrates how better the checkpointing overheads, availability and throughput are handled by using AFTM framework. Also, the overheads were reduced to 50% as compared to OCI framework.

Link to the paper:

https://www.researchgate.net/publication/360116940_AFTM_Agent_Based_Fault_Tolerance_Manager_in_Cloud_Environment

Biography: Dr Shivani Jaswal has completed her Doctor of Philosophy in Cloud Computing. She has a credible record in teaching and education. Her keen areas of research interests are cloud computing, trust and fault tolerance in cloud computing and edge computing. She has published a number of research papers and chapters in reputed journals and conferences. She is a member of various professional bodies such as ACM, IAENG etc. She is a reviewer of IJEER, IGI Global. She has also won 'E-Guru Award' award in September 2021 for outstanding contribution in e-learning platforms for whole engineering cluster.

Google Scholar

ID: https://scholar.google.com/citations?view_op=list_works&hl=en&user=1DoTNu0AAAAJ

Dr Rohit Verma

School of Computing



An extensible and dynamic service description framework for mobile environments

Abstract: Mobile devices today are increasingly being looked upon as potential platforms for service provisioning rather than mere 'service consumers'. There is, however, much that needs to be done to realize this. A detailed, dynamic, and lightweight service description is an important requirement for the automatic and efficient discovery, selection, and subsequently provisioning of services over mobile devices. Traditional approaches for service provisioning are usually not directly adaptable to the mobile environments owing to the latter's dynamic and distinct nature. Hence, a lightweight and extensible approach for service description especially designed for mobile environments is proposed. The proposed approach incorporates detailed and rich descriptions covering functional, non-functional, contextual, and business aspects of services to be provisioned over mobile devices. The service descriptions have been partitioned along these lines and the various parts are distributed between service registries and the mobile service providers. This facilitates the service provider to maintain an up-to-date description without having to compromise on the overall consistency of the description. The proposed service description is good for a heterogeneous environment comprising both wired and wireless systems. A prototype of the proposed system has been implemented with the intent of validating the feasibility of the approach.

Biography: Dr Rohit Verma is associated with School of Computing, NCI as an associate lecturer. He is joining the school as a lecturer. Previously, he was a postdoctoral researcher with Insight SFI Research Centre for Data Analytics, Dublin City University, Ireland . He is also the part of Performance Engineering Laboratory, Dublin City University (DCU), Ireland as a visiting researcher. He is an active researcher of the EU Funded Horizon 2020 project TRACTION. Dr. Verma obtained his Ph.D. degree for his research on service-oriented architecture in resource constraint environments. He was awarded M.Tech. and B.Eng. degrees in Computer Science and Information Security. He had worked with VMware Inc. and Marvell Semiconductor Inc. before joining full time research. His research interests include autonomous and adaptive systems in service computing, cloud computing, and Internet of Things (IoT) environment, quality-oriented and performance-related issues of adaptive delivery, computer networks. He has published several papers in prestigious journals and conferences, has authored many book chapters. He is an active reviewer of many journals and TPC member of many conferences. He is a member of IEEE and IEEE Computer Society.

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