Postgraduate Researchers' Summer Conference 2024

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Welcome Message from the Conference Chairs

May we extend a very warm welcome to you! We are truly delighted to showcase the innovative research undertaken by our postgraduate students under this year's conference theme 'Enriching lives through research'. The Middlesex research community is a diverse and multifaceted one and this event is a golden opportunity to showcase research that is high-quality, and contributes to a prosperous society that enriches everyone in a multiplicity of ways.

A wide range of disciplines are represented in our research community (from computing, to art, design, healthcare, social sciences, psychology, law, to business

and more!) and thus this conference provides fertile ground for discussions across and beyond traditional disciplinary boundaries.

This annual conference is the highlight of the year for many research students and is a place where we can all come together to share our work and engage in mutual learning. We consider it our privilege to be able to provide a forum for this friendly and intellectually stimulating event dedicated to strengthening the MDX scholarly community. We hope you enjoy the two-day event and come away with new ideas and new friends!

The conference chairs: Dr. Agi Ryder, Dr. Tuan Le, and Prof. Eleonore Kofman

Bios

Neelam Raina

Dr Neelam Raina is an Associate Professor of Design and Development and the Director of Research at Middlesex University, London. She has a PhD in Design and Development, and a Master's in Design and Manufacture from De Montfort University, Leicester. From 2018-2021, she was the Challenge Leader for UKRI's Conflict and Security Portfolio for the Global Challenges Research Fund.

Her research interests include conflict, security, peace building, material cultures, gender, and livelihood generation in fragile, conflict affected states. Raina's work explores notions of healing, trauma, peace and reflection through the embodied practices of making, using material culture and tacit knowledge as the underpinning for approaching violence and peace building and for sustainable income generation. Raina is a post conflict reconstruction expert with a focus on South Asia where she has conducted extensive empirical research over the last two decades. The Women,

Peace and Security agenda is key to Neelam's and her research seeks to foreground voices of vulnerable and marginalised women.

Raina is a strong advocate for Afghan women and is the Director of the Secretariat to the All-Party Parliamentary Group (APPG) on Afghan women and girls in UK parliament. Her research in Afghanistan is ongoing as she brings women's tacit knowledge to commercially viable spaces from the confines of the home."

Steve Fuller

Steve Fuller graduated from Columbia University in history & sociology before gaining an M.Phil. from Cambridge and PhD from Pittsburgh, both in history and philosophy of science. He currently holds the Auguste Comte Chair in Social Epistemology in the Department of Sociology at the University of Warwick, UK.

His recent work has focused on the post-truth condition and the rival possible futures for humanity. Fuller's most recent book is Back to the University's Future: The Second Coming of Humboldt (Springer), and his next book is Media and the Power of Knowledge (Bloomsbury).

Professor Shân Wareing, Vice-Chancellor

Professor Shân Wareing is the Vice-Chancellor of Middlesex University. Prior to this role she was Deputy Vice-Chancellor at the University of Northampton, and other executive roles she has held include Chief Operating Officer at London South Bank University and Pro Vice-Chancellor Learning and Teaching at Buckinghamshire New University.

Shân's first job was as a Lecturer in English Language and Linguistics at the University of Roehampton, before she moved into the field of Education Development, during which period she was Co-Chair of the Staff and Educational Development Association. She has a track record of leading institutional transformation programmes include assessment at University of the Arts London, leading to a 12% uplift in the assessment and feedback questions in the National Student Survey sustained over 10 years, digital transformation of the student journey at London South Bank University, which won a PwC award, and recruitment improvements at the University of Northampton, leading to an uplift in recruitment of 18-year-old students, ahead of comparable HEIs.

She is Chair of the charity, Unite Foundation, Chair of Advance-HE's Leadership and Management Strategic Advisory Group, and has published in the fields of linguistics, equality, diversity and inclusion, leadership and team development, and learning and teaching in higher education. Her current scholarly interests are leadership and governance from the perspective of diversity and inclusion, and higher education policy.

Professor Shân Wareing, Vice-Chancellor

Shân studied English Literature and Language at the University of Oxford, and Sociolinguistics at the University of Strathclyde. She was a competitive rower for many years and has a rowing half-blue from Oxford. Shân holds a postgraduate diploma in Higher Education studies from the Institute of Education, University College London, she is a Professor of Teaching in Higher Education, a Principal Fellow of the Higher Education Academy and a National Teaching Fellow.

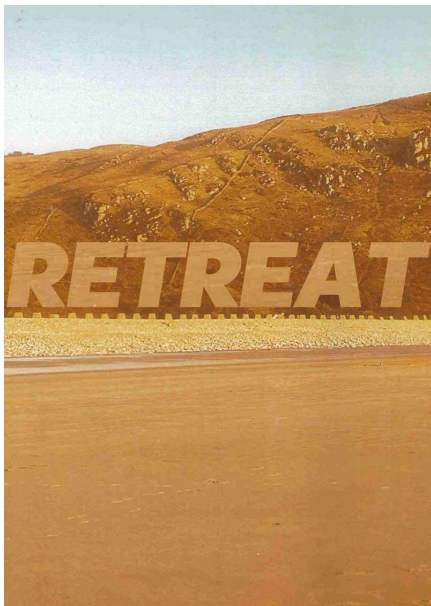## Closing Plenary - Anne Boddington

Professor Anne Boddington is our Pro Vice-Chancellor for Research and Knowledge Exchange, having joined Middlesex University in January 2023. Anne has a distinguished track record in research and impact, education, and engagement, with a particular interest in stimulating sustainable and social innovation and interdisciplinary research with, between and across life, health, physical and social sciences.

Educated as an architect, urbanist and later as a cultural geographer, Anne has held senior leadership roles in higher education including at the University of Brighton. Previous roles include Pro Vice-Chancellor for Research, Business and Innovation at Kingston University, and Research Excellence Framework (REF) 2021 Sub-Panel Chair for Art and Design: History, Practice and Theory. Prior to this, Anne served on REF 2014 and Research Assessment Exercise (RAE) 2008, and as a member of the AHRC Advisory Board.

Anne is particularly interested in organisational design, career development, and quality assurance and enhancement in teaching, research, and impact. She has a breadth of international and governance experience and is currently Deputy Chair, and a Trustee, of the Design Council, Chair of the UK Research and Innovation (UKRI) National Interdisciplinary Circular Economy Research (NICER) Advisory Board, and a member of the Scientific Committee for the Innovation and Technology Commission for the Hong Kong Special Administrative Region.

In her role as Pro Vice-Chancellor for Research and Knowledge Exchange, Anne provides strategic leadership, and has responsibility and accountability, for the development, implementation and monitoring of the University's strategy for Research and Knowledge Exchange. Anne will be leading the institutional preparations for REF 2028, and work to enhance our business-to-business engagement across the organisation.

Georgia Clemson and Daniel Shaw

The Grove Atrium, Middlesex University

2-16 July 2024

10:00 - 17:00 Monday-Friday, 12:00 - 17:00 weekends.

'Retreat: the UK's first climate refugees' is an exhibition of artwork and research exploring the changing coastal landscape of Fairbourne, North Wales. Fairbourne hit the news in 2021 when government officials declared that due to rising sea levels, the village would no longer be safe or sustainable for habitation by the year 2052. Local authorities unveiled a plan for 'managed retreat', putting a stop to the maintenance of sea defences. The press declared the residents the UK's first climate refugees.

This exhibition brings together two visions of Fairbourne's future. Georgia Clemson's artwork combines photography and sculpture to create a collection of artefacts that represent the remnants of a town whose residents already feel abandoned. Inspired by Plato's story of Atlantis, these sun and sea-bleached objects are an imagining of what will be left when our coastal towns are lost underwater. Accompanying them is Clemson's film which focuses on the water and manmade sea defences surrounding Fairbourne. Hemmed in by the Mawddach Estuary and the Irish Sea, Fairbourne also experiences runoff from the mountains. At high tide, the village is already below sea level and the film uses the constant flow of water to highlight its vulnerability.

Out of this desolation rises the innovative work of landscape architect Daniel Shaw whose design thesis 'Fairbourne 2070: Adapting coastlines, changing lives' won the Landscape Institute Student Portfolio Award 2022. Shaw proposes an ambitious and optimistic future for Fairbourne as a town that can adapt to coexist with the water that threatens its existence. In 'Fairbourne 2070', Shaw imagines a thriving coastal economy built on the principles of sustainability, ecology and community.

Together, these perspectives bring the issue of climate catastrophe home and show us that change is not only happening overseas but on our doorstep. In a recent report the Committee on Climate Change found that over 350,000 households are located in areas at risk of coastal flooding and erosion. The threat will only increase as sea levels around the UK are likely to rise one metre or more and this could happen as early as 2100. This exhibition also shows that if we take action now, there is hope that we can adapt to live with the change in a positive and collaborative way.

This exhibition has been created to coincide with Barnet Climate Action Month 2024.

@barnetcouncil

@g.clemson

@dan.j.shaw

Dominique Rivoal and Claire Loussouarn

We are plants, we are grass, we are Hackney Marshes

We are plants, we are grass, we are Hackney Marshes is an immersive audio-visual installation that takes you on a journey of being landscape through the embodied eyes of filmmaker Dominique Rivoal and the sensing body of movement artist Claire Loussouarn. It invites to slow down and attune our sensate bodies and felt sense to the incredible spectacle of nature that we constantly miss out on an everyday basis.

Hackney Marshes is the largest common land in London and has never been built upon. It is a wild oasis within urbanness which disrupts romantic portrayals of nature as separate and clean from modernity. Through Claire's attuned movement and Dominique's embodied framing, nature is de-glamourised and experienced directly with the senses and close to the bones shining its bleakness and immediacy with potency.

For the last five years since September 2018, the artists have been moving and filming in a specific spot of uncut grass behind the Lee Valley ice ring centre where a diversity of wild plants grow. They return every month experiencing seasonal and weather change, the life cycle of plants, park rangers' maintenance cut back of plant friends, the ice ring demolition and re-construction, birds and planes flying by, seasonal foragers, human passers-by and their canine companions.

Claire moves spontaneously with the environment of Hackney Marshes often finding herself entangled and in relationship with the plants growing there. She never knows what her next step will be as she lets herself be moved by the landscape. Dominique relates with her camera attuning to Claire's movement, her own internal landscape and the space equally. She holds the camera in her hands and often doesn't look through the viewfinder trusting her animal body to find its own footing. Together they blur the separation between object and subject on screen.

The four screens, their 360 placement in a square shape and the spatial soundscape aims to recreate the three dimensionality of this heightened state of awareness in landscape that both artists experience in each monthly encounter.

Dr. Agi Ryder

Dr. Agi Ryder is a Senior Lecturer in Transdisciplinary Practice at Middlesex University, London, UK. She is responsible for supervising doctoral students as their Director of Studies and leading cohorts on the Transdisciplinary Professional Doctorate (DProf TD) programme. She is a Senior Fellow of the Advance HE.

Her previous roles included leadership of the Postgraduate Certificate in Higher Education (PGCert HE) and Academic Professional Apprenticeship (APA) programmes as well as   supporting the adoption of learning technologies and innovations across various disciplines.

She received her Doctorate in Education from King's College, London in 2016. Her research interests include various aspects of learning and teaching in higher education, multilingualism as a hidden aspect of diversity, and most recently transdisciplinary practice.

Dr. Tuan Anh Le

Dr. Tuan Anh Le received his PhD degree in telecommunications research from King's College London, The University of London, London, UK, in 2012. From 2009 to 2012, he was a Researcher with the Green Radio Project funded by the Core 5 Joint Research Program of the UK's Engineering and Physical Sciences Research Council (EPSRC) and the Virtual Center of Excellence in Mobile and Personal Communications (Mobile VCE). From 2013 to 2014, he was a Postdoctoral Research Fellow with the School of Electronic and Electrical Engineering, University of Leeds, Leeds, UK. In 2014, he joined the Faculty of Science and Technology, Middlesex University, London, UK, where he is currently a Senior Lecturer. His current research interests include applied convex optimization and machine learning for wireless communications. He was a recipient of the prestigious Ph.D. Scholarship jointly from the Mobile VCE and the UK Government's EPSRC. He is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE). He was a Technical Program Chair for the 26th IEEE International Conference on Telecommunications (ICT 2019), and the co-chair for the PRSC 2023. He was an Exemplary Reviewer of the IEEE Communications Letters in 2019 and 2023. He serves as an Associate Editor for the IEEE Wireless Communications Letters (IF 6.3).

Prof. Eleonore Kofman

Eleonore Kofman is Professor of Gender, Migration and Citizenship, co-Director of the Social Policy Research in the School of Law and Social Sciences and Joint Coordinator of the Inter-University Migration Network with Anglia Ruskin and Greenwich Universities. Her UK and international research seeks to address issues of social justice and migration as in the UKRI-funded Gender, Justice and Security Hub where she undertook work in the Middle East and South Asia (2019-2024), the UKRI/Horizon Europe DYNAMIG. How migration decisions are made: diverse aspirations, trajectories and policy effects (2023-2025) and the AHRC Co-creating asset and place-based approaches to tackling refugee and migrant health exclusion (2024-207) which involves local research in London. She is also active in Social Scientists Against the Hostile Environment. She has published widely on diverse aspects of gender and migration, such as skilled and family migration, on post-Brexit migration policies and on gender and the right to the city. She has co-authored books such as Gender Migrations and Global Social Reproduction, Palgrave Macmillan, 2015 and Gender and Migration, Springer, 2022. She is on the Executive Board of IMISCOE, International Migration Research Network, the largest interdisciplinary network of scholars in the field of migration.

Matthew Maxwell

Matthew is an artist and designer with 25 years of hands-on experience in the business of interaction. He has led digital research and design projects for global corporations, spunky start-ups, government ministries, banks, retailers, and deep tech vendors.

In parallel, his artwork has been exhibited internationally and is represented in private and public collections, including the Fowler Museum, UCLA, Musée des Tapisseries, Aix-En-Provence, Victoria & Albert Museum and the Tate Gallery book collection.

A passionate teacher and learner, he read Fine Art at Oxford University and is currently pursuing a PhD at Middlesex University, London, looking at the impact of Generative Artificial Intelligence in contemporary art practice.

Dandan Han

Dandan Han is a PhD candidate in Marketing at Middlesex University, where her research focuses on artificial intelligence and consumer behaviour. She has also worked as a Student Learning Assistant and an Event and Social Media Coordinator at Middlesex University.

She has ten years of practical experience in digital marketing, advertising, content creation, storytelling, and branding across education, social media, retail, and the hospitality industry. Over the last ten years, she has served almost 200 B2B clients and over one hundred thousand B2C global clients, attaining a 70% consumer satisfaction rate and a 55% repurchase rate.

She is currently the Chief Marketing Officer for two start-ups in China.

Special Thanks

The Postgraduate Researchers' Summer Conference is an endeavour that comes to life every year for more than a decade (with one unfortunate but unavoidable exception in year 2020). We thank Nicola Skinner and Monica Millan for their invaluable support and hard work.

We are grateful for the Organising Committee for aiding us with their insights and wealth of knowledge:

Dr. Anna Charalambidou, Prof. Diane Purchase, Prof. Juan Carlos Augusto, Prof. Kate Maguire, Kerrie O'Connor, Prof. Kurt Barling, Dr. Leena Robertson, Dr. Nic Fryer, Dr. Nicky Payne, Dr. Nico Pizzolato, Dr. Noha Saleeb, Pam Hodge, Prof. Paul Gooderham, Dr. Paula Nottingham, Dr. Purav Shah, and Dr. Stefanie Sachsenmaier

We would like to express our thanks to the reviewers for their time to review and provide feedback for the submitted abstracts:

Dr. Ramona Trestian, Dr. Liang Liu, Dr. Stefanie Sachsenmaier, Dr. Paula Nottingham, Prof. Carol Costley, Dr. Leena Robertson, Prof. Diane Purchase, Dr. Konstantinos Priporas, Dr. Leandro Sepulveda, Prof. Juan Carlos Augusto, Dr. Bastien Chabe-Ferret, Dr. Anthony Turner, Dr. Alice Donald, Dr. Helen Hingley-Jones, Dr. Nicola Payne, and Prof. Paul Gooderham.

Parallel presentation sessions will be chaired by:

Dr. Juan Carlos Augusto, Dr. George Defoulas, Prof. Diane Purchase, Dr. Kate Maguire, Dr. Kevin McDonald, Pamela Hodge, Dr. Lygeri Dimitriou, Dr. Huw Jones, Dr. Paula Nottingham, Dr. Anthony Turner, Dr. Bastien Chabe-Ferret, Dr John Timberlake, Dr. Helen Roberts, Dr Aboubaker Lasebae, Prof. Paul Gooderham, Dr Steffi Sachsenmaier, Dr. David Westley, Dr Alistair McBeath, Dr. Bheshaj Kumar Ashley Hoolash, Dr. Stephen Hall, Dr Alechia Van Wyk, Dr. Ahmet Celen, Dr. Liang Liu, Dr. Nicola Payne, Dr. Mandeep Dhami, Kajal Mistry, Tasneem A. Akbar, Elham Mousavinezhad Sarasia, Abdallah Khalifa Mahdi, Flaviana Manta, Andrew Waller, Enock Sakyi Owusu, Phillippa Weekes, Parvaneh Delavari, Thomas Dutta, Margaret Olugbaro, Mayukh M Saham, Robin Parsons, Akashdeep Ganguly, Tsitsi Elaine Tsopotsa, Anas QS Salah, Rebecca L. J. McPherson, Gesajda Asllani, Dominique Rivoal, Stewart Frost,Tofig Shahniyarov, Mayukh M Saha, Yvonne M Langkamer, Tendai Gwenhure, Andrew Grimmer, Stephen Agada, Loay A Hannoudi, Adrian Jervis, Irena Ceko Marko, Olgica Dojchinoska Momirovska, Ivan Purnev, Malcolm Phillip Bevan, Nasreen Bashraheel Ep. Oslislo, Stacie Nicole Simmons, Kezban Alpan, Neelofer Mashood, Vandana Beessoo, Maria Flora Toneatto, Kerrie L. Alanen, Obinna Iwuchukwu, Syeda Bushra Ali Rizvi, Claire Gellard, Ivan Purnev.

Conference Programme

3 July 2024 - Hendon campus	4 July 2024 - online
09:00-09:30 Registration and welcome refreshments (Quad) **9:30-09:45** Opening & Welcome from Chairs **09:45-10:55** Welcome from VC Shân Wareing and keynote address from Neelam Raina, Director of Research, RKEO (Lecture theatre CG77) **11:00-12:30** Parallel sessions 1 (see programme for rooms) **12:30-13:30** Lunch (Quad) **13:30-15:00** Parallel sessions 2 (see programme for rooms) **15:00-15:30** Tea/Coffee (Quad) **15:30-17:00** Parallel sessions 3 - Poster Expo (see programme for rooms) **17:00** Evening reception (Grove Atrium) **17:30** special screening and Q&A between Clare and Dominique about the Hackney Marshes installation **All day:** installations by Dominique Rivoal and Georgia Clemson	**09:20-9:30** Welcome **09:30-10:30** Keynote address by Steve Fuller, Auguste Comte Chair in Social Epistemology, University of Warwick Hosted in PRSC 2024: Online Classroom 4 Zoom link: https://mdx-ac-uk.zoom.us/j/91909981152?pwd=JVhP0ff0BIUa3ywR4Wwo9ie8ZWLwjn.1 Meeting ID: 919 0998 1152 Passcode: 306351 **10:30-12:00** Parallel sessions 4 (see programme for rooms) **12:00-12:30** Break for lunch **12:30-13:30** Parallel sessions 5 (see programme for rooms) **13:30-13:45** Break for Tea/coffee **13:45-14:45** Parallel sessions 6 (see programme for rooms) **14:45-15:45** Closing plenary session, hosted by Anne Boddington Hosted in PRSC 2024: Online Classroom 4 Zoom link: https://mdx-ac-uk.zoom.us/j/91909981152?pwd=JVhP0ff0BIUa3ywR4Wwo9ie8ZWLwjn.1 Meeting ID: 919 0998 1152 Passcode: 306351

Parallel Sessions

Day 1 – 3 July 2024

Parallel Session 1: 11:00 - 12:30 Session

Session	Room	Chairs (**Staff**/Student)	Presentation
1A	**C104**	**Juan Carlos Augusto** Kajal Mistry	**Ian Kruger** Enhancing Organisational Success: An Actor-Network Theory Analysis of Data Analytics Adoption and its Impact on Business Outcomes. **Mae Antonette Ticar** Enhancing Mathematical Creativity Through Argumentative Discourse-centred Classroom: A Paradigm Shift in Mathematics Education. **Annisa Ristya Rahmanti** Physician Empathy Prediction Through Facial Mimicry: Spontaneous Mimicry Analysis in Clinical Video Data.

Session	Room	Chairs (**Staff**/Student)	Presentation
1B	C106	**George Defoulas** Elham Mousavinezhad Sarasia	**Amjad Alam** Energy-Efficiency Optimisation of Joint Computational Task Offloading and Resource Allocation using Particle Swarm Optimisation Approach in Vehicular Edge Networks **Thi Thu Hang Nguyen** Improved PMME medium access control protocol for multi-event wireless sensor networks by adaptive adjustment. **Inas El-Aroussi** Optimising Wireless Power Transfer (WPT) System for Critical Medical Equipment in Intensive Care Unit (ICU). **Nuhu F Chiduo** Reconfigurable Intelligent Surfaces (RIS) For 6G.
1C	C107	**Diane Purchase** Abdallah Khalifa Mahdi Enock Sakyi Owusu	**Niayesh Nejatali** Enhancing Sustainable Asset Management: A Comparative Literature Review on Industrial Buildings **Gabriela P Martinez Ortega** Collaboration in International Projects: Effects of Immersive Virtual Environments on Communications in the Construction Phase.

Session	Room	Chairs (**Staff**/Student)	Presentation
1D	C110	**Philip Jefferies** Flaviana Manta Phillippa Weekes	**Ho Ming Yip** Comparison between English and Chinese Mathematics Education in Modern Era from a Cultural and Historical Perspective. **Azam Ali** An Interpretative Study Investigating the Drivers and Inhibitors of Innovative Assessment Practices Within Faculties (departments) Offering Undergraduate Business and Management Generalist Degrees in the UK Higher Education **Philip Jefferies** Using a Book Club Methodology as a Research Method on How Picture Books are Used as a Tool to Support the Understanding of LGBTQ+ Issues
1E	C205	**Nicola Payne** Andrew Waller Parvaneh Delavari	**Thanh Thi Kim Nguyen** Effects of Metacognitive Reading Strategy Instruction on Second Language Reading Comprehension and Motivation: A Meta-analysis and a Teaching Intervention **Judina G Smith** Using Arts-Based and Visual Methods as Part of a Mixed-Methods Study into What We Can Learn from Further and Higher Education Students' Lived Experiences of Attempted Suicide

Session	Room	Chairs (**Staff**/Student)	Presentation
1F	**C206**	**Kate Maguire** Yvonne M Langkamer	**Ellouise L Long** Developing a definition and typology of trolling. **Ellouise L Long** Considering Trolling in Interaction: A Discourse Analysis **Mike Kelly** To Develop a Strategic Response to the UK Government's Proposed Changes to the Administration of Summary Justice in England and Wales **Delphine Garr** Is Compassionate Leadership the Wonder Drug for the NHS? **Vicente Lorenço de Góes** Becoming Complex - Pathways to an Ontological Approach to Complexity in Organisational Practice.

Session	Room	Chairs (**Staff**/Student)	Presentation
1G	**C207**	**Kevin McDonald** Margaret Olugbaro	**Leena D Mohandas** Exploring The Phenomenological Experiences of Second Generation British Indian Women Becoming Counselling Psychologists In The UK – A Pilot Study. **Andrew Grimmer** A Personal Odyssey: Trainee and Recently Qualified Cognitive Behavioural Therapy (CBT) Practitioners' Perspectives on Postgraduate CBT Training and Its Contribution to Competence **Mabel B Verstraaten-Bortier** My Heuristic Research Healed Me: A Retrospective Autoethnographical Study of my Professional Doctorate (DProf) Journey **Alan S McPherson** A Contextual Exploration of Counsellors, Psychotherapists and Counselling Psychologists' Who Are Interested or Engaged in Creating and Publishing Research

Parallel Session 2: 13:30 - 15:00

Session	Room	Chairs (**Staff**/Student)	Presentation
2H	**C104**	**Pam Hodge** Robin Parsons Akashdeep Ganguly	**Pam Hodge** A Qualitative Study Exploring Care Home Residents' Experience of Being Cared For By and Interacting With Nursing Students **Robin Parsons** From Changing Childbirth to Better Births: A Critical Discourse Analysis of Maternity Policies in the NHS **Michael O'Driscoll** Analysing newspaper articles - methodological and practical challenges
2I	**C106**	**Lygeri Dimitriou** Alechia Van Wyk Ahmet Celen	**Self-Organised Symposium:** Exploring Health Determinants in Multi-Ethnic Young Adults: Body Composition, Strength, and Physical Activity **Augustinas Zibuda** Estimates of Body Composition Between a Three-Dimensional Body Scanner and a Multi Frequency Bioelectrical Impedance Across Various Races and Ethnicities **Hemda Gabai** Association between Handgrip Strength and Arterial Stiffness in Young Adults: Perspectives on

Session	Room	Chairs (**Staff**/Student)	Presentation
			Cardiovascular Health Preventive Measures.
			Rita Rufus Obesity and Cognitive Impairment in Young Adults: Exploring the Role of Adiposity and Physical Activity.
			Michelle Brunetti Clinical Audit of the Effectiveness of 'Maximum-Fixed' vs 'Low-Escalating' Energy Selection, For Direct Current Cardioversion of Atrial Fibrillation Patients
2J	**C107**	**Sandra Appiah** Abdallah Khalifa Mahdi	**Michal Rudich** The Impact of Plant-Based-Protein Rich Diet vs. Omnivore Diet, on the Severity of Clinical Symptoms During Menopause
			Shadi Khonsari Investigation of genetic influence and impact of biosurfactants on biofilm formation in Salmonella Typhimurium on polypropylene surfaces
			Nitika Nathaniel Development of an Antibody-Based Biosensor for the Detection of the Lowest Therapeutic Drug Concentration of Antibiotic Meropenem in Critically Ill patients Using a Point-Of-Care Device

Session	Room	Chairs (**Staff**/Student)	Presentation
2K	**C110**	**Liang Liu** Tsitsi Elaine Tsopotsa Anas Salah	**Carlo Lazzari** Borderline Personality Disorder and Enriching Population Lives Through Research Based on Work-Based Learning. **Anas Salah** The use of Clinical Audit Cycle for Improvement in Abu Dhabi Health Service Company "SEHA". **Anthony Meehan** An Exploration of Parents' Perception of Pupil Referral Units (PRUs) In the Development of Parent Voice and Authentic, Productive and Lasting Partnerships **Tricia McQuarrie** National Survey of the Implementation of Contingency Management in Drug and Alcohol Treatment Services in England.
2L	**C205**	**Huw Jones** Elham Mousavinezhad Sarasia	**Mohammad Reza Dawoudi** Exploring the Dynamics of Ventricular Function to Unravel the Pathogenesis of Hypertrophic Cardiomyopathy. **John Nursiah** Cardiac Troponin Biosensor Development for The Early Diagnosis of Myocardial Infarction. **Alejandra Gonzalez Baez** Moulding the Future: Sustainable Recovery of Rare Earth Elements From

Session	Room	Chairs (**Staff**/Student)	Presentation
			Electronic Waste Through Fungal Bioleaching
2M	**C206**	**Tasneem A Akbar** Rebecca L J McPherson Gesajda Asllani	**Ivan P Punev** In Vitro Cell Signalling Modulation Using Combination of Doxorubicin with Baicalein in Myeloid Leukaemia – Preliminary Studies **Dora Vidalina** The Effectiveness of EZH2 Inhibitors in Treating Human Papillomavirus Associated Cancers and Associated Pathways **Duncan J Allardyce** Characterisation of Argyrin B Treatment in Vitro Response. **Eriola Diku** Development of the Chick Chorioallantoic Membrane (CAM) to Assess Angiogenesis and Metastasis in Osteosarcoma and Bladder Cancer

Session	Room	Chairs (**Staff**/Student)	Presentation
2N	**C207**	**Anthony Turner** Dominique Rivoal Stewart Frost Syeda Busha Ali Rizvi	**Syeda Bushra Ali Rizvi** A Comprehensive Mixed-Methods Study on Combating Physical Inactivity and Metabolic Syndrome **Stephen Orwin** Developing an Exercise Protocol for Elderly Care Home Residents with Parkinson's Disease: A Stakeholder Analysis. **Emanuela Bove** Reconceptualising Food Confusion Through a Biosemiotic Lens. **Jibril Salifu** Value Co-Creation Approaches to Place Branding: The Role of Digital Engagement.
2O	**C210**		**Nico Pizzolato and Kurt Barling** 3 Minute Thesis Pitch

Parallel Session 3: 15:30 - 17:00

Session	Room	Chairs (**Staff**/Student)	Presentation
3P	C104	**Helen Roberts** Akashdeep Ganguly	**Akashdeep Ganguly** Investigating Metastatic Potential: An Analysis of Migratory Body Formation in Chondrosarcoma. **Elham Mousavinezhad Sarasia** Biological Effects of Synthetic Biomolecules that May Either Mimic or Antagonise the Function of hCG In the Development of Cancer and Autoimmune Disease **Ceana Siljan** The Effects of Electronic Cigarettes on Endothelial Function: A Systematic Review and Meta-Analysis

Session	Room	Chairs (**Staff**/Student)	Presentation
3Q	**C106**	**Bastien Chabe-Ferret** Enock Sakyi Owusu Mayukh M Saha Tofig Shahniyarov	**Jo Cheesman and Donna Reddy** Enriching Lives through Peer Pair-Work: Insights from Transdisciplinary Practice Research. **Inas Ahmed** Examining Problematic Social Networking Site Use and its Associated Behaviours. **Noreen Dove** The Story of Black Women in Academia in the UK; Shifting From Invisibility to Visibility
3R	**C107**	**John Timberlake** Tsitsi Elaine Tsopotsa Parvaneh Delavari	**Matthew Maxwell** Elizabethan Cybernetics **Qingyu Shen** Challenges and Reconstructions: Femininity in Contemporary Chinese Art from the 1990s to the Present **Donal Pyne** An Existential Phenomenological Exploration of the Psilocybin Experience.

Session	Room	Chairs (**Staff**/Student)	Presentation
3S	C110	**Paul Gooderham** Claire Gellard	**Tasneem Akbar** Investigating Attention in Adults with ADHD ~~**Neelam K Ghuman**~~ ~~Beyond Work-Family Conflict: Work-Life Balance Supports for Employees with Differing Family Structures.~~ **Yvonne Langkamer** Towards a Biosemiotics of Trauma.
3T	C205	**Steffi Sachsenmaier** Dominique Rivoal	**Dominique C Rivoal** Sharing Process: A Somatic Approach to Filming. **Shicong Xie** Perceiving Time: Raising an Awareness of Time via the Frame Gap in Experimental Film **Sarah Onafuye** Strong Women Don't Have the Blues
3U	C206	**David Wesley** Tendai Gwenhure Andrew Grimmer	**Andrew Waller** Experiences of overweight and obese men and subsequent influences on their cognitive processes and emotions. **James Collins** Exploring encounters with 5-MeO-DMT among experienced psychedelic users — An Interpretative Phenomenological Analysis. **Neresia Osbourne** For Those Who Die Every Night and Wake Up in the Morning: Exploring the Lived

Session	Room	Chairs (**Staff**/Student)	Presentation
3V	**C207**	**Aboubaker Lasebae** Elham Mousavinezhad Sarasia Ivan Purnev	Experience of Black Mothers who Endure Traumatic Births, Resulting in Brain-Injured Children, in the Medico-Legal Field **Mohammad E Hashimyar** Deep Learning based Intrusion Detection System for IoT Application Protocol. **Kannan Manikandan** Leveraging Digital Twin for Enhanced Efficiency, Sustainability, and Connectivity in AI-driven Automations.

* Evening reception (Grove Atrium): 17:00

* Screening and Q&A with Clare and Dominique: 17:30

* Installations by Dominique Rivoal and Georgia Clemson: All day

Parallel Session 4: 10:30 - 12:00

Session	Room	Chairs (Staff/Student)	Presentation
4W	PRSC 2024: Online Classroom 1 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/94432646932?pwd=2eZOz9sy7R0ok8ClNAetwEMqlsaCXg.1 Meeting ID: 944 3264 6932 Passcode: ys62dn	**Dr. Alistair McBeath** **Dr. Deborah Bailey-Rodriguez**	**Self Organised Symposium: Enriching Lives through Psychotherapy Research** **Lisa Champion** The Self Appearing: A Hermeneutic Phenomenological Study Of How Humanistically-Informed Psychotherapists Experience Themselves Emerging In The Therapeutic Encounter **Claire Spiller** On Being-In-The-Digital World: Mixed Methods Research Into The Phenomenology Of Gestalt Psychotherapy Online **Alan S McPherson** Enriching Lives Through Psychotherapy Research: Embracing The Researcher Within The Therapist

Session	Room	Chairs (Staff/Student)	Presentation
4X	PRSC 2024: Online Classroom 2 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93393953502?pwd=1WyOagCbk4IoxebQINiqX9XQiBTCfU.1 Meeting ID: 933 9395 3502 Passcode: 204902	**Juan Carlos Augusto** Stephen Agada Adrian Jervis Irena Ceko Marko	**Sailendra Ramanna** EEG Signal processing Using Dynamic Mode Decomposition and Convolutional Neural Networks. **Stephen J Hall** Generative Transformers, Vector Databases and Large Language Models: A Case for AI in Micro Enterprise Knowledge Management Systems. **Silviu T Marc** An Evolutionary Approach to Automated Class-Specific Data Augmentation for Image Classification. **Daryn Fitz** Data Quality Enhancement Of Assets In The Built Environment: A Conceptual Framework To Enrich Asset Data Quality Based On Organisation Criticality Assessments

Session	Room	Chairs (Staff/Student)	Presentation
4Y	PRSC 2024: Online Classroom 3 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93316924479?pwd=8rB1rX0nYDbSY1iLzwagJxSjTjYbiv.1 Meeting ID: 933 1692 4479 Passcode: 712083	**Bheshaj Kumar Ashley Hoolash** Loay A Hannoudi Olgica Dojchinoska Momirovska	**Geethu Joy** Parameter Tuning of Nature Inspired Meta Heuristic Algorithms. **Alessandro Bigiotti** Blockchain Enabled Trustworthiness and Remote Control from Digital Twins to Cyber Physical Systems in Industry 4.0. **Praveer K Towakel** Deep Combination of Radar With Optical Data for Gesture Recognition: Role of Attention in Fusion Architectures. **Nkechi A Ndudirim** Critical Analysis of Integrating Digital Twins with Existing Assets' Data Systems and Platforms in Social Housing.

Parallel Session 5: 12:30 - 13:30

Session	Room	Chairs (Staff/Student)	Presentation
5Z	PRSC 2024: Online Classroom 1 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/94432646932?pwd=2eZOz9sy7R0ok8CINAetwEMqlsaCXg.1 Meeting ID: 944 3264 6932 Passcode: ys62dn	**Stephen Hall** Malcolm Phillip Bevan Tendai Gwenhure	**Omar OZ Zammit** Improving Student Experience: A Collaborative Framework for Predictive Information Retrieval. **Faten Alzazah** Multi-Modal Data Fusion for Advanced Stock Market Prediction. **Kezban Alpan** Image Enhancement to Improve Image Segmentation Performance Detecting Historical Subgroup of Ovarian Cancer.
5- Alpha	PRSC 2024: Online Classroom 2 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93393953502?pwd=1WyOagCbk4IoxebQINiqX9XQiBTCfU.1 Meeting ID: 933 9395 3502 Passcode: 204902	**Kate Maguire** Nasreen Bashraheel Ep. Oslislo Stacie Nicole Simmons Neelofer Mashood	**Maria Flora Toneatto** Narratives of Navigating Failure as a Liminal Space for Transformation and Well-being among Entrepreneurial Leaders. **Patricia Friberg** The Brushstrokes of Relationship.

Session	Room	Chairs (Staff/Student)	Presentation
5-Beta	PRSC 2024: Online Classroom 3 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93316924479?pwd=8rB1rX0nYDbSY1iLzwagJxSjTjYbiv.1 Meeting ID: 933 1692 4479 Passcode: 712083	**Nic Fryer**	**Kerrie L Alanen** Leading Through Fear: A Self Organised Symposium

Parallel Session 6: 13:45 - 14:45

Session	Room	Chairs (Staff/Student)	Presentation
6-Gamma	PRSC 2024: Online Classroom 1 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/94432646932?pwd=2eZOz9sy7R0ok8ClNAetwEMqlsaCXg.1 Meeting ID: 944 3264 6932 Passcode: ys62dn	**Kevin McDonald** Kezban Alpan Vandana Beessoo	**Abimbola A Ajiboye** The Legal Validity of Digital Signatures in Arbitration Agreements and Arbitral Awards in England: A Discussion on Recent UK Legislation (Law Commission Report and Draft Bill of the Arbitration Act1 1996) **Adrian Jervis** Enriching Lives Through Research – Dialogue And Disagreement In The Reception of Saint Augustine (354-430) In The Work Of Gustaf Aulén (1879-1977).

Session	Room	Chairs (Staff/Student)	Presentation
			Kars C Dodds TRASH-GENDER: The Use And Reuse Of Disposed Material For Trans-Gender Performance Activism.
6-Delta	PRSC 2024: Online Classroom 2 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93393953502?pwd=1WyOagCbk4IoxebQINiqX9XQiBTCfU.1 Meeting ID: 933 9395 3502 Passcode: 204902	**Mandeep Dhami** Stephen Agada Obinna Iwuchukwu	**Mahensingh Deonaran** Effect of Cognitive Modes of Expression And Expert Domain On Perceptions of Expert Credibility **Michaela Zliehovcova** Exploration of The Existential Themes In The Lived Experience of People With Love Addiction **Neelofer Mashood** Leveraging Ideological Beliefs In The Employee – Organisation Relationship To Promote Sustainable Employee Behaviours
6-Epsilon	PRSC 2024: Online Classroom 3 Join Zoom meeting: https://mdx-ac-uk.zoom.us/j/93316924479?pwd=8rB1rX0nYDbSY1iLzwagJxSjTjYbiv.1	**Paula Nottingham** Maria Flora (Meriflor) Toneatto Kerrie L. Alanen Tom Dutta	**Helen Jervis** Navigating apprenticeships in Higher Education **Carollyne Conlinn** Where's the Juice? The Inner Game of Enriching Research

Session	Room	Chairs (Staff/Student)	Presentation
	Meeting ID: 933 1692 4479 Passcode: 712083		

Poster Expo

In the Quad – 3rd July, 15:30 - 17:00

Abimbola Ikukoyi

Cardiovascular Risk Associated with Vaping and Smoking Among University Students

Aein Khezriazizifar

Exploring Iran's Legal Responses to Terrorism: A Shia Perspective and Policy Analysis

Ahmed Eissa

Elimination of Racial Profiling Using AI: An Investigation of Racial Profiling Using AI

Alan S McPherson

The Silent Practice: A Mixed-Methods Exploration of the Absence of Practising Counsellors, Psychotherapists and Counselling Psychologists Contributions to Research

Anas Salah

Leading Change in Staff Perception of Quality in Healthcare in the UAE: The Relationship Between Organisations' Safety Culture and Staff Perception of Quality in UAE Healthcare.

Anushkaa Mishrra

Identification of Flavouring Chemicals in E-Liquids Using LC-MS and Investigating Their Impact on Airway Epithelial Cells

Ariadni Tsiakara

Enriching Lives Through Data Analytics in Education.

Duong Huong Nguyen

Deep learning for structural health monitoring

Elise M Heinz

Hidden Seashore Diversity – Cryptic Speciation in the Genus Anurida (Collembola)

Jacqui C Ison Parsell

Does Competitive Dance Have a Role in Education, and Should Experiential Learnings from Competitive Dance be Accredited as Educational Qualifications?

Jennifer Chacon Lopez

Investigating the Influence of Distractions Whilst Engaging in Social Media – An EEG Project

Kajal Mistry

Tracking the Learning Path: Unveiling Affective Computing, Counterfactual Thinking, and Eye Tracking in Education.

Maali Alanazy

Exploring Anti-Cancer Effects of Thymoquinone and its Mechanism via EGFR Pathway in Colorectal Cancer Cells

Merve Çetinkaya

Meaning and Purpose in Life in Individuals Diagnosed with Alcohol Use Disorder: A Mixed Methods Study.

Prabhashana Gunathilake

CSR Practices of SMEs in Post-Economic/Political Crisis Sri Lanka

Samaneh S Serpooshan

Exploring Flood Vulnerability Disparities: A Comparative Study of Social Flood Risk in Disadvantaged and Less Disadvantaged Areas - Challvey Chalvey vs Burnham, and Farnham Royal

Stewart M Frost

Police Education: Does initial training deliver or diminish police pedagogy? Correct title: Police Education: Serving communities or serving tradition?

Vanessa Sofia Amaral Lopes Simoes

How Do Neural Responses to Touch in Peri-Personal Space (PPS) Change During a Social Compared to a Non-social Task: Measured Using EEG and Presented in a Virtual Reality Environment?

Vijay Simha Reddy Chennareddy

A Transformer-Based Q&A Systems for Legal Documents

Vijay Simha Reddy Chennareddy

Extracting Key Information from Appeal Court Documents by Using Transformer Models.

Abstracts

*Please note that the chair allocation to sessions will be updated ahead of the conference. You will be able to check the latest allocations at https://unihub.mdx.ac.uk/study/types/research-at-middlesex/research-student-conference/rssc-abstract-submission

Day 1 – 3 July 2024 (on Hendon campus)

Session 1-A

Ian Kruger

Enhancing Organisational Success: An Actor-Network Theory Analysis of Data Analytics Integration and Its Impact on Business Outcomes

Supervisors: Assoc. Prof. Bob Field and Clifford De Raffaele

Research from the Industry indicates that Data Analytics projects are not meeting the expectations of the technology and investments by a significant margin. Being dependent on organisational data, the organisational dynamics around its creation, use and sharing outweigh the technical solutions when determining root causes for project failure.

This presentation explores the reasons for, benefits, challenges and potential limitations of applying actor-network theory (ANT) as a framework for analysing how data analytics becomes institutionalised as an organisational capability or fails to do so. It is argued that ANT offers a unique lens through which to examine the nuanced and complex ways in which the social and technical are interwoven that defy conventional methods.

We begin with looking at the phenomena under study and why conventional methods of analysis that emphasise either the technical or the social, are fundamentally flawed. Next, we review existing literature, assessing how ANT has been previously operationalised as a method to analyse similar phenomena. We propose an approach that combines Callon's sociology of translation with Latour's translation of operations and his later work on the five controversies. This synthesis addresses questions about network complexity, technology as an actor and the evolution of data analytics innovation within organisations. Furthermore, we will explore the ability of this framework to accommodate other useful socio-technical concepts to come from HCI research, in particular Boundary Objects.

Finally, we will then apply this ANT analysis to at least one case where an analytical project failed to reach resolution, to critique its usefulness in capturing a nuanced account that balances the technical and political reasons why the project failed in a useful way.

By applying ANT to organisational data strategy analysis, this research contributes to enriching lives by offering insights into improving how analytic practices can be successfully institutionalised. Our findings aim to foster more effective decision-making processes within organisations that are grounded in a comprehensive understanding of the dynamic interplay between various actors in their data ecosystems.

Keywords: Data Analytics, Actor-network theory, Sociology of Translation, socio-technical graphs, Boundary Objects.

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Mae Antonette Ticar

Enhancing Mathematical Creativity Through Argumentative Discourse-centred Classroom: A Paradigm Shift in Mathematics Education

Supervisors: Dr. Serengul Smith and Dr. Kelly Androutsopolous

In response to the persistent challenge of improving mathematics education in the Philippines, this study investigates the efficacy of an innovative pedagogical approach, i.e,the Argumentative Discourse-centred Classroom model,in enhancing students' mathematical creativity. Despite ongoing curriculum reforms by the Department of Education, the Philippines continues to grapple with low mathematics achievement on both national and international assessments. The urgency of this issue is underscored by the Programme for International Student Assessment (PISA) 2018 results, which revealed the Philippines lagging behind its global counterparts in mathematical proficiency. This study aims to address this national concern by examining the impact of argumentative discourse-centred instruction on students' mathematical creativity. Employing a pretest-posttest quasi-experimental control

group design, the study compares the outcomes of students exposed to the Argumentative Discourse-centred Classroom model with those taught using the conventional DepEd 4A's model. Participants' mathematical creativity is assessed through an 8-item open-ended problem-solving test, focusing on fluency, flexibility, and originality of solutions. Statistical analysis, including mean, standard deviation, and ANCOVA Equal n's, reveals comparable scores between the experimental and control groups. Importantly, findings suggest that the Argumentative Discourse-centred Classroom model offers a promising alternative for mathematics instruction in the Philippines. This research underscores the relevance of pedagogical innovation in enriching lives through education. By fostering argumentative discourse, students are empowered to articulate their mathematical reasoning, communicate ideas effectively, and engage in collaborative problem solving. Beyond enhancing academic achievement, this approach cultivates essential skills such as critical thinking, creativity, and oral communication,qualities vital for success in today's dynamic, interconnected world. The implications extend beyond mathematics education, advocating for the integration of argumentative discourse-centred approaches across various disciplines. Embracing this model not only revitalises teaching practices but also nurtures a culture of active learning and intellectual exchange, ultimately enriching the lives of students and educators alike.

Keywords: argumentative discourse-centred classroom, 4A's, mathematical creativity, quasi-experimental, Philippines.

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Annisa Ristya Rahmanti

Physician Empathy Prediction Through Facial Mimicry: Spontaneous Mimicry Analysis in Clinical Video Data

Supervisors: Prof. Yu-Chuan Jack Li, Prof. Xiaohong W Gao, Prof. Huan X Nguyen, and Assoc. Prof. Lutfan Lazuardi

Methods: The study utilised 150 clinical video recordings from dermatology outpatient clinics at Taipei Medical University Hospital and Taipei Municipal Wanfang Hospital. Facial Emotion Recognition (FER) system, incorporating a deep learning-based face detector using MobileNetV2, was used to identify seven basic emotions: anger, disgust, fear, neutral, happy, sad, and surprise. The FER system, with 95% accuracy on the extended Cohn-Kanade dataset, detects real-time emotional matching between physicians and patients, assuming that physicians naturally mirror the emotions expressed by their patients without any delay. Machine learning algorithms, including Logistic Regression, Light Gradient Boosting Machine, Random Forest Classifier, Naive Bayes, Extreme Gradient Boosting, K Neighbors Classifier, and Multilayer Perceptron, were employed to predict physician empathy based on these facial mimicry patterns. The Jefferson Scale of Empathy (JSE) was administered to rate physicians' empathy levels, which were then used to classify the

empathy levels. A 10-fold cross-validation technique ensured robustness and validity in model evaluation.

Findings: Machine learning algorithms demonstrated promising results in predicting physician empathy levels, indicating the potential of leveraging facial mimicry and emotional matching to enhance empathic communication in healthcare settings. Specifically, the Logistic Regression model exhibited the best performance, with AUC values observed to be 0.82, 0.46, and 0.84 for class 0 (low empathy), class 1 (medium empathy), and class 2 (high empathy), respectively. This indicates a high degree of discriminative ability for predicting low and high empathy, while the model's performance was less accurate in classifying medium empathy.

Conclusion: These findings offer valuable insights for improving physician-patient interactions and patient outcomes. Future research should incorporate tone of voice analysis to provide a more comprehensive understanding of physician-patient interactions, as facial expression, while dominant, is not the sole factor in emotional communication.

Keywords: facial mimicry, physician empathy, artificial empathy, clinical video database, emotional matching.

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Session 1-B

Amjad Alam

Energy-Efficiency Optimisation of Joint Computational Task Offloading and Resource Allocation using Particle Swarm Optimisation Approach in Vehicular Edge Networks

Supervisors: Dr. Purav Shah, Dr. Ramona Trestian, Dr. Kamran Ali, and Dr. Glenford Mapp

With the progression of smart vehicles, i.e., connected autonomous vehicles (CAVs), and wireless technologies, there has been an increased need for substantial computational operations for tasks such as path planning, scene recognition, and vision-based object detection. Managing these intensive computational applications is concerned with significant energy consumption. Hence, for this article, a low-cost and sustainable solution using computational offloading and efficient resource allocation at edge devices within the Internet of Vehicles (IoV) framework has been utilised. To address the quality of service (QoS) among vehicles, a trade-off between energy consumption and computational time has been taken into consideration while

deciding on the offloading process and resource allocation. The offloading process has been assigned at a minimum wireless resource block level to adapt to the beyond 5G (B5G) network. The novel approach of joint optimization of computational resources and task offloading decisions using the meta-heuristic particle swarm optimization (PSO) algorithm and decision analysis (DA) to find the near-optimal solution. Using MATLAB software, the performance of the proposed algorithm has been evaluated in comparison with different algorithms, i.e., computation task offloading and resource allocation (CTORA) algorithm, computation offloading decision optimization (CODO) algorithm, and the heuristic scheme algorithm in terms of computational efficiency and latency. The performance analysis reveals that the numerical results outperform existing algorithms, demonstrating an 8%, and 5% increase in energy efficiency. We would expand our research in the future to investigate and use other optimisation approaches such as Sequential Quadratic Programming (SQP) or Genetic Algorithms approach to enhance long-term delay performance and fortify the job offloading procedure along with the combined use of mmWave and 5G NR communications.

Keywords: Energy efficiency, meta-heuristic algorithm, Heterogeneous Vehicular network, Particle swarm optimization, task offloading, Computation resource allocation, and vehicular edge computing.

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Thi Thu Hang Nguyen

Improved PMME Medium Access Control Protocol for Multi-Event Wireless Sensor Networks by Adaptive Adjustment

 Supervisor: Prof. Huan Nguyen

Multi-event wireless sensor network (MWSN) is an important component in the digital twin system, it is used to transmit information from sensors to the monitoring and control management system. In this network, information from multiple sensors can simultaneously request quality of service (QoS) provisioning with different priorities, in particular, some information needs to be transmitted in real time and with high reliability. For the Carrier Sense p-persistent Medium Access Control (MAC) protocol, value p is used to avoid the risk of collisions and improve network efficiency but traditionally it just considers as the inversion number of concurrent senders. In this paper, we propose advanced p-values varied by different priority levels and different number of concurrent sending nodes so that higher-priority data is guaranteed better QoS in terms of latency and packet success rate. Analysis and simulation in discrete event simulator named Castalia show that our proposed preferred MAC protocol for Advanced Priority MAC protocol for Multi-Event wireless sensor networks (APMME) with modified p-values out performs other two MAC protocols for multi-event wireless sensor networks which are Timeout Multi-priority

based MAC TMPQ, and Priority MAC protocol for Multi-Event wireless sensor networks PMME. APMME significantly reduces the packet delay over other two MAC protocols while guaranteeing high packet success rate and network energy efficiency. The research can be applied to multi -event wireless sensor networks to respond to real-time urgency events while ensuring the reliability and saving energy for the network.

Keywords: wireless sensor network, medium access control, priority, simulation, performance.

Inas El-Aroussi

Optimising Wireless Power Transfer (WPT) System for Critical Medical Equipment in Intensive Care Unit (ICU)

Supervisors: Dr. Purav Shah, Prof. Richard Bayford

The integration of contemporary multipurpose devices, particularly Wearable and Implantable Medical devices (WMD and IMD), with wireless power transfer (WPT) systems is rapidly evolving. This integration addresses the inconvenience often associated with conventional power cord techniques for charging these devices. WPT technology offers a secure and comfortable solution for patients, eliminating the need for frequent battery replacements or cumbersome power cable connections. Furthermore, advancements in battery technology have bolstered the adoption of WPT, underscoring the importance of power transfer efficiency alongside sufficient power provision to Medical Devices (MD). However, challenges persist in terms of MD battery life expectancy, power output, and the invasive nature of battery replacement surgeries, particularly concerning critical monitoring WMDs. This research aims to explore recent advancements in wearable and implantable technology monitoring, emphasising real-time vital sign collection. Notably, the incorporation of physical biosensors and electronics technology into textile materials has revolutionised the monitoring of vital signs such as heart rate, oxygen saturation, blood pressure, body temperature, and respiration rate. The current challenges associated with WPT in a medical environment will be examined to highlight emerging strategies and technologies aimed at enhancing the accessibility and usability of neonatal care environments. Furthermore, a framework for the integration of critical medical devices and WPT will be synthesised and proposed, considering factors such as power efficiency, device longevity, patient comfort, systems compatibility, safety. This framework underscores the potential of WPT to enhance the functionality and usability of medical implants, mitigating the risks and discomfort associated with traditional power sources and charging methods. To develop the framework for the integration of medical devices and WPT, a comprehensive review of current technologies and methodologies will be conducted, performed

experimental evaluations of power transfer efficiency and safety, analysed user feedback on device comfort and usability. This research analyses recent developments and challenges in wearable and implantable medical technology to guide future research and development. Applications extend to continuous health monitoring and early diagnosis through improved data collection and analysis. This research aims to advance wearable and implantable medical technology, ultimately leading to improved patient care, enhanced quality of life, and better health outcomes.

Keywords: Wireless power transfer (WPT), Power transfer efficiency (PTE), Wearable medical Devices, NICU, critical monitoring.

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Nuhu F Chiduo

Reconfigurable Intelligent Surfaces (RIS) For 6G

Supervisor: Dr. Tuan Le

The evolution of wireless communication, from the first generation (1G) to the anticipated sixth generation (6G), highlights a growing demand for higher data rates, improved energy efficiency, low latency, and enhanced security. However, challenges such as coverage limitations, interference, and latency persist, hindering seamless high-speed connectivity, particularly in densely populated urban areas. These challenges underscore the importance of having innovative solutions to address and meet the evolving needs of customers by enhancing connectivity and efficiency in wireless communication, ultimately enriching users' lives.

In response to these wireless communication challenges, this study introduces reconfigurable intelligent surfaces (RIS), also known as intelligent reflecting surfaces, as a promising solution. RIS comprises numerous low-cost reflectors made of metamaterials with adjustable electromagnetic properties. This characteristic enhances coverage, energy efficiency, spectral efficiency, and reduces interference. RIS communication systems have the ability to adjust the propagation environment rather than adapting to it. By intelligently reflecting signals towards the intended user without amplification, RIS can enhance signal transmission quality while consuming less energy.

Motivated by the above circumstances, this study focuses on reducing power consumption at the transmitter as a result of enhancing the communication channel capacity. A mathematical model will be derived to establish constraints governing the operation of the RIS system, considering the phase shifts of RIS elements, the channel from the transmitter to the RIS, and the channel from the RIS to the receivers. A gradient-based alternating optimization approach will be deployed to acquire the phase shifts of the RIS elements and the power allocation so that the

total transmit power is minimised while ensuring the required quality of service (QoS) for all users.

To provide a theoretical basis for the applicability of power minimization in RIS, the performance comparison of RIS and non-RIS communication systems will be conducted. This comparison will consider power efficiency, and QoS to highlight the advantages of RIS technology. By employing this approach, the study strives to develop effective strategies for RIS implementation, thereby facilitating the practical integration of RIS technology into current and future wireless communication networks like 6G.

Keywords: Reconfigurable Intelligent Surfaces, 6-G, wireless communications.

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Session 1-C

Niayesh Nejatali

Enhancing Sustainable Asset Management: A Comparative Literature Review on Industrial Buildings

Supervisor: Assoc. Prof. Noha Saleeb and Dr.Amy Burnett

The imperative for a strategic re-evaluation of asset management practices within the industrial building sector aligns with the global push towards sustainable development. This paper conducts a comparative analysis of state-of-the-art literature, identifying existing and evolving frameworks, methodologies, sustainability principles, and practices within the context of industrial buildings' sustainable management. It delves into broader concepts such as regenerative value and the economy, reflecting a move beyond traditional sustainability models.

The primary objective is synthesising these findings to develop a framework that enhances industrial building evaluation by integrating sustainability, social, and environmental standards into strategic asset management. The research aims to align these management strategies with the United Nations Sustainable Development Goals (UN SDGs) and provide mitigation plans for three levels of carbon emissions (Scope 1-3). It also focuses on practical frameworks under the SDGs domain, such as the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Targets initiative (SBTi), highlighting synergistic potential between evaluative frameworks.

Preliminary findings from bibliographic analysis reveal a lack of a comprehensive sustainability approach and integration of advanced technologies in industrial buildings' sustainable management. These underscore the need for a robust management framework capable of effectively managing diverse metrics within the

realm of sustainable asset management, incorporating innovative methodologies, tools, and technologies such as artificial intelligence (AI) and digital twins.

Hence, this presentation will showcase literature findings, related to sustainability metrics and indicators in industrial asset management, such as carbon footprint, natural resources usage, environmental quality, focusing on how they benchmark against the UN Sustainable Development Goals. It will also highlight AI's potential to analyse complex datasets, significantly enhancing the proposed framework's effectiveness. AI has been successfully used in various building types to predict energy consumption and optimise maintenance schedules, which could be adapted for industrial buildings.

Concluding with the conference theme, Enriching lives through research, this study demonstrates the transformative potential of sustainable asset management in industrial buildings for societal well-being. Advocating for a shift towards a more inclusive sustainability perspective, it encourages a multidisciplinary approach to overcome challenges and foster innovation, aligning with global sustainability efforts.

Keywords: Sustainable Development, Asset Management, Industrial Buildings, Environmental Sustainability, Social Responsibility.

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Gabriela P Martinez Ortega

Collaboration in International Projects: Effects of Immersive Virtual Environments on Communication in the Construction Phase

Supervisor: Assoc. Prof. Noha Saleeb

International contractors frequently collaborate with multicultural geographically dispersed project stakeholders. In the already fragmented and antagonistic construction industry environment, this adds an extra level of complexity to international projects. Even with the latest advances in communication technologies, physical presence on site is often considered vital to understand construction activities and to achieve effective collaboration. This could be challenging among geographically dispersed teams, resulting in fewer in-person interactions, which can become a barrier to building trust and may enhance the cultural gaps among teams with different socio-cultural backgrounds. This presentation will focus on a research study that explores the use of immersive technologies as virtual communication tools in construction coordination meetings, aiming to mimic a feeling of physical presence that could potentially enhance the understanding of the construction context and help stakeholders feel more connected.

The research utilised an inductive approach to understand the current issues on remote collaboration employing qualitative and quantitative data collection methods in an exploratory survey. Deductive methods were also utilised to study the behaviour of research subjects under controlled experiments, where they used different levels of immersion in a virtual meeting, to resolve construction issues. Results showed that higher levels of immersion in virtual reality can significantly improve the understanding of construction activities, compared to traditional non-immersive communication methods. However, highly immersive technologies did not significantly impact the development of trust among multicultural teams. These results may prove that immersive 3D virtual environments can help the construction industry communicate technical construction issues more effectively. However, further technological advances in more realistic interactions need to be made to improve trust among remote teams.

Keywords: Immersive technologies, virtual reality, communication, international construction, building information modelling.

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Session 1-D

Ho Ming Yip

Comparison between English and Chinese Mathematics Education in Modern Era From a Cultural and Historical Perspective

Supervisor: Dr. Snezana Lawrence

For the past few decades, the importance of integrating the history of mathematics into mathematics education has been steadily gaining recognition. As mathematics anxiety is a worrying trend in the UK, it is hoped that my results will not only provide a deeper understanding of the issue from a historical perspective but also serve as an endorsement for an alternative pedagogical method. Both empirical and philosophical approaches are adopted in my project.

Empirically, I intend to conduct experiments with secondary school teachers and students. By injecting historical content into mathematics classes, my goal is to explore how such an application could enhance mathematics teaching. This endeavour involves the design of tailor-made teaching materials to fit within existing curricula and the delivery of a new learning experience. For example, classical problems, the historical development of mathematical concepts, and anecdotes of mathematicians will be included. Additionally, questionnaires are prepared to gather feedback from the pupils, while interviews will be conducted with the mathematics teachers, allowing us to evaluate its effectiveness in both quantitative and qualitative manners. Investigations will take place in both England and Hong Kong.

Our general beliefs and modern education systems have always been evolving over time. Oriental pedagogical models, such as the Singaporean and the Shanghainese methods, were once considered potential solutions to the predicament by local authorities. However, one must not overlook the influence of cultural norms. Examining English and Chinese historical trajectories enables us to study how the contemporary understanding of mathematics was shaped. Firstly, delving into historical texts allows us to trace the evolution of mathematical concepts and the ways of knowledge transmission. Secondly, a comparison of education policy reforms between England and Hong Kong forms the focal point of analysis. Thirdly, I aim to sort out a philosophical explanation of the differences in learning behaviours and attitudes from a cultural viewpoint.

Throughout my study, a positive impact on students' affective domain through the use of the history of mathematics is expected. Thus, the results could be applied in curriculum design and teacher training, providing a future research direction.

Keywords: Mathematics education, motivation, history of mathematics, cultural backgrounds, secondary school.

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Phillippa Weekes

Why are Black Caribbean Boys 5 Times More Likely to be Excluded From Schools in England?

Supervisors: Prof. Carol Costley and Prof. Anthony Goodman

This poster will explore and highlight the current disproportionately high rates of Black Caribbean boys being 4-5 times more likely to be permanently excluded from schools in the UK. Higher than any other group. Reports show that black Caribbean boys are overrepresented in Pupil Referral Units (PRUs) and Alternative Provisions (APs). Closely aligned is the historic overt practice and extortionate statistics of the placement of black Caribbean (West Indian) boys into 'Educationally Subnormal Schools' (ESN) in the 1960s and 70s, where some 'ESN' schools had 33% of their pupils from black Caribbean backgrounds when only 9% of the population of that area were black. I intend to investigate whether much has changed in the English education system in the treatment of black Caribbean boys and their exclusion from mainstream schools in 50 years?

I will use a range of research methods such as semi-structured interviews and focus groups with black boys who have been excluded, teachers, senior leadership teams, parents, and black males who have criminal justice system experience following their exclusion from school. I will examine and analyse the data to assess the exclusion decision making process, government guidelines, possible long-term impact of school exclusion on the lives of black Caribbean boys, the 'PRU to Prison Pipeline',

and whether alternative methods of intervention, support, Restorative Justice or trauma informed practices might prevent exclusions.

Through a Literature Review, questionnaires, accounts, interviewee reflective practices, I aim to examine and propose possible evidence-based recommendations to prevent exclusions, which may impact the change required to reduce potential missed academic and career opportunities, and reframe the perceptions of black Caribbean boys in mainstream schools.

By critically examining the nexus of theory, policy and practice of school exclusion, researching this important social justice issue and gaining a greater understanding of the possible disproportionate effects of exclusion, this research could have a profound effect on enriching and improving the experience of black Caribbean boys in the English education system, which in turn might positively influence school behaviour policies, exclusion decision-making and the teacher training curriculum.

Keywords: Black Caribbean Boys, Exclusion, School.

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Azam Ali

An Interpretative Study Investigating the Drivers and Inhibitors of Innovative Assessment Practices Within Faculties (departments) Offering Undergraduate Business and Management Generalist Degrees in the UK Higher Education

Supervisors: Dr. Victoria De Rijke and Prof. Carol Costley

Business and Management degrees within the UK remain one of the most popular for student choice. In addressing the conference theme of enriching lives, innovative assessment has the potential to shape the learning process that should meet the needs of society. From the educators' perspective, there is a gap in understanding the drivers or inhibitors of innovative assessment practices within Higher Education (HE) in the UK. This research paper aims to examine the educators' approach to assessment, primarily focusing on UK HEIs teaching Business and Management degrees at undergraduate level. Interpretivism has been used, as the researcher views the world that is open to interpretations and is socially constructed. A pilot study that involved interviewing one focus group of five educators and conducting two unstructured 1:1 interviews was convened. Reflexive Thematic Analysis (rTA) was the method of analysing the research material, with the researcher adopting the 6-stage approach from the work of Braun and Clarke published in 2006. The researcher found conducting pilot studies an invaluable learning experience and all stakeholders involved in research will benefit from introspection and lessons learned using this approach. The main finding was that there are various interpretations and views of the term assessment and innovative assessment. Educators' antecedent

background is a key factor as to whether innovative practices occur or not and appears to be the main driver as to whether innovative assessment practices occur.

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Philip Jefferies

Using a Book Club Methodology as a Research Method on How Picture Books are Used as a Tool to Support the Understanding of LGBTQ+ Issues

Supervisors: Dr. Victoria de Rijke and Prof. Jayne Osgood

This presentation demonstrates how using a book club research methodology can enrich the lives of those in primary education settings including teachers, parents and children.

The presentation will focus on the use of a book club methodology as part of a PhD research project. The book club method is experience-centred and grounded in phenomenology allowing for participant discussion focused on the opportunity to explore, discuss and critically review the use of picture books to support understanding of LGBTQ+ issues. The intention of the presentation is to explain and reflect upon the use of a book club style research methodology focusing on how the use of this creative approach to research enriches the quality of the research taking place.

The presentation is based on my current PhD study that is concerned with the ways in which picture books are used as a tool in primary school to support the understanding of LGBTQ+ inclusion issues by teachers. My research is at the point of reflecting upon the impact of a pilot study using this particular research method and the presentation will explore and demonstrate the complexities, challenges and possibilities of pursuing this research. The importance of discussion within the research method will be explored with a focus on how the introduction of quotes and questions from related theory can trigger discussion that will deepen the quality of the responses of participants therefore supporting the research aims. The presentation will also focus on how the book club methodology can lead to an enriching of the lives of LGBTQ+ children, young people and families as it allows for links between children's literature and an understanding of equality within primary education.

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Session 1-E

Andrew Grimmer

A Personal Odyssey: Trainee and Recently Qualified Cognitive Behavioural Therapy (CBT) Practitioners' Perspectives on Postgraduate CBT Training and Its Contribution to Competence

Supervisors: Assoc. Prof. Nicola Payneand Assoc. Prof. David Westley

The literature on CBT training suggests that extensive training that monitors adherence and reinforces skilfulness produces increased therapist competence, which is related to better patient outcome. However, CBT trainees are heterogenous, and little is known about how trainees perceive their training and its impact on what they understand to be competent practice. All UK BABCP Level 2 training courses were contacted, and 15 volunteer trainee and recently qualified CBT practitioners completed a photo elicitation task followed by a semi-structured individual interview. Pseudonymised accounts were analysed using thematic analysis. Thematic analysis produced an overarching theme of training as a personal odyssey comprising: 1) a transition from the known to the unknown, with subthemes: distal, formative influences; proximal precipitating factors; and, a professional role transition; 2) a testing experience, with subthemes: a demanding but stimulating journey; and, active coping; and 3) a transformative process, with subthemes: structural and contextual features of training; the constructive learner; a well-rounded practitioner; and, a worthwhile outcome. Themes and subthemes were consolidated into a "cycle of mastery" model. The themes and model provide a conceptualisation of training experiences that could help make CBT training more effective and less potentially overwhelming by identifying and fostering supportive learning experiences at each stage of the process. Limitations of the study include 1) the lack of gender and ethnic diversity, meaning a limited range of perspectives was available for analysis, and 2) the provisional nature of the cycle of mastery model which requires further research to ascertain its accuracy and applicability.

Keywords: cognitive behavioural therapy, competence, training, qualitative research; thematic analysis.

Judina G Smith

Using Arts-Based and Visual Methods as Part of a Mixed-Methods Study into What We Can Learn from Further and Higher Education Students' Lived Experiences of Attempted Suicide

Supervisors: Dr. Lisa Marzano and Dr. Erminia Colucci

This presentation will discuss the use of arts-based and visual methods, as part of a national research study into what we can learn from Further and Higher Education students' lived experiences of attempted suicide. It will consider how we can use innovative research methods to challenge perceptions and stigma, break down barriers and share insights into the impact on a person's sense of self, sense of others and ways of being in the world. It will reflect on research design and draw on the experiences of gathering visual narrative responses, data from public responses to 4 exhibitions of 60 artworks made by research participants in response to their lived experiences, as well as presenting some of the emerging findings.

Data were collected via a national survey and semi-structured interviews, followed by arts-based responses. Methods include thematic analysis, polytextual thematic analysis and visual social semiotics. The presentation will highlight how arts-based and visual methodology, as part of mixed methods research design, offer unique ways to communicate and facilitate interaction, enabling access to content that could otherwise remain inaccessible and help us gain insights that words alone may not convey. The inclusion of exhibitions of the artworks has demonstrated how the arts and visual narratives are able to transcend language and provide ways to challenge stigma and give a voice to what goes unspoken. The feedback from exhibitions and participants' responses to sharing their stories demonstrate how this research fits the conference theme of enriching lives.

These research findings have the potential to provide valuable insights that can contribute to society's understanding on a human and individual level and by using visual methods, generate new insights in relation to this under-explored area.

Keywords: Suicide prevention, attempted suicide, visual methods, arts-based, lived experience.

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Ellouise L Long

Developing a Definition and Typology of Trolling

Supervisors: Dr. Susan Hansen, Prof. Miranda Horvath, Dr. Jackie Gray

Trolling has been used as an umbrella term by the media to describe all manner of unwanted types of online behaviour. There have been attempts in academia to define and categorise trolling behaviour, but to date there is no single, agreed definition. This research aims to develop a definition of trolling and to propose a typology of the behaviour. A mixed-methods approach was used to analyse comments made on YouTube videos and Twitter covering various topics from terrorist attacks to a speech on equality (now known as X). This included an initial content analysis in study one to identify characteristics of trolling which informed a smallest space analysis to propose types of trolling in study two. Study two proposes two behaviours; provocative trolling (more concerning and potentially harmful) and performance trolling (more playful and less potentially harmful). The two types of trolling identified show that there are differences in trolling content online and these different types may need different responses. Provocative trolling which was more potentially harmful therefore requires further legislative and political debate in order to protect individuals when they are online. Whilst anonymity is addressed in the Online Safety Act (2023), normalisation of aggression online was identified as an important precursor to trolling which needs further intervention in order to challenge trolling. The potential for this research to inform legislation and protect individuals online therefore has the power to enrich lives and improve experiences online.

Keywords: Trolling, online abuse, cyberpsychology, smallest space analysis, aggression.

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Ellouise L Long

Considering Trolling in Interaction: A Discourse Analysis

Supervisors: Dr. Susan Hansen, Prof. Miranda Horvath, and Dr. Jackie Gray

Trolling has gained increasing attention from the media and academia in recent years. Whilst research largely focuses on typical characteristics of trolls, currently there is limited research which considers how the public respond to trolling. This research therefore aims to look at trolling in interaction to explore different responses to trolling. It was considered important to ground the analysis in naturally occurring data which was not influenced by the researcher. Therefore, comments made in response to a video of Emma Watson's 'HeforShe' speech at the UN in 2014 on YouTube were collected and analysed using discourse analysis. Five types of responses were found; low-risk strategies (ignoring and rationalising) which often did not lead to further interactions with trolls and high-risk strategies (labelling, offensive and mirroring) which were more likely to be followed by further abuse. Mirroring responding where responders 'mirror' the actions of trolls is a novel finding not currently identified in the trolling literature. This finding may be due to the methodology allowing a different level of noticing through discourse analysis

compared to previously used methods (e.g. looking at responses in situ rather than interviews with people who have experience trolling). Differences in responding to trolling were identified, ranging from low to high-risk. Some responses were as offensive as the trolling it was responding to (e.g. offensive responding) blurring the lines between trolls and those being trolled. Whilst the low-risk strategies were less likely to have further repercussions, this effectively allows users to be silenced. With minority groups and women being disproportionately targeted by trolls, this raises questions about what is the best way to deal with trolling that does not silence these groups and can therefore enrich their online lives.

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Session 1-F

Mike Kelly

To Develop a Strategic Response to the UK Government's Proposed Changes to the Administration of Summary Justice in England and Wales

Supervisors: Dr. Andrea Werner and Dr. Jenni Ward

Strong institutions that promote justice can lead to enriched lives. My research aims to support justice which, in turn, enriches lives. This transdisciplinary research project aims to develop a strategic response to the UK Government's proposed changes to the magistracy of England Wales, whilst providing a scholarly critique of its development.

The magistracy is critical to the administration of summary justice with 95% of criminal cases being dealt with by 12,000 volunteer magistrates (also known as Justices of the Peace) Over the last decade the number of magistrates has fallen from 30,000 to the current 12,000.

The primary area of research is an auto-ethnographical study into the factors leading to the strategic response and the influences upon me as a magistrate practitioner. This will lead to an accompanying scholarly critique.

These reforms have the potential to fundamentally alter the way magistrates' courts are organised as well as the professional landscape for magistrates. Potential implications could relate to physical proximity of courts for victims, defendants and professional court users thus requiring a consideration of access to justice itself. In addition, reform could critically impact on the professional landscape of magistrates

raising questions around retention, recruitment, workplace wellbeing and caseload of these volunteers.

My project, contributing towards the Doctor of Professional Studies, draws upon my professional, corporate experience and skillset - as an international corporate lobbyist, strategist and communications leader - and my experiences as a serving leadership magistrate navigating the preparation.

Keywords: summary justice, magistrates, reform, transdisciplinary, professional studies.

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Delphine Garr

Is Compassionate Leadership the Wonder Drug for the NHS?

Supervisor: Dr. Agi Ryder

Like most organisations, leadership is a key concern for the NHS, a complex entity operating in a volatile and ambiguous environment with limited resources, including its workforce.

NHS England is committed to compassionate leadership. This has been actively articulated via guidelines in the last five years although without clarity of a consistent implementation approach across the NHS. An emergent theme from recent collaborative workshops organised by NHS Resolution highlighted the importance of implementing a "healthy workplace culture that is psychologically safe, compassionate and meets the needs of staff" (p.6). I believe compassionate leadership means a more human approach to leadership.

I am the Head of Education Programmes and Lifelong Learning at Barking Havering and Redbridge University Hospitals Trust (BHRUT). I am conducting this practitioner research as part of my doctorate in Transdisciplinary Practice to explore ways of creating a thriving environment in a complex system like BHRUT. This action research focuses on how to create a compassionate environment that would change my Trust in a way that boosts morale and enables people to thrive at work. In true transdisciplinary style I intend to build relationships and involve others across the Trust in identifying ways of being compassionate, practising these compassionate acts and reflecting on the impact.

This research employs the Organisational Development Action Research methodology by Coghlan, published in 2019, to facilitate a Cooperative Inquiry involving a democratic process of engaging all involved as co-researchers and co-subjects in a dialogue about the definition of questions, what to explore and the methodology to be used. The emergent concept of this model is highly suitable to my

practice landscape and enables me to adapt the project in line with the emergent interactions and inter-relationships, especially as the data gathering process is more about raising collective awareness and creating new possibilities for resultant change.

This research is work in progress and the presentation will explore some preliminary reflections on the process of researching this topic including the progress to date and responsiveness of the participants.

Keywords: Leadership, compassion, NHS, complexity, transdisciplinary.

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Vicente Lorenço de Góes

Becoming Complex - Pathways to an Ontological Approach to Complexity in Organisational Practice

Supervisors: Dr. Kate Maguire and Dr. Paul Gibbs

This research explores complexity as a way of being that can optimise organisational practice and broader life contexts. Recognizing the critical role organisations play in addressing complex challenges, this study redefines complexity as a fundamental aspect of existence often overlooked in organisational life. Aligning with the conference theme "enriching lives through research," it demonstrates how a deeper understanding of complexity can lead to more adaptive, creative, and innovative practices. Adopting a Transdisciplinary (TD) approach, the research merges epistemological and ontological perspectives, enriching lives by integrating the development of both the researcher and subjects, in a process that turns knowledge for practice into knowing for becoming. Unlike traditional disciplinary methods that prioritise efficiency, TD research intertwines with life's dynamics, fostering a deeper understanding of human interactions during significant change and adaptation. The research process comprises three key components: an introspective examination of the researcher's roles as a psychotherapist, educator, and organisational consultant; dialogues with diverse stakeholders, including organisational leaders, improvisation artists, scientists, philosophers, and indigenous community leaders; and engagement with a broad knowledge landscape that includes academic literature and traditional cultural texts. These elements culminate in a manuscript titled "Learning Complexity." Through this TD approach, the researcher's personal and professional experiences become both a source of knowledge and a developmental territory. This contrasts with the detached stance of traditional disciplinarity. The research process itself mirrors the complexity it seeks to understand, prompting shifts in perceptions among both the researcher and contributors. The selection of contributors highlights the intersectionality of their experiences, transcending specific roles and emphasising their multifaceted engagement with complexity. The study reveals that complexity is inherently relational and open-ended, challenging the

notion of the isolated individual "facing" complex contexts. Effective engagement with complexity relies not on comprehensive conceptual understanding but on adaptability, creativity, and connectivity. These qualities are essential for fostering emergent behaviour through interactions and relationships. Insights from this research hold potential for consultancy practices, particularly in leadership and team development. By emphasising relational dynamics, the study provides a pathway for organisations to enhance their capacity to address complex issues, ultimately enriching lives within and beyond these organisations.

Keywords: complexity, ontology, organisational practice, transdisciplinarity, transdisciplinary research.

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Session 1-G

Leena Mohandas

Exploring The Phenomenological Experiences of Second Generation British Indian Women Becoming Counselling Psychologists in The UK – A Pilot Study

Supervisors: Dr. Nancy Hakim-Dowek and Dr. Paula Seth

The exploration of how second-generation British Indian women counselling psychologists navigate understanding their emotions and developing their identities, are key to how individual's lives are enriched in UK society. The aim of the research is to explore the phenomenological experiences of second generation British Indian women becoming Counselling Psychologists.

The objectives are to discover and interpret the experiences of the participants of becoming Counselling Psychologists and how holding two cultures influences their work. There is currently very little research looking at how the two cultures are held and how this impacts the experience of becoming a counselling psychologist. As a comparison to white British women, there are relatively few British Indian women who are counselling psychologists and alongside this few British Indians choose to have therapeutic sessions with a counselling psychologist. The hope of this research is that the representation of British Indian women counselling psychologists is more widely spread and the perceptions of therapy amongst the Indian communities in the UK are influenced. The epistemological constructivist position taken informs the ontological interpretivist stance so that the explication, understanding and meaning of the participant's experiences can be explored in an attempt to uncover that which is not yet known. For this research, 90 minute semi-structured interviews and van Manen's practice of phenomenology have been chosen for the method. van Manen's position is that he is focused on the practical functions of phenomenology, providing

a framework to enable the researcher to collect, interpret and analyse the data in a meaningful way, without being constrained. Some of the phenomena that emerged from the analysis of the pilot study data were career progression; racism in counselling psychology training; the concept of culture; liminal space and gender inequality.

Keywords: Phenomenological, Experience, British-Indian, Women, Psychologists.

Thanh Thi Kim Nguyen

Effects of Metacognitive Reading Strategy Instruction on Second Language Reading Comprehension and Motivation: A Meta-analysis and a Teaching Intervention

Supervisors: Dr. Anna Charalambidou and Prof. Johan Siebers

The project identified the importance and strong power of metacognition which enriches motivation due to its features of autonomy and independence, and the power of motivation by establishing motivation's effects on outcomes and results. Specifically, the project examined effects of metacognitive reading strategy instruction (MRSI) on second language (L2) reading comprehension and motivation by a meta-analysis and a teaching intervention. The current presentation focuses on the conversation analysis of the focused group interviews. In the teaching intervention, 40 Vietnamese 5th graders in 2 intact elementary classes at an English centre in Vietnam were assigned to two groups. The teaching intervention, particularly non-MRSI has no effects on MRS use of the control group and MRSI has significantly positive impacts on MRS usage of the experimental group. 6 participants in the experimental group who were assigned to 2 sub-groups took part in the focused group interviews before and after the teaching intervention. Similarly, 2 sub-groups of the control group with 3 students in each group also participated in the pre-interviews and post-interviews. As a result of the thematical analysis of the interviews, there were no changes in reading motivation of the control group after the teaching intervention and two major changes in reading motivation of the experimental group. In addition to the thematical analysis which identified the reading motivation sub-categories reported by the participants, the conversation analysis of the interviews was also conducted due to its ability to analyse social interaction, communication dynamics, turn-taking, structural patterns, sequential orders and timing in the interviews. The thematical analysis and conversation analysis of the interviews support each other in providing the researcher with in-depth understanding of the interviewees' perspectives and changes before and after the teaching intervention. Although there were small changes in the reading motivation of the experimental group, the changes in their reading comprehension were large and significantly positive.

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Mabel B Verstraaten-Bortier

My Heuristic Research Healed Me: A Retrospective Autoethnographical Study of my Professional Doctorate (DProf) Journey

Supervisors: Dr. Simon Cassar and Dr. Julie Scheiner

My doctoral research was a heuristic study of the lived experience of therapists working with suicidal clients in Ghana. Though the seven therapists interviewed (myself included) mentioned that their participation had proved helpful i.e. that their lives were enriched by it; this paper however focuses on how the entire research process from the conceptualisation of the research topic, though the chosen methodology, to the findings and subsequent dissemination of the results have altogether enriched the participant-researcher's (my) life in ways she did not or could not have anticipated. One of the unique features of the heuristic methodology is that it encourages the participant-researcher to reflect and acknowledge whatever personal impact the research process and its findings have had on him/herself. This then became a sort of secondary research (an autoethnographic one) of the impact of my primary research (the heuristic one) on me. The findings of this autoethnographic study is also known as the personal outcome of the heuristic research. This work investigated the personal outcomes of both the clinical and research component of the DProf programme on the participant-researcher. Autoethnographic inquiry was employed, in which personal data from various sources such as memory, journal entries, research related artefacts as well as my thesis document were used as research data. Contrary to what was presented and enforced in my DProf program as the right way of doing therapy, (which caused me a lot of trouble and trauma); the findings from my study showed that the way the participant-researcher (I) worked with her clients was culturally appropriate to her setting - Ghana. Not only was I vindicated but I was also healed by the findings. This has greatly enriched my life. Conclusion: Psychotherapy trainers should exercise cultural sensitivity and not impose a British mode of doing therapy as the standard for international students as therapy may be practised differently across different cultures. Dismissing the way in which therapy is practised in the home countries of international students amounts to epistemic injustice.

Keywords: Psychotherapy Education, Heuristic Research, Autoethnography, Epistemic Injustice, International Students' wellbeing.

Alan S McPherson

A Contextual Exploration of Counsellors, Psychotherapists and Counselling Psychologists' Who Are Interested or Engaged in Creating and Publishing Research

Supervisors: Dr. Deborah Bailey-Rodriguez and Dr. Alistair McBeath

By its very nature, counselling and psychotherapy is a means by which lives can be enriched. The British Association for Counselling and Psychotherapy (BACP) identifies the necessity for research in identifying effective therapeutic responses. Whilst the BACP, and other professional bodies, recognise the valuable contribution practising counsellors, psychotherapists and counselling psychologists (therapists) can make through their engagement in the undertaking and publishing of research, there are many identified obstacles. Despite this, some therapists have successfully undertaken, engaged in and published research. Following a mixed-methods design this project seeks to explore and learn from these endeavours, by firstly exploring context of therapists who are interested or engaged in research.

Using a semi-qualitative online survey, participants were recruited by poster and direct email to professional bodies, therapy training courses and therapeutic practices across the UK. Data was collected from participants by a brief set of quantitative demographics and contextual questions and a qualitative story completion task. Story completion is an innovative qualitative research method whereby the researcher initiates a story to be completed by the participant. The quantitative data will be descriptively interpreted to create a contextual picture of the participants' and their training and research experiences. Reflexive thematic analysis will be used to analyse the storied data. The findings from the quantitative and qualitative analyses will be drawn together and integrated offering a preliminary understanding. The outcome will be narratively illustrated, informed by researcher reflexivity, illustrating both resonances and dissonances as a transparent picture of the contextual landscape by which therapists engage in the creation and publication of research.

Keywords: psychotherapy, practitioner-research, mixed-methods, online survey, story completion.

Session 2-H

Pam Hodge

A Qualitative Study Exploring Care Home Residents' Experience of Being Cared For By and Interacting With Nursing Students

Supervisors: Prof. Helen Allan and Prof. Betsy Thom.

This research aims to explore the residents' experiences of working with student nurses on placement in a care home and vice versa. These findings will inform the co-production with residents and students of resources to support future practice learning and enhance residents' care. This work fits with the conference theme by supporting service users and students to actively participate in research with the aim to enrich their respective experiences in the care home. Service user (resident) experience has become an essential component in all aspects of health and social care evaluation. Yet there remains a lack of literature on service user experience, especially in adult social care. The wealth of literature relating to nursing student placements, does not include those in social care. This research will address this lack of research. Actively involving residents is integral to the research and will move beyond the stereotyping and disempowerment of this intersectional cohort. This qualitative research uses participatory action research at one London care home, involving both residents and students on placement. The accessible data collection strategies include observation, discussions, diaries, and questionnaires. This research is currently in action research cycle two. To date the residents' have highlighted that key personal qualities in the students are important. There are emerging themes related to; reciprocity, power or influence status, emotional labour, tea and chat, and both students and residents "bringing in their world." There is very little research actively involving social care residents and even less which also involves student nurses. In action cycle three, this research will develop and co-produce placement preparation resources.

Keywords: Social Care, Service user and Student experience, Action Research, Co-production.

Robin Parsons

From Changing Childbirth to Better Births: A Critical Discourse Analysis of Maternity Policies in the NHS

Supervisors: Prof. Helen Allan and Prof. Michael Traynor

Recent high-profile investigations into maternity care, by Ockendon (2022) and Kirkup (2023) have highlighted the concerns with the quality of maternity care in the NHS. The role of midwives is not immune from this and the wider discourse that now surrounds practice suggests that change is needed. However, missing from the wider debate about midwives is a discussion of how the midwifery profession is constructed. This paper uses a Policy-as-discourse stance to analyse how the role of the midwife is brought into being through policy discourse.

'Policy documents' were defined as written proposals emanating from the Department of Health or the NHS Executive which have had a significant impact on the development of midwifery practice in the UK. To identify documents for the discourse analysis selection criteria were that the policies appeared to have been implemented in the NHS, been publicly available since 1992 and focus on midwifery services and midwives.

Two policies were selected, Changing Childbirth (1993) and Better Births (2015) and analysed from the 'policy as discourse' perspective with an underlying Foucauldian approach. A Foucauldian approach facilitates a detailed investigation of the structural and linguistic features of texts in relation to other social processes, in particular how power shapes and constrains agency. The policy as a discourse perspective examines how policy constructs and position subjects, their identities and their roles within society.

Analysis of the policies shows developing neoliberal discourses with strong discourses of responsibilisation, evident in the increasing rhetoric of choice and control in maternity services. Discourses of normal childbirth and the concept of continuity care develop alongside these neoliberal discourses, which position midwives as the lead professional for pregnancy as childbirth as way of increasing both quality and choice of services. As the remit of midwives, promoting continuity of care and normal childbirth furthers the professional position of midwives.

These findings suggest that neoliberal discourse and the concepts of normality and continuity in policies shape professional midwifery identity. Future policy should consider the occupational boundaries that are drawn from the normal childbirth discourse and the rhetoric which embeds the current power dynamic within maternity care.

Keywords: Midwifery, identity, discourse, policy, profession

Michael O'Driscoll

Analysing Newspaper Articles - Methodological and Practical Challenges

Supervisor: Prof. Betsey Thom, Dr. Tim Weaver, and Dr. Sophie Knowles

As part of his doctoral studies, the author is using UK national newspapers as a data source for understanding the nature of media coverage of privatisation in the NHS (2010 to present). In this presentation, he describes the challenges and rewards of newspaper database searching and analysis, to help others who may be considering using this data source.

Newspapers are a useful secondary data source / historical source but are fraught with limitations - they are usually politically partial with a distinct editorial line. They tend to sensationalise to increase readership and to some extent "tell their readers what they want to hear". Journalists tend to be from privileged backgrounds and consciously or unconsciously may reproduce the dominant ('establishment') ideology.

Newspapers are highly selective in the events covered, the "voices" they permit to be heard and the way these are framed. They also 'set the agenda' in terms of the prominence given to particular events and the frequency of their reporting. Although sometimes dismissed as 'legacy media' they are still read daily by millions and often influence the agenda on broadcast and social media. Newspaper journalists are often prominent figures , accorded "expert status" and are often seen as spokespeople or champions for left , right or centre political views. Despite this, newspapers can also be agents of radical change in society, although arguably that is less the case today than it was historically, with most national newspapers in the UK being Right wing or centre right.

There are also issues in terms of how newspapers are curated in databases or collections. Online databases of newspapers seem somewhat idiosyncratic in terms of searchability and which newspapers they include. The author shares knowledge gained about the use of FACTIVA and Global Newstream databases as well as emerging findings regarding media coverage of privatisation in the NHS.

The presentation relates to the conference theme of ''Enriching lives through research' 'in that understanding the way in which media coverage is constructed enables a more critical stance towards this media and a greater understanding of the core of the welfare state – the NHS.

Keywords:NHS, newspapers, secondary data.

Self-Organised Symposium: Exploring Health Determinants in Multi-Ethnic Young Adults: Body Composition, Strength, and Physical Activity

Augustinas Zibuda

Estimates of Body Composition Between a Three-Dimensional Body Scanner and a Multi Frequency Bioelectrical Impedance Across Various Races and Ethnicities

Supervisor: Dr. Lygeri Dimitriou

Objective: This study aimed: 1) to examine differences and limits of agreement in fat and lean mass estimates between three-dimensional (3D) body scanning and multi frequency bioelectrical impedance analysis (MFBIA) across different ethnic groups, and 2) to assess the participants demographic distribution.

Methods: Hundred nineteen students (33 males and 86 females, age: 18 ± 2.6 years; stature: 1.66m ± 0.08 m; body mass: 69.3kg ± 19.8kg [mean ± SD]), across five ethnic groups participated in this study. Fat and lean mass was estimated via MFBIA and 3D scanning technologies. Spearman's rho assessed correlations, Bland-Altman plots analysed limits of agreement, and Wilcoxon signed-rank and Kruskal-Wallis tests evaluated discrepancies in body composition measurements.

Results: Strong correlations between MFBIA and 3D scanning measurements were noted for fat mass (r=0.956, p<0.000) and lean mass (r=0.971, p<0.000) estimates. Bland-Altman analysis showed notable biases, especially in lean mass estimations. Wilcoxon signed-rank test indicated significant underestimation of fat mass by 3D scanning (median difference: 15.1 vs. 17.1kg, p<0.000) and overestimation of lean mass compared to MFBIA (median difference: 51.80kg vs. 48.75kg, p<0.000). Kruskal-Wallis results highlighted significant BC estimate discrepancies across ethnicities for fat mass (p=0.021), and lean mass (p=0.031). The greatest discrepancies were observed among the South Asian cohort, with a median fat difference of 3.3kg, and the white cohort, with a median lean mass difference of 1.4kg.

Conclusions: In spite of the strong correlations sought between these two BC technologies, the statistically significant discrepancies and poor limits of agreement found in fat and lean mass estimates suggest that these technologies cannot be used interchangeably and highlights the need for developing ethnic specific algorithms to accurately estimate BC.

Keywords: Obesity, Ethnic minorities, MFBIA, 3D Body Scanner, Lean mass and fat mass estimation.

Hemda Gabai

Association Between Handgrip Strength and Arterial Stiffness in Young Adults: Perspectives on Cardiovascular Health Preventive Measures

Supervisor: Dr. Lygeri Dimitriou

Cardiovascular diseases (CVD) are the leading cause of global disease burden, with arterial stiffness recognized as a crucial risk factor in both symptomatic and asymptomatic individuals. This highlights the importance of early detection and intervention. This cross-sectional study assessed the relationship between arterial stiffness and handgrip strength among 126 undergraduate students. Height, weight, body mass index (BMI), body composition (measured via bioelectrical impedance), arterial stiffness (measured via pulse wave analysis), and handgrip strength (measured via dynamometer) were evaluated. Multiple regression analysis showed a significant inverse relationship between handgrip strength and arterial stiffness ($F_{(1, 22.46)} = 22.67$, $p < 0.05$), indicating that each unit increase in relative handgrip strength was associated with a 5.25 unit decrease in arterial stiffness. These findings highlight handgrip strength as a potential marker for cardiovascular health in young adults. Future research should investigate the mechanisms driving this association and assess the utility of handgrip strength in routine cardiovascular screenings. Given its promising potential, integrating handgrip strength assessment into regular health screenings could lead to personalized preventive strategies and improved cardiovascular outcomes in young adults.

Keywords: Cardiovascular diseases, arterial stiffness, handgrip strength, body mass index, association.

Rita Rufus

Obesity and Cognitive Impairment in Young Adults: Exploring the Role of Adiposity and Physical Activity

Supervisor: Dr. Lygerie Dimitriou

Research on the relationship between obesity and cognitive function in young adults is limited. Considering the escalating global obesity epidemic and rising cognitive impairment, this study investigated the associations among markers of obesity and cognitive function, along with physical activity (PA), in young adults. In a cross-sectional study of 70 university students (age 19 ± 2.7 years) measurements of fat percentage using bioelectrical impedance, and waist circumference (WC),

weight, and height using standard procedures were performed. Body mass index (BMI) and waist-to-height ratio (WHtR) were calculated. Participants were divided into a Normal Weight Group (NWG, n=42, mean BMI=20.7 kg/m²) and an Overweight and Obese Group (OWOG, n=28, mean BMI=29.6 kg/m²), with ethnicity considered in the BMI classification. Cognitive function across domains of executive function, processing speed, visuospatial skills, and memory and PA levels were assessed using the PsyToolkit and the International Physical Activity Questionnaire (IPAQ), respectively.

Markers of obesity (WC 86.5cm, WHtR 0.53, fat 32.2%) in the OWOG were greater, than those of the NWG (WC 71cm, WHtR 0.43 and fat 25.4%). The OWOG showed higher error rates in the Wisconsin (P=0.103) and VAAST (P=0.215) tasks compared to NWG. Furthermore, the OWOG showed statistically significant lower performance in the N-back Task (p=0.029) and in the Simon Task Incongruent (P=0.011) compared to NGG, suggesting an association between increased obesity and reduced executive functions and working memory. Associations between WHtR and errors in Wisconsin Task (r=0.308, p=0.011), BMI with performance in the Stroop Incongruent (r= -0.232, p=0.057) and N-back Task (r=-0.234 p= 0.058) were also observed. Additionally, PA (1726 MET-minutes) in the OWOG were lower than those in the NWG (1893 MET-minutes, P>0.05).

The findings suggest that markers of obesity are associated with lower cognitive functions, particularly executive function and working memory, highlighting immediate risks linked with obesity. Increased PA may mitigate these declines and independently enhance cognitive function. Given exercise's wide-ranging benefits, including neurogenesis and disease prevention, promoting PA is recommended to combat obesity and improve cognitive health, thereby enhancing overall well-being in young adults.

Keywords: Obesity, Cognitive Impairment, Young Adults, Adiposity, Physical Activity.

Michelle Brunetti

Clinical Audit of the Effectiveness of 'Maximum-Fixed' vs 'Low-Escalating' Energy Selection, For Direct Current Cardioversion of Atrial Fibrillation Patients

Supervisors: Dr. Alechia Van Wyk and Dr. Vivetha Pooranachandran

DCCV is an essential management option for atrial fibrillation, the most common cardiac arrhythmia worldwide. Research such as this benefits patients immensely, DCCV is known to provide an immediate reversion to sinus rhythm in a high percentage (>90%) of patients, which fundamentally relieves symptoms and

substantially improves quality of life. Despite this, the optimal energy settings for DCCV are unknown, nor is it covered in any guidelines.

This clinical audit aims to determine if a maximum-fixed energy approach provides a significantly greater clinical outcome than a low-escalating approach to energy selection for DCCV of AF.

This retrospective clinical audit compared 100 patients who received DCCV of AF using a low-escalating approach (120J-150J-200J) with 100 patients who underwent the procedure using a maximum-fixed energy approach (360J-360J-360J). The primary outcome was measured by the number of patients who reverted to sinus rhythm after the delivered shock(s). The secondary outcome was determined by first-shock efficacy (of those successfully cardioverted to sinus rhythm).

The primary outcome was assessed using a chi-square test. A maximum fixed energy approach had a higher overall success rate (94%) than a low-escalating method (92%), but the difference was not statistically significant (p=0.579). The first-shock efficacy of the maximum-fixed energy selection was 97%, compared with the low-escalating method, which achieved 76% first shock success, which was statistically significant (p=0.00).

The limitations of this study include that it is a single-site study, and that the reliability of the information gathered is dependent on the quality of the notes taken at the time of the procedures. The results also do not consider individual patient factors, such as BMI, duration of AF and whether anti-arrhythmic drugs were used. An initial maximum-fixed energy setting produces considerably greater first shock efficacy than a low-escalating energy selection. This supports a maximum-fixed energy approach to DCCV for AF.

Despite DCCV being a fundamental part of treatment, there is little data on long-term success in maintaining sinus rhythm, which would be a very significant area for future studies to provide data on.

Keywords: Cardioversion, Atrial fibrillation, Energy selection, Maximum-fixed and Low-escalating.

Session 2-J

Michal Rudich

The Impact of Plant-Based-Protein Rich Diet vs. Omnivore Diet, on the Severity of Clinical Symptoms During Menopause

Supervisors: Assoc. Prof. Sandra Appiah, Assoc. Prof. Liang Liu, Dr. Michelle Barrow

Menopause is a complex stage in women's lives occurring naturally at the median age of 50. According to the Central Institute of Personnel and Development in the UK, 17% of women drop out of work each year and 9% of women reported disciplinary actions against them while suffering from menopausal symptoms. Hot flashes, anxiety, depression, elevated blood pressure, body composition changes and sexual dysfunction, are some commonly reported symptoms during menopause. Current recommendations mainly address general symptoms, including medication such as Hormone Replacement Therapy, having known side effects including elevated cancer risk rate. Some change has been noted recently, in the UK, accepting alternative treatments and nutritional alterations as suitable protocols. One way of naturally managing menopausal symptoms would be through research based dietary plans, taking into consideration metabolic changes, nutritional and energy needs according to changes in gonadal hormones during the menopausal transition period. The aim of the study is to develop evidence-based dietary guidelines, to optimise nutritional plans for menopause women, and enriching healthcare systems with more research-based knowledge.

The methods used for the first stage of the study will include conducting a National Health Nutrition Examination Survey (NHANES), and quantitative (statistically analysable) surveys and other qualitative data collected from menopausal and postmenopausal women in London UK where ethnicity and culture are drivers.
The data are expected to shed light on the research question and assist in determining whether to recommend plant based vegan nutrition or any other protein-rich combination in-order to lower the intensity of menopausal symptoms. The study will take into account BMS (British Menopause Society) recommendations for suitable nutritional plans, including foods with elevated mineral levels to preserve bone mass, lower glycaemic index to prevent menopause related diabetes, higher percentage of protein due to vast body composition changes. Rich in antioxidants and protein diets, with a greater percentage of vegetables and fruit as well as refraining from processed foods, have been studied in the past, although there is little research on the influences of protein source on the intensity of menopausal symptoms. The purpose of the study is to fill this gap.

Keywords: Menopause, Symptoms, Nutrition, Protein, Diet.

Shadi Khonsari

Investigation of Genetic Influence and Impact of Biosurfactants on Biofilm Formation in Salmonella Typhimurium on Polypropylene Surfaces.

Supervisors: Prof. Diane Purchase, Dr. Andrea Cossu, Dr. Dallas Roulston, and Dr. Milan Vu

Biofilm formation by Salmonella enterica serovar Typhimurium, a major foodborne pathogen, contributes to its persistence in industrial and clinical environments, posing challenges for disinfection and increasing the risk of contamination. Biosurfactants, compounds produced by microorganisms, can potentially control biofilm formation as eco-friendly antimicrobial agents. This study investigates the genetic factors influencing the biofilm formation of S. Typhimurium and its mutant strains (with mutations affecting their lipopolysaccharide (LPS) biosynthesis and structure) on polypropylene, a commonly used plastic in food packaging, and the effect of biosurfactants (produced by Bacillus subtilis) on these surfaces.

Results from a biofilm reduction assay using the Crystal Violet method revealed that LPS-mutant strains (with mutated rfa genes, critical for LPS biosynthesis) had altered biofilm-forming abilities, with reduced stability and cohesion compared to the wild-type (WT) strain. In addition, surfactin (from Bacillus subtilis) treatments at 5 µg/mL significantly reduced biofilm mass in WT ($p\text{-value}<0.0001$) as well as in LPS-mutants: 228 (rfaL), 229 (rfaJ), 230 (rfaF) (all $p\text{-value}<0.0001$), and 227 (rfaI) ($p\text{-value}<0.01$). Indicating that LPS biosynthesis influences the cell surface of biofilm structure and adhesion. Furthermore, suggesting that surfactin can inhibit biofilm formation and have the potential to affect its growth on polypropylene surfaces as demonstrated by SYPRO Ruby staining, which quantifies the extracellular polymeric substance, using Fluorescence microscopy. To understand the genetic basis of biofilm formation several genes were investigated by qRT-PCR technique: flgK, bcsA, bamA, ftsZ, dnaA, and others that are directly or indirectly involved in bacterial biosynthesis when grown on polypropylene surfaces vs planktonic cells.

These findings have practical implications for designing biofilm control strategies in food processing environments, potentially reducing the risk of foodborne contamination and enhancing food safety.

Keywords: Salmonella, Biofilm, Antimicrobial, polypropylene, lipopolysaccharide.

Nitika Nathaniel

Development of an Antibody-Based Biosensor for the Detection of the Lowest Therapeutic Drug Concentration of Antibiotic Meropenem in Critically Ill patients Using a Point-Of-Care Device

Supervisors: Assoc. Prof. Sandra Appiah, Prof. Richard Bayford, Prof. Ajit Shah

Meropenem is a broad-spectrum carbapenem antibiotic, widely used to treat severe nosocomial infections. To be effective, meropenem levels need to be maintained at a certain level over time but alterations in organ function, volumes of distribution etc, mean levels can vary dramatically in the critically ill. However, due to a lack of meropenem monitoring, the fixed-dose approach used by clinicians leads to undertreatment and failure in some and overtreatment and toxicity in others. This study aims to develop a fast, portable, and reliable biosensor for spot monitoring of the meropenem concentration in the blood. Ultimately this will allow clinicians to titrate the dose of meropenem to the individual in front of them reducing the risk of treatment failure and toxicity.

A biosensor was constructed with the layers of the self-assembled monolayer, protein G, immobilised antibody, and the antigen for meropenem on a tetra-polar gold microband electrode to form a stable complex for higher measurable impedance. Electrochemical impedance changes were measured using a Solartron 1260 analyser with SMaRT software.

The overall time taken to detect meropenem concentration on a fully developed biosensor was 25 min. The antibody concentration ranging between 100-200 µg/mL was used to optimise the biosensor, with 125 µg/mL being the best-suited concentration producing good signals. The lowest concentration of meropenem detected 0.1 µg/mL was the satisfactory limit. The interfacial charge resistance increased for each meropenem concentration, 33.8% for 0.1 µg/mL, 141% for 1 µg/mL and 930% for 10 µg/mL. The high magnitude of the resistance increase indicates successful detection of the meropenem for the expected clinical range with the biosensor. The successful construction of the meropenem biosensor will help practitioners adjust the therapeutic drug dosing to effective levels in hospital patients using a fast and reliable point-of-care device.

Keywords: Meropenem, biosensor, antibiotic resistance, therapeutic dosing, point of care device.

Session 2-K

Carlo Lazzari

Borderline Personality Disorder and Enriching Population Lives Through Research Based on Work-Based Learning

Supervisors: Dr. Elda Nikolou-Walker and Assoc. Prof. Liang Liu

Despite the extensive production of research on borderline personality disorder (BPD) and public health, there are still some gaps in the creation of a unifying theory of cognitive and general health models to merge the results from diverse areas of expertise. To enrich lives through research, we propose that practitioner-researchers working directly within their settings and populations of interest can promote healthcare changes by theorising from their work-based experience and transforming daily researchable outcomes into practical healthcare policies. The privileged route for understanding practice-based research was a self-reflective approach with critical incident analysis. We extracted middle-range and grand theories on BPD and public health through grounded theory and meta-synthesis of our published research on BPD, work-based learning, and ethnographic-naturalistic research. A total of 15 publications from our portfolio on separate aspects of BPD were inspected to generate an overarching conceptual model of health and population health behaviours. Our work-based theorisation and reflective practice on BPD, reinforced by on-the-field work-based and serendipitous learning, has allowed us to conclude that early attachment disruption (between a child and parents), child abuse and violence result in later health and social vulnerability in the general adult population. Traumatic child bonding during early years reduces resilience and health behaviours during social, emotional, and biological threats along the human lifespan. Furthermore, the reciprocal influence between population and individual health can destabilise healthcare resources regionally and worldwide. Our work-based research model has some limitations due to the restricted generalisability of work-based findings. However, it is a promising venue for inspiring practitioners to capitalise on their tacit and work-based learning and become change agents by disseminating their work-based research via practical theories and policies.

Keywords: Borderline Personality Disorder, Work-Based Learning, Grounded Theory, Public Health.

Anas Salah

The Use of Clinical Audit Cycle for Improvement in Abu Dhabi Health Service Company "SEHA"

Supervisors: Dr. Catherine Kerr and Dr. Elda Nikolou-Walker

This study investigates the application and outcomes of implementing the Clinical Audit cycle as a tool for healthcare improvement within the Abu Dhabi Health Service Company (SEHA). Clinical audit is recognized as a healthcare assessment procedure that evaluates whether provided care meets established guidelines and standards, aiming to identify areas for improvement and ensure high-quality care delivery.

A qualitative action research approach was adopted, involving seven interviews with SEHA healthcare professionals from the facilities quality department. This method helped explore the processes, challenges, and benefits associated with implementing clinical audits in a UAE healthcare setting. The study outlines the systematic application of clinical audit phases: preparation, measurement of performance, implementation of change, and sustaining improvement.

Key factors influencing the effectiveness of clinical audits were identified, including staff understanding and engagement, integration of clinical audits into governance frameworks, and development of a supportive audit culture. The project proposes a comprehensive Clinical Audit Strategy Framework tailored to SEHA's operational context, aiming to enhance patient care quality, meet regulatory requirements, and foster a culture of continuous improvement.

The findings suggest that the clinical audit framework, when implemented, can significantly improve the quality of care provided in a healthcare setting and drive efficiency. Additionally, the study highlights the need for ongoing training, leadership support, and cross-disciplinary collaboration to ensure successful implementation and sustainability of clinical audits.

This research contributes valuable insights into the practical aspects of clinical audits, offering a blueprint for other healthcare organisations striving to improve care quality through evidence-based practices. By implementing the proposed Clinical Audit Strategy Framework, SEHA can achieve its goals of quality improvement and operational excellence in healthcare delivery.

Keywords: Clinical Audit, Healthcare Improvement, Abu Dhabi, Abu Dhabi Healthcare Services – SEHA, Action Research, Audit Strategy Framework.

Anthony Meehan

An Exploration of Parents' Perception of Pupil Referral Units (PRUs) In the Development of Parent Voice and Authentic, Productive and Lasting Partnerships

Supervisors: Assoc. Prof. Leena Robertson and Assoc. Prof. Gordon Weller

This study explores experiences of parents of children excluded from schools and attending Pupil Referral Units (PRUs), which research shows is considered to be a stigmatising experience. Negative narratives around PRUs have been well documented; they are portrayed as schools to avoid. Working-class, minority ethnic and vulnerable pupils are overrepresented in PRUs, with little variation in this pattern since their introduction.

Conceived within a critical constructivist paradigm, informed by Freire, Kincheloe and Bourdieu, this ethnographic study fills a gap in how this issue is addressed by broadening the investigation to offer critical insights into historical, political and ideological factors impeding effective strategies for exclusion. Semi-structured interviews and a focus group were used to gather data from parents and key stakeholders. Reflexive thematic analysis and narrative inquiry were used for analysis purposes.

My study shows that PRUs remain peripheral to a fragmented education system, increasingly subject to neoliberal principles. Parents experience powerlessness in the process of exclusion, fear sending their children to PRUs and desire a quick return to mainstream. PRUs' and mainstream schools' conflicting priorities make reintegration problematic. Pupils stay in PRUs often for many years.

This study proposes giving PRUs a pivotal role, giving statutory weight to designing reintegration plans, including determining subsequent mainstream placements at the point of exclusion, with pupils' stay at a PRU time-limited. Acknowledging PRUs as operating in a liminal space with the practical wisdom (phronesis) needed to deal with complex needs, PRUs can become arbiters in determining pupils' readiness for reintegration. Trained in advocacy and non-behaviourist, relational approaches, staff can affect positive change by fostering lasting partnerships with parents, often labelled hard to reach, advocating for them in challenging exclusion decisions and supporting them in navigating the education system, accessing other support services, to improve chances of a successful and sustainable reintegration.

Keywords: School exclusion, reintegration, equity, advocacy, social justice.

Tricia McQuarrie

National Survey of the Implementation of Contingency Management in Drug and Alcohol Treatment Services in England

Supervisors: Assoc. Prof. Tim Weaver and Dr. Nicola Metrebian

The problematic use of drugs and alcohol (D&A) is a major public health priority. Evidence-based interventions (EBIs) exist to treat problematic D&A use however their implementation is often slow and complex. This research is important because people affected by problematic D&A use deserve to be offered effective EBIs to support their recovery. One effective intervention which has a strong evidence-base and is recommended in multiple clinical guidelines is Contingency Management (CM). CM involves providing a 'reward' (in the form of vouchers and verbal praise) to reinforce behaviours which align with personal recovery (e.g. attending an appointment, medication adherence and abstinence). Preliminary findings from the first phase of the project (a national survey) will be presented and methodological issues discussed. The PhD utilises theories and frameworks from the field of Implementation Science, which aims to improve the uptake of EBIs. An online survey is being distributed to all adult D&A treatment providers in England from January - July 2024. The survey design and the complexity of identifying the survey population will be discussed. Initial findings will be presented on (a) the number of services using CM, (b) the characteristics of the CM programmes being implemented (c) service manager opinions regarding the utility of CM for treating problematic D&A use. 330 adult D&A treatment providers were identified on the National Drug Treatment Monitoring System and service managers emails were obtained directly from the treatment providers. Preliminary findings will be presented describing the rates of CM implementation, the behaviour(s) being targeted; eligibility criteria, how the target behaviour is reinforced, service managers opinions regarding the utility and ethical status of CM and the perceive barriers and facilitators to the successful implementation of CM. This first phase of the PhD will provide a comprehensive national picture of the implementation of CM in England. This will generate evidence on the factors supporting and hindering the implementation of this EBI in D&A treatment settings. With the aim of improving the quality of services offered to people experiencing problematic D&A use. This will advance the application of Implementation Science in the Addictions.

Keywords: Implementation Science, Contingency Management, Drugs and/or Alcohol, Substance use, Evidenced-based Interventions.

Session 2-L

Mohammad Reza Dawoudi

Exploring the Dynamics of Ventricular Function to Unravel the Pathogenesis of Hypertrophic Cardiomyopathy

Supervisors: Prof. Richard Bayford, Prof. Diane Purchase, and Dr. Vania Gomes

Hypertrophic cardiomyopathy (HCM) is a genetic cardiac disorder characterised by the thickening of the ventricular walls, with a prevalence rate of 0.2% to 0.5%. This study focuses on the diagnostic challenge posed by HCM, given its symptom overlap with various heart conditions and metabolic disorders. Despite the availability of multiple diagnostic tools such as Electrocardiogram (ECG), Echocardiography, Cardiac MRI, Genetic testing, Blood tests, and Stress tests, each method presents specific advantages and limitations, complicating the accurate diagnosis of HCM. Our research aims to discern ECG patterns characteristic of HCM from those of similar heart conditions and metabolic diseases (phenocopies), thereby refining diagnostic accuracy. We conducted a comparative analysis of ECGs from three groups: individuals diagnosed with HCM, those without HCM, and phenocopies. Employing MATLAB for ECG morphology analysis, particularly R-Peak Detection techniques, and leveraging the Pan-Tompkins Algorithm, we sought to identify distinctive ECG features. Our study utilised data from two ECG databases: "The Norwegian Endurance Athlete ECG Database" and the "QT Database" from Physionet in addition to ECG data collected from hospitals in the United Kingdom. Statistical analysis, specifically t-tests, was applied to the data derived from the Pan-Tompkins algorithm, and the Receiver Operating Characteristic (ROC) curve was used to evaluate diagnostic efficacy in distinguishing healthy individuals from those potentially afflicted with HCM. Our findings aim to contribute to the enhancement of HCM diagnostic precision through improved identification of specific ECG characteristics.

Keywords: Hypertrophic cardiomyopathy, Electrocardiogram, Phenocopy disease, Pan-Tompkin's Algorithm, Statistical Analysis.

John Nursiah

Cardiac Troponin Biosensor Development for The Early Diagnosis of Myocardial Infarction

Supervisors: Assoc. Prof. Sandra Appiah, Prof. R. Bayford, and Dr. Jiang Dai

Myocardial infarction (MI) a subgroup of cardiovascular diseases is a life-threatening pathological condition that stems from myocardial injury. Cardiac troponins (CTn) are valuable indicators of myocardial ischemia and potent biomarkers of myocardial necrosis. Thus, cardiac troponin I (CTnI) and CTnT quantification in human serum is the cornerstone of MI laboratory diagnosis. Current clinical diagnostics of MI can cause reperfusion therapy delay and overcrowding of an emergency department. Early screening and detection of CTn biomarkers in a population could prompt medical diagnosis and initiate preventative therapy to avert any future adverse cardiovascular events. Detection of spiked recombinant cardiac troponin biomarker (CTn) in a Fetal Bovine Serum (FBS) (diluted 1:30) was carried out using a label-free tetrapolar gold electrode immunosensor. Functionalization of the biosensor's surface was carried out by sequential immobilisation of Self-Assembly Monolayer (SAM), protein-G and monoclonal anti-CTnT, respectively. [Electrochemical Impedance Spectroscopy](#) (EIS), was used for probing of the biosensor construct and detection of recombinant CTnT (1 pg/mL & 10 pg/mL) biomarkers in the presence of electrolytic redox couple $[Fe(CN)_6]^{3/4}$. The EIS parameter charge-transfer resistance (R_{ct}) was used to evaluable the functionalization process and antigen detection. Validation of the biosensor results were conducted by Western Blot (WB) analysis. Continuous increase in R_{ct} from during layer-by-layer functionalization of the immunosensors indicated its successful construction. Impedimetric detection of recombinant CTnT proteins at clinically relevant concentrations of 1 pg/mL and 10 pg/mL was achieved. The normalised densitometric data for WB analysis indicated the specificity and selectivity of the CTnI and CTnT antibodies for their corresponding target protein as evidenced by absence of bands for negative controls. The WB Limit of Detection (LoD) achieved for recombinant CTnI and CTnT were 264 pg and 62.5 pg, respectively. Conductive Polymers (CP) are organic materials with attractive mechanical, electrical and chemical properties. Development of a CP-based immunosensor could enhance the stability of an immunosensor and consequently improve the sensitivity, selectivity and robustness of the biosensor construct for the early detection of cardiac CTn biomarkers in human serum.

Keywords: Myocardial Infarction, Troponins, Immunosensor, EIS.

Alejandra Gonzalez Baez

Moulding the Future: Sustainable Recovery of Rare Earth Elements From Electronic Waste Through Fungal Bioleaching

Supervisors: Prof. Diane Purchase, Prof. Hemda Garelick, and Dr. Leonardo Pantoja Munoz

Recovering rare earth elements (REE) from secondary sources, such as electronic waste (e-waste) is gaining more attention as these elements are crucial and

potentially irreplaceable in current and future technologies, especially for the transition to low-carbon economies. These critical materials are currently at high supply risk, and the environmental impacts of mining them are of increasing concern. Different hydrometallurgical processes are being researched in the recovery of REE from e-waste. However, these technologies still represent a risk to the environment due to their high chemical and energy demands. This research aimed to investigate the extraction of REE from e-waste through bioleaching and gain an understanding of its mechanism. Bioleaching is an environmentally friendly method that exploits the ability of microorganisms to recover metals from the waste matrix.

Industrially treated Waste Printed Circuit Boards (WPCBs), an important part of e-waste, were provided by e-waste recycling companies from the UK. The chemical composition of the WPCBs material was thoroughly analysed, and the material was subsequently used for bioleaching studies. Bioprospecting of microbial strains exhibiting bioleaching capabilities involved screening strains isolated from a contaminated site. The optimization of the bioleaching process was carried out using a Response Surface Methodology (RSM) approach, which included the analysis of microbial organic acid production. The study explored the kinetics aspect of the process to provide an understanding of the microbial mechanisms driving the bioleaching of REE. A newly isolated Penicillium expansum strain outperformed established reference strains (e.g. Aspergillus niger) and achieved maximum recovery of REE (Pr, Nd, and Gd improved by more than 25%, approaching 70% recovery) under optimal conditions of 7.5 initial pH, 0.1 mM phosphate concentration, and excluding a buffering agent from the medium. The fungal mechanisms involved in REE extraction were related to fungal regulation of extracellular pH, organic acid biosynthesis, phosphate bioavailability, and potential fungal proton pump involvement. This research represents a promising solution for the sustainable recovery of REE from e-waste, promoting circular economy and conservation of natural resources.

Keywords: Biometallurgy, organic acids, critical raw material, metal recovery, circular economy.

Session 2-M

Ivan P Punev

In Vitro Cell Signalling Modulation Using Combination of Doxorubicin with Baicalein in Myeloid Leukaemia – Preliminary Studies

Supervisor: Assoc. Prof. Sandra Appiah, Dr. Milan Vu, and Dr. Perry Devo

A rising problem in developed countries associated with age are haematological cancers, including acute (AML) and chronic myeloid leukaemia (CML). The exact cause of myeloid leukaemia remains unknown, but leukaemogenesis is promoted by aberrant cell signalling in pathways such as apoptosis and autophagy which leads to increased cellular proliferation and leukaemic cell survival. The anthracycline doxorubicin (Dox) is an established chemotherapy for myeloid leukaemia with the caveat of adverse side effects for the patients. The flavone baicalein, which is a plant extract, has shown promising anticancer properties with no severe side effects and favourable safety.

Preliminary in vitro studies in the cell lines K562 (CML), MOLM-13 (AML) and U937 (histiocytic lymphoma, monocytic myeloid cells) aimed to determine the effective concentrations of baicalein and Dox for further drug combination studies. Cytotoxicity assays have been optimised using CyQuant GR after 2-day treatment of cells with varying concentrations of Dox or baicalein. Dox treatments (0.039μM - 2.5μM) presented dose -dependent inverse relationship with viability in all tested cell lines. MOLM-13 presented with the highest sensitivity towards Dox (7-fold difference) with significantly lower IC50 (=0.034 μM; p=0.006) compared to K562 (IC50=0.239μM). For baicalein (1.25 μM- 80 μM), a dose-dependent cytotoxicity was observed if [baicalein]>10μM with K562 (IC50=22.4 μM) and MOLM-13 (IC50=18.5 μM) presenting similar sensitivity. However, lower sensitivity to baicalein was observed in U937 (IC50=39.3 μM; p<0.0001 compared to the other two cell lines).

These findings show promising first steps for further studies into the drug combination development using various flavones in structure-related activities. Human samples will be obtained to further validate the findings. Future work will also focus on targeting established biomarkers and elucidating mechanism of action of the drug combinations at protein, genetic and epigenetic level in cell signalling pathways such as apoptosis, autophagy, Wnt

Keywords: myeloid leukaemia, baicalein, doxorubicin, cytotoxicity, cell signalling.

Dora Vidalina

The Effectiveness of EZH2 Inhibitors in Treating Human Papillomavirus Associated Cancers and Associated Pathways

Supervisors: Assoc. Prof. Lucy Ghali, Dr. Nick Kassouf, and Dr. Song Wen

High-risk human papillomavirus (HPV) is an important risk factor in the development of several types of epithelial origin cancers including cervical, head and neck, anal and penile cancers among others. Epithelial to mesenchymal transition (EMT), which affects phenotypic cellular changes, has also been indicated to be involved in the

pathogenesis of those cancers alongside HPV infection. Up to now, there is still no consensus on the exact roles of epigenetic regulators in managing these conditions. As EMT has been indicated in pathological processes in cancer progression and metastasis, their aggressive and invasive cancer cell behaviour along with chemotherapeutic drug resistance was also observed from HPV associated epithelial cancers suggesting high-risk HPV infection could play a role in it. Furthermore, an enhancer of zeste homolog 2 (EZH2), a histone methyltransferase, has been found to downregulate expression of tumour suppressor genes and upregulate oncogenes, hence promoting cancer cell proliferation, drug resistance and cancer invasion.

Recent findings reported overexpression of EZH2 in HPV associated cancers, which was proposed to be correlated with involvement of EMT process and tumour metastasis. Hence, this study was set up to investigate the expressions of epigenetic changes and EMT markers in HPV associated cancers and to identify whether EZH2 inhibitors (EPZ6438 and ZLD1039) can be effective in reversing EMT process and whether this would be associated with HPV oncogene status.

Current research methods involve evaluating EZH2 inhibitor drug toxicity by cell proliferation assay, cell cycle arrest and cell apoptosis assay using flow cytometry analysis on HPV+ and HPV- cervical and head and neck cancer cells. Epigenetic marker EZH2 and EMT markers have been examined using western blotting. Both EZH2 inhibitors demonstrated effectiveness in reducing EZH2 expression, inducing apoptosis and cell cycle arrest in G0/G1 phase. Results also showed a tendency in reversing the EMT process in the cell lines investigated. Further plans are to confirm the findings including molecular mechanisms of EZH2 inhibitors' action using immunocytochemical staining, western blotting and RT-qPCR techniques.

Keywords: EZH2, HPV, cancer, EMT, epigenetics.

Duncan J Allardyce

Characterisation of Argyrin B Treatment *in Vitro* Response

Supervisors: Dr. Duncan Allardyce, Assoc. Prof. Sandra Appiah, Dr. Dirk Wildeboer, Dr. Erika Loizidou, and Prof. Ajit Shah

The ubiquitin-proteasome pathway plays a critical role in cellular protein degradation and homeostasis. Interaction with the cell cycle, regulation of apoptosis and downregulation of chemoresistance pathways make this an established therapeutic strategy to cancer treatment.One example of a drug approved by the FDA for this purpose is carfilzomib, which is used to treat multiple myeloma. Building upon this success, next generation proteasome inhibitors seek alternative mechanisms of action to overcome resistance and common cardiotoxicity. Argyrin analogues have a growing body of research, indicating proteasome and translation inhibition mechanisms that propose wide applications, including antitumour therapies and as antibiotic immunosuppressive agents. This study aims to further characterise the

cellular impact of argyrin B and contrast with the 2nd generation proteasome inhibitor carfilzomib.

The biological effects of argyrin B were compared with carfilzomib on the B-lymphocyte-derived cell lines, RPMI8226 (multiple myeloma cell line) and RPMI1788 (noncancerous origin cell line). MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) assays determined metabolic activity; a measure relative to viability, proliferation and cytotoxicity. An annexin V/propidium iodide apoptosis assay was investigated using flow cytometry. Finally, label free quantitative proteomic study was performed to determine how protein expression is affected. This involved using UPLC coupled to a Q-exactive Orbitrap mass spectrometer. Mass spectrometry data was processed using Proteome Discoverer 2.5®.

Argyrin B presented a reduction of metabolic activity and an increase in late apoptosis, revealing low micromolar IC_{50} values and a therapeutically beneficial higher sensitivity towards the multiple myeloma cells. Carfilzomib indicated more potent nanomolar IC_{50} ranges but a higher sensitivity towards the noncancerous cells (RPMI1788). Of interest, in both cells, a distinct high granularity subset was observed only amongst high dose argyrin B treatments. Proteomic analysis aims to identify particular proteins and associated pathways up and downregulated in response to each compound treatment, relative to control. This may reveal distinct molecular responses and mechanisms of action between each compound and cell line. Together this contributes to the understanding of argyrin B impact in vitro, benchmarked to carfilzomib and understanding pathway responses of therapeutic interest.

Keywords: Cancer, therapeutics, proteasome, apoptosis, proteomics.

Eriola Diku

Development of the Chick Chorioallantoic Membrane (CAM) to Assess Angiogenesis and Metastasis in Osteosarcoma and Bladder Cancer

Supervisor: Assoc. Prof. Helen Roberts and Dr. Ghada Elayat

The prognosis for cancer patients presenting metastasis and chemoresistance remains generally low, prompting research into understanding the different metastatic pathways and testing novel chemotherapeutic agents. While the traditional in vivo mouse model has been widely used in research, they are often expensive and time- intensive, leading researchers to explore alternative models.

This study aims to optimise and utilise an innovative in ovo model known as the chick chorioallantoic (CAM) assay. This model offers an easy and inexpensive

alternative to visualise the tumour growth in an in vivo like environment, while also minimising animal suffering. Although various CAM studies have shown promising outcomes in osteosarcoma research, investigations into bladder cancer remain limited. This study investigates the growth patterns of two different bladder cancer (BC) cell lines (T24 and SCaBER) alongside an osteosarcoma cell line (HOS-143B) using the CAM model. Furthermore, the behaviour of these BC cell lines will be assessed within a bone-like environment, simulated by utilising a NuOSS scaffold, and compared to a non- bone like environment, created using a protein mixture resembling the extracellular matrix (ECM) of normal in vivo setting. This will give a better insight on the different metastatic and angiogenesis pathways BC uses to metastasise to bone.

In this study, the CAM assay was conducted on embryos at 13 days of development, resulting in tumour formation for HOS-143B and SCaBER cell lines, which has not been observed before in bladder cancer studies. The tumours were analysed using haematoxylin and eosin (H&E) staining as well as immunohistochemistry (IHC). In the future, different antibodies, including CD31, CD34 and CD105, will be utilised to assess angiogenesis and endothelial cell proliferation within the tumour microenvironment. Furthermore, metastatic and angiogenesis genes expression will be evaluated by performing PCR techniques and comparing the results with those obtained from in vitro experiments.

Keywords: Metastasis, angiogenesis, osteosarcoma, bladder cancer, CAM assay.

Session 2-N

Syeda Bushra Ali Rizvi

A Comprehensive Mixed-Methods Study on Combating Physical Inactivity and Metabolic Syndrome

Supervisors: Dr. Anne Eliott, Prof. Tim Evans, Dr. Rhonda Cohen, and Assoc. Prof. Huw Jones

As this study constitutes a pivotal step within the broader framework of a PhD study, it serves as a foundational element in the journey toward developing targeted interventions aimed at enhancing lives and promoting health and well-being among Dubai's multi-ethnic population. Given the substantial global challenge of physical inactivity, along with the concerning prevalence rates of Metabolic Syndrome (MetS) among young individuals in the United Arab Emirates (UAE), this study is serving as a first endeavour to comprehend and tackle these urgent concerns. This study aims to provide new insights into the intricate relationship between chronic disease awareness and physical activity behaviours, building upon past findings and answers

to the highlighted problems. This study aims to establish a foundation for the creation of evidence-based interventions that are customised to address the unique requirements of Dubai's varied population. The research is utilising a cross-sectional survey design, with a sample of 400 individuals ranging in age from 18 to 65, who represent various ethnic backgrounds. The results obtained from this study are expected to provide valuable insights for the development and execution of focused treatments that aim to encourage physical activity and alleviate Metabolic Syndrome in future research endeavours. The management of metabolic syndrome is widely acknowledged as a critical factor in the prevention and postponement of non-communicable diseases, hence promoting healthier ageing and mitigating the overall impact of noncommunicable diseases. Despite inherent limitations, this study represents an essential initial step in the ongoing effort to improve health outcomes and enhance the quality of life for individuals in Dubai and beyond, with the ultimate goal of implementing effective interventions to address these pressing public health concerns. Preliminary analysis will be presented at the conference.

Keywords: Physical activity, Metabolic syndrome, Healthy ageing, Non-communicable diseases, cross-cultural study.

Stephen Orwin

Developing an Exercise Protocol for Elderly Care Home Residents with Parkinson's Disease: A Stakeholder Analysis.

Supervisor: Dr. Anne Elliott, Prof. Tim Evans, and Dr. Rhonda Cohen

Parkinson's disease, a progressive neurodegenerative disorder, occurs when the body's dopamine production, essential for movement, declines. For individuals with Parkinson's in care homes, this often marks an advanced stage of the disease. However, incorporating structured exercise into their full care plans can enhance their quality of life. The rationale for incorporating structured exercise into the care plans of individuals with Parkinson's disease, especially those in advanced stages residing in care homes, is multifaceted and grounded in both physiological and psychological benefits including mental health, neurologically, mobility & customised care.

The difference of approaches among care homes and organisations to exercise protocols poses a challenge in developing a singular beneficial model for residents. The problems are primarily related to the inconsistency in the quality and effectiveness of care provided to residents. This study will seek to merge a broad range of multidisciplinary insights, viewpoints, and therapy experiences to develop a physical activity protocol for care home residents.

The initial study will involve an analysis of stakeholders through qualitative methods. Insights will be gathered from a diverse group of contributors including medical professionals (like doctors and physiotherapists), policymakers, individuals who have firsthand experience of the condition, their families, and caregiving staff working with residents in this area. This research initiative adopts a constructivist ontology and a social constructivism epistemology.

The research will engage 16-20 stakeholders for interviews, aiming to generate a comprehensive analysis. Stakeholder groups include policy makers, residents living with the condition, physiotherapists and families. Data will be analysed both vertically and horizontally to uncover a wide range of insights. The results of this paper will inform the next study; use identified narratives to design and implement a prescriptive exercise plan and evaluate the results through Action Research methodology.

Keywords: Parkinson's Disease, Healthcare Systems, Stakeholder Analysis, Action Research, Adaptive Exercise.

Emanuela Bove

Reconceptualising Food Confusion Through a Biosemiotic Lens

Supervisors: Prof. Paul Cobley and Dr. James Graham

Amid a surge in dietary guidance and wide-ranging crises, confusion about what to eat prevails. While the 'food confusion' phenomenon is typically attributed to deficits in human knowledge, my research suggests that it arises from how all organisms, including humans, interpret nourishment cues, intertwining cognition with fundamental sustenance-seeking activities. The phenomenon thus represents a universal biological issue intensified in the contemporary world. Emphasising the imperative of examining such taken-for-granted semiotic processes and guided by a biosemiotic lens, my study explores the interpretive errors and disruptions occurring across biological systems, thereupon expanding the scope of investigation into food confusion, from cellular reactions to societal misconceptions. This approach shifts discussions from a narrow focus on misunderstandings of nutritional benefits to a comprehensive analysis of species-specific semiotic acts. Building on this premise, the paper focuses on food confusion within the dynamics of semiotic processes throughout life forms, demonstrating how these processes become more complex as the biological sophistication of the organism increases. From simple cells that rely on chemical gradients as signals, through animals equipped with nervous systems interpreting sensory inputs like taste and smell, to humans, who understand food through a variety of cues, including sensory attributes, as symbols loaded with rich meanings and associations, this paper will discuss how an organism's biological complexity influences the depth and accuracy of food identification. Consequently, it

explores how sign-mediated recognition can lead to various levels of misinterpretation, offering insights into the abstract-symbolic, sensory and cellular dimensions of food identification and misidentification. By challenging and broadening conventional discourses around nutrition within an integrated interdisciplinary framework, my work contributes to "Enriching lives through research".

Keywords: Food confusion, Food identification, Biosemiotics, Metabolism-driven cognition, Interdisciplinary approach.

Jibril Salifu

Value Co-creation Approaches to Place Branding: the Role of Digital Engagement

Supervisors: Dr. Giannina Warren and Dr. James Graham

Place branding has become a crucial strategy for enhancing the competitiveness and attractiveness of cities and regions in today's globalised world. A growing body of literature emphasises the need for co-creating value in place branding efforts by involving various stakeholders, including residents, businesses, tourists, and other local actors. Value co-creation approaches can promote inclusivity and participation in place branding initiatives and activities. This involves investigating how digital engagement can help to overcome barriers to participation and how different stakeholders, including local communities, businesses, government entities, and other relevant actors, can be empowered in place branding initiatives. However, there is limited research on how value co-creation approaches, which emphasize collaboration and engagement, can be effectively employed in the context of place branding, particularly in developing countries such as Ghana. With the rapid advancement of digital technologies, digital engagement has emerged as a crucial aspect of place branding efforts.

The Brand Ghana Office is a government initiative established in 2009 with the primary mandate to develop and execute strategies that would enhance the image and reputation of Ghana both locally and internationally. However, in 2017, the government of Ghana under new leadership made the decision to dissolve the office. Following the dissolution of the Brand Ghana Office, its functions were absorbed by a committee tasked with marketing the country to the rest of the world. This committee comprised representatives from the Ghana Tourism Authority (GTA), Ghana Investment Promotion Centre (GIPC), Ghana Export Promotion Authority (GEPA), and the Ghana Free Zones Board (GFZB).

Using a qualitative approach, this study integrates the principles of Collaborative Destination Marketing (CDM) and the Grönroos-Voima Value Model to develop a

holistic understanding of how collaborative efforts among key agencies in Ghana, such as the Ghana Tourism Authority, Ghana Investment Promotion Centre, Ghana Free Zones Authority, and Ghana Export Promotion Authority, can leverage digital engagement to co-create value in branding Ghana.

This research will contribute to literature on value co-creation, place branding, and digital marketing by providing knowledge on coordinating these concepts to create an inclusive, ethical, and sustainable approach to place branding.

Keywords: Value co-creation, Place branding, Digital Engagement, Stakeholder Collaboration, Nation Branding Strategy.

Session 2-O

Nico Pizzolato and Kurt Barling

3 Minute Thesis Pitch

Could you engage everyone in the audience with your topic and leave them with a better understanding of your area of research, without getting bogged down in detail and jargon? Every year hundreds of Doctoral students take part in VITAE's 3 minute thesis (3MT) pitch, where they explain a typical 80,000 word thesis (which would take 9 hours to read) in 3 minutes. In this workshop, facilitators, Prof. Kurt Barling and Dr Nico Pizzolato, will work with participants to explain the principles of an elevator pitch, including, voice, intention, clarity and structure, and to draft and rehearse one.

Session 3-P

Akashdeep Ganguly

Investigating Metastatic Potential: An Analysis of Migratory Body Formation in Chondrosarcoma

Supervisor: Dr. Helen Roberts

Chondrosarcoma (CHS) is the 2nd most prevalent bone sarcoma. Approximately 27% of all bone cancer cases reported to the International Agency for Research on Cancer (IARC) database are CHS. CHS tends to primarily affect adults above the age of 30 with 70% of cases reported affecting patients of 40 years and above. While

CHS has an optimistic 5-year survival rate of 75.2%, this can depend greatly on the accuracy and time of diagnosis, histological grade, and subtype. Metastasis which often leads to chemoresistance have been primary complications in this cancer which often leave minimal treatment options, prolong the treatment course, and cause severe damage to the patients' quality of life.

In our research group, we have identified a potential route through which metastasis might occur. Our in vitro observations with CHS cell-line SW1353 have shown that spheroids which we call migratory bodies (MB) can detach from the monolayer in our cell culture plates and remain suspended in the media. These MBs have shown to be able to adhere and proliferate, forming new colonies once replated into a fresh cell culture plate. Different cell seeding densities were used in 6 well-plates to optimise the production of MBs. 5000 cells/cm^2 was found to be the optimum seeding density to produce the maximum number of MBs in SW1353. EGF and FGF were used to further optimise the formation of these MBs. A combined dose of 10ng/ml EGF and 10ng/ml FGF was shown to maximise the production of MBs. Going forward, these MBs will be used for downstream analysis such as qPCR to compare gene expression prolife with the original monolayer to investigate whether they possess higher stemness, metastasis, angiogenic and chemoresistant properties as we have previously shown in osteosarcoma MBs. Our hypothesis is that these MBs metastasise and form chemoresistant secondary tumours.

Keywords: Chondrosarcoma, Metastasis, Chemoresistance.

Elham Mousavinezhad Sarasia

Biological Effects of Synthetic Biomolecules that May Either Mimic or Antagonise the Function of hCG In the Development of Cancer and Autoimmune Disease

Supervisors: Dr. Sue Outram, Dr. Roger New, and Prof. Ivan Roitt

hCG is a cortisol hormone that plays an essential role in maintaining a successful pregnancy outcome. Recently, it has been shown that hCG achieves this outcome, in part, by maintaining maternal immune tolerance of the paternal antigens in the fetus. It does this by driving the expansion of a range of immunoregulatory cells, including tolerogenic dendritic cells, Tregs, and Bregs.

The purpose of this project is to design and synthesize two small oligopeptide aptamers capable of binding specifically to either the Beta or Alpha-helix sheets of the hCG receptor thereby regulating the hCG signalling pathway. Peptide aptamers are a new class of biologically active molecules that can bind their target exclusively.

Using PBMC isolated from human blood cones as a source, purified Naïve B cells were obtained. This purified cell population were then set up in culture with the two separate aptamers with and without hCG and examined for their ability to drive the expansion of Breg subsets. The percentage representation of this CD19+CD24+CD27+ subset was investigated using flow cytometry. The function of the cells was measured by analysing secretion of the immunoregulatory cytokine, IL10 using ELISA.

It was observed that the aptamer designed to bind directly to the beta sheet of the receptor (A1) acted as an agonist of hCG signalling resulting, generating the same effect as with hCG alone namely an expansion of Breg cells accompanied by an increase in IL10 secretion. The second aptamer that was designed to bind to the alpha sheet of the hinge reason of the receptor acted as an antagonist of the hCG signalling pathway as evidenced by the fact that expansion of the Breg population in the presence of hCG was blocked by the presence of theA2 aptamer.

The generation of aptamers with both agonist and antagonist properties on the hCG signalling pathway provides us with the long-term potential to use these aptamers as treatments in the clinic to either promote the expansion of immunoregulatory cells such as in autoimmunity or to block the production of immunoregulatory cells such as in the treatment of tumours.

Keywords: Aptamers, Immunoregulatory cells, Cancer, Flow cytometry, ELISA.

Ceana Siljan

The Effects of Electronic Cigarettes on Endothelial Function: A Systematic Review and Meta-Analysis

Supervisor: Dr. Vivetha Poornachandran

Despite being marketed as a safe alternative, the harmful vascular effects of electronic cigarettes (EC) remain widely unknown. In this meta-analysis, EC and tobacco cigarettes (TC) were compared to illustrate the effect on endothelial function, as measured by flow-mediated dilation (FMD). A reduced FMD is an early indicator of future cardiovascular events. Our meta-analysis aimed to investigate the effects of e-cigarettes on vascular endothelial function. PubMed, ScienceDirect and AHA Journals were searched for full-text studies between 2015 and 2023. Eligible studies included healthy smokers between 18 to 65 years, assessing both EC and TC's effect on FMD. Data were analysed using REVMAN 5.5. Five studies with 249 participants were eligible for this review, of which 3 were randomised control trials and 2 were non-randomised control trials. The 5 studies were pooled using a random-effects model. A statistically significant reduction in post-FMD in TC

compared to EC was observed: overall mean difference -1.20 (CI -2.14, -0.27, Z = 2.53 P= 0.01 I^2= 95%), indicating a greater reduction in FMD in those who smoked TC compared to EC. However, a minimal reduction in post-FMD in the EC arm was also seen when compared to Base-FMD: overall effect 0.37 (CI -1.06, 0.32 Z=1.06 P= 0.29, I^2 98%), suggesting both products may have a similar influence on endothelial health. In summary, evidence from our pooled analyses indicates that inhalation of e-cigarettes leads to negative changes in endothelial function. However, further studies need to explore the cardiovascular risk before considering it as a safe alternative to traditional smoking.

Keywords: Electronic cigarettes, flow-mediated dilation, endothelial function, cardiovascular events, tobacco cigarettes.

Session 3-Q

Jo Cheesman and Donna Reddy

Enriching Lives through Peer Pair-Work: Insights from Transdisciplinary Practice Research

Supervisors: Dr. Clarice de Santos and Dr. David Adams

"But ask anyone, such is the nature of relationship…. We learn together, or we do not learn." — Nora Bateson, Small Arcs of Larger Circles: Framing through Other Patterns

The DProf (Transdisciplinary Practice) programme encourages peer engagement and support through convening as an international cohort. The connections and trust that were fostered through the cohort activities led two members to begin linking regularly.

We invite you to join us at the midpoint in our journey, as we share our experience of partnering together, including the process and conditions we create and the complexities we navigate, and explore how an explicitly Transdisciplinary approach has enabled deeper mutual development.

Transdisciplinary practitioner research invites curiosity, exploration, and transformation. We developed a process of pair-work, in which we are collaboratively curious, providing space for questions to emerge, illuminating for each other the areas made dark by blind spots, and providing encouragement and challenge. This brings new perspectives and enables insights that help each of us to become unstuck.

From the outset, the transdisciplinary approach has encouraged our vulnerability through questioning our assumptions. In the process, we both grow our agency as researchers and practitioners and step beyond our comfort zones into a stance of exploration.

One of the most beneficial aspects of our pair-work has been the use of metaphors to conceptualise our professional practices, challenges and ways of working together. The resulting co-creation of knowledge enriches our individual research journeys.

With the aim of, in turn, enriching other practitioners' research, we hope to share our experience of pair-work and encourage your own reflections on what might enrich your journey.

Keywords Transdisciplinarity, knowledge co-creation, pair-work, metaphor, mutual development.

Inas Ahmed

Examining Problematic Social Networking Site Use and its Associated Behaviours

Supervisors: Dr. Shing-Wan Chang, Dr. Costas Priporas, and Dr. Moustafa Battor

Problematic Social networking sites (SNS) use can relate to behaviours such as excessive, compulsive or destructive engagement with different social media websites, for example Facebook, Twitter, or Instagram amongst others. This is characterised by the negative impact it can have on individuals' mental well-being, interpersonal relationships, and day-to-day functioning. Some of the common causes of problematic SNS use are unrestricted time spent on SNS, obsession with likes and comments, reassurance seeking of others and compulsive checking of social status. Moreover, persistent use of SNS can lead to problems, where people may find it difficult to control the amount of time they spend on these platforms, commonly at the expense of other important activities such as work, study, or personal relationships. It is argued that although problematic SNS use is not classified as a mental disorder, several studies have argued that it produces symptoms like substance use disorder. However, there are many benefits provided to users through SNS, for example users have the ability to connect and stay in contact with friends, peers, co-workers and relatives, while also getting access to news and information and other online communities with relevant topics for the user to engage with.

Therefore, this research study aims to identify the antecedent and consequences of Problematic SNS use. The central research question that this study would like to ask is what are the antecedents and consequences of problematic SNS use? This

study will adopt a quantitative research design and will conduct a survey questionnaire to collect a sample of 600 SNS users. Therefore, this research would like to identify several hypothesised relationships which are perceived to cause problematic SNS use. Also, this study will also identify the relationship between problematic SNS use and several other consequences, which have not been addressed in the previous literatures. This research study will help to enrich people's lives through understanding how people can manage their day to day lives while developing a healthy obsession with social networking sites without the expense of neglecting other important decisions.

Keywords: Social network sites, SNS, Problematic Social network sites ,behavioural addiction, SNS overuse.

Noreen Dove

The Story of Black Women in Academia in the UK; Shifting From Invisibility to Visibility

Supervisor: Assoc. Prof. Orthodoxia Kyriacou

This research investigates the nuanced dynamics of invisibility and visibility experienced by black women (African and African Caribbean) within the context of higher education in the UK, examining their potential impact on career progression and overall well-being within academic settings. Despite legal reforms aimed at fostering diversity and inclusion, there is evidence to suggest that some black women still encounter various challenges related to inclusivity and a sense of belonging in academia.

The primary objective of this study is to amplify the voices of black women in academia, providing them with a platform to share their lived experiences (negative or positive) and collaboratively explore strategies for better support while navigating the academic landscape. Employing qualitative research methods, including storytelling and focus groups, the study aims to gather insights directly from black women academics regarding their experiences (negative or positive) and suggestions for further development. Through this approach, the research seeks to develop a nuanced understanding of the factors influencing the professional experiences and well-being of black women in academia.

In light of recent social movements such as Black Lives Matter, discussions surrounding diversity, inclusivity, and equality have gained significant traction, prompting organizations to reevaluate their practices and policies. This study contributes to these conversations by shedding light on the experiences of black women in academia and fostering dialogue.

20 black women employed in academic institutions across the UK have been interviewed. By June 2024, focus group sessions will be completed.

Keywords: Institutional Racism, Higher Education, Marginalisation, Black Feminism, Critical Race Theory

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Session 3-R

Matthew Maxwell

Elizabethan Cybernetics

Supervisor: Dr. Vlad Morariu and Dr. John Timberlake

Shakespeare wrote about women in ways that were radically new at the time. In a deeply unemancipated age, the female characters he presented reject the 'stereotype of the passive, sexless, unresponsive female. Instead, they occupy many central roles, where their agency – social, natural, and sexual – is never in doubt. The canon is full of roles that explore boundary, agency, and convention.

Four centuries later, Donna Haraway's influential Cyborg Manifesto, similarly challenged traditional notions of gender, identity, and society through the metaphor of the Cyborg; 'a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction.' Today, Haraway's prediction has matured. Cybernetic creativity – a blurry collaboration between computational and organic creativity – is breaching boundaries of who, or what, constitutes an artist, and, by extension, what it means to be a human in a world increasingly managed by automated systems.

How will this research 'Enrich Lives?'. I would imagine there can be little doubt that Shakespeare's canon has, over the centuries, enriched the lives of those open to the themes he explored. At a time when women were viewed primarily in the language of ownership, Shakespeare created and gave prominence to women who are complex, confident, and capable. And while our modern age may have reconsidered the place of women in society to some extent, Haraway's imagining of 'creatures of social reality and fiction' feels ever more relevant. Not just to the condition of women, but to the possessors of organic intelligence, no matter their gender, sex, or creative ambition.

Keywords: AI, AIArt, Shakespeare, Natural Language, Psycho-geography.

Qingyu Shen

Challenges and Reconstructions: Femininity in Contemporary Chinese Art from the 1990s to the Present

Supervisors: Dr. Katy Deepwell and Dr. Alexandra Kokoli

In the 1990s, feminism emerged as a distinct artistic phenomenon in contemporary Chinese art, heralding a rise in women artists, feminist artworks, and related art exhibitions. Contemporary Chinese feminist art has progressively unveiled its unique characteristics concerning gender and its relation to works produced by Chinese women artists. Research on feminist art since the 1990s has mainly revolved around the enrichment and development of feminist art as a distinct branch of Chinese art, gaining recognition from various texts and authors who have discussed this topic in China. Despite the recognition of feminist art as a distinct genre within Chinese art, scholarly exploration, particularly in the nuances of femininity (女性特质, nǚxìng tèzhì), the distinction between feminine-ism and feminism, remains sparse. My research aims to bridge this gap by dissecting the portrayal of femininity in contemporary Chinese feminist art, its critical reception, and the distinction between feminine-ism and feminist art in China through art criticism, artworks, and art exhibitions. Utilising in-depth interviews with art critics, artists, and curators conducted both in person and via Zoom, this study is currently in the writing-up stage following fieldwork outcomes and interview data. Through this exploration, I seek to enrich the discourse on Chinese feminist art, fostering a deeper understanding of its contribution to cultural enrichment and the lives it touches. By generating a framework for how contemporary Chinese feminist art navigates and nuances the discourse on gender and culture, this research underlines the significance of feminist artistic expression in "enriching lives".

Keywords: Chinese contemporary art, feminist art, art history, art criticism, art exhibitions.

Donal Pyne

An Existential Phenomenological Exploration of the Psilocybin Experience

Supervisor: Dr. Niklas Serning and Dr. Victoria Garland

Over the last number of years there has been a resurgence of interest and activity around the clinical potential of psilocybin. Quantitative studies conducted suggest strong evidence demonstrating its effectiveness in alleviating distress and enhancing well-being with both clinical and non-clinical populations. Fewer qualitative studies

exist but the themes and results from those studies indicate that an existential-phenomenological approach is ideally suited to capture the inherently subjective nature of the psilocybin experience and potentially illuminate mechanisms of action closer to lived experience. This study will report on the experiences of six healthy individuals who availed of a trip-sitting service in the Netherlands employing a qualitative existential-phenomenological approach to gain an understanding of the psilocybin experience paying close attention to ethical practice to minimise any potential harm to the participant. The trip-sitting service also operates a sliding scale of payment to facilitate greater inclusivity.

Themes that emerged from the data of one participant, who consumed a moderate dose of psilocybin and was interviewed one month after her journey, provided some illuminating insights. The emergent themes pointed to the importance of set and setting in providing a safe container for the experience, the manner in which psilocybin can provide release from depression, the discrepancy between prior expectations and the actual experience itself, the ways in which social conditioning can hinder authentic expression and suppress the longing for connection, the capacity of a psilocybin journey to connect to more spiritual dimensions of our being, as well as highlighting the challenges and supports associated with the integration process.

This initial finding is consistent with findings from the existing literature indicating that, under safe and supportive conditions, a moderate psilocybin dose can act as a catalyst for enriching and transforming the psychological, social and spiritual aspects of our Being.

Keywords: psychedelics, psilocybin, existential, phenomenological, qualitative

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Session 3-S

Tasneem Akbar

Investigating Attention in Adults with ADHD

Supervisors: Dr. Alexander Jones and Dr. Jonathan Silas

Attention refers to the cognitive ability to focus and concentrate on relevant incoming stimuli. Attention is commonly divided into two distinct categories: endogenous and exogenous. Endogenous, or top-down, attention is a voluntary and effortful process based on the individual's internal behavioral goals. Exogenous, or bottom-up, attention is an involuntary process driven by environmental stimuli, such as a flash of light or a tap on the shoulder. In the tactile (touch) domain, we constantly need to filter out irrelevant information. In the past, it has been suggested that Attention-deficit/hyperactivity disorder (ADHD) was characterized in part by an

increased sensitivity to incoming stimuli. However, there has been limited scientific research that has investigated how tactile attention is processed in people with ADHD. Therefore, the aim of this current study was to address this in hopes of enriching the lives of people with ADHD.

In this EEG (electroencephalogram) study, the participants were exposed to tactile and visual stimuli. The tactile stimuli consisted of a tapping sensation produced by a small button upon which the participant's finger would rest upon. The visual stimuli consisted of numbers and letters displayed on a monitor. While attached to the electrodes of the EEG, the participants engaged in three tasks: single tactile, single visual, and dual modality tasks. During the single tactile and single visual tasks, they responded verbally to specific targets in either the tactile (tap) or visual (number) modality. In the dual task, they responded to both visual and tactile targets. The EEG would measure and record electrical activity in the brain throughout those tasks.

The primary objective of the attention task was to explore potential differences in behaviour and neural markers between ADHD and neurotypical individuals. By examining ADHD through the somatosensory modality, this study aimed to provide a greater understanding of how this disorder is exhibited in the brain. This study investigated how tactile attention is processed in individuals with ADHD, an area that has seen limited research in the past. Data was gathered from the two groups, and the findings indicated a notable difference in tactile attention between the groups.

Neelam Kaur Ghuman

Beyond Work-Family Conflict: Work-Life Balance Supports for Employees with Differing Family Structures

Supervisors: Dr. Nicola Payne and Dr. Camille Alexis-Garsee

The most prevalent model of work-life balance (WLB) asserts that when an individual faces competing demands amongst roles in their life it leads to conflict between roles. Research has predominantly focused on conflict between work and family roles, and focused on employees with children. Limited research has explored experiences across employees with differing family structures, such as those without children. This includes their perceptions of WLB supports such as flexible working. In 2014, the UK's right to request flexible working legislation was extended from parents and carers to all employees, highlighting the importance of assessing perceptions of fairness of WLB supports among employees with differing family structures. This research examined perceptions of supports for WLB, particularly the extension to the right to request flexible working legislation, from the perspective of

Human Resources (HR) managers, line managers and employees. It also explored the WLB experiences of employees with differing family structures. This paper will primarily focus on telephone/Zoom interviews with seventeen employees. Differences in WLB experiences and use of sources of support from work and outside of work were reported across employees with differing family structures. The majority recounted work-personal life conflict (WPLC) and reported guilt and self-blame for this. While they felt the extension of the legislation was fair, contradictory responses suggested parents may be perceived as having a greater need. Similarly, telephone and in-person interviews with fourteen HR and line managers revealed they saw benefits to the extension of the legislation, such as it being fairer to all employees, but also barriers, such as value judgments that employees without children have less legitimate reasons for requesting flexible working. The results contribute to a more comprehensive understanding of WLB that includes the experiences of those with differing family structures. They highlight the need for managers to ensure fairness in their processes and to aid in establishing a healthy workplace culture that minimises work demands and WPLC. Employees can also benefit from adopting strategies to help manage boundaries between work and personal life. Future research should aim for greater diversity in sampling.

Keywords: Occupational Psychology, work-life balance supports, work-family conflict, differing family structures and fairness.

Yvonne Langkamer

Towards a Biosemiotics of Trauma

Supervisors: Prof. Paul Cobley and Prof. Tom Dickins

Responding to the conference theme, Enriching Lives Through Research, my paper will argue that what is deemed an epistemological crisis in the psy disciplines is at the expense of those whose lives are devastated by life-long, severe post-traumatic symptoms in the form of mental health and/or personality disorders. These individuals are ill-served by the resultant misdiagnosis, widespread use of psychopharmaceuticals and ineffectual, time-bound therapeutic interventions. The valiant adoption of the biopsychosocial model and of the introduction of various body-oriented somatic psychotherapies to bolster the talking cure are inadequate because of a lack of a secure and unified ontological, theoretical and conceptual basis.

Traditional 'gold standard', operationalized, categorical systems in psychiatric taxonomy – embodied in the DSM and the ICD – classify disorders theoretically, using boundaried criteria based on observable signs and symptoms. The Research Domain Criteria (RDoC) and Hierarchical Taxonomy of Psychopathology (HiTOP) challenge these traditional systems, advocating dimensional and transdiagnostic

approaches to categorisation and demanding that research be focused on multifaceted aetiologies of disorder, such as traumatic antecedents and genetic, epigenetic, biological, neuroanatomical, environmental and developmental factors.

The rationale behind this epistemological thesis is to question the dualistic ontological position to which essentialist psychiatric classification and the psy disciplines rigidly adhere by looking at how psychopathology and personality may be examined using a complex systems approach. The aim is to focus on two 'diagnostic kinds' – complex post-traumatic stress disorder (cPTSD) and borderline personality disorder (BPD) – using the theoretical framework of biosemiotics, which synthesizes cultural sign theory with biology and examines signification, information processing, meaning making and communication in living systems. As such, the organism is conceptualised from a cybernetic perspective and the trauma response as part of this complex, self-organising and adaptive living system. The contribution to knowledge, therefore, moves beyond dimensional and transdiagnostic understandings.

Keywords: Biosemiotics; complex/early relational trauma; philosophy of psychiatry; psychopathology; personality.

Session 3-T

Dominique C Rivoal

Sharing Process: A Somatic Approach to Filming

Supervisors: Assoc. Prof. Stefanie Sachsenmaier, Prof. Vida Midgelow, and Dr. Vesna Lukic

My research explores the intersection between somatic movement practices and filmmaking, particularly in the context of 'Screendance', with the focus of developing an experimental film practice that bridges these disciplines, discovering along the way new mediated ways of seeing and being with. The research uses the format of the dyad (a filmmaker/mover) to explores a somatic way of working with the camera, with the objectives of adapting known somatic strategies of self-awareness to the process of filming.The presentation takes the form of a video-essay to reveals the various somatic strategies of self-awareness that were employed during the process of filming for a four-screen audio-visual installation called 'We are plants, we are grass, we are Hackney Marshes', through an ongoing process of monthly encountering, lasting more than five years, between the site of Hackney marshes, two artists and a camera. This video-essay serves to encapsulate and share the filmmaker's process, conveying how attending to soma while operating a camera is an enriching and transformative practice, that can exist, in parallel to a somatic movement practice, instead of merely documenting it. This video also reveals how

the durational and iterative nature of this collaboration has empowered the filmmaker to experiment, take risks, indulge in self-perception to shift engrained habitual patterns of representation. This ongoing process has also allowed for the refinement of the relational strategies for somatic filming, such as camera witnessing, with the intention of sharing these as a method of somatic filming with broader communities.

Keywords: durational- Dyadic- Somatic- Filming- Process.

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Shicong Xie

Perceiving Time: Raising an Awareness of Time via the Frame Gap in Experimental Film

Supervisors: Dr. Anne Robinson and Dr. Tansy Spinks

This research is practice-led, exploring temporal experience in film via the concept of the frame gap, which I developed from my moving-image practice. Beginning with several experiments engaged with light as a medium in the cinema, this research delved into intermediary meditation on the medium specificity between film and light as a pure medium in art. Reflecting on Henri Bergson's two modes of time, 'duration' and 'spatialised time', the film's nature of frame structure as its timeline seems to differentiate light as a durational experience in installation and performance. Based on Peter Gidal's concept of 'film as film', as a study of film materiality in 'Structural Film' and materiality of animation, an innovative concept of the frame gap is identified as a unique physicality of film based on its special language and mechanism. Applying this new concept in my two experimental cinemas, Motion or Time(2024) and One Day in One Minute(2024), these two cinemas investigated how the frame gap evokes an awareness of time as time perception in the context of film phenomenology. To address this question, this research draws on Merleau-Ponty's existential phenomenology, Vivian Sobchack's 'embodied experience', and Laura Marks's 'haptic visuality', illustrating the frame gap as a feature of film's intelligent body different from our body. Through the phenomenological perceptual structure of mutual exposure between these two bodies, my cinemas not only enable the viewers to perceive the frame gap as the disappeared time from the film's body but also expose a pre-reflective perception of time as a continuous flow within our bodily experience towards the world. Therefore, my cinemas enrich our lives by creating a new cinematic phenomenon of temporal experience.

Keywords: Time, Medium, Frame gap, Film materiality, Phenomenology.

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Sarah Onafuye

Strong Women Don't Have the Blues?

Supervisor: Dr. Vesna Lukic, Assoc. Prof. Helen Bendon, and Prof. Eleonore Kofman

My experiences as a second generation black-British Nigerian heritage woman living in the UK forms the existential basis for this research enquiry. As a black-British Nigerian heritage woman, filmmaker, I embrace several insider-outsider roles which informs my conception of the Strong-Black Woman trope. As I have seen and witnessed how the trope negatively impacts black women's wellbeing, I seek to find ways using documentary narrative along with lived experiences of black women, to disrupt and educate the Nigerian community to create softer pathways for young girls growing up in the community, and to help black women who are succumbed to the trope. I am interested through my research in creating softer paths for black women, giving them ways to navigate through cultural demands, expectations, and standards.

The main aim of this research practice is to explore as an insider the misconception of notions of strength in the Nigerian diaspora as a second generation black British Nigerian. The Strong Black Woman is a woman who overcomes all obstacles, remains strong despite life problems and challenges, and lastly sacrifices herself for others. In this study I am exploring the life of the researcher, and the lived experiences shared with the Strong Black Woman trope, along with first generation Nigerian women and second generation black British Nigerian women. The current study explores the lived experiences of British Nigerian women through the lens of the Strong Black Woman trope to unpack the qualities and misconception of strength from first generation and second-generation black women. It also explores the lived experiences of black women and how the Strong Black Woman trope is complex and how it discourages black women's vulnerability. Capturing the relationship between myself and participants will be through our interactions in interviews, focus groups and discussions around the trope. Therefore, to meet this objective, I will engage several interdisciplinary methods, namely, semi-structured interviews, insider outsider approach and lastly, focus groups. According to Banks (1998) "there are two main types of researchers in cross cultural research 'cultural insiders and outsiders' cultural insiders have commonality with the research participants as they share the same social background, culture language".

Keywords: Auto-ethnography, Documentary, Focus group, Semi structured interviews, Nigerian diaspora.

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Session 3-U

Andrew J Waller

Experiences of Overweight and Obese Men and Subsequent Influences on Their Cognitive Processes and Emotions

Supervisors: Dr. David Westley and Assoc. Prof. Nicola Payne

In relation to the core theme of PRSC2024, this research aims to enrich lives by better understanding the experiences of overweight and obese men. A series of studies seeks to eventually cause cultural realignment by reducing instances of stigma and discrimination, which have been discovered by previous research, to ultimately aid adjustment of the social acceptability of humour, taunts and abuse aimed at the subject group. In most western countries, a greater proportion of men, rather than women are overweight or obese, in England, 67% of adult males against 60% of women are classed as being overweight, encompassing 26% of the male population who are considered obese. Despite this, previous research has focused predominantly on the experiences of overweight women. A mixed methods series of studies will explore the personal experiences of overweight and obese male adults and subsequent influences on their cognitive processes and emotions. The series of studies will augment the existing, small, and inconsistent research base, and will assist in addressing the imbalance of sex, in terms of participant focus, to assist improvement and sustainability of male mental and physical health, and enhancing understanding of how associated prejudice may be pertinent in the prediction of psychological distress and problematic behaviour. Study One will use Interpretative Phenomenological Analysis (IPA) to capture personal lived experiences of overweight and obese men and interpret the emotional impact in relation to discrimination and prejudice. Informed by the findings of the IPA Study, Study Two shall utilise Constructionist Grounded Theory (CGT) to construct a theory of how obesity in men influences their cognitive and emotional processes. After the CGT phase, Study Three will test the constructed theory, using selected appropriate psychometric methodology.

 Keywords: obesity, overweight, experience, health, prejudice.

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James Collins

Exploring Encounters With 5-MeO-DMT Among Experienced Psychedelic Users — An Interpretative Phenomenological Analysis.

Supervisors: Dr. Niklas Serning and Dr. Chris Timmermann

Examining first-hand accounts of profound psychedelic experiences can provide valuable insights into the therapeutic potential of psychedelics to enrich and improve lives. Public, scientific, and regulatory interest in psychedelics has grown exponentially in recent years, alongside a growing evidence base for psychedelics and psychedelic-assisted therapies as treatments for a range of mental health indications. Among the most potent psychedelics is 5-methoxy-N,N-dimethyltryptamine (5-MeO-DMT), a fast-acting, naturally occurring tryptamine that produces intense changes in cognition and affect. Research suggests that people who inhale vaporised 5-MeO-DMT experience intense mystical experiences and psychopharmacological research indicates a single inhalation of vaporised 5-MeO-DMT can bring self-reported improvements in satisfaction with life, reduction in anxiety and improvements in mental health. Qualitative research into 5-MeO-DMT is nascent, presenting an opportunity to see what first-hand user accounts might contribute to understanding these phenomena. An existential-phenomenological investigation of people's encounters with 5-MeO-DMT will be conducted, utilising an Interpretative Phenomenological Analysis (IPA) methodology, rooted in existential philosophy. Utilizing an existential-phenomenological approach will enable an in-depth exploration of the lived experience of 5-MeO-DMT and the meaning participants derive from these profound altered states, shedding light on the transformative, life-enriching aspects. Research will comprise in-depth interviews with up to 10 experienced psychedelic drug users, between two weeks and four months following a 5-MeO-DMT experience. This research aims to expand understanding of the potential of psychedelic experiences to enrich lives by providing a window into the lived experience of 5-MeO-DMT and its capacity to occasion meaningful, transformative states of consciousness.

Keywords: psychedelics, 5-MeO-DMT, bufo, IPA, meaning-making.

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Neresia Osbourne

For Those Who Die Every Night and Wake Up in the Morning: Exploring the Lived Experience of Black Mothers who Endure Traumatic Births, Resulting in Brain-Injured Children, in the Medico-Legal Field

Supervisor: Dr. Simon Wharne

Black mothers experience higher rates of maternal death, infant mortality, and physical and mental complications due to medical violence and obstetric racism. Lack of informed consent subjects Black women to medically unnecessary procedures or none at all. The American Psychological Association's (APA) apology for contributing to establishing a human hierarchy in society holds historical significance and provides a basis for challenges. Limited research on the

experiences of black motherhood, and there are limited studies on the mental health of Black mothers caring for children with complex needs or their access to the medical-legal route. This work poses a question as: "To what extent do biological racism and anti-Black identity perpetuate the ongoing deficits in psychological research and psychotherapeutic practices?" Exploring a black existential feminist narrative provides a wide-ranging opportunity to examine various aspects. It delves into the ontological perspective of black female identity, racism, trauma, and the intersection of motherhood. Focusing on the existential crises experienced by black mothers, as well as the phenomenological experiences of raising disabled babies and children while navigating the challenges posed by male-created identities. It also serves as a foundation for academic research, promoting theoretical and conceptual traditions in the public and mainstream domain. Through a critical theoretical lens, it prioritises the stories interviewees shared as the primary data source. This approach fosters an ethos of intellectual inclusion and supports qualitative research in counselling psychology. It recognises the significance of an Africana methodological approach as it facilitates deconstructing historical narratives. Offering researchers and practitioners a framework to integrate anti-racist practices, ultimately enriching the lives of black women.

Keywords: Discrimination, Birthing, Women, Disability and Race.

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Session 3-V

Mohammad E Hashimyar

Deep Learning based Intrusion Detection System for IoT Application Protocol

Supervisors: Dr. Mahdi Aiash, Dr. Ali Khoshkholghi, and Dr. Giacomo Nalli

The Internet of Things (IoT) is one of today's greatest technological trends; it helps create applications to improve the quality of life. For IoTs' services to succeed, new communication protocols have been introduced at the application level, such as Advanced Message Queue Protocol (AMQP) and Message Queuing Telemetry Transport (MQTT), the most common lightweight protocols for communication between IoTs' applications. Unfortunately, cyberattacks are rapidly becoming a major threat to the IoT's security; cyber criminals are continuously exploiting vulnerabilities in IoT applications. Some of these attacks are known types of network attacks, such as DoS, brute force, and MITM attacks, while others are unique for the IoT's protocols, such as heap buffer overflow. Today, protecting these systems is a primary issue for researchers. Cyberattacks are becoming a major Internet of Things security problem. Due to the lack of data, a novel dataset was created specifically for training the machine learning and deep learning models of the intrusion detection system. We developed a testbed to conduct different new attacks based on the mitre framework against IoT network environment to generate new datasets. The new

dataset will be used to train machine learning Intrusion Detection Systems (IDS) for IoT application threats which has not been used or developed by researchers. The aim to identify emerging IoT application protocol vulnerabilities by addressing the limitations of existing datasets that may not accurately represent real-world IoT network circumstances. Currently Examining the new dataset using several machine learning models to verify the intrusion detection system (IDS)'s ability to react to present threats. This will enable the Intrusion Detection System (IDS) to promptly detect and recognise assaults occurring in real time, specifically targeting Internet of Things (IoT) devices and networks. Overall, the use of machine learning models in this Intrusion Detection System (IDS) would enhance the security of IoT devices and networks.

Keywords: IoT, Intrusion detection.

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Kannan Manikandan

Leveraging Digital Twin for Enhanced Efficiency, Sustainability , and connectivity in AI-Driven Automations.

Supervisor: Dr. Purav Shah, Dr. Ramona Trestian, and Dr. Hrishikesh Venkataraman

The contemporary era is witnessing an exponential transformation driven by Artificial Intelligence (AI) technologies, which are revolutionising various industries through automation and advanced data analytics. However, achieving optimal performance, efficiency, and sustainability in AI systems necessitates substantial investments and meticulous iterative testing processes reminiscent of traditional methodologies.

This research delves deep into the strategic utilisation of cutting-edge digital twin technologies to effectively address these multifaceted challenges. A Digital twin, intricate virtual replicas of physical assets or processes, offer a sophisticated and minute framework for optimising iterative tests within automated systems. By meticulously simulating and analysing diverse test scenarios with unparalleled precision and agility, digital twin significantly consume a lot of time, resources, and costs typically associated with conventional iterative testing paradigms.

Furthermore, the pivotal role of digital twin extends beyond test optimization to encompass comprehensive energy analysis and optimization within AI-driven automotive processes. Leveraging real-time data integration and advanced analytics, digital twin facilitate in-depth energy consumption analysis, enabling organisations to implement targeted and efficient energy-saving strategies without the need for real-world resource consumption.

Moreover, digital twin empower proactive maintenance strategies through sophisticated predictive analytics and anomaly detection algorithms. By continuously

monitoring and analysing system behaviour, digital twin enable organisations to anticipate and mitigate potential issues proactively, thus enhancing operational reliability, minimising downtime, and optimising maintenance schedules.

Additionally, the interconnected and collaborative nature of digital twin fosters enhanced connectivity and synergy within AI-driven automations. Creating a network among all the automotive systems, the efficiency of the automation can be increased by making the system more smart enough and meeting the unimaginable expectations.

In essence, this research enhances the lives by underscoring the pivotal role of digital twin technologies in driving efficiency, sustainability, and connectivity within AI-driven automations, offering innovative and transformative solutions for optimising operations, enhancing system reliability, and maximising overall performance in today's dynamic and rapidly evolving technological landscape.

Keywords: Artificial Intelligence, Digital Twin, Automation, Data Analytics and System Reliability.

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Day 2 – 4 July 2024 (online)

Session 4-W

Self Organised Symposium: Enriching Lives through Psychotherapy Research

In this symposium, Enriching Lives through Psychotherapy Research, three psychotherapy researchers who are a part of Middlesex University through its allegiance with Metanoia Institute, will present their research.

Lisa Champion is researching how psychotherapists experience themselves appearing in their therapeutic work and will share how her hermeneutic phenomenological research has the potential to enrich the lives of psychotherapists by offering a new paradigm for considering how therapists grow in therapeutic wisdom. Alan McPherson is using a mixed-method approach involving story-completion methodology to research the experiences of trainee and practising counsellors, psychotherapists and counselling psychologists who are primarily in therapeutic practice and are also engaged in the creation and publication of research. His presentation will focus on how becoming a researcher has the potential to enrich the lives of psychotherapists. Claire Spiller is using a combination of focus groups, survey and interviews to research how Gestalt psychotherapists are delivering psychotherapy remotely and will present findings from her international study, reflecting upon the phenomenology of online clinical spaces, through which

both client and therapist may access an enriched horizon of choice during times of war, rising cost of living, and climate crises.

After hearing each presentation, a discussion with invited speakers will ensue exploring the individual contributions of these researchers as well as the value of psychotherapy research for the researcher, practitioner and client.

Lisa Champion

The Self Appearing: A Hermeneutic Phenomenological Study Of How Humanistically-Informed Psychotherapists Experience Themselves Emerging In The Therapeutic Encounter

Supervisors: Dr. Paula Seth and Dr. Steven Segal

As a part of this symposium that is exploring Enriching Lives through Psychotherapy Research, my presentation will focus on how research can enrich the lives of psychotherapists.

This research explores the lived experiences of psychotherapists noticing themselves appearing in the therapeutic encounter. Using Heideggerian hermeneutic phenomenological methodology and micro-phenomenologically-informed interviews with twelve experienced humanistically-oriented psychotherapists, the study aims to enrich understanding of this phenomenon. Each therapist shared a concrete experience of noticing themselves appear in their work, which was analysed thematically and through a unique framework of Convention-Disruption-Transformation that mirrors Heidegger's perspective on how the self becomes explicit.

The findings revealed that therapists experience themselves appearing through being-in disruption, characterised by a felt sense of relational disconnection or concern. From this, therapists either sought to retreat into familiarity or became resolute, leading to a transformative experience. As therapists embarked on the path of transformation, they were able to see and challenge conventions they held, experience deeper relational connections with their clients, and experience a growth in therapeutic wisdom.

This research highlights the potential of a Heideggerian perspective to offer psychotherapists a new understanding of how they appear in their therapeutic work. This understanding can facilitate the growth of therapeutic wisdom through practice. A secondary part of the research demonstrated how these findings can be applied to the clinical supervision of psychotherapists.

In summary, this thesis introduces a novel Heideggerian framework for understanding how therapists notice themselves in their work, contributing to the existing body of psychotherapy literature by suggesting a new paradigm for

understanding the phenomenon of the self appearing and subsequently growing in therapeutic wisdom through practice.

Keywords: psychotherapist, self, appearing, phenomenology, disruption, therapeutic wisdom.

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Claire Spiller

On Being-In-The-Digital World: Mixed Methods Research Into The Phenomenology Of Gestalt Psychotherapy Online

Supervisors: Dr. Rupert King (Metanoia Institute), Dr. Alistair McBeath (Metanoia Institute), and Dr. Tarek Younis (Middlesex University)

As part of this symposium that is exploring Enriching Lives through Psychotherapy Research, I will present findings from an international research study on how Gestalt psychotherapists are delivering psychotherapy remotely and how, consequently, the lives of both clients and therapists may be enriched.

The presentation will reflect upon the phenomenology of online clinical spaces, through which clients may access an enriched horizon of choice, during times of war, rising cost of living, and climate crises, and in so doing, gain greater accessibility to psychotherapy with a remote clinical setting.

This doctoral study explores whether there is a process of adaptation or reconfiguration of the therapeutic frame from the traditional in-person model to online and remote work.

The research question: How are Gestalt Psychotherapists renegotiating or extending their practice into a new digital online frame? is designed to phenomenologically explore how Gestalt therapists are delivering psychotherapy online or via remote means, to identify any emerging situational or contextual phenomena in the process of working within online therapeutic spaces.

A mixed methods research design combined i) online focus groups, ii) an international online survey and iii) semi-structured online interviews to phenomenologically inquire into how Gestalt therapists are working and being-in-the-digital world, drawing on Barber's research-practitioner concept (2006), and Johnson and Onwuegbuzie's mixed methods research process model (2004).

Keywords: Gestalt therapy; phenomenology; research, remote, accessibility.

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Alan S McPherson

Enriching Lives Through Psychotherapy Research: Embracing The Researcher Within The Therapist

Supervisors: Dr Deborah Bailey-Rodriguez and Dr Alistair McBeath (Metanoia Institute)

As a part of this symposium that is exploring Enriching Lives through Psychotherapy Research, my presentation will focus on the psychotherapist as researcher.

Many psychotherapists do not see themselves as researchers, yet it can be argued that they are researching all the time in their role. Whether this is in gaining knowledge to understand a client's experience or therapeutic need, exploring interventions and processes in clinical supervision, or reflecting on their own responses in personal therapy or journal, psychotherapists rarely see this as research. Whilst psychotherapists and researchers are the same people, many therapists view research as being unrelated to practice, remaining sceptical at best in the benefits to their clinical practice.

The future of psychotherapy is reliant on research with its tangible potential in changing people's lives. Yet, the role of the psychotherapist only exists due to research endeavours of our psychotherapeutic ancestors, for example, Freud, Skinner, Bowlby, Rogers, who all actively engaged in the creation and publication of research. We know of these names within our major approaches to psychotherapy and psychology. Research informs us that psychotherapists who actively engaged in research themselves are more interested in the findings of therapy research, yet there are few training programmes which provide real-world examples of practice-based research. Whilst therapy training develops skills in moving closer to another's subjective experience this often does not translate into therapy research.

In this presentation, I will explore the intrinsic relationship of the therapist as researcher, and how embracing the researcher within enriches the life of a therapist.

Keywords: therapist-researcher, researcher, relationship, duality, integration.

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Sailendra Ramanna

EEG Signal Processing Using Dynamic Mode Decomposition and Convolutional Neural Networks

Supervisors: Prof. David Windridge, Dr. Santosh Tirunagari, and Prof. Chris Huyck

Alzheimer's disease (AD) poses significant challenges in understanding its progression and predicting its outcomes. In response, we present a novel five-stage pipeline tailored for time series analysis of AD-related data. This pipeline integrates advanced methodologies to capture, analyse, and utilise temporal patterns inherent in the data, aiming to enhance our understanding of disease dynamics and improve prognostic capabilities.

The first stage of the pipeline focuses on embedding the time series data, into a high-dimensional space using delay-coordinate embeddings. This process captures the temporal dependencies within the data and enables the exploration of complex disease dynamics over time.

Subsequently, the embedded data undergoes dynamic mode decomposition (DMD), a powerful technique for identifying dominant temporal patterns, or dynamic modes, underlying AD progression. These modes serve as interpretable representations of the disease dynamics, shedding light on key factors driving disease progression and evolution.

In the third stage, the pipeline facilitates reconstruction and forecasting of the time series data, while also incorporating filtering based on specific frequency ranges relevant to AD-related biomarkers or clinical manifestations. This enables the isolation of critical temporal dynamics associated with disease progression, aiding in accurate prediction and prognosis.

Following reconstruction, the pipeline employs diagonal averaging to enhance the interpretability of dynamic modes by computing their spatial structures. This process reveals spatial patterns and relationships within the data, offering insights into the spatial organisation of AD-related dynamics.

Finally, a convolutional neural network (CNN) stage is introduced to extract hierarchical features from the reconstructed or forecasted time series data. Leveraging the CNN's capabilities in feature extraction and classification, this stage enables automatic identification of disease-related patterns and trends.

By integrating state-of-the-art techniques tailored for AD, this pipeline offers a comprehensive framework for analysing disease progression and prognosis. It provides valuable insights into the underlying dynamics of AD-related data, enabling researchers and clinicians to make informed decisions and improve patient care.

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Stephen J Hall

Generative Transformers, Vector Databases and Large Language Models: A case for AI in Micro Enterprise Knowledge Management Systems

Supervisors: Dr. Serengul Smith, Dr. Can Baskent, and Dr. Clifford De Raffaele

In an era of rapid technological advancements, Artificial Intelligence (AI) has proven to be an invaluable tool for enhancing various aspects of human life. This research paper delves into the potential impact of cutting-edge AI technologies on micro enterprises by integrating them into knowledge management systems. The conference theme 'Enriching Lives Through Research' aligns with our objective to shed light on how these innovations can contribute significantly to empowering small businesses, facilitating their growth, and bolstering their competitiveness in the marketplace. This paper examines the latest developments in AI technology, specifically focusing on Generative Transformers, Vector Databases, and Large Language Models. By exploring the capabilities of these advanced systems, it aims to present a strong case for integrating them into a knowledge management framework designed specifically for micro enterprise. It is envisioned that the integration of these technologies would lead to numerous benefits, including improved decision-making processes, streamlined operations, better market insights, and heightened customer engagement. Furthermore, it will investigate the potential challenges associated with implementing AI in these systems, as well as possible ethical concerns related to data privacy, security, and bias. By addressing these critical aspects of the technology, we aim to promote informed discussions and debates on their implications in micro enterprises' contexts. In summary, this paper represents a comprehensive exploration of how AI-powered tools such as Generative Transformers, Vector Databases, and Large Language Models can improve the adaptation of knowledge management systems for micro enterprises. By presenting a strong case for the benefits of these technologies, along with a thoughtful consideration of potential challenges and ethical concerns, our research aims to contribute significantly to the ongoing conversation about AI's role in shaping the future of business. This research is at an early stage consisting of a completed literature review, some discussion and concept outlines being presented.

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Silviu T Marc

An Evolutionary Approach to Automated Class-Specific Data Augmentation for Image Classification

Supervisors: Dr.Roman Belavkin, Prof. Xiaohong Gao, and Prof. David Windridge

Convolutional neural networks (CNNs) can achieve remarkable performance in many computer vision tasks (e.g. classification, detection and segmentation of images). However, the lack of labelled data can significantly hinder their generalisation capabilities and limit the scope of their applications. Synthetic data augmentation (DA) is commonly used to address this issue, but uniformly applying global transformations can result in suboptimal performance when certain changes are more relevant to specific classes. The success of DA can be improved by adopting class-specific data transformations. However, this leads to an exponential increase in the number of combinations of image transformations. Finding an optimal combination is challenging due to a large number of possible transformations (e.g. some augmentation libraries offering up to sixty default transformations) and the training times of CNNs required to evaluate each combination. Here, we present an evolutionary approach using a genetic algorithm (GA) to search for an optimal combination of class-specific transformations subject to a feasible time constraint. Our study demonstrates a GA finding augmentation strategies that are significantly superior to those chosen randomly. We discuss and highlight the benefits of using class-specific data augmentation, how our evolutionary approach can automate the search for optimal DA strategies, and how it can be improved

Keywords:Data Augmentation, Genetic Algorithm, Optimization, Convolutional Neural Network.

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Daryn Fitz

Data Quality Enhancement Of Assets In The Built Environment: A Conceptual Framework To Enrich Asset Data Quality Based On Organisation Criticality Assessments

Supervisors: Assoc. Prof. Noha Saleeb and Dr. Nicholas Sharples

The built environment produces 39% of carbon emissions world-wide and emerging technologies such as Digital Twins and AI have the potential to impact and support reductions in carbon emissions and promote more sustainable development and management of our built environment, but these solutions are reliant on good quality and trusted data sources. This research has identified that data quality is inherently

poor in the domain of asset management for the built environment, and it is asset managers who typically define data requirements. Therefore, a business process to enable asset managers to determine data and their quality requirements at an asset system and component level is required to inform data management and maximise the effectiveness of Electronic Asset Management Systems (EAMS) and emerging technologies. By enhancing data quality, strategic decisions can be made from an informed position via trusted data enabling asset owners/managers to improve the quality of spaces' usage, performance thus enriching lives of their users. This research has adopted a mixed methods approach, including surveys, experiments, and observations with quantitative data used to expose new knowledge associated within this under-researched area of study, and qualitative data collection to provide opportunities to create new theories and new hypothesises. Fundamental to this research was to exploit existing researcher professional knowledge to fully contextualise the research and interpret its relevance and develop an `insider industry view', supported at every stage by industry practitioners. Data quality frameworks and effective data analytical tools are in existence, but these typically lack domain context and implemented in a generic manner. This research presents a conceptual framework and model, enabling asset managers to identify which assets are important to their organisation and specific asset portfolio as well the associated data, leading to improved and contextually aware data quality assessments and management. This research provides opportunities to improve and enrich the lives of those employed within asset management via improved data specification and management, inform emerging and existing technologies, improving their effectiveness, and intends to support future research with domain contextual understanding and opportunities to expand upon this body of work.

Keywords: Data, Quality, Asset, Management, Framework.

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Session 4-Y

Geethu Joy

Parameter Tuning of Nature Inspired Meta Heuristic Algorithms

Supervisors: Reader Xin-She Yang and Prof. Chris Huyck

Optimization algorithms typically come with parameters that significantly influence their behaviour. Therefore, it's crucial to tune these parameters to ensure optimal performance across various optimization problems. This paper focuses on examining how different parameter values affect the efficiency of the firefly algorithm. To evaluate the impact of parameter values, two different simulation methods (Monte Carlo and Quasi Monte Carlo) are employed to randomly initialise the parameters.

The tuned firefly algorithm (FA) is then tested on two benchmark functions (Rosenbrock and Sphere) and a spring design problem to assess its robustness.

Monte Carlo (MC) method, founded on robust statistical principles, exhibits errors diminishing as $O(1/\sqrt{N})$, making it effective in practical applications compared to manual methods. The parameters for the FA are initially set through random sampling from uniform distributions within defined ranges, followed by utilising these settings to solve optimization problems. The second tuning method used to generate parameter values is the Quasi-Monte Carlo (QMC) method. It employs low-discrepancy sequences like Sobol or Halton and offers faster convergence rates compared to standard Monte Carlo (MC) by diminishing errors as $O(1/N)$. The Rosenbrock function is a non-convex function commonly used to test optimization algorithms, characterised by a narrow, curved valley. The Sphere function is a simple convex function with a single global minimum, often employed as a benchmark in optimization problems.

Preliminary findings suggest that the FA exhibits robustness against variations in parameter settings. Experimental trials on the Rosenbrock function, sphere function, and the spring design problem using MC and QMC methods showed consistent results in fitness or mean fitness values, indicating the algorithm's insensitivity to parameter changes.

However, since this study is limited to a small number of optimization problems, it's essential to conduct further research to confirm the observed robustness across a broader range of problems and algorithms. Additionally, theoretical analysis is warranted to understand the relationship between parameter tuning and convergence behaviour observed in numerical experiments. Understanding parameter tuning effects enhances optimization of algorithms in fields such as finance and deep learning applications, bolstering performance across diverse scenarios.

Keywords:Firefly Algorithm, Parameter Tuning, Optimization, Monte Carlo, Quasi-Monte Carlo.

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Alessandro Bigiotti

Blockchain Enabled Trustworthiness and Remote Control from Digital Twins to Cyber Physical Systems in Industry 4.0

Supervisors: Assoc. Prof. Leonardo Mostarda, Prof. Alfredo Navarra, Dr. Purav Shah, and Assoc. Prof. Ramona Trestian

The advent of Industry 4.0 has favoured a profound transformation for production systems, characterised by the integration of new and emerging technologies. Some

of the leading technologies are artificial intelligence, blockchain, digital twins and the internet of things. Artificial intelligence aims to carry out predictive analysis in order to plan maintenance or detect anomalies. Blockchain can help maximise system traceability, transparency and security. The internet of things allows to obtain real-time data by making measurements of physical world. Digital twins allow to comprehensively monitor the entire system. However, integrating these technologies also presents unique challenges. Artificial intelligence requires well-structured data. Blockchain encounters scalability problems in systems that require real-time communications. The internet of things suffers from security issues inherent to communications. The digital twin must faithful and timely reflect the behaviour of the physical system. This article presents a new framework that synergies blockchain, industrial internet of things, artificial intelligence and digital twins to revolutionise manufacturing systems. The main objective of this integration is to exploit the characteristics and benefits of each technologies, increasing the security of the overall automation capacity of the entire system. In particular, the proposed framework aims to enable the digital twin to control the behaviour of the physical system.

Keywords:Blockchain, Industry 4.0, Artificial Intelligence, Digital Twin, Internet of Things.

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Praveer K Towakel

Deep Combination of Radar With Optical Data for Gesture Recognition: Role of Attention in Fusion Architectures

Supervisors: Prof. Huan Nguyen and Prof. David Windridge

Multimodal time-series classification is crucial for human gesture recognition, where combining data from multiple modalities can overcome individual sensor limitations. In a deep-learning pipeline, the attention mechanism allows selective concentration on relevant features. However, the standard attention mechanism, effective in natural language processing (NLP), is not ideal for temporally- or spatially-sparse multimodal data. In this article, we present a novel attention mechanism, Multimodal Attention Preconditioning (MMAP). We demonstrate that MMAP outperforms regular attention in classifying modalities with temporal and spatial sparsity. Specifically, we investigate the impact of attention in fusing radar and optical data, utilising three modalities: dense spatiotemporal optical data (RGB data on a grid), spatially-sparse/temporally-dense kinematic data (model landmark outputs), and sparse spatiotemporal radar data (velocity and range vectors). We explore the effect of attention on early, intermediate, and late fusion (LF) architectures and compare eight pipelines in terms of accuracy and robustness to missing modalities. Our results, based on 5-fold cross-validation, show that MMAP significantly enhances

classification performance and robustness compared to standard attention mechanisms. We highlight key differences between late and intermediate attention (IA) mechanisms in the context of radar and optical data fusion, demonstrating MMAP's superior ability to handle sparse data and maintain high accuracy even when some modalities are missing. Future research will apply MMAP to various other datasets that exhibit sparsity, aiming to validate its effectiveness across different contexts and improve its adaptability. We will explore diverse applications such as environmental monitoring, medical diagnostics, and robotics, where multimodal data sparsity is common. Additionally, we intend to investigate enhancements to MMAP to further boost its performance and robustness in dealing with real-world sparse data scenarios.

Keywords:Machine learning, neural networks, radar, gestures, attention.

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Nkechi A Ndudirim

Critical Analysis of Integrating Digital Twins with Existing Assets' Data Systems and Platforms in Social Housing.

Supervisors: Assoc. Prof. Noha Saleeb and Prof. Balbir Barn

The research objective of this work is to investigate the benefits of integrating digital twins with existing asset data systems in social housing and how this can improve retrofit project outcomes. Also, to highlight how this integration aligns with UN Sustainable Development Goals (SDGs), underscoring its potential to enrich lives through research.

This paper focuses on achieving sustainability in UK social housing through retrofitting and digital twin technology. Retrofit projects aim to enhance energy efficiency and reduce carbon emissions, while digital twin technology improves project performance and decision-making through data-driven insights.

By aligning research efforts with the United Nations Sustainable Development Goals (SDGs), we can create valuable knowledge and innovations that tackle important global challenges, enrich quality of life, and support sustainable development. Integrating academic research with practical applications guarantees that the benefits of scientific progress are widely accessible, contributing to a fairer and more sustainable world.

This paper presents an in-depth analysis and comparative study of data management systems in the social housing sector. Focusing on integration of digital twins to enhance operational sustainability in retrofit projects and improve the lives of tenants. Despite its success in other industries, the potential of digital twin technology in social housing sector has been underutilised. The paper will

demonstrate the benefits of digital twins in social housing projects, including improved designs, cost savings, better business operations, regulatory compliance, importantly, a positive impact on occupants live. This aligns with the UN Sustainable Development Goals and the UK Sustainable Development goals, ensuring a better present without compromising the future. Furthermore, the paper will emphasise how the integration of digital twins in social housing retrofit projects will enhance building environmental sustainability, encompassing social, economic sustainability aspects and enriching lives.

Keywords:Digital Twins, sustainability, Retrofit, Energy Efficiency, Net zero.

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Session 5-Z

Omar OZ Zammit

Improving Student Experience: A Collaborative Framework for Predictive Information Retrieval

Supervisors: Dr. Serengul Smith, Dr. Clifford De Raffaele, and Prof. David Windridge

Web-based learning has been promoted in education and students are required to retrieve online information to complete their assignments and study for exams [1]. Various challenges exist during information retrieval, especially with novice students [2]. This research aims to lessen these challenges by introducing a collaborative framework that gathers students' searched keyphrases and analyses trends to predict the most effective subsequent keyphrase to search. The proposed solution encourages students to contribute by sharing their information retrieval trends while collectively benefiting from each other's searching strategies. In addition, novice students will enrich their domain knowledge since the prediction results contain keyphrases searched by students from previous cohorts. Next-word prediction is a well-known area of Natural Language Processing (NLP) that is used to forecast the next word given a sentence [3] or predict trends based on time-series data [4, 5]. Word suggestions are popular in mobile devices and studies show that users rely on them while they are typing [6]. The methodology involves the implementation of a framework that collects online browsing activity [7]. Undergraduate students studying a BSc in Computer Science were engaged to participate in an experiment wherein they installed a Google Chrome extension capable of collecting data and predicting suitable content related to the researched domain. The data consisted of Uniform Resource Locators (URLs) containing keyphrases that students searched during their studies. A feature engineering process was performed to analyse and transform the data into a time-series sequence of actions and to ensure that it is fit for the intended purpose [8]. A grid-search method was employed on various machine learning models to identify the most effective hyper-parameters that can predict the

best keyphrase. The best algorithms that were identified included, GRU, LSTM, and Decision Trees based on accuracy and F1 scores. The results showed that students relying on the predictions generated by the machine learning models outperformed those who depended solely on the Internet. This highlights the potential of such an approach to assist students and improve their experience. Further research could explore the evaluation of the framework across diverse educational domains and student populations.

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Faten Alzazah

Multi-Modal Data Fusion for Advanced Stock Market Prediction

Supervisors: Prof. Xiaohong Gao and Prof. Raja Nagarajan

Investors use machine learning to predict future market trends. Although there are different approaches to stock price movement prediction, fundamental and technical analyses are the primary approaches. When it comes to technical analysis, the prediction of future market trends might not be as accurate as expected.

Various factors influence the stock market, and the accuracy of existing prediction models could be enhanced by incorporating diverse data sources. Video news stands out for its ability to provide real-time, insightful information. However, it also poses the challenge of filtering out irrelevant data.

Using advanced machine learning algorithms to analyse multiple datasets can prevent bias and improve prediction accuracy. This includes integrating video data into prediction models for up-to-date information. Our study compared the effectiveness of financial video news, text news articles, and Twitter sentiment in predicting stock market trends.

The Granger causality test evaluated the relationship between indices' prices, news source sentiment, and Twitter sentiment index. Various models were assessed for sentiment analysis of the S&P 500 and FTSE 100 indices. Initial results suggest a stronger causal relationship between video news sentiment and stock market volatility.

The experimental results underscore the significant improvement in prediction accuracy when multiple financial data sources are utilised. Video news strongly correlates with price movements, consistently yielding low p-values. The combination of TSI and S&P 500 prices shows improved results, and the accuracy of prediction is further enhanced by integrating news data with index prices, leading to highly

accurate forecasts. The most influential predictor is a combination of VNews for the S&P 500 and index price.

Keywords: ATT-LSTM, CNN, transformer, FTSE100, and video news.

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Kezban Alpan

Image Enhancement to Improve Image Segmentation Performance Detecting Historical Subgroup of Ovarian Cancer

Supervisors: Dr. Shahedur Rahman and Dr. Song Wen

Ovarian cancer is an extremely lethal gynecological cancer that kills approximately 200,000 women each year. Unfortunately, this cancer also has an insidious character and 70% of patients are diagnosed in advanced stages of the disease. While this creates a basis for a dangerous situation such as metastasis, it also makes the treatment of the disease difficult. Considering both the difficulty of the treatment and the high recurrence and relapse rates, there is no other option that gives the patient a chance of survival other than the error-free treatment. As in many other types of cancer, histopathology plays an important role in ovarian cancer. Determining the cancer subtype by examining tissues stained with Hematoxylin-Eosin (H&E) guides oncologists when deciding on the correct treatment approach. The aim of this research is to define the subgroup of ovarian cancer through H&E stained tissue images. For this purpose, Prostate, Lung, Colorectal and Ovarian Cancer (PLCO) tissue screening trial image dataset that contains 834 images from 227 patients will be used. During image pre-processing, an image enhancement method will be applied on the original image dimensions to make tissue patterns more visible. This process will be applied specifically to the images in the dataset and as arranged according to the color tones of the H&E staining. The purpose of this step is to increase the robustness of U-Shaped Network (U-Net) segmentation results that will be applied in the continuation of the study and will be carried out with MATLAB environment. To apply U-Net model, the training test split will be arranged as 80% and 20%, respectively with data holdout method. Five different ground truth images for five different cancer stages will be created and applied on the same dataset. After applying the model, the results obtained can be evaluated using evaluation metrics such as Dice score, Jaccard index, housedorff distance. This approach, designed to contribute to the correct treatment of ovarian cancer, and it can also be used in the accurate diagnosis of other types of cancer by examining H&E stained images.

Keywords: Ovarian cancer, Machine Learning, Image Enhancement, U-Net, Segmentation.

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Session 5-Alpha

Maria Flora Toneatto

Narratives of Navigating Failure as a Liminal Space for Transformation and Well-being among Entrepreneurial Leaders

Supervisors: Dr. Agi Ryder

Entrepreneurial leaders can have a profound impact on society by driving innovation, creating jobs, and fostering economic growth. They often bring fresh ideas, challenge and disrupt the status quo, and contribute to the development of new industries, ultimately helping shape the socio-economic landscape. Hence, failure in entrepreneurship is an important phenomenon. It has causes and consequences for the overall well-being not only for the entrepreneurs but also has a ripple effect on families, organisations, communities and society. Through a Transdisciplinary Practice post-reductionist lens, this qualitative research inquiry will explore failure as a liminal space for transformation and well-being among entrepreneurial leaders who have experienced a significant failure event in their venture and successfully navigated the setback. By utilising a collaborative narrative approach, this study intends to provide a meaningful and holistic understanding of the contextual and trans-contextual influences that entrepreneurial leaders face in relation to the failure event. It also intends to provide a holistic understanding of how entrepreneurial leaders navigated the liminal space of failure toward well-being, growth and resilience and how they are leveraging their learnings moving forward. This research study can positively contribute to the conference theme of "Enriching Lives Through Research" and beyond by advancing the knowledge of various academic fields as well as advancing the practice of professionals, coaches, organisations, training and 2 educational providers working in the entrepreneurial, well-being, and leadership development space.

Keywords:Entrepreneurial Failure, Well-being, Liminality, Transdisciplinary Narratives.

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Patricia Friberg

The Brushstrokes of Relationship

Supervisors: Dr. David Adams and Dr. Agi Ryder

After gaining diverse career experiences, including working as a psychodynamically trained art therapist and serving as a corporate health club manager, I recently completed postgraduate research on creative arts and human flourishing. As a Stage 1 TD student, I aim to explore the following question based on my scholarship of practice and commitment to building a more connected society.

What if, through daily art practice, more relationships could be formed and deeper connections made, contributing to human sustainability?

The "great resignation" of 2022, during which 4 million people resigned per month, reveals a global trend of workplace dissatisfaction. According to a Gallup survey of 25 million people, poor leadership and lack of transparency contribute significantly to employee turnover. Trustworthiness, as emphasised in the WHR, is crucial for relationships. Exploring better relationships may help transform the "great resignation" into a "great reconnection", Romanowska et al., 2013 and Seligman (2011) report that successful workplace relationships increase psychological safety and engagement, establish meaning or mattering, and contribute to productivity. A person's openness can be considered a personality trait, but it can also be trained. According to Bateson et al. (2013) and Puig et al. (2006), the creative arts can promote openness. Music, for instance, is a creative activity that reduces stress. As a result, the brain can access the part responsible for social cognition, which enhances openness. Trust-filled work environments are essential for an optimal workplace culture.

Similarly, Jung called the collective relationship the collective unconscious. Sheldrake termed it morphic resonance, in which each living thing contributes to the whole. Through my 21-day creative arts intervention, I hope to explore how relationships can be formed between oneself, colleagues, the organisation, and the collective. I intend to contribute to the transdisciplinary field by investigating how the creative arts may impact leadership relationships, ultimately resulting in a more connected society.

Keywords: Relationship, Transdisciplinary, Leadership, Creative-Arts, Psychology.

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Session 5-Beta

Kerrie L Alanen

Leading Through Fear: A Self Organised Symposium

Supervisors: Dr. Agi Ryder and Dr. David Adams

The relationship that mental fitness has on psychological safety (PS) as observed in leadership behaviour, has been extensively researched within North America and the

United Kingdom. Now we consider how we may enrich the lives of individuals in organisations through building mentally fit cultures and teams, by strengthening leaders' neuropsychological safety (NS). Positive Intelligence™ (PQ), one modality of improving mental fitness, demonstrates that increasing PQ can lead to improvements in PS. We can measure these improvements using modalities like neurofeedback and other physiological testing. PS creates safe environments for workers to grow and flourish. There is a professional curiosity to understand how to integrate the qualities of PQ for brain-based behaviours, and what impact they may have if a leader develops higher NS. This symposium topic proposes discussion on the impact of leadership style by way of applying PQ to measure the impact of leader's NS. When leaders are in a constant state of fear, anxiety and emotional dysregulation, their NS is compromised. Globally, there are growing trends of reduced team morale, performance and well-being within organisations, as leaders are unconsciously creating environments of fear and anxiety within their teams. [1] To date, there has been no established or published link between mental fitness and how behavioural neuroscience validates the link through NS. This symposium will explore research on how improved mental fitness, through changes in a leader's NS, will positively affect their leadership, personal wellbeing and organisational performance. Practising PQ and using neurofeedback positively impacts levels of cortisol and allostatic loading (chronic stress). Behavioural neuroscience shows a correlation of improved PQ, with improved brain health, neuroplasticity, and behaviours of leaders. The symposium will examine how leaders' mental fitness, triggers neurological function and how the firing of neurotransmitters leads to certain behaviour. The symposium objectives will reveal how brain-based behaviours impact fear, anxiety and emotional dysregulation in leadership, and how improved NS markers will enrich lives through building organisational trust, wellbeing and mental fitness

Keywords: Psychological Safety; Neuropsychological Safety; Mental Fitness; Fear; Leadership.

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Session 6-Gamma

Abimbola A Ajiboye

The Legal Validity of Digital Signatures in Arbitration Agreements and Arbitral Awards in England: A Discussion on Recent UK Legislation (Law Commission Report and Draft Bill of the Arbitration Act1 1996)

Supervisors: Dr. Sara Hourani and Dr. Giulia Pecorella

There has been a significant increase in the use of technology since the pandemic till date for the conclusion of arbitration agreements and awards. The UK law which is

known as a leading hub for commercial arbitration have legally recognized e-signature since 2002 through some of its laws emanating from the EU, the Electronic Signatures regulations, The EU Directives etc. After Brexit eIDAS remains domesticated as part of UK law. In addition there are other existing laws in England that regulates electronic signatures e.g the Electronic Communication Act 2000, Electronic Signatures Regulation 2002, case law etc.

A negative aspect of the use of electronic signature is its lack of set of guidelines for identification and validity. Despite all of the above existing laws, under the Arbitration Act 1996 there is no express provision for the use electronic signature in arbitration agreement. The Law Commission, a statutory body created to recommend reforms conducted a review of the Arbitration Act 1996 in 2021 to ensure that it remains fit for purpose. In its first consultation paper published in September 2022 and a second paper in March 2023, did not propose the express inclusion of the use of electronic signatures in concluding Arbitration agreements and awards, although recognizing modern technologies and their reason being that permitting a type of procedure might risk giving the impression that the other type is not permitted and that technology will continue to evolve.

The focus of this paper is on the validity of electronic signatures in arbitration agreement. This paper will discuss the recent legislative development in England and its effect on the legal validity of digital/electronic signatures in Arbitration Agreements and Awards.

This research will be carried out through a black-letter approach by providing strict legal analysis with the aid of primary and secondary sources analysis of the English law. This paper will seek to offer solution to the issues around the validity/enforcement of electronic signature in arbitration agreement and awards.

Keywords:Law, Electronic Signature, Arbitration Agreement,Awards,Validity.

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Adrian Jervis

Enriching Lives Through Research – Dialogue And Disagreement In The Reception of Saint Augustine (354-430) In The Work Of Gustaf Aulén (1879-1977)

Supervisors: Dr. Matthew Knell and Prof. Tony Lane

My paper aims to consider the theme of "Enriching Lives Through Research" by considering my own area of research, Christian theology, and, in particular, Gustaf Aulén's interactions with the writings of Augustine of Hippo. I would like to highlight that our lives are enriched through dialogue with each other and, perhaps controversially, through disagreement. Aulén's reception of Augustine will be a form

of case study which demonstrates what I mean by "dialogue" and "disagreement" in the field of Christian theology.

Research in general is about the ongoing process, the dialogue that takes place between different specialists in our field, each thirsting and longing for a better understanding of their discipline and, therefore, of life itself.

In Christian theology a researcher has the potential to engage innumerable conversation partners from almost any part of time and history. But I have chosen to limit the discussion to that which took place between Gustaf Aulén, a Swedish Lutheran theologian born in 1879, and Saint Augustine, a Berber born in 354 in modern day Algeria.

Augustine's influence on Western Christianity is almost comprehensive – he has enriched the lives of almost everyone who has identified themselves as Christian after him, whether they know it or not.

Aulén's influence primarily stems from one book, Christus Victor, written in 1930 on the topic of the atonement. This has become an essential text any theologian considering the topic must dialogue with.

I will be investigating the ways in which Aulén interacted with Augustine, both through adopting his ideas and consciously rejecting them – that is "dialogue" and "disagreement". For example, in Christus Victor, Aulén cites Augustine as supporting his theory that the Church Fathers advocated a view of atonement which interprets the cross as Christ triumphs over the devil. However, in other works, such as Dogmhistoria, Aulén attacks Augustine's doctrine of predestination, an idea which the Bishop of Hippo has bequeathed to Christian theology.

Aulén has chosen to dialogue with Augustine but refuses to take a simple either/ or path that would reject or accept Augustinian theology wholesale. Rather, his research is a nuanced discussion, a give and take, a dialectic of agreement and disagreement through which he formed his own theology, idea which he thought could enrich the lives of 20th C Sweden.

Keywords: Gustaf Aulén, Swedish Theology, Augustine, Lundensian School, Lutheranism.

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Kars C Dodds

TRASH-GENDER: The Use And Reuse Of Disposed Material For Trans-Gender Performance Activism

Supervisors: Dr. T.J. Bacon, Dr. Robert Vesty, and Dr. Alexandra Kokoli

Transgender Visibility is increasingly essential, especially as both the United States of America and the United Kingdom approach general elections. Violence against transgender and the greater queer community is on the rise, in tandem to the stripping of transgender rights and access to gender-affirming care becoming distant hope for most. As a trans-masculine person, I can attest to the challenges faced by my identity, body, needs, desires, and likewise of those within my community. To speak to the conference them, 'enriching lives through research', this paper presentation will provide visibility for the trans-masculine experience in an academic setting and offer an artistic, de-sensationalized, and visual representation in hopes of sparking conversation and greater understanding. As part of my Master's research, titled: "Why not chop them off?" I am exploring what I am calling 'trash-gender'. This term has become a concept, an action and the title a series of performances. As a concept, trash-gender links the marginalisation of trans-masculine people to the disposable nature within which capitalism informs social attitudes towards value, waste, and re-use. In performance, I am costumed in garments of trash as an outer layer. The 'disposable' garments are torn from the body, revealing a visibly trans-masculine, mid-transition body. By reclaiming multiple uses to previously disposed materials, I artistically provide a visible history of reclamation to the materiality of the trans-masculine body, in kinship to the dismissal, disgust, and denial of trash (i.e. trash-gender). This paper presentation aims to examine the use of trash and disposable materials in performance and sculpture as it relates to queer identity, queer body, and ephemera of the individual. The content and discussion of this work offer a visible demonstration of artistic activism, queer protest and reclamation of gender amidst cisheteronormativity.

Keywords: Transgender; Phenomenology; Queer Studies; Performance Art; Practice Research.

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Session 6-Delta

Mahensingh Deonaran

Effect Of Cognitive Modes Of Expression And Expert Domain On Perceptions Of Expert Credibility

Supervisors: Prof. Mandeep K. Dhami and Dr. Yvan I. Russell

Juror perceptions of forensic witness credibility are critically important as they may influence decisions regarding expert forensic evidence. A witness deemed credible may lead jurors to believe and accept their testimony. Conversely, questioned credibility could result in jurors giving less weight to the opinion evidence. This study investigates how different cognitive modes of expression used by forensic witnesses

from well-established (DNA) and less established (Digital) expertise domains influence laypeople's perceptions of expert credibility.

A 2x3 between-subjects factorial design examined the impact of intuitive, quasi-rational, and analytical cognitive modes on DNA and digital expert witness credibility assessment. Participating were 376 laypeople eligible for UK jury service, engaging in an experimental study with mock trials and expert testimonies. The study assessed evaluations across seven credibility dimensions: likability, believability, trustworthiness, intelligence, scope, relevance, and confidence. A non-parametric MANOVA statistically tested differences across the six treatment conditions, analysing the relationship between dependent variables (expert credibility measures) and independent variables (domain of expertise and cognitive modes of expression), including their interactive effects.

The cognitive mode of expression significantly affects perceptions of expert credibility. Analytical testimony was generally rated more favourably across most dimensions, except likability, where intuitive testimony was preferred. DNA experts were perceived as more credible than digital experts across all cognitive modes, underscoring higher confidence in DNA evidence. Additionally, the test of between-subject effects showed that the interaction between Cognitive Mode and Forensic Expertise was significant at the 5% level for Likability ($p = .038$) and Scope ($p = .015$) and at the 1% level for Confidence, Trustworthiness, Knowledgeability and Believability, with all four registering values that were below .01. However, it was not significant for Relevance ($p = .568$) at the 5% level

This research contributes to the body of literature on jury decision-making. The insights from this study can inform real-world legal policies and procedures, enhancing jury instructions or permitting juror inquiries to witnesses. By linking psychological processes in juror decision-making to underlying psychological principles and legal procedures, this research paves the way for recommendations to improve jury performance, leveraging psychological insights.

Keywords:Jury decision-making, forensic witness credibility, cognitive mode

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Michaela Zliehovcova

Exploration Of The Existential Themes In The Lived Experience Of People With Love Addiction

Supervisors: Prof. Fabio Sani and Dr. Daniela Bloom

The phenomenon of 'love addiction', also known as 'pathological love', is defined as a form of obsessive love that is characterised by maladaptive and pervasive patterns of love that can negatively impact an individual's life. Although love addiction is not

viewed as a mental health disorder and therefore is not included in DSM 5, there is a substantial amount of empirical data supporting its consideration within mental health classifications. However, there is still scope for a better understanding of the phenomenon, as research on the subjective experience of love addiction is scant. The current study is an attempt to fill this gap by exploring the lived experience of love addiction adopting an existential framework. Data will be collected via in-depth semi-structured interviews and will be analysed using hermeneutic phenomenology in order to obtain rich, nuanced insights into participants' worldviews. The participants will be recruited on social media platforms using snowball sampling. By shedding light on the subjective experience of love addiction, this research has the potential to facilitate the development of an existentially informed treatment suitable for a diverse range of clients.

Keywords: love addiction, hermeneutic phenomenology, existential framework, lived experience, semi-structured interviews.

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Neelofer Mashood

Leveraging Ideological Beliefs In The Employee – Organisation Relationship To Promote Sustainable Employee Behaviours

Supervisors: Dr. Pinar Tufan and Prof. Paul Gooderham

Preserving environmental sustainability is paramount. There is a growing implementation of corporate social responsibility (CSR) and organisational sustainability strategies and workplace behaviour assumes increasing significance. HRM policies, practices, and communications send signals to employees regarding sustainability-related values, directing their activities towards sustainability goal achievement. A significant amount of research has been conducted on the correlation between green HRM practices and employee pro-environmental behaviours. However, much of this research overlooks the influential factor of the relationship between employees and the organisation. Comprehending the factors affecting this relationship is essential for effectively implementing the organisation's sustainability strategy. One significant concept that emerges is the notion of perceived organisational fit, which occurs when an employee's values, goals, and job responsibilities align with the organisation's objectives. The psychological contracts theory can significantly enhance our understanding of the significance of this 'organisational fit', especially the concept of ideology-infused psychological contract (IPC). It proposes that when an organisation espouses a cause that an employee values, then the employee reciprocates with contributions and commitment that benefit both the organisation and the cause. However, there is little theorising about fundamental issues such as how (under whose initiative) and when (under what conditions) IPCs will develop. It is crucial to broaden conceptualizations beyond the

conventional individual-level focus prevalent in much psychological contracts research. This expansion should encompass the organisational context, recognizing that both employees and employers, notably through their HRM strategies, play roles in shaping IPCs. Consequently, this study aims to investigate sustainability-oriented ideology-infused psychological contracts (IPCs) from both organisational and individual perspectives. It will examine the motivations that drive organisations and employees to pursue IPCs. An integrative literature review of empirical and theoretical studies on Ideological PCs and sustainable HRM will be conducted to draw conclusions. The study will contribute to the gap in literature on the impact of IPC on organisation's environmental performance and this enhanced understanding of the implementation, functioning and timing of IPCs can prove advantageous for companies aiming to leverage the favourable results stemming from such contracts.

Keywords:Psychological contracts; Ideology-infused psychological contracts; Green HRM; pro-environment employee behaviours.

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Session 6-Epsilon

Helen Jervis

Navigating Apprenticeships in HE

Supervisor: Dr. Agi Ryder

I began my DProf journey as a Lecturer in Leadership at Teesside University in Middlesbrough in the North East of the UK. My career to date has been rooted within the field of education in various settings and guises. I have traversed Further Education settings, School environments and Higher Education as a leader, manager, and educator and in doing so worked alongside students, staff and employers for almost 20 years. In more recent years, my work has led me to the context of leadership in Higher Education, more specifically Apprenticeship provision as the acting Head of Department for Finance, Performance and Marketing.

As an institution, the pace at which we need to ready ourselves for scrutiny within this area is hastening as we recognise the national drive to embed degree apprenticeships successfully within HE settings. However, this paper recognises that viewing my own experience of education as well the experiences of others through the lens of one discipline does not provide sufficient tools to holistically explore the implications for our understanding of this space for the learners as well as the processes and systems embedded within it as we move forward.

To that end, the purpose of this paper is to begin to unpack the three entwined voices that will contribute to the starting point of my transdisciplinary DProf research;

the voices arising in my situation, the voices arriving from elsewhere and indeed, my own voice.

The paper seeks to incorporate the movement and flex that I have encountered in my own agency, autonomy and ability to shape the future path of my apprenticeship learners as well as my own trajectory whilst discussing the complex relationship that this holds with regard to compliance and regulation at the macro level. The potential opportunities for my research to further explore feelings of growth and development encountered by both my learners and myself as we navigate the complex world of apprenticeships in HE and the implications that our involvement in this space has upon our own identify, sense of belonging and social mobility / capital going forwards at the meso and micro levels will also be discussed.

Keywords: Apprenticeships, People, Identity, Belonging, Social Mobility/Capital.

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Carollyne Conlinn

Where's the Juice? The Inner Game of Enriching Research

Supervisor: Dr. Mary Hartog

This interactive presentation invites participants to embark on an inner journey of discovery, exploring how their research enriches lives on both personal and societal levels. Grounded in the conference theme of "Enriching Lives through Research," this session offers a dynamic platform for engagement and reflection.

Inspired by Ingold's perspective on being alive, research can be a catalyst for personal empowerment, engaging individuals to delve into the depths of knowledge, cultivate critical thinking skills, and unlock their potential for innovation and self-discovery. Through interactive exercises and real-life anecdotes, participants will uncover the transformative power of research in shaping their individual narratives and fostering a sense of agency and purpose.

Beyond its intrinsic value to individuals, research serves as a driving force for societal progress and positive change. From ground-breaking scientific discoveries to social science inquiries that illuminate pressing societal issues, research serves as a cornerstone for informed decision-making and evidence-based policymaking. Through self-reflective questions, participants will be invited to share insights into how their research contributes to the enrichment of society by addressing pressing challenges, fostering inclusivity, and promoting sustainable development.

Moreover, this presentation will highlight the symbiotic relationship between researchers and the broader community, emphasising the importance of collaboration, knowledge exchange, and public engagement in maximising the

impact of research endeavours. Through interactive discussions and collaborative activities, participants will explore how research not only enriches their own lives but also contributes to the collective well-being and prosperity of society at large.

This interactive presentation offers a unique opportunity for participants to reflect on the myriad ways in which research enriches their lives, from empowering themselves to effecting positive societal change. By fostering dialogue and collaboration, I aim to inspire participants to embrace the transformative potential of research and become catalysts for positive change in this research community and beyond

Keywords: critical reflection, self-discovery, collaborative inquiry, meaning, purpose.

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Poster Expo

Abimbola Ikukoyi

Cardiovascular Risk Associated with Vaping and Smoking Among University Students

Supervisors: Dr. Vivetha Pooranachandran and Dr. Alechia Van Wyk.

The use of electronic nicotine delivery systems, commonly referred to as e-cigarettes, has been on the rise among adolescents and young adults, either as a substitute for traditional cigarettes or as a newfound recreational activity. Despite being perceived by many users as a safer alternative to conventional cigarettes, these devices pose significant health risks. It is imperative for individuals and communities to be aware of the potential dangers associated with e-cigarette use and to take proactive measures to promote healthier habits among young people.

Our objective was to investigate the effect of both smoking and vaping on the cardiovascular system by exploring the impact on arterial pressure.

Students at Middlesex University were randomly selected to participate in this study. Demographic information, as well as smoking and vaping status, were collected through an online survey. Participants underwent non-invasive physical examinations, which included measurements of their height(cm), weight(kg), blood pressure(mmHg), and heart rate(bpm). The collected data was analysed using Minitab version 21.4.

A total of 52 students were recruited to participate in the study. The cohort consisted of 43 female students with an average age of 20±2.5 years, and 9 male students with an average age of 20±4.5 years. The study results indicated that e-cigarette users/smokers had a statistically significant mean difference in brachial diastolic

pressure (BDP) compared to non-users. E-cigarette users/smokers had an average BDP of 74.6±8.6, while non-users had an average BDP of 68.9±9, P = 0.05.

The Pairwise Pearson correlation analysis revealed a significant correlation between brachial systolic pressure (BSP) versus BMI (p =0.0001), BDP versus BMI (p =0.008) and mean arterial pressure (MAP) versus BMI (p =0.004). Regression analysis showed a statistically significant relationship between BMI and gender as a function of vaping status. Mean values were higher in BSP for male vapers/smokers (112.6±0.75) compared to female vapers/smokers (94.8±), p = 0.05.

These findings highlight the importance of considering the potential cardiovascular risks associated with vaping and smoking, especially in relation to BMI and gender.

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Aein Khezriazizifar

Exploring Iran's Legal Responses to Terrorism: A Shia Perspective and Policy Analysis

Supervisor: Dr. Janroj Keles

Given the evolving global counterterrorism landscape, it is crucial to analyse how different legal systems balance security needs with religious beliefs. Iran, a predominantly Shia Muslim nation, offers an intriguing case study. This research explores the alignment between Iran's counterterrorism legislation and Shia Islamic teachings, seeking to clarify the complexities of managing security while adhering to religious principles. This study aims to: i) Analyse the rise of extremist groups in the Middle East; ii) Examine Iran's legal framework for counterterrorism; iii) Compare Iran's legislation with international legal standards; iv) Assess Iran's counterterrorism policies in the context of international obligations. The research employs a comprehensive range of qualitative methods, including interviews and analysis of secondary sources such as books, journals, and periodicals. A case study approach will focus on Iran, providing detailed insights into the data-gathering process, sample significance, and data analysis. This work contributes to the conference's theme by the following facts. Understanding how Shia Muslims interpret and respond to extremism and terrorism can significantly inform global counterterrorism strategies. This research aims to provide new, first-hand data on the intersection of terrorism, politics, and international law, ultimately contributing to more effective and culturally sensitive security policies.

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Ahmed Eissa

Elimination of Racial Profiling Using AI: An Investigation of Racial Profiling Using AI

Supervisors: Dr. Aboubaker Lasebae, Dr. Kamran Ali, Dr. Shahedur Rahman, and Prof. Chris Huyck

After the onset of the counter-terrorism campaign in mid-2003, a prevailing sentiment emerged among the general populace, wherein certain nations were perceived as potential sources of terrorism. This perception was shaped by factors such as a lack of information, religious biases, racial prejudices, and sectarianism. Additionally, instances of unprofessional or biased journalism contributed to the establishment of these perceptions in the minds of ordinary individuals. This phenomenon extended across diverse sectors of life, encompassing entities like border protection agencies and law enforcement organisations.

Individuals within these sectors are susceptible to harbouring suspicions leading to arrests based on criteria such as skin colour, names, language, or background, resulting in unfounded accusations. Despite the dedicated efforts of border protection and law enforcement personnel, the inherent potential for human error remains significant.

This research will attempt to mitigate the likelihood of false positive arrests by developing a prototype solution. The proposed solution leverages artificial intelligence and machine learning algorithms to analyse various factors, distinguishing between genuine criminal elements and those falsely accused (false positive). By integrating advanced data analytics and predictive modelling, the system aims to enhance the precision and equity of law enforcement interventions, thereby reducing the impact of racial profiling and bias.

Currently, the project is in the prototype development phase. Initial results have demonstrated promising accuracy in identifying potential false positives, with ongoing improvements being made to refine the model and expand the dataset. Further testing and validation are underway to ensure robustness and reliability in real-world applications.

Keywords:Racial Profiling, Artificial Intelligence, Law Enforcement, Bias Mitigation.

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Alan S McPherson

The Silent Practice: A Mixed-Methods Exploration of the Absence of Practising Counsellors, Psychotherapists and Counselling Psychologists Contributions to Research

Supervisors: Dr. Deborah Bailey-Rodriguez and Dr. Alistair McBeath (Metanoia Institute)

By its very nature, counselling and psychotherapy is a means by which lives can be enriched. The future of psychotherapy is reliant on research (UKCP, 2022), with research having a tangible potential in changing people's lives (BPS, 2018). Since Eysenck's (1952) critique of there being limited evidence that psychotherapy (in particular psychoanalysis) improved people's lives, action has been taken to address this. The aim of this doctoral research to explore how practising counsellors, psychotherapists and counselling psychologists' (therapists) experience being a researcher and engaging in research alongside their clinical practice. The objective is to identify commonly-held beliefs regarding being both a practitioner and a researcher, to draw from these experiences to support more therapists in the process of engaging in creating and publishing research whilst working in private practice.

Drawing on a qualitative-driven mixed-methods approach, this research project is split into two phases. The first explores the individual narratives in which therapists engage in and with research, drawing together quantitative demographic and contextual information, such as modality and research experience, alongside qualitative data pertaining to personal and contextual beliefs in the value of researching within the role of therapists. The second phase draws on the themes identified in phase one, using free-association narrative interviews to deepen the exploration into the personal and social conscious and unconscious narratives which persist within practising therapists and their engagement in research.

Keywords:psychotherapy, practitioner-research, mixed-methods, publishing research.

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Anas QS Salah

Leading Change in Staff Perception of Quality in Healthcare in the UAE: The Relationship Between Organisations' Safety Culture and Staff Perception of Quality in UAE Healthcare.

Supervisors: Dr. Catherine Kerr and Dr. Elda Nikolou-Walker

The healthcare sector in the UAE is constantly evolving to enhance patient care quality. Understanding and implementing a quality framework within healthcare settings can be challenging. This study investigates the role of safety culture, communication, teamwork, and leadership in shaping healthcare staff's perceptions of quality. The study aims to assess staff perceptions and understanding of quality and safety culture in UAE healthcare settings. It identifies key factors influencing these perceptions and evaluates the impact of clinical audits on patient care standards. A case study approach will incorporate surveys and semi-structured interviews with frontline staff in public and private healthcare facilities. Additionally, safety culture and clinical audit reports will be analysed. The survey is developed and will be disseminated through the Middlesex University platform or external such as Survey Monkey, targeting 1,000 healthcare professionals, including doctors, nurses, and allied health professionals, who have been working in their facility for at least one year and have between 1 and 3 years of experience. Follow-up interviews will be conducted based on survey outcomes to gain deeper insights. Preliminary findings suggest that effective communication, teamwork, and leadership significantly influence staff perceptions of quality. A robust safety culture within organisations correlates with improved patient outcomes and a positive work environment. The study should highlight the essential role of clinical audits in maintaining high standards of patient care and emphasise the importance of creating a supportive and open environment for staff to voice quality and safety concerns. Understanding staff perceptions of quality is crucial for delivering safe and effective patient care. This study enriches lives by providing valuable insights and practical strategies for healthcare leaders aiming to improve quality and safety in their facilities. Healthcare organisations in the UAE can enhance their overall quality of care by fostering a safety culture, promoting effective communication, and implementing robust clinical audit practices.

Keywords: Healthcare, UAE, Safety.

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Anushkaa Mishrra

Identification of Flavouring Chemicals in E-Liquids Using LC-MS and Investigating Their Impact on Airway Epithelial Cells

Supervisors: Prof. Ajit Shah, Assoc. Prof. Lucy Ghali, and Dr. Song Wen

Electronic cigarettes or vapes are commonly used amongst smokers as an alternative to quitting tobacco smoking, as they are perceived to be a "healthier alternative." These devices have grown popular amongst smokers and non- cigarette smokers but most importantly amongst youth.

E-liquid contains vegetable glycerine, propylene glycol, flavoring components, and nicotine. When heated, aerosol is produced which also releases numerous toxins

and nanoparticles. Flavorings are one of the primary reasons e-cigarettes are used amongst youth due to their pleasant taste which is superior to traditional cigarettes. Although most flavors are safe to ingest, inhaling these products may risk exposure to toxins and result in respiratory toxicity.

Previous studies have suggested that these devices are safe and harmless, however, current research and the sudden outbreak of EVALI in 2019 suggest otherwise.

This study aims to identify the most preferred e-cigarette flavor amongst users. Further explore the chemical components present in these flavoring chemicals by LC-MS analysis and expose airway epithelial cells to these chemical components to investigate their adverse impact on pulmonary cells.

An online survey was conducted to learn and investigate vaping patterns, reasons to use e-cigarettes, preferred flavor, health related issues and side effects experienced after initiation of e-cigarette use. A total of 152 responses were collected, which established that the most common e-liquid flavor used amongst users was 'fruity' flavors. Users experienced Shortness of breath, dry mouth, sore throat, and loss of appetite after initiating and continuing e-cigarette use for 1-2years. According to participant response, the most preferred e-liquid flavors were purchased in order to conduct further research to detect oxidative stress, cell death, and other possible toxicological mechanisms when pulmonary cells are exposed to e-liquids. Biomarkers of inflammation, apoptosis and epithelial-mesenchymal transition will be investigated accordingly. Analytical and staining techniques such as flow cytometry, western blotting and immunocytochemistry will be conducted in the future.

Keywords: e-cigarettes, propylene glycol, flavoring, vaping, nicotine.

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Ariadni Tsiakara

Enriching Lives Through Data Analytics in Education

Supervisors: Dr. Stylianos Kapetanakis and Dr. Giacomo Nalli

The research is conducted in the field of data analytics and in particular learning analytics. The focus of the research study is on determining methods for analysis data collected in modern academic institutions for improving the educational performance of learners. By identifying patterns of learning behaviour, and interactions during learning activities, it is possible to determine how individual learners could be classified in terms of their behaviour and actions. Subsequently these patterns can help in forecasting learners' behaviour and actions in certain educational contexts, offering personalised support and guidance to them, therefore enhancing their learning experience.

The research was triggered by the need to use data that are available during a learner's journey from registration to an academic programme till graduation and sometimes post-graduation, to offer more personalised support. The aim of educational data analytics is to provide data-driven support for the learning process, rather than replacing the role of the instructor.

This study involves data collection and analysis from both individual learners, and learning activities. The multi-disciplinary nature of the study means that a mixed-method approach is more likely to be followed. This means the earlier stages of the research will be grounded, consisting of a literature review of secondary data and published works in data analytics models and practices. The outcome of the initial phase of the study will result in a draft conceptual model for data visualisation in an educational context. The next phase of the research will involve interviews and/or focus groups with instructors who will assist in validating the need for the core proposed educational data visualisation model's elements. Next, the research will conduct a number of pilots focusing on deploying learning support in different modules, while monitoring data representing aspects such as engagement, performance, assessment, and communication. The final phase will include student surveys to obtain feedback on learners' perception of the support provided.

The current state of the research focuses on conducting a preliminary literature review and formulating initial research questions.

Keywords: Data Analytics, Learning Analytics, Educational Analytics, Adaptive Learning, Learner Profiling.

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Huong Duong Nguyen

Deep learning for structural health monitoring

Supervisor: Prof. Huan Nguyen

Vibration-based damage detection (VBDD) method is a non-destructive method and a global damage detection method that can be applied to complex structures and long-term monitoring. To enrich the traditional VBDD methods, and improve the accuracy and level of damage identification, deep learning has been considered a promising method to combine with. Deep learning is a part of a machine learning method based on neural networks, which use multiple layers in the network. Nowadays, deep learning has become the principal approach for much ongoing work in the field of machine learning. Among many deep learning algorithms, ANNs, CNNs, and faster R-CNN are the most popular techniques, which have been widely used in SHM during the last decades. This research proposes a method for identifying damage localization and severity in a structure using VBDD methods associated with deep learning. Most classical VBDD methods help to detect the

damage in a structure however, they need expert people to run. Deep learning can help create the SHM procedure which automatically runs and doesn't depend on people. Damage scenarios are created by reducing the modulus of elasticity of the structure at the damaged area from 1% to 60%. The data obtained from the damage scenarios were used as input data for training and testing the neural network. The results showed that after training, the neural network could automatically determine the damaged area and its severity based on the image extracted from the VBDD methods. The prototype of the free free beam and the slab structure were used to test the proposed methods. The damage's location and severity will be found in the beam structure only using vibration data. For slab structure, faster R_CNN and CNN can identify the damaged area. Thanks to the development of technology, the structure vibration can be obtained using accelerometers, wireless sensors, and strain transducers, etc... Moreover, the number of sensors is not limited. Therefore, the proposed method is highly accurate and has the potential to apply to service structures and be used to create the early alert damage system in the future.

Keywords: damage detection, vibration-based damage detection, structures, neural networks, deep learning.

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Elise M Heinz

Hidden Seashore Diversity – Cryptic Speciation in the Genus Anurida (Collembola)

Supervisors: Assoc. Prof. Martijn Timmermans and Dr. Steve Kett

Cryptic diversity is widespread among animal taxa. Cryptic species are defined as those which are morphologically indistinguishable, but are genetically distinct and not capable of interbreeding. Such hidden diversity biases biodiversity estimates.

Collembola are known to have many cryptic species, and investigating these could help gain a better understanding of how new species emerge, evolve and spread. Anurida maritima (Guérin, 1836) is an intertidal collembolan that is found throughout the temperate zones of Europe and North America, including the British Isles. The species aggregates in large numbers in the upper intertidal zone under the influence of an uncharacterised 'aggregation pheromone'. Some authors have suggested an Anurida maritima 'species group', consisting of at least two species: Anurida maritima and Anurida bisetosa (Bagnall, 1949). Recent molecular genetic analyses have found strong support for this split. To gain a better understanding of the two lineages and their divergence, a straightforward Scanning Electron Microscopy (SEM) method to visually distinguish between the two species was developed and pheromonal responses were investigated. Four UK populations were subjected to SEM analysis: Wells-next-the-Sea (Norfolk), Goldhanger (Essex), Maldon (Essex) and Lundy (Devon). Using forty specimens from each, the presence of A. bisetosa at

the Goldhanger and Lundy sites and A. maritima at Wells-next-the-Sea and Maldon was revealed. Subsequent behavioural studies showed that A. maritima and A. bisetosa respond to each other's pheromones.

In summary, this study supports cryptic speciation within Anurida maritima. Further research is needed to determine what caused this speciation to occur.

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Jacqui C Ison Parsell

Does Competitive Dance Have a Role in Education, and Should Experiential Learnings from Competitive Dance be Accredited as Educational Qualifications?

Supervisors: Dr. Astrid Bernkopf, Dr. Kate Rogan, and Dr. Mike Dines

Each year thousands of young people participate in extracurricular dance festivals and competitions in the UK, often over many years in parallel with their academic education, but without any formal recognition of their efforts and years of hard training. Promoted as educational, the reality is that these events are all about 'winning'. The growth in popularity, fuelled by reality television shows such as Dance Moms, has only reinforced to young minds that 'success' is through competition and that winning is the overriding objective, with learning outcomes secondary. This environment, therefore, is highly competitive and frequently toxic.

This research addresses whether extracurricular competitive dance can contribute to educational qualifications and whether the experiential and tacit knowledge gained therefrom should be accredited, thereby giving recognition to the young people who participate, and enriching their lives by highlighting the value of these learning experiences whilst providing opportunities for growth, self-expression, personal development and qualification. Such accreditation is even more relevant at this time when the teaching of GCSE and AS/A level dance is being squeezed from the academic timetable, with dance often relegated to a module within physical education. The introduction of breaking, which is classified as DanceSport but seen by many as an artistic dance form, at the 2024 Paris Olympics, further highlights the juxtaposition between artistry and athleticism, potentially leading to further reduction of education in dance and so making the accreditation of the learnings from competitive dance more important.

Research utilises a mixed methods approach, engaging with the theories of Kolb and Dewey whilst shining a postpositivist lens as a means of unpacking knowledge. Firstly, quantitative data to collect opinion from the dancers (of GCSE/A level age,

13-18 years) to demonstrate whether they would want and value accreditation. Secondly, interviews with dance organisations, and dance personalities whose careers were founded in competition to provide a different perspective, applying techniques such as reflective thematic analysis to analyse qualitative data. Worldwide, there is very little scholarship and research into competitive dance and its role within education, and therefore this research fills a gap in knowledge.

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Jennifer Chacon Lopez

Investigating the Influence of Distractions Whilst Engaging in Social Media – An EEG Project

Supervisors: Assoc. Prof. Alex Jones, and Assoc. Prof. Jon Silas

This study aims to take a closer look at the social media app TikTok and its potential influence on attentional processes. TikTok has grown in popularity in recent years and is especially popular amongst teenagers and young adults. It features a "never ending scroll" as its main feed where users encounter a wide variety of topics. The goal of the study is to investigate how distractors are processed when engaging with social media. This will be assessed by EEG data collected throughout as well as both tactile and visual distractors presented during the trials. The tactile distractor is a tactor that participants will place their left index finger on, and the visual distractor is a green LED. During the experiment, all participants will have different blocks where they will have a TikTok engagement section as well as a control that features a blurred screen along with unintelligible audio. During each of those, they will sometimes be asked to respond to the target, a white LED on the screen over their phones, via a foot pedal and other times they will not be asked to respond. Their performances will be analysed with a within-subjects approach. It is expected that when participants engage with their personalised TikTok feed they will not filter distractors as well. Though the existing literature does not feature neurological studies centred on social media other similar topics such as Lavie's (1995) perceptual load theory provide enough framework from which to base expectations off. Social media is a growing area of interest in publication due to its increasing presence in society. As it is a relatively new phenomenon, it warrants scientific interest to analyse the ways it may be modulating attention, if at all. Users of social media should know of potential effects to any aspects of attention so that they are able to make informed decisions regarding time management for the sake of their well-being.

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Kajal Mistry

Tracking the Learning Path: Unveiling Affective Computing, Counterfactual Thinking, and Eye Tracking in Education

Supervisor: Prof. George Dafoulas

People frequently engage in counterfactual thinking, reflecting on past events to rethink and regulate behaviour, thereby improving performance. This research addresses the gap in understanding counterfactual thinking, human behaviours, and educational technologies, exploring how these factors influence students' decisions about their learning and educational goals. By analysing human behaviours, researchers gain insights into motivations, productivity, and the dynamics of teams and individuals, considering the variability in personality, attitudes, values, perception, motives, and abilities.

The study focuses on four key areas: (i) Emotion, (ii) Cognitive Capabilities (Human Behaviour), (iii) Counterfactual Thinking, and (iv) Educational Technologies. These aspects are detailed within the thesis to review the developing gap comprehensively. By examining emotion, cognitive capabilities, and counterfactual thinking alongside educational technologies, this research provides a comprehensive view of learning processes and student performance. It investigates how counterfactual thinking can enhance learning outcomes in higher education and analyses links between students' learning styles, personality traits, and decision-making.

Expected outcomes include:

- Insights into factors influencing human behaviour and strategies to enhance performance.

- A comprehensive understanding of counterfactual thinking in general and within higher education.

- Analysis of how counterfactual thinking can promote learning and improve student performance.

- Identification of links between students' learning styles, personality traits, and decision-making processes.

Findings indicate that counterfactual thinking significantly influences student learning and behaviour. Data from educational settings show that students engaging in counterfactual thinking better regulate their emotions and performance. Integrating educational technologies facilitates this process, providing real-time feedback and adaptive learning experiences. These technologies enable personalised learning paths, helping students identify strengths and areas for improvement more

effectively. The study suggests that student engagement with educational technologies correlates with improved academic outcomes, demonstrating the potential of combining counterfactual thinking with innovative educational tools to enhance learning experiences.

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Maali Alanazy

Exploring Anti-Cancer Effects of Thymoquinone and its Mechanism via EGFR Pathway in Colorectal Cancer Cells

Supervisory team: Prof. Richard Bayford, Assoc. Prof. Lucy Ghali, and Dr. Song Wen

Colorectal cancer (CRC) poses a significant global health challenge, with a prediction to exceed over 45,000 incidents in the UK between 2038-2040. The limited treatment options for CRC which is often surgical resection and chemotherapy together with the late-stage diagnosis are usually encountered for a poor prognosis which emphasises the need for innovative therapeutic strategies. Thymoquinone (TQ) is a natural bioactive compound found abundantly in Nigella sativa and it shown to exhibit antimicrobial, antioxidative and anti-inflammatory properties as well as anticancer effects in various cancer types such as lung, ovarian and prostate cancer. TQ is suggested to affect cancer cells through several mechanisms such as suppression of Notch signalling pathway, interaction with DNA bases, upregulation of DKK-1, CDNK-1A and TGF-β1 as well as downregulation of Wnt, β-catenin and p38β. Epidermal growth factor receptor (EGFR) overexpression is frequently observed in CRC and has been associated with aggressive disease behaviour and poor prognosis. The aim of this research is to investigate the therapeutic efficacy of TQ on colorectal cancer cell lines, which are EGFR positively expressed and its associated mechanisms of drug action. Current results from MTT cell viability assay showed a dose dependant cell population reduction from TQ exposure on CRC cell line HCT116 (stage 4). The half maximal inhibitory concentration (IC50) was 45.67μM. Also, EGFR was investigated by fluorescent immunocytochemistry (F-IHC) staining in HCT116 cell line and showed a decreased expression following 48 hours TQ treatment while an increase of caspase3 expression was noticed. This suggests that TQ has effects on HCT116 growth, possibly by limiting EGFR signalling pathway and by gaining a comprehensive understanding of TQ mechanisms of action, its therapeutic benefits can be optimised and facilitate the way for effective treatments for CRC patients. Future work will involve another CRC cell line CRL2159 and normal colorectal cells as a negative control. IC50 values will be investigated for them which will be used for further treatment for these cells, then various techniques including western blot, cell cycle

assay, apoptosis assay and reactive oxygen species assay will be applied to check their therapeutic potential and their mechanisms of actions.

Keywords: Cancer research, Nanotechnology, Oncology, Liposomal delivery, Combination therapy.

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Merve Çetinkaya

Meaning and Purpose in Life in Individuals Diagnosed with Alcohol Use Disorder: A Mixed Methods Study

Supervisors: Prof. Betsy Thom, Assoc. Prof. Camille Alexis-Garsee, and Dr. Helen Gleeson

The goal of the current study is to investigate how people with alcohol use disorders see death and the meaning and purpose of life. By looking at the impact of the death phenomena and meaning/purpose in life on the individual's alcohol use, and by questioning participants about their experiences and thoughts, it is intended to describe the relationship between alcohol use disorder, death phenomenon, and meaning/purpose in life.The current study is a mixed-methods research project that includes a quantitative component to address alcohol use disorder, the death phenomenon, and life's meaning/purpose as well as a qualitative component to complement the findings by supplying details on the relational context and subjective experience. With the help of this study, which uses the phenomenological method to examine the phenomenon of death and meaning/purpose in life in people with alcohol use disorder from an existential perspective, people will be able to benefit from the perspective gained as a result of the in-depth knowledge about addiction and alcohol phenomena, which will help people make prevention and treatment methods more effective. The results of this study will also aid in the creation of programs aimed at fighting addiction in light of the experiences that the participants described.

Keywords: alcoholism, Addiction, Meaning in Life, Purpose in Life, Death.

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Prabhashana Gunathilake

CSR Practices of SMEs in Post-Economic/Political Crisis Sri Lanka

Supervisors: Assoc. Prof. Andrea Werner, Dr. Sian Stephens, and Dr. Chandima Hettiarachchi

Businesses operating in a country that has gone through an economic/political crisis, such as Sri Lanka, often encounter financial difficulties. Those financial difficulties could impact the Corporate Social Responsibility (CSR) of those organisations. Although an economic/political crisis is difficult for society as well as organisations, Carroll (2021) suggests that many companies are attempting to reset their CSR thinking and initiatives to accommodate the crisis and to meet what is expected of them by the society. Furthermore, according to Wirba (2023) governments can become involved in CSR in crisis situations by promoting awareness, soft laws, partnering, and mandating business enterprises to be transparent.

The focus of this study is on SMEs as they make up a large proportion (99% of all businesses) of the Sri Lankan economy, employ 75% of the labour force and contribute up to 52% of the GDP (Asian Development bank 2021). Furthermore, according to Spence (2016) small business social responsibility enables engagement with mainstream CSR research. Therefore, focusing the study on the CSR of SMEs in Sri Lanka will allow for an understanding of highly represented but rarely studied section of a developing country after an economic/political crisis.

This research aims to explore CSR practices of Sri Lankan SMEs and the perceived contribution of those CSR practices to local society in a post economic/political crisis with the use of stakeholder and social-capital theories. It also aims to investigate the role of government in influencing CSR of SMEs in the context of a global south economic/political crisis utilising institutional theory and Foucault's governmentality theory.

Text-based research examine relevant governmental laws, data of international organisations such as the IMF, world bank and Asian development bank regarding Sri Lanka. In depth, semi-structured Interviews will be conducted with 25-30 SME owners and management and 5 local and national government personnel according to availability. The sample selection will be determined in due course to reflect the Sri Lankan economy. Data generated from these interviews will be thematically analysed. This research will follow an abductive approach as data will be analysed using both deductive and inductive thematic codes.

Keywords: Corporate Social Responsibility, SMEs, Economic/Political crisis, Global South, Governmentality.

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Samaneh S Serpooshan

Exploring Flood Vulnerability Disparities: A Comparative Study of Social Flood Risk in Disadvantaged and Less Disadvantaged Areas - Challvey Chalvey vs Burnham, and Farnham Royal

Supervisors: Prof. Sally Priest and Dr. Simon McCarthy

Climate change is expected to increase flood frequency and severity globally. Such climate shifts can compound poverty, and at the same time, being disadvantaged make communities more vulnerable to the effects of climate change. Research has shown that certain populations have a greater ability than others to prevent, mitigate, or recover from severe flooding. However socially vulnerable and marginalised populations often suffer the most severe impacts from floods compared to wealthier ones, while also lacking resources to prepare and recover. Combinations of the increased flood exposure from climate change and rising social vulnerability due to demographic changes highlights the need to focus on flooding in more disadvantaged areas to better support these communities.

Previous studies have explored social vulnerability and its relation to flooding, yet a comprehensive understanding and quantification of community level vulnerability characteristics are still lacking. In this paper, the disparities in flood vulnerability between disadvantaged and less disadvantaged areas in flood-prone neighbourhoods in Slough, UK, including Burnham, Farnham Royal, and Chalvey, and their effects on flood risk will be examined. The Neighbourhood Flood Vulnerability Index (NFVI) and the Social Flood Risk Index (SFRI) have been utilised as proxies for flood vulnerability and flood risks in these areas. Geographic Information Systems (GIS) were used to illustrate disparities between these areas and highlight how these indices can provide insight into social vulnerability from flooding.

Moving forward, the use of a qualitative approach will enable a closer examination of social flood vulnerability indicators. Interviews are utilised to further investigate the results derived from the comparative NFVI and SFRI analysis in the case study areas. These permit a bottom-up investigation of social flood vulnerability. By better understanding and addressing the factors that contribute to flood vulnerability in disadvantaged communities, this research aims to inform targeted interventions and policies that can enhance resilience, promote social justice, and ultimately enrich the lives of those most affected by flooding. Enriching lives through research is a critical goal, particularly when addressing the disproportionate impacts of climate change on vulnerable communities.

Keywords: Flood poverty, flood disadvantage, flood vulnerability, flood risk, resilience.

Stewart M Frost

Police Education: Serving Communities or Serving Tradition?

Supervisor: Prof. Darryl Bravenboer

The overarching aim is to better prepare professional police officers to begin re-dressing the tarnished reputation of policing. This research examines the pedagogic conventions within police training in England and Wales. The research considers the extent to which methods used to train police officers are effective in equipping them to meet the complex needs of the communities they serve. The study will focus on gathering and analysing data regarding the quality of the learning experience of student officers undertaking the Police Constable Degree Apprenticeship at Middlesex University.

Anecdotally, student officers may report that they do not feel confident or ready for front-line duties after police training. Potential drivers for this potential lack of confidence could include a tacit psychological barrier regarding operational policing, a product of police culture not valuing learning or a possible disconnect between training methods used and policing practice. However, this research will specifically consider the potential relationship between this perceived sense of 'unreadiness' and the traditional classroom learning methods typically used to deliver police training. Traditional training approaches will also be contrasted with work-integrated learning pedagogies that position the workplace and operational policing environment as the primary site of learning.

This study is designed to use a phased, iterative, mixed methods approach including a literature review; a series of semi-structured interviews; and a questionnaire survey. The literature review sought to ground the research within the relevant specialist field of work-integrated higher education and provide productive themes to inform the development of both a survey and interviews. A survey of police officers will generate data, which will inform the direction and method of subsequent phases, including the review of specialised literature as well as themes for semi-structured interviews with key stakeholders; including police training managers, governing body curriculum architects, student coaches and consortium leaders.

It is hoped that this research, as a specialised area within police education, will contribute empirical evidence that can inform policy and practice regarding police education pedagogy.

Keywords: Police Education, Training Pedagogy, Applied Practice, Discursive Gap, Organisational Culture.

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Vanessa Sofia Amaral Lopes Simoes

How Do Neural Responses to Touch in Peri-Personal Space (PPS) Change During a Social Compared to a Non-social Task: Measured Using EEG and Presented in a Virtual Reality Environment?

Supervisors: Assoc. Prof. Jonathan Silas, Assoc. Prof. Alexander Jones, and Dr. Peter Passmore

Attention is a higher-order cognitive function that allows us to select information to prioritise and process. This process has been extensively researched regarding stimuli presented in different spaces. Peri-personal space (PPS) is the immediate space around the body. Previous research has shown that stimuli within the peri-personal space (PPS) are attended to faster than when presented in the extra-personal space (EPS. More importantly, the demand for social cognition in this space impacts behavioural and neural responses. For example, tasks requiring higher social cognition within the PPS have been shown to increase neural activity. Virtual reality (VR) is a relatively new method of presenting stimuli and has a significantly high level of emergence compared to on-screen methods. This study aims to bridge the methodological and theoretical gap by combining VR and EEG to explore whether there are significant differences in neural responses between social and non-social cognitive processes in the PPS compared to EPS. The visual stimuli consist of videos of two actors having a conversation, recorded in the same environment participants will be tested in, giving an immersive feel. In the near-distance condition, the actors were .95m from a 360-degree camera. In the far-distance condition, the actors were 3.45m from the camera. In the social task, participants must infer what emotions the actors were feeling, and the non-social task requires participants to count how many times they each touched their faces. Tactile stimulation involving small taps delivered on the right index finger, will be used in conjunction with VR and EEG, to investigate the differences in somatosensory cortex activation to the types of tasks, in the different spaces. There is expected to be a significantly bigger difference in the ERPs in the social task presented in the PPS compared to the non-social task presented in the EPS. Overall, these findings will shed light on sensory-perceptual processes, specifically in the somatosensory cortex and how this area of the brain engages differently in social vs non-social contexts. The use of VR demonstrates how novel technology can be integrated into research, paving the way for future studies employing innovative methodologies.

Keywords: Virtual reality, Peri-personal space, Social cognition, EEG, Attention.

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Vijay Simha Reddy Chennareddy

A Transformer-Based Q&A Systems for Legal Documents

Supervisors: Prof. David Windridge, Prof. Mandeep Dhami, and Dr. Santosh Tirunagari

Within legal research, individuals involved in studying and analysing intricate legal documents from the BAILII database face considerable obstacles. These documents, filled with various appeal court decisions, offer valuable insights into legal arguments and judicial interpretations. Conventional approaches to document analysis are time-consuming and demand a high level of expertise to decipher complex legal terminology and extract relevant information. Existing tools for legal document analysis often fail to meet the needs of specific legal questions or cases, as they need the ability to perform contextual analysis tailored to the nuanced requirements. There is an apparent demand for an intelligent system capable of navigating the complexities of the legal domain. Transformer models have emerged as powerful tools in Natural Language Processing (NLP), significantly improving the performance of Question and Answer (Q&A).

This research introduces a cutting-edge Q&A system to analyse appeal court documents from the BAILII website. Leveraging advanced Transformer models, our system stands out in its ability to generate and answer questions specific to these documents, offering a novel approach to legal document analysis.

We have made significant progress on the project by successfully implementing the Llama Index pipeline and training the models with legal databases, Including completing the data preprocessing and integrating the Retrieval-Augmented Generation (RAG) model. The pipeline implementation with the Llama Index guarantees smooth handling and processing of legal documents, while the model training using extensive legal databases equips the system to handle a wide range of legal questions with precision. The integration of the RAG model combines a dense retriever and a sequence-to-sequence generator to fetch relevant documents from the knowledge base and produce contextually relevant answers. Although there have been significant advancements, some tasks still need to be completed. These tasks involve running the model on legal questions and assessing its performance using metrics like F1-score, precision, recall, and BLEU score. In addition, legal experts will conduct a qualitative evaluation to assess the accuracy and relevance of the generated answers. By completing these tasks, we can thoroughly evaluate the model's capabilities and identify areas for improvement.

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Vijay Simha Reddy Chennareddy

Extracting Key Information from Appeal Court Documents by Using Transformer Models

Supervisors: Prof. David Windridge, Prof. Mandeep Dhami, Dr. Santosh Tirunagari

Natural Language Processing (NLP) has undergone a significant transformation with the advent of Deep Learning and Transformer-based models. However, these models are typically trained initially with Wikipedia and newspaper data. We are here studying the problem of Legal NER and extracting the information from the legal documents obtained from the BAILII Court of Appeal database. Despite the notable progress made in Natural Language Processing (NLP) and Deep Learning, the Legal Domain continues to present several challenges and limitations. These include domain-specificity, various forms of ambiguity (Lexical ambiguity, Semantic ambiguity, and Syntactic ambiguity) and Contextuality.

Extracting the Named Entity Recognitions knowledge from BAILII records, which could relate to the neutral citation number, date of the crime, nature of the offence, and the identities of the parties involved, has the potential to enhance legal research, facilitate the identification of case patterns, enable predictive analysis, and streamline document management. It can encourage the creation of cutting-edge legal technology applications such as Legal-chatbots, case summaries, and legal research tools, thereby boosting public access to legal information and guidance and increasing legal comprehension. As a result, the findings of this ground-breaking study have the potential to drastically alter the legal environment in the United Kingdom and Ireland.

Our primary focus will be on the extraction of casual reasoning as a means of identifying legal bias. To achieve this objective, we will endeavour to develop a customised transformer solution. Initially, the BERT-based language model is pre-trained with the Legal corpus, thereby enhancing the efficacy of language models concerning tasks specific to a particular domain. Subsequently, we utilise a dataset comprising 50 self-annotated documents, each containing a maximum of ten annotation tags, to train BERT (Bidirectional Encoder Representations from Transformers) models to extract Named Entity Recognitions (NERs), Questions and Answers (Q&As), and Document Summaries (DS) from criminal documents.

Finally, an evaluation is conducted on domain-specific tasks such as named entity recognition (NER), question answering (Q&As), and document summarising (DS). The outcomes are subsequently compared with those of the regular BERT Model.

Keywords:Large Language Models (LLMs), Natural Language Processing (NLP), Named Entity Recognition (NERs), and BERT.