Better to illuminate than merely to shine...

Book of Abstracts 2023

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SPARC 2023 Book of Abstracts

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Preface

Welcome to the Book of Abstracts for the 2023 SPARC conference. Our conference is called "Better to Illuminate than Merely to Shine" reflecting our desire to share knowledge and inspire others in addition to attaining individual, personal growth.

Shared learning and community is important for us all, and this is certainly true when undertaking postgraduate research. The support, encouragement and constructive challenge peers provide each other is a truly invaluable part of the journey. There is no better place to see the value of the PGR community and peer support than at SPARC, where PGRs come together to share and celebrate each other's research. It's a wonderful, exciting, energising event and I am delighted to say this year we will be extending our peer network, with ten PGRs from Huddersfield University coming to join us and share their work.

As well as peer support, PGR successes are underpinned by the support and guidance of dedicated supervisors and the Doctoral School Team. To recognise supervision excellence, we have again run the annual supervisor of the year competition and it has been a delight to hear about how supervisors support our PGR community and the difference they make to PGR journeys. We will be awarding our annual Supervisor of the Year prizes, based on the nominations received from their PGR students, at the end of the first day of SPARC.

It's fabulous to see that SPARC is growing, building on the huge value it offers the PGR community, and his year will be our biggest yet. We have received a tremendous contribution from our postgraduate research community and friends at the University of Huddersfield; with 89 presenters, and 38 poster presentations, the conference showcases our extraordinarily vibrant, inclusive, and resilient PGR community at Salford. There will be prizes to be won for each parallel session and delegates too could be in for a treat, with a prize draw for a unique tour of the Golden Mummies of Egypt exhibition with Keynote speaker, Dr Campbell Price.

The abstracts contained here provide a taster of the diverse and impactful research in progress and provide you with a reference point for networking and initiating critical debate. Take advantage of the hybrid format: in online sessions by posting a comment or by messaging an author to say "Hello", or by initiating break time discussions about the amazing research you've seen if you are with us in person. Who knows what might result from your conversation? With such wide-ranging topics being showcased, we encourage you to take up this great opportunity to engage with researchers working in different subject areas from your own. As recent events have shown, researchers need to collaborate to meet global challenges. Interdisciplinary and international working is increasingly recognised and rewarded by all major research funders. We do hope, therefore, that you will take this opportunity to initiate interdisciplinary conversations with other researchers. A question or comment from a different perspective can shed new light on a project and could lead to exciting collaborations, and that is what SPARC is all about.

As well as the talks and posters, there are a variety of workshops and lunch time sessions exploring topics such as decolonising research and how to communicate your research in novel ways. Be sure to look at the schedule and plan in which sessions you want to attend. Note some needed prior booking.

SPARC is part of a programme of personal and professional development opportunities offered to all postgraduate researchers at Salford. More information about this programme is available on our website: Doctoral School | University of Salford. Registered Salford students can access full details on the Doctoral School hub: Doctoral School Hub - Home (sharepoint.com) You can follow us on Twitter and Instagram @SalfordPGRs and please use the #SPARC2023 to share your conference experience.

This year we are really pleased to welcome taught students from our undergraduate and master's programmes as audience members, as well prospective PGRs from elsewhere. We hope you enjoy

the presentations on offer and that they inspire you to pursue your own research career. If you would like more information about studying for a PhD here at the University of Salford, your lecturers can advise, or you can contact the relevant PGR Support Officer; their details can be found at Doctoral School | University of Salford.

We wish you a rich and rewarding conference experience.

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Session 1.1 Health Interventions 1

Investigating Agile Non-functional Requirements Issues in Medical Software Development

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Abstract

Over the years, implementing agile practices has resulted in generic improvements in software development processes, thereby mitigating the inherent obstacles of the traditional methodology. These obstacles include high software delivery costs, time wastage, software project failure, and a lack of customer engagement. However, empirical evidence on identifying and implementing nonfunctional requirements (NFRs) at the onset of agile medical software development processes is unclear. Practitioners usually identify NFRs late in the development processes, resulting in a decrease in software quality, an additional cost of rework, and occasional software failure. Therefore, this research aims to mitigate the consequences of the late implementation of software addressing NFRs in selected agile medical software in the UK, India, and Nigeria. The study will adopt a qualitative multimethod approach and explore the research in four phases: an exploratory pilot study, the main study, framework development, and the framework evaluation phase. The study will collect data through interviews with experienced and selected practitioners developing standalone and embedded agile medical software and use an approach to data analysis informed by grounded theory. Investigating such phenomena will contribute to the software engineering body of knowledge in theory and practice. The expected research findings will enhance the development of quality medical software and influence agile practice implementation.

Keywords

Software Development, Agile Practices, NFRs, Medical Software Practitioners, Stand-alone/Embedded

Format

Oral presentation

Digital Humanities' Solution to Complex Malaria Drug Leaflets in Nigeria

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Abstract

As of today, malaria is one of the leading causes of death in Nigeria and other sub-Saharan African countries. One reason that can be attributed to this high level of death is the level of information available to the patients in the Nigerian malaria drug Patient Information Leaflets (PILs), as many complain that the PILS are not accessible to them due to the complex nature of the language used. In the context of the above, the current study explores the possibility of solving the problem using a digital humanities solution through an investigation into the possibilities of creating simplified versions of the PILs that can be accessible to drug users in Nigeria of different educational and non-educational categories through mobile application platforms. The study, which is exploratory in nature, intends to examine a purposively sampled population of 180 Nigerians with varying educational backgrounds split into two equal parts, where the first group will be given the simplified text, while the other group will be given the existing text. The level of comprehension of the two groups will be tested at the end using established frameworks. The application of the knowledge that will be gained from this study will help in developing and ensure the efficacy of a digital platform that simplifies the dangers and dosage specifications of malaria drugs in developing countries.

Keywords

Patient Information Leaflets, Malaria, Nigeria, comprehension, complexities, readability

Format

Oral presentation, Poster

"The Experiences of pregnant women using mobile pregnancy apps in Nigeria": Lessons Learnt from a Pilot Study

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Abstract
Maternal mortality has been of significant concern in Nigeria, with the country's mortality ratio in 2022 being 917 per 100,000 live births. Nigeria is among the top six African countries contributing to more than 60% of global maternal deaths. As a result, various maternal healthcare services have been implemented at primary healthcare facilities to attain the Sustainable Development Goal (SDG) that seeks to cut maternal mortalities to 70 per 100,000 live births globally.
Pregnant women's poor access to healthcare facilities to available maternal healthcare intervention, such as antenatal care (ANC), contributes to maternal mortality in developing countries, particularly Nigeria. Digital Health Technology (DHT) with mobile health (mHealth), in particular, is explored to help improve access to antenatal care for overall improvement to maternal health and attainment of related Sustainable Development Goal 3 (SDG 3).
This paper involves a scoping review that assesses the global experiences of pregnant women using mobile Pregnancy apps, an evaluation of the qualities of available mobile pregnancy apps in Nigeria App stores and a pilot study to assess the feasibility of conducting online in-depth interviews of pregnant women that used mobile pregnancy apps to assess their experiences with the innovation.
This paper intends to provide an understanding of the quality features of mHealth required to bridge the access gap of existing antenatal care services to enhance maternal health in Nigeria and potentially other affected developing countries.

Keywords
Antenatal care, Maternal mortality, Mobile health, Pregnancy apps, User Experience

Format
Oral presentation

Combination Chemotherapy Design of Hollow Gold Nanoparticles as a Novel Anticancer Treatment

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Abstract
The application of nanoparticles in the treatment of cancer has been subject to extensive research in recent years. Chemotherapeutics design based on utilising nanoparticles offers selective treatments, targeted therapies as well as the possibility of a personalised medicine approach. Distinctively, gold nanoparticles have been placed as attractive candidates for anticancer applications due to their unique properties including their stability inside the human body, tunable particle size, ease of drug attachment and advanced surface alterations. The advancement of synthesis methods has provided the possibility of exercising control over the shape and dimension and even the porosity of nanoparticles that confers the possibility of producing novel nanoparticle designs such as hollow nanoparticles. Despite the structure has been known as a crucial parameter, exploiting shape-related characteristics such as hollow structures has still been limited. This study has developed a design of hollow gold nanoparticles conjugated with doxorubicin as a chemotherapy drug and has evaluated their impact on cultured cells on a variety of cancer cell lines by using cell viability tests. These preliminary results suggest that the enhanced therapeutic efficacy of hollow nanoparticles presented in this study offers a promising potential for a future treatment method.

Keywords
Gold nanoparticles, cancer, chemotherapy, drug delivery, hollow nanoparticles

Format
Oral presentation

“Rattle Me Bones”: A Vibro-Acoustic Method to Measure Bone Strength

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Abstract
As we get older, our bones become weaker and more likely to fracture from small falls. This condition is called osteoporosis and is a world-wide problem that is particularly common in post-menopausal women and elderly men. The current method to predict risk of fracture involves x-ray machines in hospitals to measure the Bone Mineral Density [BMD] and compare it to a healthy reference value, giving a T-Score. But though it has been accepted as the “Gold Standard” by the World Health Organization, there are major limitations and problems with this current approach. Instead, we propose a vibro-acoustic method which vibrates the shin bone to produce audible resonances. These resonances are then recorded, analyzed, and put through a machine learning algorithm to predict the strength of the bone by the ratio of stiffness over its density. This algorithm is trained using mathematical models which look to simplify the shape and complexity of bones to make predictions easier. The results of this modeling and the early results of the machine learning algorithm will be discussed, including recent work on studying how to simplify the bone shape to understand its influence on the bone’s vibration.

Keywords
Osteoporosis, Vibro-acoustics, Bone, Health, Machine Learning

Format
Oral presentation

Development of Nanoemulsions for Topical Application of Mupirocin

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Abstract

Mupirocin (MUP) is a topical antibacterial agent used to treat superficial skin infections but has limited application due to inactivation inside the human body through binding to blood protein. Nanotechnology is an approach that attracted researchers to use it in order to formulate MUP for topical application. Nanoemulsions are nanoscale carriers used to deliver MUP efficiently into the skin. In this study, innovation was performed in nanoemulsion formulation by using essential oil such as eucalyptus oil (EO) and eucalyptol (EU) as an oil phase and synergistic aid of skin permeation. The process involved combining the oil phase with the water phase and stabilising this mixture with the aid of a substance called surfactant using an ultrasonic homogeniser. The results have shown stable nanoscale-size droplets containing MUP in nanoemulsion form with higher skin permeation as compared to the marketed control product (Bactroban® cream). The inclusion of EU and EO increased the skin permeation of MUP in 2-fold and half-fold, respectively as compared to the control. In addition, the amount of MUP detected in the skin after 8 hours of application is higher with EU-based nanoemulsion while after 24 hours of application, it is higher with EO-based nanoemulsion as compared to the control. Pharmaceutically, this is important to design nanoformulations for both acute and chronic management of topical infections by choosing the appropriate essential oil, while economically, it may be possible to use cheap crude essential oil to formulate an advanced pharmaceutical formulation.

Keywords

Eucalyptus oil, mupirocin, nanoemulsion, topical delivery, permeation

Format

Oral presentation, Poster

Session 1.2 Working Together

Internal CSR Effect on Employees: A Sensemaking Approach

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Abstract

Research studying into organizational CSR (Corporate Social Responsibility) activities on customers, society and environment have been developing. However, the internal organizational CSR activities on employees are very much overlooked. Hence, this research explores the impact of internal organizational CSR activities on individual employees in the context of Food and Beverage industries in Myanmar. A quantitative research method is constructed to examine the relationship between internal organizational CSR and employee outcomes such as employee engagement and organizational citizenship behavior of employees through a mediator of meaningfulness by using survey questionnaires. These research findings show that there are relationships among internal CSR, employee engagement, organizational citizenship behavior, and meaningfulness. However, a weak relationship is found out between internal CSR and organizational citizenship behavior. Even though when employees directly benefit from the internal CSR programs, they have less willingness to reciprocate care towards their coworkers. Thus, involvement of the mediator meaningfulness is an essential role between them. When employees are targeted as part of their organizational CSR, they experience meaningfulness at work which is more likely to help coworkers beyond their job requirements. These research findings contribute an original empirical insight into the literature by offering a conceptual framework that explain the CSR knowledge of late developed countries to some extent by focusing on Myanmar as a contextual research background. In addition, these findings are likely to help managers in organizations design and embed a framework of CSR activities for their internal employees.

Keywords

Sensemaking, internal CSR activities, employee outcomes, integrating level analysis

Format

Oral presentation

Micro and Small Business (MSB) Project Planning and its Impact on Project Outcomes

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Abstract

This study's investigation into MSB project planning was prompted by a serious Australian project management failure, due to a mobile home being dropped on two homes during a crane lift as a result of the inadequate planning of the project, fortunately nobody was killed. However, the construction company went bankrupt, and as a result employees were made redundant. Many project planning issues were discovered after this failure including no method statement or risk assessment and project governance lacking. This led to poor project planning that would have prevented this outcome from the onset.

This study is significant due to the 28 EU member survey showing a 5-year survival rate of only 44% in MSBs and indicates a need to stem project performance decline and improve project governance. Project governance is failing due to poor leadership and commitment from the inception to appoint a project leader and establish a team with clear, defined and agreed project governance. The literature review research initiated two research questions: 1. Evaluate MSB critical project planning implementation? and 2). Explore how a limited resource MSB could improve its project planning governance performance? These two questions were explored and evaluated using an investigative interview process which was pilot trialled and found to be fit for purpose which allowed the main investigation to be undertaken with multiple present and former MSB management and stakeholders.

The study's knowledge and practice contribution will be to have a universally developed MSB project planning protocol which will lead to a significant improvement in project outcomes.

Keywords

Micro and Small Businesses, Project Governance, Project Planning, Universal MSB Project Planning Protocol

Format

Oral presentation

Complexities and Risks of Mega Projects Execution in Developing African Countries

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Abstract
Construction projects can be described as mega-projects if they are executed on a very large scale and involving significant financial resources. The condition of many previous mega-projects in Africa can be described as poor. However, there has been significant increase in African Infrastructure investment by foreign investors in recent years. Nevertheless, various risks and complexities persist when attempting to successfully execute mega-projects in developing African countries. This can be put down to a range of factors including workforce shortages, skills gaps and previous funding issues. This causes a problem for a large majority of Africa's population, who have poor access to potable water supplies, decent and affordable housing and health care, transportation, and educational services. This manifests itself in a lack of sustainable infrastructure and facilities and the absence of locally available construction capacity. This paper begins to address this research gap by identifying the risks, complexities, socio-economic, and political factors involved in mega-project delivery. The aim of this paper is to seek to identify steps to help improve the performance of mega-projects execution in Africa by conducting a critical analysis of existing literature on mega-projects to identify any common themes and lessons that can be shared. This will contribute to current knowledge by clearly articulating gaps in the literature to help better shape the direction of future mega-project research.

Keywords
Mega Projects, risks, complexities, socio-economic factors

Format
Oral presentation

Collaborative Dynamic Capabilities: A Systematic Literature Review

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Abstract
The business world is ever changing and laden with challenges which hinder attainment of business goals. Factors such as the Covid-19 pandemic, the war in Ukraine etc., have only heightened the existing risks, challenges, and how quickly things change in the business world. The record number of business failures in recent times highlights the detriments of businesses operating in isolation. There is a need to look beyond individual firm boundaries and develop relevant capabilities to overcome the realities of a challenging business environment today.
Collaborative dynamic capabilities (CDCs) meet this need. They are the capabilities business organizations need to survive and move from ordinary to superior performance. Unlike Dynamic capabilities (DCs) which are developed within individual organizational boundaries, CDCs are developed from cross boundary interactions. Looking beyond individual boundaries in this way holds potential for greater value creation and CDCs enable maximization of this potential. Yet, there is a shortage in studies on CDCs. Furthermore, existing studies are hard to locate and relevant discussions which shed light on the topic are hugely fragmented.
This study therefore uses a systematic literature review (SLR) of 70 research studies to analyze the existing body of knowledge on CDCs as well as organize the disjointed discussions. Findings indicate that CDCs hold high potential for business attainment to superior performance. It also provides answers to why the existing body of knowledge and discussions on CDCs are fragmented. These provides a solid foundation for future development of the topic for the benefit of businesses today.

Keywords
Dynamic capabilities, collaboration, cross boundary, collaborative lens, co-creation

Format
Oral presentation, Poster

Collaborative Models for the Project Procurement in Support of the Needed Grounding Theoretical Models in Construction

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Abstract

Within the Architectural, Engineering and Construction (AEC) industry, collaboration is promoted for adoption by various forms of governmental and technical instruments (Policy, Standards, Frameworks), with the aim to improve performances in the project delivery of construction projects. However, the collaborative models embedded in these instruments are limited by a lack of theoretical grounding context. Hence, there needs to explore "the real meanings of collaboration" in these technical instruments and then, to understand "the people's perceptions upon project level collaboration" and "what/how people do for project level collaboration at work?". Thus, the researcher intends to undertake some observational research field work to explore the realities happening in the collaboration context within the project teams of multidisciplinary firms via ethnographic research approach, focusing on the work in pre-design and preconstruction phases. Precisely, there is specific interest with the involvement in the collaborative work of alliances between contractor and manufacturer within the early procurement.

By undertaking qualitative analysis based on the empirical data from the observation of actual collaborative practices in multidisciplinary firms, it intends to reveal the key emergent themes embedded collaboration: collaboration policy, integrated process in procurement methods, Building Information Management (BIM) for collaboration. Thereby, the researcher will generate the grounded theoretical models empowering collaboration, reflecting on "how collaboration is defined in the realities" based on evidence-based interactions with practitioners with pure qualitative enquiry. As such these theoretical grounded models are underpinned as foundations for the implementation of collaborative governance in the UK project procurement.

Keywords

Collaborative Models, Collaboration Policy, Integrated Process, Project Procurement, BIM technology

Format

Oral presentation

Session 1.3 Novel Technologies

Digital Technologies for Construction Circular Economy

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Abstract

The construction industry is vital for global economic growth, but it faces the challenge of delivering the built environment efficiently and sustainably. This sector consumes large amounts of raw materials and generates significant waste, with the UK alone producing 138 million tons of construction waste. Transitioning to a circular economy is seen as a crucial approach to address environmental concerns and promote economic growth. To achieve sustainable development goals, the construction sector can adopt Circular Economy (CE) standards. Integrating Construction 4.0 technologies can support this transition by optimizing resource management and enhancing circularity. However, while there is extensive research on digital technologies in construction, there is a lack of focus on integrating these technologies to support circular practices. This paper explores the potential of integrating Industry 4.0 technologies in the construction circular economy, particularly the Reduce, Reuse, Recycle (3R) principles. Technologies such as Building Information Modelling (BIM), Geographic Information System (GIS), Blockchain, Artificial Intelligence (AI), and the Internet of Things (IoT) are analysed for their role in managing digital information throughout the lifecycle of built asset projects. By conducting a comprehensive literature review, this study aims to contribute to the advancement of circular economy practices in the construction industry. It examines how these technologies enable resource reduction, promote material reuse, and facilitate effective recycling practices. The integration of Industry 4.0 technologies in the construction sector can drive the adoption of circular economy principles and enhance the sector's sustainability.

Keywords

Construction and Demolition Waste Management, Industry 4.0, Construction Circular Economy, Building Information Modelling

Format

Oral presentation

Experimental Investigation Using Joint Nanoparticles and Polymer on Oil left in reservoir with Injection Air booster for Enhanced Oil Recovery

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Abstract

Three-phase flow (oil, fluids and air) happens in petroleum reservoirs through third method in enhanced oil recovery processes such as air-alternating-water flooding (AAW). Due to the lower of interfacial tension (IFT) between gas/oil compared with water/oil interaction, the sweep efficiency by gas injection is technically better than water-flooding. Various types of gases have been used around the world for oil recovery processes, including hydrocarbon (HC), CO2 (mostly in the U.S.), LPG, propane, exhaust gas and N2. Water alternating gas (WAG) injection, commonly used in light to medium crude oil reservoirs is a well-developed technique for enhanced oil recovery. It combines the effects of two conventional oil recovery processes - water injection and gas injection. The AAW process is used to improve the efficiency and enhancement of oil recovery by controlling oil mobility. Air can become trapped in the reservoir when injected alternatively in AAW. Continuous air trapping causes a blocking effect that prevents the oil from being in contact with the water. Polymer (Arabic gum), nanoparticles (silica) and combination Arabic gum with silica are introduced in AAW procedures to reduction this water blocking effect and improve oil recovery. To get a better understanding of combination (Arabic gum and silica) interaction in three-phase flow two-phase polymer/oil, silica/oil and combination/oil experiments were conducted. In this study, experimental techniques have three scenarios that have been developed. These examine the effect of air injection with water alterative, fluid injection with air and fluid on the viscosity and recovery of oil during Enhanced Oil Recovery process.

Keywords

Background, materials, core flooding, IFT, low salinity

Format

Oral presentation, Poster

The Socio-Technical Implications of Algorithmic Inclusion in SMEs: A Comparative Study between Nigeria and UK

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Abstract

In today's era of artificial intelligence, digital transformation has become a critical factor for the competitiveness of small and medium enterprises (SMEs). Algorithms have proven effective in reducing human errors and biases within businesses. However, it is worth noting that the benefits provided by algorithms are not evenly distributed. An algorithm divide has emerged, like the digital divide that separates those with access to technology from those without.

SMEs constitute over 90% of all businesses globally and play a vital role in creating 7 out of 10. However, many SMEs, particularly in developing countries, face barriers to adopting crucial technologies necessary for long-term competitiveness.

While algorithmic bias and fairness have received growing scholarly attention, the algorithmic divide has not been adequately addressed. An understanding of the existing algorithmic divide requires a social-technical perspective. Hence, the primary objective is to analyse how SMEs navigate the complex and dynamic socio-technical implications of algorithmic inclusions. The study endeavours to analyse the attributes of the AI divide in SMEs and develop a framework that facilitates the utilization of AI in SMEs.

The research employs a qualitative approach, conducting multiple case studies of SMEs in Nigeria and the UK. Interviews with relevant employees and focus groups will be conducted to understand the socio technical issues that exist in relation to AI and will be analysed using NVivo software. The findings of this study will contribute to the existing knowledge on digital transformation and provide valuable insights for policymakers and stakeholders to support Nigerian SMEs.

Keywords

Digital Transformation, SMEs, Artificial Intelligence, Emerging technologies, Algorithmic divide

Format

Oral presentation

Dynamic Pricing Strategies in Different Business Models with Fairness and Business Ethics

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Abstract
Dynamic pricing refers to the practice of setting different prices for products or services that have a fixed or unlimited supply, while their demand can vary. This PhD thesis provides an overview of various issues related to dynamic pricing, including fairness in pricing, the algorithms used in this field, and the business areas that are affected by these problems. The survey highlights several challenges and suggests future research directions. This research focuses on using a technique called multi-armed bandit (MAB) algorithms for dynamic pricing, with a specific emphasis on ensuring fairness. The proposed research also introduces a new method to reduce biases in pricing data, which can lead to unfair outcomes, without compromising business profits. This research highlights the importance of considering fairness beyond the training data when developing and evaluating machine learning models and provides a new approach for achieving fairness through pre-processing.

Keywords
Fairness and business ethics, Dynamic Pricing, Data mining in dynamic pricing, Business pricing model, Multi-Armed Bandit

Format
Oral presentation, Poster

Investigating the Progressive Collapse of Reinforced Concrete Structures

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Abstract

Progressive collapse is one of the most catastrophic types of structural failure, resulting in significant financial losses and fatalities. Progressive collapse is a term used to describe events where initial local failure is followed by unexpected damage propagation and eventually detrimental final damage to a structure. Progressive collapse remains an understudied phenomenon that is often overlooked in structural design processes. This issue can be identified when the progressive collapse guidance in the Eurocodes is examined and compared to other international codes.

The gaps in knowledge associated with progressive collapse can be attributed to the significant limitations associated with investigating it. This is due to the large-scale dynamic nature of experimentation required for this type of study. To overcome this issue, most studies to date have been conducted numerically. However, such studies may not accurately represent the real-life progressive collapse of structures due to the idealisations and simplifications adopted in most of them.

This research proposes the use of novel scaling laws that will enable the utilisation of small-scale models to experimentally represent full-scale structures. The successful implementation of this concept can help significantly develop the knowledge in this field with critically reduced cost and time demands.

Keywords

Progressive Collapse, Robustness, Structural Integrity

Format

Oral presentation

Routing Protocol to Enhance 3D Network Communication in 6G Network

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Abstract
The network infrastructure of the future, beyond 5G/6G, will need a new design to efficiently expand network coverage instead of just extending traditional land-based networks. 5G technology has allowed for improved communication between devices and technologies. Nonetheless, it can be difficult to connect different networks protocols, multi-layer networks and management. In addition, protocols used in 2D networks may not be appropriate for use in 3D environments such as mountain areas, airborne networks, underground networks, underwater networks, etc. Due to two-dimensional routing algorithms, longer paths are chosen even when shorter paths are available, and this may be due to a lack of knowledge of third dimension. As a result, the previous generation of terrestrial network cannot be used for phone calls in the high-altitude network or underwater network, and certain data cannot be accessed in those locations. Therefore, 6G network integrated satellite-terrestrial networks promise to provide global access for all types of users and have drawn much attention from both academia and industry. This work will contribute to provide a unified routing protocol to centralize the routing data of the different networks. Also, the process of routing protocol involves integrate all networks into one cohesive network, which enables seamless connection, updates and upgrades between them. To evaluate the effectiveness of the proposed protocol, we are using a simulation called "walker" as a space network that has been designed to help us create a scenario for 16 satellites around the Earth. Each of these satellites is positioned at a height of 600 kilometers. In addition to that, we will utilize OPNET simulation software to generate a comprehensive Mobility Model, Radio Network Interfaces as well as Network Traffic among diverse equipment.

Keywords
Integration protocol, Artificial intelligence, Satellite-terrestrial integrated network, Mobile core network architecture, Mobility management.

Format
Oral presentation, Poster

Session 2.1 Working Lives

Exploring Registered Nurses' Experiences of Preparation as Practice Supervisors and Assessors of Nursing Students

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Abstract

Aim

To explore how practice supervisors and assessors of nursing students experience preparation for their roles.

Background

In the UK, nursing students require supervision and assessment in clinical practice by registrants. Prior to 2018, the role in practice was that of mentor, but in 2018 the Nursing and Midwifery Council (NMC) inaugurated new *Standards for student supervision and assessment* NMC, 2018) which separated the roles of supervisor and assessor. Mentorship stipulated requirements for role preparation, but the 2018 standards set outcomes for each role with the requirement that supervisors and assessors undertake appropriate preparation. This has potential for variation in approaches to role preparation, without evidence to support understanding of what this should consist of.

Design

The study utilised a phenomenographic approach, which aims to describe variation in ways in which people experience, understand and make sense of a phenomenon.

Methods

Thirteen semi-structured interviews were conducted and the data analysed.

Results

Three categories emerged: learning about the role; preparation and confidence; and missing pieces. Registered nurse educators experienced preparation for their roles in a variety of ways encompassing initial role preparation and learning through application and experience. Initial preparation, while significant and valued, was insufficient to enable educators to then apply their roles in practice with confidence. Ongoing reflection and experience were key aspects to the emergence of self-efficacy and self-confidence, and further development of knowledge and skills.

Keywords

practice supervisor, practice assessor, role preparation, phenomenography

Format

Oral presentation

Managing Art: Management Skills of Art graduates in China

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Abstract

Over the past decade, China has witnessed significant growth in its arts and cultural industries, resulting in a thriving creative sector. This expansion has brought about increased complexity in managing arts projects, cultural organizations, art galleries, museums, and other creative institutions. Consequently, there is a rising demand for professionals who possess both artistic talent and management skills in China.

As a primary source of information, this study has investigated the career opportunities and dilemmas of Chinese arts graduates by collecting over 200 questionnaires and conducting approximately 20 in-depth interviews with individuals experienced in the arts and culture sector, for which there is a dearth of research.

The study focuses specifically on the importance of (self-)management skills in the workforce of the arts and cultural industries. This relates to the way in which arts workers aim to make a living from their talents. If the lack of management skills is one of the reasons why arts practitioners are unable to earn a living from their talents, then this study promises to shed light on the reasons for this and ultimately suggest solutions to improve the problem.

Keywords

Art Management, Higher Education, Artists as Career, Chinese Art Market

Format

Oral presentation

An Interpretative Phenomenological Analysis (IPA) of the lived experience of Supervision in Irish Early Childhood Education Practice Education Placements

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Abstract
This doctoral research will reveal the unexplored research area of supervision in early childhood education placements in Ireland. It will investigate the 'experience' and 'understanding' of current supervisory practices and arrangements utilising qualitative semi structured interviews with early years educators supervising students on placement.
Since the early 1990s, significant efforts have been made to improve the Irish Early Childhood Care and Education (ECCE) sector in order to professionalise services provided to children under 7 years old and their families, as well as supporting professionals and students in this area. However, despite these efforts, early childhood educators experience significant challenges in relation to their professional recognition, professional supervision and mentoring, identity, level of qualification, and salary. Interestingly, there is little regard or respect for the utilisation of professional supervision to address these fundamental challenges for early childhood professionals in practice, often disregarding valuable formative practice placements for students as emerging early years professionals.
The outcome of this research will add strength and enable substantial and meaningful impact in current professional practice in early childhood education by appraising and scrutinizing several factors that influence the current climate within Irish early childhood education practice. These include the ever-changing statutory policy discourse, regulatory bodies, governance and poor working conditions as well as the professional identity of the early years educator who supervises students on placement.

Keywords
Early Childhood Education, Practice Education Placement, Professional Supervision

Format
Oral presentation

Aligning Capability in a Complex Health Care Setting

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Abstract
This presentation will be about the Aligning Capability (AC) model and approach that has been developed and used by the author over the past 7 years. AC is based upon and draws together a wide range of conceptual models, frameworks and theories but its focus is on real world application. In short, AC enables anyone using the model to take account of the fact that healthcare is delivered within a complex adaptive human system. It helps people to produce solutions to their 'wicked problems' by addressing what it means to thrive as a human being living (individually and collectively) in a world that is complex, messy, entangled and unpredictable. The model directs the user's attention to a group of common system facets that have been found to help and/or hinder people's individual and collective capability and contributions in meeting the needs of the populations they serve. In particular, the AC approach focuses on the level of alignment, flow and resonance between its human and environmental factors. In so doing, it brings insight and benefits to team working, decision-making and transformational change. The presentation will set out the theoretical and practical origins of the model and describe the early findings of a case study being carried out into how the model is helping develop leadership capability at different levels of system (strategic, operational, community) within the health and care "Place" of West Cheshire

Keywords
Complexity, Human, System, Leadership, Healthcare

Format
Oral presentation

Sustainable Engagement of Stakeholders for Socio-Economic Development of Oil producing Communities in Nigeria

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Abstract

Oil producing companies have contributed significantly to the growth of the Nigeria economy. However, Niger delta communities in Nigeria hosting oil exploration are facing environmental degradation, inadequate physical infrastructure, and low human capital development. Multinationals and Indigenous oil companies operates in these communities. By law and ethics, these companies embark on Corporate Social Responsibility (CSR) by engaging with these communities to understand their needs and priorities. This will provide the infrastructure and human capital development the communities are lacking. The CSR for the indigenous and multinational companies might differ in scope, objective, and communal acceptability.

This paper explores areas of similarities and differences between an indigenous and a multinational oil company CSR practice. Through semi structure interviews with the local communities and staff of oil companies, we recognized areas of similar projects with recommendation for harmonization of plans in order not to be repetitive of development in communities. We also identified areas of inadequate engagement between the communities and the oil companies, and lastly, the expectation of communities on responsibilities that are not of the companies but of the government.

Keywords

Engagement, Corporate Social Responsibility, Oil producing communities, Nigeria

Format

Oral presentation, Poster

Session 2.2 Movement and Travel

T-pose with Stillness as Active Listening of Dynamic Rhythms

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Abstract

The performative demonstration introduces the initial findings of my current practice as a research PhD on how to activate the T-pose with Stillness. This research explores the sculptural qualities of the improvising body within motion-capture environments.

The movement practitioner's body is extended with arms outstretched shoulder level, with legs slightly apart, forming the shape of the letter 'T'. The T-pose is a standardised static pose in motion capture practices to construct the marker data set into a recognised skeleton structure. I propose that this shape has a sense of presence with dynamic movement qualities of active listening.

As the movement practitioner stands with expanding arms outwards, it opens their body to the relationship with the space and time in the 'here and now'. A T-shape with stillness activates the rhythms and energies of the space the dancer/mover inhabits in real-time. Active listening to these rhythms heightened awareness of bodily knowledge and sensations of their own bodies within motion capture environments.

The T-pose with silence allows movement practitioners to actively listen and explore their sense of being and consciously respond to the perceived visualization. These sensations and a deeper sense of self allow the dancer/mover to open the body to experimentation, creativity, and spontaneity, which is vital to dance improvisation. Through the T-pose with stillness, the dancer has a deeper connection to themselves, others and the world.

Keywords

Embodiment, stillness, active listening, bodily knowledge and sensations, shape

Format

Performative demonstration on how to activate T-Pose with Stillness

The Pilgrimage Project: Re-enactment and Rupture Within Pilgrimage as Performance

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Abstract

The Pilgrimage Project is a practice as research PhD main aim is to creatively reframe our understanding of pilgrimage beyond its traditional religious associations and to explore the creative potential of pilgrimage as performance. Within this paper I will explore how the practice of re-enactment could be a potential mode for exploring pilgrimage as performance. Reenactment is a practice that intersects with both the practices of pilgrimage and performance. I will respond to academic Robert Blackson assertion of reenactment as a creative act that offers multiple ways for the past to be moved to 'create the possibilities for new experiences and histories' by drawing on my recent performance practice, a series of creative pilgrimages. These pilgrimages have been focused upon reenacting author Virginia Woolf night walks through London and final walk in East Sussex. I will touch upon the insights gathered from these pilgrimages, particularly exploring the creative possibilities of the minor ruptures that have emerged within the reenactment process when deviating from the original historical sources. I will discuss the creative possibilities of these ruptures within the reenactment process and how they offer possibilities for new ways of reinterpreting the pilgrims role, and the construction of a pilgrimage journey. The significance of this paper will be to begin to explore the possibilities of reenactment as a potential mode of pilgrimage as performance, that can examine how we embody and construct our own personal histories within the structure of a journey to a significant destination.

Keywords

Pilgrimage, Contemporary, Performance, Reenactment

Format

Oral presentation

Making sense of 'sport as a therapy choice' for paediatric physiotherapists working with young people who have disabilities.

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Abstract

The professional lifeworld of physiotherapists is influenced by the challenge of maintaining patients' engagement with physiotherapy and it consistently appears in their top ten research priorities (Chartered Society of Physiotherapy, 2021). Some paediatric physiotherapists have successfully employed sport and physical activity (PA) to address this issue in young people with disabilities (YPwD). However, within the research literature, there has been no exploration of the meanings attributed to 'sport as a therapy choice' nor how paediatric physiotherapists make sense of it, among those who routinely use the term and the approach.

Therefore, this project explores paediatric physiotherapists' beliefs and lived experiences to examine how they make sense of 'sport as a therapy choice' in their physiotherapy practice. Accordingly, a qualitative research paradigm using Interpretative Phenomenological Analysis analyses data from semi-structured individual interviews with UK-based paediatric physiotherapists working in both public and private healthcare.

Findings and interpretative analysis revealed six superordinate themes - 1.Shaped by contexts. 2.It's all about the kids. 3.Relationship of physiotherapy and sport/physical activity. 4.Sport/physical activity – a tool in the toolbox. 5.Locating identity. 6.Embodiment of models. The themes highlighted the multiple ways in which 'sport as a therapy choice' was experienced and enacted by contemporary paediatric rehabilitators. Accordingly, suggestions for changing the emphasis within future paediatric physiotherapy practice and pre-qualifying physiotherapy education are presented.

As no study has previously explored how paediatric physiotherapists experience 'sport as a therapy choice,' this study provides a unique contribution, enabling exploration of implications of practitioners' varying contextual influences, alongside knowledge and philosophical perspectives.

Keywords

Physiotherapy, Young people with disabilities, Sport, Physical activity, Engagement.

Format

Oral presentation

Evidence-Based Yoga and Pilates for Adults Over Fifty

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Abstract
Yoga and Pilates are the top group exercise choices in the UK and particularly popular among women, who are more prone to chronic musculoskeletal conditions. This research compares the effects of yoga and Pilates for adults over fifty. Two systematic reviews found that both are safe interventions for chronic musculoskeletal conditions in a >70% female sample, mean age 50+. Yoga was effective for osteoarthritis and neck pain, and physical functioning for osteoarthritis and sarcopenia (muscle loss). Pilates was effective for back, neck, osteoarthritis, and osteoporosis pain. Neither was superior to other exercise. This suggests preferences are not always linked to orthopaedic health outcomes. A mixed methods approach was then used to gain better understanding of participants' experiences. A survey of yoga and Pilates participation in adults 50+ was undertaken to explore motivators and barriers in real world settings. Participants were long-term practitioners, indicating the practices' sustainability in later life. Yoga was more popular than Pilates yet had a higher injury rate. Evidence suggested that mental outcomes accounted for yoga's appeal more than for Pilates.
Data were used to design yoga and Pilates interventions for adults 50+ for a 12-week trial measuring back, knee, and shoulder pain, physical functioning, and quality of life. Thematic analysis of a post-trial survey and in-depth interviews illuminated the role of prior life experience and personality in choice of exercise. Pilates significantly reduced back pain, while the qualitative data suggested a high importance should be placed on personal histories and preferences in exercise delivery and referrals.

Keywords
Ageing, Exercise, Pilates, Yoga, Physiotherapy

Format
Oral presentation

Intelligent SD-WAN Controller Based on End-to-End Traffic Analysis

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Abstract

Software Defined Wide Area Networking (SD-WAN) is a technology that is shaping the future of computer networks. It brings new capabilities to networks by allowing them to be more flexible and adaptable. However, there are challenges when it comes to effectively managing and controlling the flow of data in SD-WAN systems, especially when it comes to the way applications behave.

In a typical SD-WAN setup, data is sent across different connections in a network based on predetermined rules. However, this can cause problems because the system doesn't always adjust to changes in real-time, which can lead to slower or less efficient communication. To address these challenges, it involves closely examining the data flowing through the network to identify any areas where there might be too much traffic, which can slow things down.

The proposed solution includes creating a system that can keep track of and manage the flow of data in the network. Additionally, a special type of software called a Python-based SD-WAN controller is being developed. This software will help make decisions about how data is routed through the network, reducing delays and improving overall efficiency based on the information gathered by the flow management system. The research shows that this approach can reduce delays and improve the way data flows in the network. It also ensures that adding new devices or parts to the network doesn't cause problems and allows the network to grow and change as needed.

Keywords

GNS3, Python, SDN, SD-WAN, Throughput

Format

Oral presentation

Droning On: Acoustic Field Measurements of Unmanned Aerial System (UAS)

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Abstract
The sound produced by Unmanned Aerial Systems (known as UAS or Drones) is often considered to be one of the main barriers (alongside privacy and safety concerns) preventing the widespread use of these vehicles in environments where they may operate near to the general public. To better understand the potential environmental noise impact of commercial UAS operations, work has been undertaken to characterise and measure the sound produced by UAS during outdoor flight conditions. The presentation presents a field measurement campaign, strongly influenced by emerging guidance, undertaken to measure several UAS performing flyovers at different speeds and take-off weights. The preparation involved with the organisation of the measurement campaign is described, along with the measurement methodology, indicative results, and explanation of how this data may be use within the context of environmental noise impact assessment and to inform future research. The poster and presentation conclude by explaining what we learnt during this measurement campaign and how we are using this experience to improve future measurements.

Keywords
UAS, Drones, Noise, Perception and Environmental Impact

Format
Oral presentation

Session 2.3 Cybersecurity and Fintech

Environmental Social Governance Relevance Score and Firm Performance

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Abstract
This study investigates how Environmental Social Governance (ESG) Relevance Score (ESG_RS) affects firm performance. The ESG_RS represents the probability of how a negative ESG-related incident influences corporations from creditors' perspective. Particularly, ESG_RS quantifies how environmental, social and governance risk affects corporations. It also displays how this risk can affect the corporations' credit rating. The credit ratings of the corporations with higher values of ESG_RS are more sensitive to ESG events. Hence, we posit that due to this credit sensitivity, ESG_RS will adversely affect firm performance. Moreover, we investigate whether ESG_RS impacts the relationship between ESG Performance Score (ESG_PS) and firm performance. The ESG_PS represents how good corporations are in terms of engaging in ESG activities. Because most existing studies argue ESG_PS is positively related to firm performance, we postulate that ESG_RS moderates this positive relationship. We found that Environmental Relevance Score (ENV_RS) has significantly and negatively impacted firm performance (proxied by Tobin's Q), and it mitigates the positive relationship between Environmental Performance Score (ENV_PS) and Tobin's Q. These findings are consistent after undergoing robustness tests, demonstrating their creditability. This study has considerably contributed to ESG-related topics. To the best of our knowledge, it has been the first research adopting ESG_RS – an only purely credit-based measurement of ESG risks in the market until now, and thus puts forward the idea of how ESG risks affect firm performance from creditors' standpoint. Furthermore, it contributes to the humble number of studies about ESG-related risks. Importantly, our research shows that ESG_RS can alleviate the positive influences of ESG_PS on firm performance.

Keywords
ESG Relevance, ESG performance, financial performance, creditors

Format
Oral presentation

Exploring the Factors Contributing to Organisational Reluctance to Share Cyber Threat Intelligence

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Abstract

Cybersecurity frameworks are essential for organisations looking to improve their cybersecurity readiness, reduce risk and regulatory compliance requirements. The cybersecurity frameworks provide a structured approach to cybersecurity that can help organisations effectively manage risks and protect critical assets.

The National Cyber Security Centre (NCSC), the National Institute of Standards and Technology (NIST), and the European Union Agency for Cybersecurity (ENISA) have all developed cyber threat intelligence sharing (CTIS) frameworks that detailed threat intelligence sharing importance and give guidelines on sharing threats between organisations. However, many organisations are reluctant to share CTI due to the embarrassment of being hacked, loss of information, stolen trade secrets and the cost of sharing threat intelligence, which can lead to loss of customers. The research will examine the practitioner's perspectives on the factors that make organisations reluctant to share CTI with others.

The research will utilise a mixed-method approach with a pragmatic worldview to understand the phenomenon. Firstly, a case study pilot exploratory study and analysis informed by grounded theory will be conducted in the United Kingdom to examine the practitioner's views on the factors that make organisations reluctance to share CTI with others. Secondly, a main explanatory study will be conducted in sub-Saharan Africa, specifically in Nigeria, to examine the practitioner's perspectives on the factors that make organisations reluctance to share CTI with others. The outcomes of both studies will aid in developing a novel conceptual framework that addresses the factors that make organisations reluctance to share cyber threat intelligence with others.

Keywords

Cybersecurity, CTIS framework, case study, grounded theory analysis, organisation.

Format

Oral presentation

Development of Cybersecurity Framework for Bahrain's Fintech Stakeholders

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Abstract

FinTech is the term used to refer to new technology innovations that conduct or connect with financial services via the internet, smart devices, software applications, or cloud services and encompasses anything from mobile banking to cryptocurrency applications. Despite the advantages of FinTech, the occurrence of cyber risks, such as system hackers, security breaches, and theft, poses a significant threat to the stability of these novel innovations. Therefore, addressing cybersecurity concerns is crucial for the success and further progress of FinTech.

This research examines the challenges facing FinTech and identifies effective measures for managing its cybersecurity risks. Furthermore, it provides an overview of the commonly adopted cybersecurity standards in the financial and banking industry. The research uses these standards as the basis for proposing a cybersecurity framework for FinTech's stakeholders in Bahrain, as regulation for this subject is still recent. The proposed framework aims to achieve a level of excellence by striking a balance between optimizing the advantages of FinTech and reducing potential cyber threats to the financial system. Bahrain is used as a research field to illustrate the critical aspects involved in developing such a framework through in-depth research interviews with executives, experts, and other financial business stakeholders.

To assist in developing a usable framework to address cyber risks and threats for Fintech, the research identifies several vital factors and insights related to Bahrain that will structure an acceptable cybersecurity framework for Fintech businesses.

Industry experts were invited to review and provide their opinions on the proposed framework, as well as identify any gaps or areas for improvement. The research aims to elevate the level of cybersecurity posture and establish a trusted business environment for both the customers and FinTech innovations in Bahrain.

Keywords

Cybersecurity, FinTech, Framework, Bahrain

Format

Oral presentation

Fintech and Money Laundering: The role of Financial Regulations and Financial Literacy

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Abstract
This study has become important given the reported increase in the cases of money laundering activities around the globe. Establishing the factors influencing the money laundering is extremely important not only for the policy making but to the body of knowledge as well. Therefore, the research examines the influence of FinTech, Financial Regulation and Financial Literacy on Money Laundering supported by technological determinism theory. This study fills this important research gap by undertaking a sample survey of 248 respondents in Nigeria. By using regression analyses with the aid of SPSS (statistical Package for Social Science) and PLS-SEM (Partial Least Square Structural Equation Modelling), Statistical analysis of the survey indicated a significant positive relationship positive relationship between FinTech and money laundering. Additionally, financial regulation moderates the relationship between FinTech and money laundering. However, financial literacy does not moderate the relationship between FinTech and money laundering. The findings of this study serve as a springboard for regulatory responses to mitigate the adverse effect of FinTech on money laundering. Additionally, the findings of the study may assist in minimizing the money laundering issue which include the problems of the next generation of cash and payment infrastructure design, regulatory responses to cryptocurrency, and the design of central bank digital currency infrastructure to ensure they are inclusive, safe, private, transparent, and interoperable.

Keywords
Fintech, money laundry, financial regulations, financial literacy, Nigeria

Format
Oral presentation

Secure Agile Software Development Process

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Abstract

Nigeria is ranked second globally after India in reported incidences of cyberattacks. Attackers usually exploit vulnerabilities in software which may not have considered security features during the development process. While agile methodologies are well-established paradigm, they remain vulnerable to security challenges and susceptible to cyberattacks. Despite its significance, there is paucity of research addressing security. This thesis aims to improve security of software products when using agile method using the developed secure-by-design process model. The methodology adopted is a multi-methods qualitative research divided into four phases involving 38 practitioners from 12 software companies. This thesis presents a taxonomy of security practices identified in different research sites. Based on analysis of the Nigerian interview transcripts, a grounded theory of the security challenges confronting agile practitioners was also developed. Also, the model developed in this thesis used swim lane diagrams to highlight the process flow of security activities. 26 security practices were identified and organized into the phases of the software development life cycle. The model proposed a new practice, in response to an observed lack of collaborative ceremonies, to disseminate awareness of and hence compliance with security standards. This study also reveals tensions between the Nigerian regulatory environment and agile software developers' compliance. The research model was validated with practitioners which influenced positive changes. These includes enhanced collaboration through introducing security retrospectives sessions, intervention to reduce manager's work tasks by introducing a security champion role, action to enhance team security competence by reducing collaborative gap with senior roles which forms mitigation mechanisms to improve compliance to regulatory compliance in the global south context.

Keywords

Agile Software Development, Secure Process Model, Multi-methods, Grounded theory, Cybersecurity

Format

Oral presentation

Can Blockchain be Used to Enhance Privacy and Data Protection in 6G Networks?

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Abstract
6G mobile communication will make huge transformation in communication system, due to expanded high coverage of communication. With the help of new technologies and standards, 6G is designed to be a three-dimensional, interconnected space-aerial-terrestrial-ocean network with a variety of pieces. This will increase the system's intelligence and flexibility so that it can effectively handle a wide range of requirements. Numerous applications, including autonomous vehicles, sensing, implants, computing reality devices, smart wearables, and 3D mapping, can profit from it. However, there are a new set of security and privacy challenges which are due to, an increase in the number of devices and users, new network services, diversity of connected device and machine, communication technologies and networks, high user privacy concerns, scalability, minimize latency, and higher throughput of the network, are main challenges in the future generation network.
A blockchain is a distributed and immutable digital ledger that is responsible for recording transactions and tracking the movement of digital assets on its network. The research will try to investigate, analyse, and test 6G security defects and blockchain as a method of providing security and privacy in 6G networks which are expected to be even more diverse than their predecessors. Blockchain-Based 6G Networks: Investigate the potential of blockchain technology in 6G networks and propose novel blockchain-based architectures that can provide secure and efficient network services to users.

Keywords
6G, Blockchain, Blockchain-Based 6G, Security and Privacy, Blockchain with 6G.

Format
Oral presentation

Session 3.1 Improving Environments 1

Assessing Transit-Oriented Development Impact on the Urban Heat Islands Effect in Manchester

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Abstract

Reducing air pollution became a priority, especially after Covid-19 spread. No one could deny how the air in our cities has been cleaner during the lockdown when roads were empty of moving cars. It proved that driving less could significantly save the environment. Sustainable urban strategies such as Transit-Oriented Development (TOD) target creating high-density neighbourhoods around public transport stations and offering jobs, housing, and services, in the same area; to limit the need for commuting and encourage people to walk, cycle, and use public transportation. Hence, this approach reduces car dependency, promotes public transportation usage, and enhances air quality. But what about the air temperature, especially with the high-density concrete buildings in the TOD? Since most of the buildings in our cities are built from concrete, could you imagine the impact of these dense concrete blocks on temperature? These buildings could trap solar heat, store it, and emit it at night, creating Urban Heat Islands Effect (UHI). This effect occurs when urban areas trap more heat than the surrounding rural areas due to the condensation of manufactured materials; that store heat, such as concrete and asphalt. This phenomenon triggers more extreme weather events in Urban areas. Therefore, taking Manchester Piccadilly and East Didsbury as TOD case studies, this research investigates the effect of the urban structure of the TOD areas on the UHI effect. Hence, this study provides a better understanding of the heat pattern in TOD areas and the applicable guidelines to mitigate the UHI there.

Keywords

Air Pollution, Urban Heat Islands, Transit Oriented Development, Urban Structure

Format

Oral presentation, Poster

Creating End-of-Service-Life Datasets for Construction Materials and Products

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Abstract

The UK construction industry is the largest consumer of natural resources estimated at 400 million tonnes and producing about 100 million tonnes of waste yearly. The volume of waste produced during construction activities and demolition in the United Kingdom accounted for 62% of total waste in 2018. Data management is one of the main challenges identified, showing gaps in data inconsistencies, reporting, collection, harmonization, accessibility, and storage.

Digitization of life cycle information about materials and products in construction brings solutions for ease of accessibility, interoperability, and upcycling. The purpose of the PhD project is to identify sets of data required and develop datasets for the end-of-service-life of materials and products in construction.

Material passports are presented as a solution with great potential to create datasets about construction materials and products in buildings. This paper will explore about how material passport can be used to obtain information for end of service life for materials and products in construction and demolition stages. A systematic review will be carried out about material passport application in building life cycle assessment and circular economy in the built environment.

The outcome of this paper will be useful in categorizing and defining properties of materials and products for extended service life and increasing the residual value for end of service life in buildings, with the potential integration of material passports for end-of-life dataset development.

Keywords

Construction and demolition waste, pre-demolition audit, resource efficiency, circular economy, and material passport

Format

Oral presentation, Poster

What Demotivates Homeowners to Retrofit Their Houses: A Systematic Review

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Abstract

The study expects to identify the factors that demotivate homeowners from retrofitting their houses. Retrofit is defined as improving the energy performance, ventilation or reducing carbon emission of a building. According to the statistics, the progress rate of sustainable housing retrofit in the United Kingdom is poor and this has become a critical bottleneck to achieve sustainable goals in the UK. The housing sector itself is responsible for around 18% of the total UK emissions. One of the main barriers to drive housing retrofit is poor homeowner motivation for retrofit. By addressing this barrier, the UK may look forward to get rid of 18% of carbon emissions at existing levels. A systematic literature review approach is to be used for the proposed study, which is reported to be more transparent, accurate and standard. The tentative findings include financial constraints, social drivers, personal preferences, sentimental reasons, resistance to change, reliability and trust, complex processes, government policies, and uncertainty of energy savings. However, the list can be exhaustive and more subjective judgement will be better to arrive at conclusions. The findings will be important for driving housing retrofit in the UK. Being the homeowner decision-making a deterministic factor in driving sustainable retrofit, identifying motivational barriers will be a key priority in driving retrofit at a scale.

Keywords

Homeowners, motivation, retrofit, decision-making

Format

Oral presentation, Poster

Infrastructure Delivery System for Failed Affordable Housing in the South-South Region of Nigeria

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Abstract

This study aims at investigating the usability and reliability of the Viable Infrastructure Delivery Systems Model (VIDM) to actualise an effective infrastructure delivery system (IDS) in Nigeria. VIDM is a model developed at the University of Salford by Dr. Bankole Awuzie since 2014. The author is interested in the application of a practical system model (PSM) from the general literature and showing a conceptual model for oil and Gas around the infrastructure delivery system (IDS).

Currently, there is no research that this study is aware of, that has ever talked about or investigated the usability and reliability of VIDM on Failed Affordable Housing in the southern region of Nigeria. This study seeks to explore the pros and cons surrounding the newly developed VIDM and provide evidence for using VIDM to actualize effective infrastructure Delivery Systems focusing on Public Private partnerships (PPP) in the construction sector for infrastructure delivery in Nigeria.

The research will look to test how best VIDM will be implemented in the organizational structure using interviews and Focus groups as research methods, this will be administered through the relevant stakeholders. Intra-case and cross-case analyses will be employed to extract facts from the data gathered. NVivo software will be employed, and the findings will be analysed.

The Research aims to understand How an existing Infrastructure Delivery Systems Framework can address Failed Affordable Housing Projects in the South-South region of Nigeria's Construction Industry

Keywords

Infrastructure, Policy implementation, Engineering, Construction, Stakeholders

Format

Oral presentation

A Rapid Blast Noise Prediction Method for Industrial Processes Using Measured Data

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Abstract

This research presents the development of a prediction model for the management of environmental blast noise impacts from industrial operations. The work stems from a collaborative research project on blast noise supported by DNV, and was carried out at their Spadeadam Testing and Research site in Cumbria, UK. Full-scale major hazards research is carried out on site, including explosion and blast testing for renewable industries and government agencies. This paper focuses on predicting noise impacts from a particular process related to improving safety of national railway infrastructure, known as Explosive Depth Hardening (EDH). Acquiring the data to accurately represent how sound propagates outdoors using traditional computational methods is made difficult by the complex topography and meteorology in the area. A live noise monitoring network was used to collect measurements from EDH operations at a number of sensitive residential properties over 1 year. Correlations are made with meteorological data and a simple geometric solution is used to find regions of enhanced noise. It is concluded that simple empirical model can make noise predictions with the accuracy required to make operational decisions. Further measurements close to the noise source are required to improve the accuracy of the model.

Keywords

Acoustics, Blast Noise, Environmental Noise

Format

Oral presentation

Sustainable Management of Pet Plastic Waste in the Design of Buildings

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Abstract

Polyethylene (PET) plastic mostly used for beverage and water packaging, has over the years replaced glass bottles. The high quantity produced as waste due to single usage pollutes the environment, affecting both terrestrial and aquatic animals and threatening bio-diversity. This has become a global challenge, hence the need to sustainably manage it.

Inadequate understanding of the wide range of uses and other characteristic advantages of PET plastic waste bottles in the design of buildings has affected its extensive use. Even though, researchers considered the construction industry as a potential tool for managing the menace of plastic waste pollution.

Emphasis have been placed on recycling as means of managing PW but literature has shown that plastic is a sustainable waste with over 400 years shelf life and PET plastic waste is categorised among 7 types with the lowest recyclability. Up-cycling however, has more innovative approaches to the management of plastic pollution in the construction industry to produce alternative building materials (ABMs).

Keywords

PET bottles, ABM, recycling, up-cycling, sustainability

Format

Oral presentation, Poster

Session 3.2 Lived Experience

Understanding Content Provision and User Engagement on Douyin in China

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Abstract

This study examines the nature of communication on Douyin, the Chinese version of TikTok, explicitly focusing on commercially motivated content created by Chinese fashion brands. It contributes a fresh and significant perspective on the under-explored topic of commercial communication on the Douyin platform. By concentrating on Chinese fashion brands, the study provides insights into their content creation strategies and their impact on the Chinese market. Furthermore, it highlights the importance of employing a social media netnographic approach to comprehend the growing significance of Douyin in China.

The study adopts a social media netnographic approach, which involves immersing oneself in the online environment of Douyin, observing and analyzing user-generated content, and identifying key factors that drive user engagement. This methodology allows researchers to explore social media platforms' unique characteristics and dynamics. Subsequently, interviews were conducted with 12 experts in the field of Douyin and 12 Douyin users. Through empirical analysis of observational and interview data, the study presents a content model that enhances user engagement for fashion brands on Douyin. The model emphasizes the importance of video duration, Background Music (BGM), titles, scenes, and Douyin's unique content style. Additionally, it underscores the significance of hedonic value, trust, timeliness of interaction, cognitive breaking, and pain points as stimuli for user engagement.

Keywords

Douyin(Chinese Version TikTok), Customer/User Engagement, Short video content creation, Fashion Brand

Format

Oral presentation, Poster

Victimisation, Offending and Family: A Comparison of Young People in Brazil and Britain

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Abstract

Research in Criminology has focused on a person's familial context as a potential determinant of offending behaviour and occasionally of victimisation. However, far less research has examined the potential effects of victimisation and offending on the person's familial context, including family living arrangements and interactions with family members. This second approach is particularly interesting for theorising the effects of offending and victimisation in the youth`s familial context, since family is often the main point of reference in prevention/intervention. Therefore, knowing if offending and victimisation affects, at least partially, youth`s familial context could provide practitioners knowledge that can be applied when working with offenders and/or victims and their families. The current study explores the effects of victimisation and delinquent behaviour on young people's self-reported familial contexts, among samples of 13 to 17-year-olds in Brazil and Britain who were surveyed as part of the International Self-Report Delinquency Study (ISRD4) project. The ISRD is an ongoing international and collaborative study that targets adolescents' experiences with offending and victimization. We expect victimisation to lead to greater integration with, and support from, the family while offending behaviour is likely to have the opposite effect. Given that Brazil and Britain are classified as belonging to different cultural regions, and that family practices are one component of culture, we also explore the extent to which significant differences emerge between the two countries.

Keywords

Victimisation, offending, family, ISRD-4, Brazil, Britain

Format

Oral presentation

Experiences of Weight Stigma in School Nursing: An equality, diversity & inclusion perspective

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Abstract

School nurses are registered nurses with additional post-graduate training in Public Health. They are key professionals in the promotion and coordination of health for school aged children and young people. School nurses work collaboratively with partners in health, social care, and education to improve population health and reduce inequalities.

School nurses have been identified as key sources of support around childhood obesity. Obesity, inequalities, and deprivation are intrinsically linked, and numerous studies show there are many factors that contribute to a person's body size. These include access to safe green space, quality of housing, access to affordable fresh food, advertising, isolation, food production, climate change, ethnicity, disability, stigma, cultural factors, and education level.

This poster presents the findings from a literature review conducted as part of my doctoral study. The review interrogated existing evidence surrounding the relationship between school nurses and parents of children with bigger bodies, and weight stigma. It sought to examine the representation of under-served groups who tend to experience more of the above factors and are associated with higher rates of obesity. This was done using the PROGRESS-Plus framework, which was developed by Cochrane to support researchers in identifying potential bias and promote representation in their work.

The literature review identified a dearth of representation from under-served groups in the literature and highlighted experiences of weight stigma, frustration, hurt and judgement. Additionally, it identified that the roles of school nurses and other public health professionals are unclear, and a more considered approach needs to be taken.

Keywords

School Nursing, Childhood Obesity, Weight Stigma, Inequalities

Format

Oral presentation, Poster

The Aim Of This Research Project Is To Understand Our Need As A Society To Recreate The Obsolete Objects Of Our Recent Past, Despite The Fact They Have No Obvious Practical Application Today.

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Abstract

Equal parts practice and theory, the practice focuses on recreating music-related objects, including vinyl and cassette formats in the form of sculpture and installations. Parallel with this, the theory involves a series of chapters on Medium, Media Archaeology, Longing and Display analysing the issues raised by the artworks generated with reference to the theories of Parikka, Derrida and others. What makes this project unique is the way it visualizes the potential future point where our fascination with the recent past becomes so instantaneous that the past and present meet.

After Michel Foucault, contemporary media archaeologists such as Jussi Parikka discuss our growing fascination with the recent past and suggest this cycle is occurring at a faster rate than before. “Media archaeology sees media cultures as sedimented and layered”, writes Parikka and that “new technologies grow obsolete increasingly fast” (Parikka, 2012, p. 18). But what does the conclusion of this media cycle look like? And how are music related objects affected by it? Part of my argument is that these objects take on the character of what theorist Jacques Derrida calls ‘hauntology’, assuming a spectre-like quality which “is neither living nor dead” and as a result makes the presence and uses of these mediums eerie (Derrida, 2006, pp. 63).

Keywords

Hauntology, Obsolete, Monument, Recreate and Souvenir

Format

Oral presentation

Improving the After Care of Deceased Organ Donor Families and Friends, an Online Peer to Peer Support Network

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Abstract
The research study aims to presents the use of social media to support aftercare for families of organ donors following the death of their relative. Existing research appraising aftercare of family's post deceased donation is limited with families receiving limited bereavement support following organ donation. A closed Facebook group was created, 'Donor Families Together' for donor family/friends to connect with one another, offering peer support using an online platform. With group consent a qualitative research study ran consecutively for 12 months. Conversational data from the Facebook group was downloaded, 1452 posts and the results of 3 polls (short surveys), as well as one to one interviews, capturing personal experiences. Thematic analysis of group and individual narrative data generated rich integrated findings and new knowledge to inform practice. The research found that organ donor families who joined the group connected with others who are living through this unique grief experience, sharing their most intimate feelings with strangers, offering support any time of the day or night. Organ donor families have united through their lived experience of death and donation, providing them with a safe environment to share, emotions, grief, questions, offering peer support, and building a special bereavement community. The findings revealed the complexity of organ donation and how families need specialist bereavement support as they continuously search for information about recipients. Using this innovative approach generated new knowledge in valuing the impact of social media in connecting organ donor families, providing understanding of the complex aftercare needs of organ donor families.

Keywords
Organ Donation, Family Aftercare, Social Media, Online Bereavement Support, Complex Grief

Format
Oral presentation, Poster

Fetal Alcohol Spectrum Disorder: Fitness to Participate in the Criminal Justice System in England and Wales

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Abstract

There is international concern regarding whether vulnerable people attending court proceedings are able to access their right to a fair trial. Fetal Alcohol Spectrum Disorder (FASD) is a term used to describe the lifelong impacts on the brain and body of individuals that have been exposed to alcohol whilst in the womb. When a baby is exposed to alcohol their physical and mental development can be affected, causing permanent brain damage. International research has found that people with FASD can act impulsively, have poor judgement, are unable to see the consequences of their behaviour, have difficulty learning from their mistakes, have poor memory and lack social skills. There is a gap in research on whether this vulnerable population can receive justice in the UK. This research will explore whether people with FASD can understand the charges made against them, decide how to plead, instruct solicitors, follow proceedings, give evidence in their own defence and participate effectively in a trial. A systematic review will be conducted to establish the abilities required to participate effectively in criminal proceedings, including issues raised by case law, and the known difficulties experienced by people with FASD. Measures identified by the review will be tested on a population of adults diagnosed with FASD and compared to adults without FASD. Legal professionals will then be questioned about their understanding of FASD and their training needs. Information gained from this research will be used to increase the knowledge of FASD throughout the legal profession and inform legal policy.

Keywords

Criminal justice, fetal alcohol spectrum disorder, FASD, fitness to plead, fitness to stand trial

Format

Oral presentation

Session 3.3 Aging and Dementia

The Breaking of the Nib of the Pen: A biographical novel documenting the memories of an Alzheimer's patient

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Abstract
In October 2012 my grandmother was diagnosed with Alzheimer's disease and Dementia. Every morning after this, she woke to a fresh batch of memories being wiped from her mind. From her survival of the catastrophic partition of India in 1947, to migrating to England in 1960, all events were erased. I decided to attempt to restore these memories with the use of fiction by writing a biographical novel.
This presentation will focus on the following aspect of my research:
To what extent can fiction replace historical facts when writing a biography about a person who does not remember their own life?
Combining a creative novel with a critical essay, my research will shed light on the above question. Due to her disease, I only have fragments of my grandmother's past. The intention is to piece everything together through my writing. However, the complexity of the subject may mean that I must shatter the fragments into smaller pieces before I can begin.
My approach to this research will be practice-led, allowing me to write about real events through creative methodologies. I aim to use my writing to find lost experiences that were turning points in the subject's life. These experiences gave the subject her identity, such as having to relocate twice in her life. Dissecting these journeys through eyewitness accounts will allow me to place my grandmother's story somewhere in between, with the help of fiction. My reflective essay will outline the process and challenges of this pursuit.

Keywords
Alzheimer's, Memory, Home, Identity, Fragments

Format
Oral presentation

Life Through Their Lens: Understanding the lived experiences of the older population

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Abstract

The number of older people in the United Kingdom (UK) is rising. The World Health Organisation advocates that a heathy ageing population is crucial to preserve both longevity and quality of life. Evidence suggests that social isolation affects a significant proportion of older people, and is associated with poor health outcomes, frailty, and mortality. The combination of frailty and isolation in older age can have serious consequences for longevity, health, and well-being, and reduces quality of life. COVID-19 and associated self-isolation measures has further amplified social isolation levels in the elderly. Yet, social isolation is not routinely screened for by medical professionals, meaning that it is often undetected. Furthermore, the effectiveness of Government strategies and interventions to reduce social isolation is debatable. There is also limited literature available regarding the experiences of older people living with social isolation, meaning that their care needs are not fully understood.

This study aims to explore the lived experiences of older people who may be living in social isolation using interpretive phenomenological analysis. Semi structured interviews and contextual data (age, gender, ethnicity, marital and housing status), frailty score, and social isolation score, will be collected to explore the impact of social isolation on the older population. The findings will address the research gap, to enable a rich understanding of the experiences of socially isolated older people and will enable planning for future care provision and the development of services and interventions to prevent social isolation in the UK and globally.

Keywords

Social isolation, older people, lived experiences, qualitative research.

Format

Oral presentation

Becoming the 'Risky Subject': Ageing in the Charity Retail Sector

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Abstract

Charity shops have long been found to promote sociability, nurture experiences of belonging and act as spaces for community, caring and well-being. Older people remain likely to participate in this setting and charity shop volunteering is often associated with events of positive ageing. However, alongside the expansion of the sector, most charities have undergone a series of changes in a quest for professionalism and profit. While research suggests that these operational shifts have significant implications for the practice of charity shop volunteering, there is a limited evidence base regarding older volunteers' experiences within the organisational context of the modern UK charity shop. To address this knowledge gap, this on-going PhD research ethnographically explored the lived experience of volunteers aged 65+ working within the charity retail sector in the Northwest of England. In this paper I will discuss why ageist discourses have been embedded into the sector and illuminate how they ultimately work to reconstitute older charity shop volunteers as a type of 'risky subject'. I will explore the unique ways in which these discourses manifest on the charity shop floor, as well as outline the complex facets of resistance that characterise the volunteers' efforts to get by in this environment. It is hoped that this both illuminates the multifaceted nature of ageism in the sector and challenges the idea that older people are passive within the context of organisational change.

Keywords

Ageing, ageism, volunteering, professionalisation, charity shops

Format

Oral presentation

Investigating Small Extracellular Vesicle MicroRNA Cargoes as Biomarkers of Dementia

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Abstract

Latest figures published by the Alzheimer's Society display over 885,000 people aged over 65 in the UK suffer from dementia, with numbers scarily rising to 1.6 million in 2040. Sadly, no current clear-cut way to correctly diagnose the diseases that cause dementia exist. Small extracellular vesicles (sEVs), small delivery bubbles that transport various molecules throughout the body, could potentially play a role in future diagnostic methods. Although their content can cause diseases such as Alzheimer's disease (AD) and frontotemporal dementia (FTD), analysing their cargoes to observe differences in diseases may provide levels of diagnostic foundation. MicroRNA, small molecules that act as fine tuners by reducing or switching off certain process in the body, are an example of one of the cargoes found within sEVs, with evidence showing miRNA to impact dementia through modulating neuroinflammation and synaptic activity. This study aims to categorise specific miRNA as biomarkers for AD and FTD.

Frozen brain tissue from control, AD and 3 genetic variants of FTD (GRN, MAPT, C9orf72), were broken down and sEVs were isolated. Brain sEVs were characterised using western blotting, transmission electron microscopy (TEM) and fluorescent nanoparticle tracking analysis (fNTA). Quantitative PCR was used to analyse the variation of miRNA within sEVs.

Initial results of this study show variation in the miRNA signatures from AD, GRN, MAPT and C9orf72 sEV samples. This preliminary fluctuation of different miRNA cargoes from sEVs will enable the identification of novel, potential disease biomarkers for use in early detection and diagnosis of different dementia subtypes.

Keywords

Dementia, Extracellular Vesicles, MicroRNA, Biomarkers

Format

Oral presentation, Poster

The Power of Poetry Against the Dark Art of Imposter Syndrome

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Abstract

It is acknowledged that the competing demands and expectations of doctoral study present challenges, often causing students to feel isolated and inadequate. Doctoral students commonly experience impostor syndrome, which traps them in a continuous cycle of critical reflection. Recording reflections in a written format is promoted as a personal and professional means of supporting reflective thinking, with therapeutic benefits often cited. Poetry, as a written form of expression, has been effectively used to support reflective pieces, especially when addressing highly sensitive subjects and traumatic experiences.

In this presentation, I will describe how the researcher utilized poetry to address feelings of impostor syndrome at the beginning and during doctoral study. I will provide an overview of how poetry has subsequently been integrated into a narrative inquiry research design. Additionally, I will discuss how poetry gives strength to the researcher's academic voice and enables the voices of individuals living with dementia to be heard.

Keywords

Poetry, narrative Inquiry, post graduate journey, student experience, dementia

Format

Oral presentation

Session 4.1 Health Interventions 2

Nurses' Knowledge, Perceptions, and Challenges of Caring for Intubated Adults with Light Sedation: A Qualitative Approach

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Abstract

The move towards using much less sedation for intubated patients on artificial ventilation has led to better outcomes; shorter length of stay in the Intensive Care Unit (ICU), lower death rates, and less confusion. Consequently, the more patients are awake, nurses may struggle to deliver safe care, increasing their workload and potentially leading to sedation-related patient adverse events and worsening patient outcomes. In the United Arab Emirates (UAE), most nurses care for more than one patient at a time, in contrast with other countries where the nurse-to-patient ratio in ICUs is one-to-one. Therefore, the study's aim is to investigate nurses' perceptions of caring for artificially ventilated adult patients with less or light sedation. Individual semi-structured interviews were conducted with sixteen nurses across four intensive care units in UAE. The thematic analysis reveals two major overarching themes and six subthemes. The theme "The benefits and drawbacks of light sedation" highlighted positive outcomes and risks to patients and the challenges and benefits for nurses. The theme "essentials for light sedation" was divided into restraints as an acceptable solution, family and caregivers, teamwork and tasks, and staffing with light sedation. Caring for lightly sedated intubated patients with limited family visiting hours and a lower than 1:1 nurse-patient ratio presents challenges in UAE. This requires some deliberation of the current visiting policy and reconsideration of the staff ratio. While few nurses have received training in this area, education on how to manage lightly sedated patients may be useful. Further research is needed to establish the impact of this on the nursing workload.

Keywords

Light sedation, intubated patients, experience, nurses, intensive care unit

Format

Oral presentation, Poster

Challenging the Surgical Practice of Incision and Drainage in the Treatment of Skin and Soft Tissue Abscesses

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Abstract

Background: The surgical practice of incision and drainage has historic foundations in abscess management, believed to be the only effective way to resolve the condition. Research now suggests that the technique's ability to fully resolve an abscess is waning, associated with the rise of Community-Associated Methicillin-Resistant Staphylococcus. There is further speculation that this clinically and institutionally accepted practice has perpetuated wider, yet vastly unrecognised holistic challenges, affecting the patients, the healthcare professionals, and the National Health Service (NHS).

Methods: Our aim was to conduct a scoping review to critically appraise and map research evidence examining alternative practices of treatment for people with an abscess. Electronic searches were performed over the following databases: CINAHL, Medline, Cochrane Library, British Nursing Index, Science Direct, the NICE institutional evidence database, ClinicalTrials.gov and MedNar. We utilised two specialist frameworks; The Population Intervention Comparison Outcome and the Preferred Reporting Items for Systematic Reviews and Meta-analyses tools to demonstrate a rigorous, repeatable appraisal of available literature.

Results: Fifteen papers were included in the review. On appraisal of the literature, we found that antibiotics, needle aspiration, loop drainage, catheter drainage and suction drainage demonstrated statistically and clinically effective treatment adjuncts or alternatives to incision and drainage. The quality of the studies examined was variable.

Discussion: Although there are favourable alternatives to incision and drainage, the historic practice appears to have remained ritualistically embedded within the NHS. If nurses are to improve outcomes for patient, professional and institution, the blind acceptance of incision and drainage must be challenged.

Keywords

Surgical nursing, advanced clinical practice, abscess, skin and soft tissue, incision and drainage

Format

Oral presentation, Poster

Use of wearable sensors to classify activities of amputees in the real-world for improved K level assessment

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Abstract
K-levels are a rating of an amputee's activity levels and associated potential to use a prosthetic device and are mostly determined through dialogue. K-levels determine the prosthesis components a lower limb amputee receives. There are known issues with the consistency of K-level allocations, especially when deciding between a K2 and K3. We are creating a sensor-based system to objectively assess a patient's activity levels in the real-world, to support clinical decision-making. In a first interview study we identified that the ability of the patient to vary their cadence, traverse different terrain, walk without a walking aid and the distance they can walk reflect the main differences between a K2 and K3 patient. Previous research has measured cadence and distance travelled from shank mounted inertial measurement units, and a combination of sensors has shown to identify between some different terrains. However, no studies yet identified walking aid use using body or prostheses mounted sensors. This research aims to use lab-based motion capture to identify the idealised sensor type and placements to classify walking on various terrains and walking with/without a walking aid. Algorithms design will further be supported through real-world data collection where video serves as ground truth. A final study will get prosthetists to compare their prescriptions informed by the senor system's output against the traditional methods of allocating K-levels. They will do this by assessing patients using both methods: the inter-reliability of assigned K-levels will be used to assess the effectiveness of the system in supporting clinical decision-making.

Keywords
Activity monitoring, K Level, Terrain recognition, Lower limb prosthetics

Format
Oral presentation

Nanoparticles Synthesis for Next Generation Antimicrobial- To Fight Antibiotic Resistance

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Abstract

Antimicrobial resistance (AMR) is one of the major global health threats faced by humanity, its dramatically emerging as one of the main causes of morbidity and mortality worldwide. The World Health Organisation (WHO) has declared that AMR will cause 10 million annual deaths and catastrophic damage to the global economy. AMR occurs when bacteria, fungi, and other microorganisms develop a resistance mechanism to the antibiotic designed to kill them, they become less responsive to many antibiotic treatments. The treatment for resistant infections are limited, challenging and perhaps impossible when the organism becomes resistant to many antibiotics known as Multidrug Resistance Organisms (MDROs). The development of new robust drug complexes is urgently required to defeat the resistant pathogens and tackle the antimicrobial resistance challenge.

Nanomaterials have emerged as a novel alternative tool to overcome barriers faced by traditional antibiotics , combat resistant pathogens and fight antimicrobial resistance crisis.

The development of nanoparticle-based therapeutics strongly relies on the tuneable physicochemical properties of the nanoparticles including size, shape and surface chemistry functionalisation with molecules of interest. The success of nanoparticles-based strategies relies on the ability of the nanoparticles to penetrate biological barriers of pathogenic microorganisms and interfering with crucial molecular pathways, creating unique antimicrobial mechanisms. The aim of this interdisciplinary project is to develop robust and new protocols for complex antimicrobial testing in vitro of the complex particle geometries with advanced and unique surface functionalities designed to target and kill pathogens that are at the top priority list of the World Health Organisation.

Keywords

Antimicrobial resistance (AMR), World Health Organisation (WHO), Multidrug resistance organism (MDROs), Nanomaterial, Nanoparticles

Format

Oral presentation

Design and Synthesis of Multifunctional Antimicrobial Nanoparticles for the use in Treating Prosthetic Joint Infections

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Abstract

Antimicrobial resistance is one of the most serious public health threats that we face today. Antibiotics that are commonly used to treat infections are becoming increasingly redundant, as bacteria develop resistance to them. Novel approaches to treating bacterial infections must be identified in order to prevent serious illness and death. The use of nanoparticles as an antimicrobial is one potential way of continuing to effectively treat bacterial infections.

Nanoparticles can be synthesized from different elements, with varying shapes and sizes that have interesting properties and a wide range of potential uses. Nanoparticles can also be functionalised with antibiotics and antimicrobial peptides, by attaching them directly to the nanoparticle's surface via linkers. By screening and optimizing different nanoparticles and drug combinations, it is hoped to create a nanoparticle that be used to bacteria that are commonly associated with prosthetic joint infections, such as Staphylococcus aureus and Enterococcus faecalis.

By using different microbiological tests on the target strains of bacteria, nanoparticles can be identified as to having an antimicrobial effect, as well as establishing lowest concentration that the nanoparticles will stop bacterial growth. It is intended to establish the rate of resistance development of bacteria to these nanoparticles in comparison to antibiotics, as well as study the effectiveness of the nanoparticles against biofilms, one of the main causes of complications in prosthetic joint infections.

Keywords

Antibiotic resistance, nanoparticles, biofilms, prosthetic joint infection

Format

Oral presentation

Bad Neighbourhood for Cancer Treatment: The role of Bone Marrow microenvironment in Childhood Acute Lymphoblastic Leukaemia (ALL) Development and Treatment

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Abstract

Resistance against treatment has been a major problem in childhood leukaemia. Bone-marrow cells (microenvironment) that surround leukemic cells influence such resistance. However, the actual mechanism(s) through which such 'bad-neighbourhood' exerts its influence is not well-known. This study aims to characterize pathways, which influence microenvironment and phagocytosis induced by immune cells, that modulates outcome of chemotherapy. ALL cells were treated with conditioned media which mimics bone marrow microenvironment. To determine such pathways computational modelling and bioinformatics tools were used to find most prominent pathway in a previously published gene expression array (microarrays). The list of genes obtained was further filtered through bioinformatic tools including Metascape, cBioPortal, GeneCards and STRING-databases. An identification of selectively upregulated and immunotherapy-related genes was performed followed by gene-expression and cellular viability analyses with or without treatments of ALL cells. Analysis showed upregulation of IL10, CD8, CD24 and CD47 genes whereas CD19, CD3, CD108 and CD2 gene expressions remained unaffected in ALL cells treated with conditioned media (CM). CD47—one of the upregulated genes – is known to prevent phagocytosis (engulfing and ingesting particles) and eventual cell death of leukaemia cells by macrophages. CD47 gene-expression was upregulated in cells treated with CM according to microarray analysis but its protein expression appears reduced in cells treated with DNA damaging drug etoposide, though its cell surface expression remains unchanged. Bioinformatic identification of CD47 affirms focus on it for the understanding of the role of immune system and microenvironment in leukaemia. Preliminary results suggest a possibility that persistent CD47 gene-expression underscores its role in chemoresistance.

Keywords

Chemotherapy, Resistance, Leukaemia, Immune system, microenvironment

Format

Oral presentation, Poster

Session 4.2 Telling Stories

Augmenting Established Historical Digital Art Narratives through Evaluating the Impact of Early Digital Arts Festivals in the UK

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Abstract

The late 1980s and early 1990s saw the growth of digital art in the UK, with an abundance of festivals launching in the North of England. They commissioned art works that were risk taking and ambitious leading to exhibitions and experiences that aimed to disrupt and debate technological impact. However, due to their transient nature, much of this history and the work exhibited is lost.

This presentation questions how established historical digital art narratives can be augmented through reimagining these early festivals and preserving their forgotten collections of ephemera and artwork. The research aims to give insight into the cultural significance of this heritage and allow a multiplicity of voices to be heard. Its potential to inform present and future research into digital art, social history and technology. It will raise awareness of the importance of these 'at-risk' collections and provide models to secure their longevity and access.

Keywords

Digital Art, Festival, Archive, Preservation, Social Memory

Format

Oral presentation

Contemporary Irish Folklore: Imagining a Folkloric Past, Advocating for Marginalised Voices

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Abstract

How is 'folk' imagined in academic discourses and modern writing, in the context of Irish folklore, nationalism, and contemporary progressive movements? Folklore often functions in terms of the representation of ideas about community, identity or history. The history of Irish folklore speaks to an imagined 'Irishness', pre-colonial history, and post-colonial nation. Recent publications of Irish folklore grapple with this history from a perspective of marginalisation.

'Folklore', 'tradition' and 'antiquation' are immaterial concepts defined in relation to modern concerns; urbanisation, working-class/popular culture, and national identity. Irish folklore has embodied imperialist notions of Irish squalor and backwardness, the Romantic 'noble savage', and the ancient lineage of modern nation. This points to an ideological basis for the documentation and study of folklore that is intertwined with experiences of marginalisation. Contemporary writing in this area is notably interested in highlighting marginalised voice in Irish culture, as seen in recent feminist writing and in writing by Irish Travellers. This is a significant shift in how folklore is imagined, with folklore being a framework for the advocacy of marginalised voices.

This paper explores the construction of the term 'folklore' in folklore studies, and the ways that it imagines history and community within modernity. It will identify contemporary Irish folklore as embodying experiences of marginalisation, and analyse how contemporary writers – such as Oein DeBhairduin and Dierdre Sullivan – document and adapt Irish folklore in ways that embed themselves in diverse experience. This contemporary approach to folkloric writing is indicative of a shifting relationship to the imagined Ireland.

Keywords

Folklore, Irish studies, Nationalism, Marginalisation, 21st century writing

Format

Oral presentation

Understanding China's Intervention in Global Media: International Documentary Co-productions

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Abstract

Over the past decade, China's rapid global expansion of its media industries has led to renewed interest in the connections between media and international relations. The country's media and cultural landscape has also been completely reshaped. Nichols (2001) acknowledged documentary's function of constructing and contesting national identity. China has seen the possibility of promoting its views and challenging the Western dominated representation of itself via co-production documentaries. Since the publication of "Advice on promoting the documentary industry" by the Government in 2010, China's documentary industries have undergone unprecedented transformation in both domestic and international contexts. Since then, these industries have been exploring new co-production models and have emerged as a key player in the global market.

Existing studies of Chinese media have primarily concentrated on concerns relating to politics, regulations, and cultural hurdles. They have tended to focus on the news, films, and print media. The documentary industries have received too little attention. In this project, I will be conducting what is called a programme research to identify the distinctive features of co-production documentary programmes. In addition to traditional methods of studying media text and audience, I will scrutinise different organisations, stakeholders, and practices that operate within the global market. As a result, I will have critically appraised the co-production documentary industries on a microlevel. These findings should contribute to our understanding of how media discourse influences politics and ideology (soft power), whilst offering fresh insights into the changing cultural and economic relationship between China and the West.

Keywords

Co-production, documentary, national identity, soft power, industry studies

Format

Oral presentation

Re-telling Madness: An Alternative Approach to the Representation of Madness on Screen through an Affective Engagement with German Expressionism, Surrealism, and the Carnivalesque.

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Abstract

Western film culture, arguably, has a historic insensitivity towards the portrayal of madness that gives very little thought to the stigmatising effects of this. It is through this practice of homogenously misrepresenting madness, that fiction film has reinforced a concept of madness which is rooted in historic (mis)representations that destined madness to be considered as outside of societal normality. This paper argues firstly that the representation of mental illness in fiction film has generally focused on the cinematic portrayal of madness; secondly, engaging with philosopher Michel Foucault's concept of madness as a social construct relative to time and culture, it contends that it is this specific portrayal of madness, as opposed to other mental illnesses, that informs a significant amount of the public's knowledge about mental illness.

While much previous research discusses portrayals of madness in fiction film, there are still significant gaps in how to approach a fair and ethical portrayal from a filmmaker's perspective. This paper attempts to fill this gap by suggesting the need for a highly stylistic approach that is expressive and aesthetically meaningful so as to affectively engage the audience. This is done by looking at the film movements of German Expressionism, Surrealism, and the concept of the Carnivalesque, all of which are recognised by their unique and expressive stylisation and have historically been connected with the representation of mental illness. This paper is part of a my PhD research, which is a practice as research PhD, engaging with practice as research methodology as well as mixed methods research in various ways.

Keywords

Mental Illness, Madness, Fiction Film, German Expressionism, Surrealism, The Carnivalesque

Format

Oral presentation

Impacts of Land Use\Cover Change on the Extent of Flooding Along Epie Creek, Nigeria

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Abstract

Flooding worsened by changes in land use and climate change is an environmental concern threatening the livelihood of people in tropical developing countries like Nigeria, which is characterized by high population growth, rapid urbanization, improper planning, deforestation, and poor land use management. The Increasing frequency and magnitude of flooding is perceived to be partly caused by changes in rural land use management which has a direct effect on people, their economy, and the environment. Flooding has been a serious environmental problem globally and the impacts of flooding are becoming more severe due to global climate change. Effects of flooding include loss of human lives and livestock, damage to property and infrastructure, groundwater contamination, soil erosion, and siltation but amongst all these, the effect on agriculture and people's livelihoods are more pronounced causing over-saturation, soil infertility, damage to crop fields and food scarcity.

Nigeria experienced its worst flooding in 2022 where 2,504,095 persons in 33 states were affected, about 1.302.589 persons were rendered homeless, 45,249 houses were destroyed, and 603 deaths were recorded by the National Emergency Management Agency, (2023).

This paper examines the impacts of land use change on the extent of flooding which affects the livelihoods of people, especially agriculture, food production and availability, housing, and income. The study employed the use of Geographic Information System (GIS), expert interviews, questionnaires, and secondary data to collect data.

Keywords

Land use/cover, flooding, deforestation, climate change, urbanization

Format

Oral presentation, Poster

Attribution Processes in Media Coverage of Minoritised Groups

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Abstract

Background- After the UEFA 2020 European Football Championship final in 2021, several black members of the England men's national team received racist abuse for missing their respective penalties. When viewing hate crime statistics in England and Wales between April 2015 to March 2022, the UK Home Office does not attribute an explanation for the spike in racially or religiously aggravated offences in the summer of the Championships.

Problem- The research issue is identifying covertly racist speech and understanding how it is created by media representatives. Further, evaluating the effects covertly racist language has on creating the target audience's culture.

Hypothesis- I argue that by describing the behaviour of individuals, stereotypic or non-stereotypic social categories are formed. Combined, descriptions and social categories produce a linguistic family. A combination of linguistic families produces a metaphor, where a metaphor is understood as a device for conceptualising reality. When metaphors combine, cultures are produced. Therefore, a culture will change if its behavioural descriptions are changed.

Methodology- The research will use Media Psychology techniques, such as content analysis, discourse analysis, interviews, and laboratory experiments, to identify the language being broadcast via civilian journalists and the behavioural effects this language produces in the target audience.

Implications- The research is intended to identify whether changes in behavioural descriptions of minoritised groups in a specific culture can reduce anti-social behaviour toward minoritised groups within that culture. If linguistic changes do not result in behavioural changes, the research will further highlight the requirement for implementing specific institutional changes.

Keywords

Covert Racism, Linguistic Intergroup Bias, Media Psychology, Metaphors, Stereotypes

Format

Oral presentation

Session 4.3 Improving Environments 2

Developing a Community Response to Climate Change Through an Action-Research Approach

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Abstract

The power of community action was demonstrated during the COVID pandemic. In Bolton, the community was a key partner in shaping the response and delivering effective and responsive solutions during an emergency. This study uses the learning from Covid to design a sustainable community response. The approach being adopted is Action Research which follows a continuous cycle of plan, act, observe and reflect. The research will be designed with the community using co-researchers.

The first stage of the study is the recruitment of paid co-researchers from the community. Co-researchers will be selected based on their networks and knowledge of local communities and their interest in climate change. A key aspect of their role will be to design, develop and deliver the research. Co-researchers will define the target communities and recruit participants for Action Research focus groups. Working with the participants they will design interventions to support behaviour change in the community. Data will be collected before, during and after the interventions to evaluate whether and how it works. Built into the Action Research cycle will be a reflection stage where the co-researchers and participants will come back together to understand what has worked and what has not. The cycle will then be repeated.

There will be a minimum of six focus groups over the two years with a third of these working with young people. This study aims to understand how collective community action can support behaviour change at a community level to tackle climate change.

Keywords

Action Research, Co-researchers, Climate Change, Community response

Format

Oral presentation

Sustainable Recycling and Valorization of Mixed Plastic Waste to High-Value End Products

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Abstract

Mixed post-consumer plastic waste (MPW) poses one of the greatest waste stream challenges worldwide as plastics take 500-1000 years to degrade. The world generates 320 million tonnes of MPW yearly, which is expected to triple by 2050. A 9% annual increase in MPW generation suggests that besides irrational production, improper usage and disposal of plastics, conventional landfilling, incineration, and recycling may be inadequate to handle MPW. With the world in danger of being overwhelmed by plastic pollution, a sustainable solution is essential. Pyrolysis, which is the thermal breakdown of materials at elevated temperatures in inert environment could offer viable solutions to handling MPW with the advantage of producing useful end-products. In contrast to conventional methods, pyrolysis has low carbon footprint and can handle commingled and contaminated wastes. In this study, 3000g of MPW containing High-Density Polyethylene-33.3%, Low-Density Polyethylene-33.3%, Polypropylene-16.7%, Polystyrene-16.7% was pyrolyzed at 350-450OC in a batch reactor for 180 mins. The products of the pyrolysis were oil-56wt%, gas-41.5wt% and char-2.5wt%. Physical properties of the oil were evaluated, with results suggesting that it has comparable properties to diesel and gasoline. This study demonstrate that pyrolysis can overcome the major limitations of conventional recycling with the ability to process mixed plastic waste. Pyrolysis could significantly reduce waste generation as a 97.5% mass reduction of MPW was achieved. MPW pyrolysis could lead to production of fuel which is a valuable resource recovery. This study would evaluate the chemical properties of the oil and char to determine their chemical composition and potential application.

Keywords

Mixed post-consumer plastic waste, Pyrolysis, Recycling, Plastic pollution

Format

Oral presentation, Poster

Environmental DNA Metabarcoding Reveals Fish Diversity in a Once Biologically Barren Ecosystem

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Abstract

From the early 1850s to the late 1970s the Mersey estuary became derelict of its historically healthy populations of fish species due to continuous pollution from surrounding industrial and agricultural infrastructures along the estuary and riverbanks. Since the introduction of water quality legislation in the 1970s, there have been gradual improvements in water quality, resulting in the return of fish species to the system. However, fish are elusive organisms and can be difficult to monitor, particularly in a large tidal ecosystem with low visibility. We applied eDNA metabarcoding in the Mersey estuary to gain insight into the current diversity of fish species present. eDNA metabarcoding involves collecting samples from the environment and extracting DNA from within those samples. We collected 360 water samples from 10 different sites. Locations were selected based on inferences from our TELEMAC-2D hydrodynamic model. Hydrodynamic models are used to simulate fluids in motion. Sample locations were determined based on the model salinity outputs that visually separated the Mersey into different habitat types, freshwater, mixed (where fresh meets marine) and marine. From the extracted DNA, we detect a wide range of different fish species in the Mersey. Notably, we detect the European eel Anguila anguila, a critically endangered species, Atlantic Salmon Salmo salar, which uses the Mersey as a migration route and a plethora of other fish. Results indicate that sampling using eDNA metabarcoding can be highly effective in challenging, estuarine systems and show that the Mersey is once again inhabited by a range of fish species.

Keywords

Estuary, metabarcoding, modelling, eDNA, fish

Format

Oral presentation

A Multi Analytical Approach Towards the Fate of Micro and Nano Plastics in Surface/Fresh Water

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Abstract
Plastics have served the progress of civilization in incredible ways. They have transformed healthcare, made homes more energy efficient, and lessen the burden on the mining of natural resources, such as wood and cotton, by producing plastic alternatives. Though, the longer durability of plastics has made it both the best, and the worst material. A lot of attention has been given to sea life been affected by plastics found in the oceans. But images of marine life strangled and suffocated by plastic waste are the effects of bigger plastic pieces which are either being a trap or ingested mistakenly as food leading to blockage of gut and ultimately the death of organism. However, there are more serious concerns with plastic pollution with the less explored, very small size plastics called as “Micro and Nanoplastics”. Sourced from weathering/degradation of abandoned plastic objects or directly from consumables containing micro/nanoplastics, these particles could be found everywhere including freshwater bodies. Substantial intricacy is involved in understanding the impact of micro/nanoplastics in nature because of their different physical–chemical properties that makes them multifaceted stressors. Where microplastics serve as vectors by carrying toxic chemicals in the ecosystems, they are themselves, a cocktail of hazardous chemicals that are added intentionally as additives during their manufacture in order to increase polymer properties and durability. The present study aims to investigate the potential effects of micro/nanoplastics on a freshwater model organism. The study intends to explore the physiological as well as molecular aspects of model organism to trace the effects by conducting several bioassays.

Keywords
Microplastics, Nanoplastics, Ecotoxicity, Daphnia, Oxidative stress

Format
Oral presentation

Hydropower Longevity: 2D Modelling of Sediment Dynamics in Climate Impacted Glacier Fed River Basins

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Abstract

Glaciers are a significant contributor of sediment into a hydrological system and, with the acceleration of deglaciation due to a changing climate, this presents an increased sediment load in high mountain areas. This represents a problem for glacier-fed hydropower schemes such those in Switzerland, which produce 56% of domestic energy. Sedimentation is the most common source of failure and inefficiency in hydropower, according to present research. Prior research, however, suggests that periglacial and proglacial systems (environments located on the margin of past glaciers) through slope and depositional processes will lose much of the energy, and thereby sediment, before reaching hydropower infrastructure. However, this is theoretical and unobserved due to the difficulties of high mountain environments. Therefore, this study aims to use 2D Modelling to simulate sediment dynamics of high mountain glacial catchments to identify the mechanics and validity of this phenomenon on multiple basins over time. This study therefore serves as a novel first test for the accuracy and limits of 2D modelling software in an extreme environment with initial validation of 2D modelling methods using HEC-RAS 2D modelling software on a UK high energy river site of Blaze Beck in Whinlatter Forest Park, Cumbria. The initial study of validity revealed good accuracy in high energy environments of a similar character to high mountain systems. Modelling on Findelngletscher and Gornergletscher, Switzerland revealed unseen insights into proglacial geomorphology and that theorized understandings of sediment balance are indeed correct, the risk to hydropower from sediment related failure does not increase with glacial retreat.

Keywords

Glacial, Proglacial, Sediment, 2D Modelling, Climate Change

Format

Oral presentation

Urban Hedges as Noise Barriers: Does Plant Species Choice Affect Insertion Loss?

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Abstract

Noise in urban environments is responsible for annoyance and adverse health effects. Noise barriers are used to mitigate noise and are effective when properly designed and installed but provide little visual or biodiversity benefit. Hedges are frequently used as boundaries in urban spaces around parks and playgrounds, schools and gardens, and have been demonstrated to provide valuable ecosystem services (e.g. biodiversity support, flood mitigation, air quality improvement). This study aims to determine what sound attenuation is provided by hedges, and how that varies with plant species. The normal incidence insertion loss of vegetative parts of two hedge species commonly used in the UK, and with different canopy characteristics (crown density, leaf thickness and size) was measured. Tests were done on 'instant hedges' planted in grow-bags, in their winter state. Measurements were carried out in a hemi-anechoic chamber to provide controlled conditions. Insertion loss results are presented showing that evergreen *Prunus laurocerasus* provides a greater insertion loss than deciduous *Fagus sylvatica*. Losses are seen at mid to high frequencies only. The marcescent leaves of *F. sylvatica* are shown to provide some acoustic benefit compared with the same plant without leaves.

Keywords

Green infrastructure, hedge, species, insertion loss

Format

Oral presentation

Session 5.1 Humans and Animals

BBC Radio Fours Representation of Non-Human Animals on Farming Today

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Abstract

Speciesism is the assumption of human superiority leading to the exploitation of non-human animals (NHAs). The social constructs non-human animals face is widely accepted, leading to under-examination in society. The inclusion of NHAs perspectives within the media is vital, as to be included is to be considered and shown moral value. Therefore, the absence of non-human animals in reporting is erasing their presence and experiences in our shared society. The language used around NHAs - or lack of – is important to consider as it can have an effect on the way they are perceived. There have been studies on the representations of NHAs in other forms of media, however, there has been none on their representation within radio. BBC Radio Four is a station which claims it is for anyone interested in intelligent speech and sets a high standard for speech-based programming and journalism. Farming Today was first broadcast on BBC Radio Four in 1960, providing news about food and farming. There is no other industry which has a dedicated news programme on BBC Radio, however animal agriculture is reported – largely uncritically - on a daily basis. This presentation will examine how NHAs are reported in Farming Today and whether the BBC has upheld its mission as a public service broadcaster to act in the public interest, serving all audiences through the provision of impartial, high-quality, and distinctive output.

Keywords

Speciesism, Radio, BBC, Farming, Animals

Format

Oral presentation

Unravelling the Epidemiology of Ticks and Tick-Borne Infections in Benue State, Nigeria

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Abstract

Tick infestation poses a major challenge to the Nigerian livestock industry, as ticks act as carriers of pathogens with veterinary and economic importance, such as Anaplasma, Babesia, and Theileria species. To develop effective control strategies, it is crucial to understand the distribution and factors influencing tick populations through epidemiological studies. This research aimed to assess tick diversity in Benue cattle, with a total of 218 cattle surveyed, out of which 185 were infested. All identified ticks were adult ticks and categorized based on their morphology. A total of 658 ticks were identified, representing eight species. The most prevalent species was Hyalomma impeltatum (27.5%), while Hyalomma rufipes (0.2%) was the least abundant. Other species included Amblyomma variegatum (24.8%), Rhipicephalus geigyi (23.7%), Rhipicephalus microplus (17.3%), Hyalomma truncatum (5.0%), Rhipicephalus turanicus (0.6%), and Rhipicephalus decoloratus (0.9%). The observed tick diversity aligns with previous studies in Nigeria, indicating a dominance of three genera: Amblyomma, Hyalomma, and Rhipicephalus. However, the significant presence of Hyalomma ticks in this study suggests a shift in tick diversity within the North Central region, possibly due to climate variability, including higher temperatures and unpredictable rainfall patterns. The movement of cattle and humans across borders has introduced new tick species into Benue, as evident from the identification of previously unreported ticks. The presence of these ticks highlights a substantial veterinary problem with significant health and economic implications for both cattle and humans. Consequently, this study underscores the importance of adequate animal healthcare to enhance cattle health and production performance.

Keywords

Ticks, Epidemiology, Cattle, Tick borne infections, Nigeria

Format

Oral presentation, Poster

The Future of Human-Carnivore Co-Existence: Understanding Knowledge and Attitude Towards Wild Carnivores Among Students in Higher Education from Kargil Trans-Himalayas, India

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Abstract
Several studies have reflected that the success of wildlife conservation approaches and efforts is determined by local people's awareness and attitude toward the target wildlife species. It is critical to have a favorable attitude of the local communities toward wildlife for implementing successful conservation efforts that involve public participation. We conducted this study in Kargil trans-Himalayas, India to understand the knowledge and attitude of local students studying in higher education towards wildlife. To achieve the objectives of this study, an online semi-structured questionnaire was framed and circulated among students from Kargil in higher education studying in Kargil and other parts of India. The total knowledge score for the respondents ranged from 3 to 12 out of 12, with a mean score of 9.68 ±1.565. Students in higher education from Kargil also possessed a favorable attitude towards the wild carnivores of the region. The correlation though weak, reflected that the increase in knowledge of the wildlife of the region increases the favorable attitude of students in higher education towards wildlife. The knowledge and attitudes of local students towards wild carnivore species must be considered for efficient long-term conservation approaches and efforts. This shall be accomplished by timely sustainable conservation education and awareness initiatives. Although this study tries to explore an important factor to be considered in conservation efforts, from a less explored region in the trans-Himalayas, there is a great need for intensive studies, in the future, to understand and implement concrete conservation action plans in the region.

Keywords
Co-Existence, Conflicts, Human-Wildlife, Kargil, Wildlife

Format
Oral presentation, Poster

Optimising Environmental DNA (Edna) Approaches for Detecting Semi-Aquatic European Mustelids

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Abstract

Monitoring mammals can sometimes require multiple methods to detect each species within a specific location. This can be costly and require huge effort, so more efficient ways to monitor and estimate the diversity of wild mammal communities are needed to further conservation efforts. Environmental DNA (eDNA) metabarcoding utilizes DNA shed by species from river water and has been proven as an effective tool for the detection of terrestrial and semi-aquatic mammals. Here, we report on multiple eDNA metabarcoding studies using river water in England, Scotland, and Spain to gather information on the distribution and diversity of mammalian populations. While mustelids like otter (Lutra lutra) have been captured regularly on camera traps, they are often not detected using eDNA metabarcoding or require a large number of eDNA samples to be processed in order to detect them within a riverine system. To investigate if this issue is related to using a multi-species approach, we tested a newly developed single-species digital-droplet polymerase chain reaction (ddPCR) approach targeted for the otter and compared results obtained from the same eDNA metabarcoding studies. ddPCR outperformed metabarcoding in detecting otters at sites where they are known to be present. To test the potential of this approach to monitor otters at a national scale, ddPCR and metabarcoding is currently being undertaken in 60 rivers as part of the National Otter Survey in England. Otters were detected using ddPCR at multiple rivers and comparisons will be performed against established traditional surveying techniques.

Keywords

Environmental DNA, Metabarcoding, Mammals, Semi-Aquatic, Terrestrial

Format

Oral presentation

Understanding Zoo Visitors And Non-Visitors' Knowledge, Perceptions And Behaviours

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Abstract

Recent research understands zoo visitors' perceptions and knowledge about zoos, but there is a lack of studies on how non-visitors perceive zoos. One of the problematic animal welfare conflicts in zoo management is how to create a balanced relationship between zoos and the public, especially non-visitors. The overwhelming majority of worldwide zoos depend on visitors for their financial survival. Considering the major strength of zoos is utilizing the presentation of living animals in a natural context that facilitates human-animal interaction; zoos need to think carefully about how the public face of the zoos' images of conservation, education, research, and entertainment.

Reviewing existing literature on the public perceptions of the zoo's role, there is a lack of studies on the comparison between Hongkongers and Westerners viewing zoos. As HK was formerly a British Colony, findings from HK and the UK can be crucial for conducting future comparison studies with those areas with a similar background or history. Consequently, this research aims to fill the literature gap by investigating non-visitors' and visitors' perceptions about zoos, using a questionnaire distributed to people in HK and the UK. Aiming to deepen the understanding of visitors and non-visitors' perceptions about zoos, this study will present and compare the nature and motivations of respondents from HK and the UK. R is used for data analysis. Ultimately, this study aims to examine if the zoo is a bridge to connect people and animals by offering different educational activities and providing some new insights from the public.

Keywords

Hongkongers, Zoos, Animals, Visitor studies, Human-animal interaction

Format

Oral presentation

Shrimp Of Africa: A Questionnaire-Based Survey In Nigeria

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Abstract

Nigeria's shrimp fisheries have supported the human population with livelihood, food security and as a source of revenue. This study reviews the present status of shrimp fishery in the genus Macrobrachium in 5 study areas of Lagos, Ogun and Oyo states. A real-time structured questionnaire was administered to 157 respondents (comprising fishermen, fisherwomen, fish processors and fish mongers) in April 2023. The questionnaire addressed the respondents sociodemographic features, the fishery characteristics, sustainability of the fishery and the respondents activities near the water bodies. The findings revealed that 15.8% of the fishers were between age 35-50years and were primarily male with more than ten years fishing experience. The fishermen affirmed that catch had dramatically reduced over the years and varies seasonally (wet and dry seasons) thus increasing cost of fishing. Not all fishermen were certain their children will follow the fishing family tradition and they are worried about the future of the fishery. Significantly, the water bodies have been heavily polluted with loads of human induced activities which affects both the ecosystem and the aquatic fauna community. Additionally, the study used catch assessment surveys and morphometric traits to identify several Macrobrachium species in the water bodies. Conclusively, shrimp fishery and its current conditions in the study locations is becoming more and more important for the conservation and sustainability of wild species. It also has practical implications for ensuring that local communities' sources of income are monitored to prevent overexploitation while sustaining a balanced diet.

Keywords

Conservation, Human Activities, Livelihood, Macrobrachium, Nigeria

Format

Oral presentation

Session 5.2 Changing Attitudes

"I didn't know how to be a good Catholic and a good mother to a teenage girl": Mothering Under Northern Ireland's Abortion Law in BBC's Three Families (2021)

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Abstract
In 2019, a court in Northern Ireland acquitted a woman who was prosecuted for purchasing abortifacients online for her teenage daughter. Despite abortion being legal in the UK in 1967, this right did not extend to Northern Ireland. It was not until 2019 that the Creasy-McGinn amendment was passed through British parliament during the prorogation of the Stormont Assembly, legalizing same-sex marriage and abortion for women and girls in Northern Ireland. The prosecution of the mother for buying abortifacients online was fictionalised in BBC's 2021 production Three Families which drew upon genuine experiences to explore life under Northern Ireland's restrictive abortion law prior to the passing of the Creasy-McGinn amendment. This paper will explore the role of Sinead Keenan's mother figure, Theresa, arguing that Northern Ireland's abortion law affected perceptions of 'good' and 'bad' mothering in society. It will also examine how Theresa's own personal views affect how she views her own motherhood, drawing upon societal attitudes towards Catholicism as well as aspects of Irish feminism and feminism.

Keywords
Northern Ireland, Abortion, Motherhood, Irish feminism

Format
Oral presentation

Lack of Stakeholders Engagement During Quality Assurance in Information Systems Development

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Abstract

The inability of businesses across different sectors to deliver successful information systems/information technology project outcomes has been an ongoing theme in recent years. Despite the reasons for failure, organizations seem unable to learn the lessons of failure. Quality assurance (QA) is an essential and crucial aspect of the software development lifecycle. The activities that are performed within QA cut across different phases of information systems development (ISD). Effective engagement of stakeholders in any ISD will ensure greater chances of successful information systems (IS) implementation. For more than half a century, information systems have continued to record low success rates and many scholars have argued that the reasons for failure stem from budget issues to technical challenges with less emphasis on quality assurance (QA). Although recent studies have begun to argue differently based on ethical, social, and organisational issues. This research presents a different narrative. A qualitative case study research has been designed that will focus primarily on the healthcare sector. Integration of primary and secondary data will create an opportunity for further data analysis and scrutiny by deploying soft systems methodology and thematic analysis. The essence is to explore some of the underlying issues for lack of engagement by stakeholders during QA. This study aims to investigate some of the infinitesimal issues and challenges in IS implementation to unravel the reasons for lack of engagement during quality assurance. It is believed that our findings will help inform future IS implementation not only in healthcare sector but across other business settings.

Keywords

Quality Assurance, Stakeholder Engagement, Success, and Failures in Information Systems

Format

Oral presentation

Exploring Post-Pandemic Parental Hesitancy towards Routine Childhood Vaccinations: The Role of Personality, Misinformation and Cognitive Bias.

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Abstract

The advancement of medicine and the subsequent availability of routine vaccination programmes has had a substantial impact on public health. Official statistics and empirical evidence suggest that the MMR vaccination is an effective and successful treatment in preventing more than 20 million cases and 4,500 deaths from measles in the UK. However, there has been a rise in measles cases in recent years which the World Health Organisation attributes to gaps in vaccine coverage. The first official statistics highlight that the COVID-19 pandemic exacerbated this increase, with more than 23 million children missing vaccination appointments worldwide. As a result, MMR vaccination coverage in the UK is around 85%. Moving forward it is important to understand what influences parental decision-making regarding routine childhood vaccinations. In this study we aim to assess caregivers' sociodemographic variables, personality traits, perceived risk/severity of measles, as well as scores on a cognitive bias and health literacy measure, which will be analysed using a binary regression analysis to explore the relationships between predictor variables. We also developed a decision-making task exploring the perceived trustworthiness and credibility of an anecdote, a Facebook post and a NHS leaflet. Quantitative responses will be analysed using a repeated-measures ANOVA, while qualitative responses will be analysed using thematic analysis to explore emerging themes underpinning the decision-making processes, through the lens of the COM-B model of behaviour. Data collection is ongoing, but predicted findings based on the literature and preliminary findings and implications will be discussed.

Keywords

Routine Vaccination Hesitancy, Decision Making

Format

Oral presentation

The Gap Between Intentions to Seek-Help and Actual Help-Seeking Behaviour for Mental Health in University Students: Perception of Barriers

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Abstract

Although effective help is available, the majority of students still do not access professional help for their mental health concerns. Timely help-seeking could result in shorter and more cost-effective treatment and increase the quality of life by preventing prolonged suffering. Previous literature has suggested that individual's beliefs and background (e.g., culture, sociodemographic variables) influence the intentions to seek help. However, intentions do not always lead to behaviour, known as the intention-behaviour gap. Previous research often addressed intentions without investigating the actual help-seeking behaviours, therefore there is a lack of empirical evidence of what factors predict actual help-seeking. The current study therefore aims to identify the barriers and facilitators of actual help seeking for mental health difficulties in the student population which could contribute to what is currently known and improve service utilisation. The current study will explore the behavioural determinants of mental health help-seeking behaviour in university students using a mixed methods design whilst drawing on two behaviour change frameworks: Theoretical Domains Framework and COM-B (Capability, Opportunity, Motivation – Behaviour).

Keywords

Barriers, facilitators, help-seeking, mental health, intention-behaviour gap

Format

Oral presentation

Human Rights Without Human Privilege

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Abstract

In recent years, humanism has come under renewed attacks, as climate change and new bio-/cyber-technologies stretch the traditional understanding of a human that is separable from its environment. One school of thought that has offered such a critique are the posthumanists, who pose that such an understanding limits our ability to understand these 21st century problems. They instead seek to form a notion of the human that does not have any embedded assumptions of human exceptionalism: the fundamental assumption that humans are fundamentally different from all other entities and, relatedly, that only human perspectives matter.

At first glance, Human Rights would seem fundamentally at odds with such a challenge. After all, Human Rights are predicated on a notion that something about humans particularly demands special moral and legal attention. Despite this, the relationship between human rights and posthumanism remain under theorised. As such, this research seeks to critically examine the human of posthumanism through a selective and focused literature review and understand its consequences on human rights.

This paper will provide a conceptualisation of the posthumanists' rejection of a normative classification of the human and embrace of biological classification of the human, before turning to human rights and discussing the feasibility, difficulties, and advisability of adopting such a formulation for human rights. This paper will then present two plausible conclusions of such an approach: the extension of human rights to non-human entities (such as animal rights), or the unfeasibility of a rights-based framework.

Keywords

Human Rights, posthumanism, humanism

Format

Oral presentation

Public Perceptions and Responses to Air Pollution in Greater Manchester

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Abstract

In the United Kingdom, air pollution has been a major health risk issue that dates to the 1950s. Despite decades of strict monitoring and regulation, air pollution remains a problem at the local level; Greater Manchester is home to some of the most polluted cities in the UK. Regulatory and monitoring measures influence public attitudes and behaviours towards air pollution. This study aims to contribute to knowledge in this area as there is an imperative need to understand public knowledge and attitude towards air pollution issues and management strategies put in place to control, manage, and minimise air pollution. Two hundred eighty participants living or working in Greater Manchester were recruited for online and paper surveys. To identify potential barriers and challenges in effectively managing air pollution, the data collected explored people's awareness of air pollution in their local area/community, what the likely sources of air pollution are, how they interpret, make sense of, and respond to the risks associated with air pollution and air pollution management strategies. Some key findings showed that people who are generally concerned about air pollution are more likely to be those who perceive air quality as poor or fair and are worried about the health effects of air pollution. People's ability to control the level of their exposure to pollution is significantly influenced by their self-efficacy, which is the belief that there are actions that they can take to reduce their exposure to air pollution.

Keywords

Air pollution, air quality, public perception, risk perception, public responses

Format

Oral presentation, Poster

Session 5.3 Health Interventions 3

Neural Components of Decision Making Under Ambiguity

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Abstract

In ambiguous tasks where there is no optimal decision process, the best strategy is to make decisions randomly with respect to the previous event. Instead, individuals tend to employ strategies based on the outcome of the previous decision. While the functional correlates of such behaviour is extensively examined, the association of this behaviour with brain structures and resting-state brain function remains unclear. This research utilised data from the Human Connectome Project and investigated the effects of rewards and losses on subsequent behaviour in healthy participants during a forced-choice guessing task, specifically, Win-stay, Loss-Shift behaviour. These behavioural measures were combined with neural measures of brain structure and resting-state brain function to investigate associations between grey matter volume, white matter volume and resting state functional connectivity (RSFC), respectively. We identified that loss-shift behaviour was associated with reduced grey matter volume (GMV) in the left and right Superior temporal gyrus (STG), left STG, two clusters in the left middle temporal gyrus (MTG), right MTG, left occipital pole and left superior lateral occipital cortex. We also found that white matter volume within the STG was positively correlated with loss shift behaviour. Further, increased RSFC between the left STG and the left lateral occipital cortex was associated with increased tendency to adopt the loss-shift strategy. No correlations between these neural measures and win-stay behaviour were found. The results of this research further our understanding of the structural and functional correlates of loss-shift behaviour in healthy individuals to determine the neural behavioural relationship that may underlie addictive disorders.

Keywords

Decision making, Win-stay, loss-shift, Brain structure, Brain function

Format

Oral presentation

Invisible Disability That Could Lead to Prison – Fetal Alcohol Spectrum Disorder (FASD) and the Justice System

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Abstract

When alcohol is consumed in pregnancy, it has the potential to damage brain and physical development in the foetus. This could result in fetal alcohol spectrum disorders (FASD). Individuals with FASD are nineteen times more likely to be involved with the criminal justice system (CJS) when compared to those without FASD. Interrogative suggestibility, a tendency to accept suggestions (during police interviews) from interviewers is theorised to be a weakness in this population. However, except for one small pilot study with seven participants, interrogative suggestibility is yet to be investigated in individuals with FASD.

In this presentation, I will present findings from my PhD which compared the interrogative suggestibility, memory recall, intelligence quotient (IQ), impulsivity, and confabulation of the FASD population with those without FASD. Impulsivity is the extent to which individuals respond to situations without 'thinking,' while confabulation is the replacement of memory gaps with imaginative stories. Results indicate poor memory recall, high impulsivity, and high immediate/1week interrogative suggestibility of individuals with FASD who had an average IQ of 78 (range: 70 – 105). Individuals with FASD also accepted suggestions from leading questions and fabricated evidence to buttress their false admissions, while also presenting altered versions of events. Drawing from real life examples, I will also present arguments on how the implication of my research findings could impact the CJS outcomes for individuals with FASD.

Keywords

Fetal Alcohol Spectrum Disorder, Suggestibility, Vulnerability, Police interview, Criminal Justice System

Format

Oral presentation

Identification And Trapping Of Unstable Free Radicals Using Spin Trapping Agents

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Abstract

Free radicals are atoms or molecules having one or more unpaired electrons in the outer most shell. The Hydroxyl radical is very reactive which reacts rapidly with biomolecules like DNA (Deoxyribose Nucleic Acid) to mediate oxidative damage (modifications to the structure of DNA which alters its coding properties and interferes with its functions). The aim of this study is to trap such short-lived free radicals by using spin trapping compounds and detecting the stable spin adducts (spin trap-free radical adduct) that are formed with the help of Gas Chromatography-Mass Spectrometry (GC-MS).

The spin traps used were nitroxide compounds, for example, 4-Oxo TEMPO (4-Oxo 2,2,6,6-tetramethylpiperidine-1-oxyl) and its isotope labelled analogue d16-4-OxoTEMPO. The hydroxyl radical formed by the Fenton reaction (reaction between Fe2+ and hydrogen peroxide) is converted into alkyl radical by adding to aldehydes such as acetaldehyde. The corresponding alkyl radical formed will react with the above-mentioned spin traps to produce long-lived spin adduct, which may be detected by GC-MS following extraction of the Fenton reaction mixture with chloroform.

Keywords

Free radicals, Spin traps, Fenton reaction, Gas Chromatography-Mass spectrometry (GC-MS), Spin adducts

Format

Oral presentation

Structure-Activity Relationship of Anti-cancer Novel Small Molecules Against Growth Factor Interaction

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Abstract

Cancer is one of the main causes of mortality worldwide. The significant hallmark of cancer development involves the migration of tumour cells via the metastasis process. The causes of cancer are complex, and our knowledge is still poor. However, genetic mutation and overexpression in a specific growth factor, for example, the HGF (Hepatocyte Growth Factor) and its receptor Met that belongs to tyrosine kinase receptors can be one of the causes. HGF/Met is a fundamental pathway during embryonic development, and cell differentiation as well as cancer progression. The activation of this pathway triggers a wide spectrum of downstream signalling molecules that change gene expression. Despite its vital role, the information on its role in cancer progression/ resistance is inadequate and still under investigation. It has been shown that small, sulphated molecules have an important role in direct interaction with HGF/Met on the cell surface. Here, we synthesize and characterize small, non-sugar, sulphated molecules that are going to reduce the binding affinity of the growth factor (HGF) and its receptor (Met). The synthesis of target products was achieved in 3-6 steps, preparing three different series of potential inhibitors of the HGF-Met pathway. The obtained products will be investigated on cancer cells to assess their activity in inhibiting/slowing the pathway overexpression in cancer and thus preventing metastasis. This could be the starting point for producing small therapeutic agents that can be used as a combination therapy with other types of cancer treatments.

Keywords

Metastasis, overexpression, HGF/Met

Format

Oral presentation, Poster

Programming Architecture to Design More Holistic Systems Relating to Daylight and View Quality

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Abstract

It is evident as stated by WHO that the natural environment has a direct impact on our health and wellbeing [Mappiness.org, 2013]. In addition, New Evidence and Perspectives for Action, 2021 for long-term mental health stated that green and blue colour found in natural landscape and sky has positive effects on overall mental health and wellbeing. The lighting industry has had a significant improvement related to the coordination between three factors technological development, lighting design improvement and the adoption of sustainable principles [Al horr, Y, et al., 2016]. Visual comfort could be defined as the absence of daylight issues such as glare and also it could be defined as a positive feeling of wellbeing [Lasse Rohde, et al 2020]. Many prior studies investigate the relationship between daylight, view through windows and the obstruction elements to outside view such as shading devices using questionnaires to quantify subjective wellbeing related to daylight and view quality. This may be explained by the difficulty of measuring the visual content to the outside while installing shading devices which affect occupant wellbeing. Within the parametric modelling environment using Grasshopper plugin into Rhino software and the using of genetic algorithms, this paper develops a framework to investigate how defining holistic systems could lead to more sustainable solutions. Unpacking the complexities of programming language usage in building design performance with a parametric software environment such as Grasshopper intends to foster the broader adoption of designing complex holistic systems in architecture.

Keywords

Daylight, View, Shading devices, Multi-objective optimization

Format

Oral presentation, Poster

The Role of Cytokines in Coronary Artery Disease

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Abstract
Coronary Artery Disease (CAD) is a common heart disease and leading cause of death worldwide. In CAD, chemical messengers known as cytokines are increased but we do not know by how much. Cytokines regulate our immune system, but if their levels increase excessively, they can damage the heart. Two key cytokines are interleukin-6 (IL-6) and interleukin-10 (IL-10) so our study aimed to measure levels of IL-6 and IL-10 in patients with CAD, then ascertain if those levels were associated with reduced heart function.
We collected blood from CAD patients scheduled for surgery. We used specialised equipment to measure levels of IL-6 and IL-10 in those samples which were then correlated to measurements of patient heart function. Various measurements were used to represent heart function, including stroke volume and end systolic volume (which tell us how well the heart contracts during a heartbeat) and end diastolic volume (which tells us how well the heart relaxes between heartbeats).
IL-6 levels were between 4.64 and 72.58 pg/ml and IL-10 levels were between 0.63 and 15.90 pg/ml. Stroke volume did not depend on levels of IL-6 or IL-10. End systolic volume did depend on levels of IL-6. End diastolic volume depended on levels of both IL-6 and IL-10.
Our findings suggest that both IL-6 and IL-10 may reduce certain aspects of heart function in patients with CAD. This information is important as it may provide new ways to diagnose and monitor disease severity in CAD patients while providing new ways to treat the disease.

Keywords
Heart, coronary artery disease, cytokines, heart function

Format
Oral presentation, Poster

Posters

Do Anti-Cancer Drugs Increase Intracellular Oxidative Stress?

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Abstract

Annually, 400,000 adolescents and children develop cancer, making it a leading cause of deaths for those under the age of 20.

Anthracyclines (such as *doxorubicin* and *daunorubicin*) are commonly used drugs to treat childhood cancers. These drugs kill cancer cells, but it is not clear how. It could be they increase levels of highly damaging molecules called Reactive Oxygen Species, leading to a condition known as oxidative stress. However, no studies have measured this directly, so we aimed to determine whether *doxorubicin* and *daunorubicin* (1) kill and (2) increase oxidative stress in cancer cells. *Anthracyclines* also lead to side effects like heart failure, but it is not clear why. As such, we also determined whether *doxorubicin* and *daunorubicin* can kill heart cells.

In this study cancer and heart cells were exposed to *doxorubicin* and *daunorubicin*. We measured cancer cell death and levels of oxidative stress using specialised equipment.

Doxorubicin and *daunorubicin* killed cancer and heart cells. Cell death was dependent on the concentration and time cells were exposed to the drugs. *Doxorubicin* and *daunorubicin* also prevented cancer cells from growing. Both drugs increased levels of oxidative stress in cancer cells, however the effect of *doxorubicin* was greater.

Our findings confirm that *anthracyclines* kill cancer cells. We are also the first to *directly* show that *anthracyclines* increased oxidative stress in these cells. This suggests the anti-cancer actions of these drugs are at least partially dependent on oxidative stress. Our findings also suggest that heart failure caused by *anthracyclines* may be caused by a loss of heart cells.

Keywords

Cancer, Oxidative Stress, Cell Viability, Heart, Anthracyclines

Format

Poster

An Investigation of Environmental Management of Smart High-rise Buildings and Demand for Sustainable Policies

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Abstract

The construction industry is playing a vital role in improving the quality life of people and is a major contributor to the national economy. In contrast, generating construction, and demolition waste, emits higher carbon emissions in the world. Sustainable policies are implemented to minimize the burden through construction activities and smart high-rise buildings are promoting sustainable development and sustainable culture in society. Sustainable development has been introduced for many years and construction industry is a major responsible industry with the highest energy consumption and the most pressing issue in society today is the energy crisis due to fuel shortage and resource depletion. Therefore, the aim of this research is to review the problems and challenges in the environmental management of smart high-rise buildings and the gaps to move towards net zero 2050 targets. This research will cover the global environmental management impacts on smart high-rise building construction and the gaps between sustainable rating systems and sustainable policies to control environmental management in smart building construction. Furthermore, it will be investigated the positive and negative consequences of current methods to make a smart building smarter. To achieve the aim of the research mixed method will be used, quantitative and qualitative analysis will be done to analyze the collected data in the research. The significance of the study is developing a conceptual framework for environmental management and policy application. Measurement model will be also developed to control of these activities to minimize the environmental impact through correctly implemented sustainable policies to achieve net zero 2050 targets.

Keywords

Sustainable Policies, Best practices, Environment impact, Measurement model, Net Zero

Format

Poster

Working Towards the Use of Artificial Intelligence to Detect the Unwanted Loosening of Bolts

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Abstract

The common method of bolting, used to secure parts of apparatus together, relies on the bolts having a sufficient preload force in order to ensure mechanical strength. Failing to secure bolted connections to a suitable torque rating can have costly, even dangerous consequences. Despite these checks, bolts can work loose over time through the effects of external forces such as vibration. Using traditional maintenance techniques such as visual inspection to detect a bolt slowly working loose over time can be problematic. For this reason, we have begun researching the use of video-based artificial intelligence (AI) techniques to identify this problem.

Machine learning-based object recognition algorithms require training data in the form of digital images in which the object of interest is highlighted, or "annotated" by a person. It is this annotated data from which the algorithm learns the features of the object. Once trained, the model can then be used to detect the object in previously unseen images. However, accurate training data is expensive and time consuming to produce and, therefore, little is publicly available.

In order to work towards an AI system that might be able to detect changes in the rotational angle of a bolt over time, we methodically compiled a comprehensive dataset of over 1,100 images. These samples depict bolts at various rotational angles, photographed from different perspectives and focal lengths. In the absence of any similar publicly available dataset, these samples will provide a solid basis for further experimental work.

Keywords

Machine learning, Training data, Bolts

Format

Poster

The Attitudes of General Practices Towards Clinical Research

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Abstract

The true value of clinical research is widely known. During 2021/22, the National Institute for Health and Care Research (NIHR) supported over 300 COVID-19 studies, recruiting more than 770,000 participants into studies investigating new treatments and vaccine trials (NIHR, 2022).
During this time, 100% of NHS trusts across England recruited participants into clinical research. Within a primary care setting, this figure falls to 51% of general practices supporting research, despite the support offered by the NIHR. This figure varies across regions, falling to 39% in Greater Manchester, yet rising to 87% in Northwest London.
These figures illustrate a regional inequality in access to potentially life changing research from primary care providers (NIHR, 2022).
Various factors must be considered, such as patient population, funding, and regional deprivation, however, very little literature exists regarding the barriers, motivations, and incentives towards research in practicing general practitioners in England.
To address this, a series of digital and face-to-face data collection activities will take place, within Greater Manchester, and later from a sample of the GPs across all regions. The aim of which, to identify the barriers and challenges facing practices that reduce their likelihood of engaging in clinical research, alongside potential incentives and motivational factors that would support or encourage them to take part.
Knowledge gained from these activities will help inform researchers, research organisations and the NIHR, to provide support and opportunities for GPs across England, ensuring that more of the population have access to clinical research opportunities through their general practitioners.

Keywords

Clinical research, Behavioral theory, General practice, Barriers and challenges, Incentives and motivations

Format

Poster

Evolution of Royal Navy Headwear

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Abstract

The Royal Navy has a rich history that spans several centuries, and the evolution of its headwear is a reflection of that history. This poster presentation will explore the history of Royal Navy headwear, from its origins in the 16th century to the present day.

The presentation will begin by examining the headwear worn by sailors in the early days of the Royal Navy, including the Tudor bonnet and the cocked hat. It will then move on to the 19th century, a time of great change in the Royal Navy, when the traditional headwear was replaced with the more practical peaked cap and round cap.

The presentation will also discuss the role of headwear in the Royal Navy's various branches, including the Fleet Air Arm and the Royal Marines. It will examine the diverse types of headwear worn by officers and enlisted personnel, as well as the various ceremonial headwear worn on special occasions.

Finally, the presentation will look at the current state of Royal Navy headwear, including recent changes and innovations. It will examine the role of headwear in modern naval operations and discuss its significance as a symbol of tradition and pride.

Overall, this poster presentation will provide a fascinating glimpse into the history of Royal Navy headwear, highlighting the important role it has played in the Navy's evolution over the centuries.

Keywords

Royal Navy, Headwear, History, Ceremonial

Format

Poster

Investigating the Retention and Attrition of Advanced Clinical Practitioners in Emergency Care

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Abstract

This poster will detail the motivation for this study as a background and include the findings from the literature review on the topic of Advanced Clinical Practitioners (ACP) in Emergency Care (EC).

ACPs are an integral part of the healthcare workforce across England, with the NHS recognising it as a priority for the future. ACPs within EC are often senior clinical decision makers that work within the multidisciplinary team to provide high quality care to a variety of patients, presentations and acuity. I work as a consultant level ACP and reflecting upon clinical practice over the last 7 years I have identified an issue with retention of experienced ACPs. Losing ACPs in a service that is already stretched for a variety of reasons, such as; increasing attendances to ED, longer waiting times and appropriate skill mix places burden on strained departments.

To provide an evidence-base a scoping review was conducted. The first stage was to identify the research question and second stage was to identify the relevant studies. A literature review was conducted using key words. The next stage was study selection, 892 studies were identified. After applying inclusion and exclusion criteria seven articles were charted and mapped to synthesize and interpret the data. No studies had been conducted with ACP's.

To collate, summarise and report the results analysis of the literature was conducted. Key themes included: a clear career pathway was integral; a structured training program and education reduced attrition rates; crowding and working conditions in EC results in burnout.

Keywords

Advanced Clinical Practitioner, Emergency Care, Retention, Attrition

Format

Poster

Does Prophage Carriage Affect the Interactions Between *Pseudomonas aeruginosa* and Human Bronchial Epithelial Cells?

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Abstract

Pseudomonas aeruginosa is an opportunistic nosocomial pathogen capable of causing chronic infections of the upper and lower respiratory tract, leading to tracheobronchitis and pneumonia. One of the most virulent *P. aeruginosa* strains is the Liverpool Epidemic strain (LES), a transmissible strain with high morbidity and high mortality amongst cystic fibrosis (CF) patients. LES strain contains five prophages--bacteriophages incorporated in the bacterial host genome--associated with increased fitness and survival in the human lungs. However, little is known about how these prophages affect the fitness of *P. aeruginosa* in the host. Previous studies of the interplay between the PA01 host strain and the three active prophages (LES phages 2, 3, and 4) found that prophage carriage mitigated disease severity when the strain was put up against the wax moth larvae *Galleria mellonella*. The outcome suggests that the prophages have a role to play in host survival in vivo. Studies have also indicated that *P. aeruginosa* secretes Outer Membrane Vesicles (OMV), an important mechanism for host-pathogen interaction and interaction with other bacteria. The OMV contains virulence factors, and when fused with the human host cell, they elicit a pro-inflammatory host immune response. This project will investigate the effect of prophage carriage by PA01 on airway epithelial cells by challenging/ treating the airway epithelial cells with filtrates of wild-type PA01 and PA01 carrying the LES prophages.

Keywords

Pseudomonas aeruginosa, Liverpool Epidemic Strain, Prophages, Cystic Fibrosis, Airway epithelial cells

Format

Poster

Could Celastrol and Evodiamine-Based Drugs be Used to Treat Childhood Brain Cancers

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Abstract

Cancer is a disease normally associated with aging. Despite this, cases of *childhood* cancer increase each year. Though current childhood cancer drugs are effective, they result in substantial side-effects. One of these is the development of abnormal heart function which leads to early death in approximately 25% of childhood cancer survivors. This necessitates the need to develop new treatments with fewer side-effects. Natural sources such as plants show considerable potential as new anti-cancer drugs. Two examples include celastrol (a compound extracted from the plant *Tripterygium wilfordii*) and evodiamine (a compound isolated from the fruit of *Evodia rutaecarpa*); chemicals that have shown promise in the treatment of other types of cancer. However, no studies have evaluated their effectiveness against childhood brain cancers. The aim of our study was to determine if celastrol and evodiamine are capable of 1) killing childhood brain cancer cells, 2) preventing the movement of cancer cells and 3) stopping the cancer from growing.

Childhood brain cancer cells were grown and then exposed to celastrol or evodiamine. We measured cancer cell death, cell movement and cell growth using specialised equipment.

Both evodiamine and celastrol killed or slowed the movement and preventing further growth of childhood brain cancer cells. Encouragingly, the concentrations required to produce these effects were similar to those of currently approved drugs. Our findings suggest that celastrol and evodiamine may be useful for treating childhood brain cancers, but more research is required to understand how they work.

Keywords

Cancer, natural products, chemotherapy, drugs

Format

Poster

The Chemotherapeutic Effect of *Boswellia carterii* Oleoresin Against Childhood Cancers

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Abstract

There are 1,838 new cases of cancer in children each year in the UK. Whilst effective, current childhood cancer chemotherapy is nonspecific and damages healthy cells. This impacts approximately 90% of childhood cancer survivors causing organ damage to the brain, liver, and heart. Alternative treatments have been explored such as natural plant products due to their historical medicinal properties. Recent advances in medicine have unveiled the ability of natural products to kill cancer cells including that of the extract of *Boswellia carterii*. Previous work has shown *Boswellia carterii* to possess medicinal properties, however limited work has been conducted to determine its effectiveness against childhood cancers, including muscle and bone cancers. Our study aims to determine if *Boswellia carterii* can 1) kill childhood cancer cells, 2) prevent cancer progression and 3) enhance the effectiveness of clinical anti-cancer drugs.

Muscle and bone cancer cells were grown and subjected to *Boswellia carterii*. Specialist equipment was used to determine its effects on cell death, division, and interaction with clinically used drugs.

Boswellia carterii was found to kill the childhood cancer cells. It did this by reducing the ability of the cancer cells to recover after treatment and prevented the treatment from being reversed. *Boswellia carterii* was also effective at increasing the activity of clinically used anti-cancer drugs when combined. These findings show *Boswellia carterii* can treat childhood cancer and may decrease harmful side effects caused by currently used treatments.

Keywords

Cancer, Plants, Natural Products, Chemotherapy

Format

Poster

Using Social Media To Raise The Voice Of Chronic Pancreatitis Patients

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Abstract

Chronic pancreatitis is a painful debilitating illness. A multidisciplinary approach to patient care is required. Unfortunately, UK pancreatitis care is inadequate and inequitable. Delivering supportive care is challenging. Previous research has focused on clinical interventions without patient consultation. However, Guts UK charity is raising awareness by sharing patient stories through their Kranky Panky social media campaign and patients support each other using Facebook. Social media presents opportunities for patient engagement and research.

This Netnographic study will raise the voice of pancreatitis patients. Netnography is qualitative social media research methodology. Investigative, interactive, and immersive approaches are applied to campaign stories and Facebook group interactions. Collating, coding, and combining data to understand the experiences of patients and define the supportive strategies that ease the burden of pancreatitis.

Results reveal pancreatitis patients experience physical, psychological, and social disruption and suffering. Leading to distress, depression, isolation, unemployment, and financial insecurity. Tensions between patients and clinicians due to stigma and poor pancreatitis knowledge cause barriers to care. Patients battle to access support. However, there are relieving strategies. Diagnosis, lifestyle modifications, home remedies, pharmacological, specialist interventions and psychological therapies help. Patients perform their own research and adapt activities around pancreatitis. Family, friends, and professionals are essential supporters. Facebook support groups emerge as important places to find information, understanding, support and friendship.

Better clinician awareness of the challenges and supportive resources will improve pancreatitis patient experiences. Furthermore, engaging patients using social media could lead to improved relationships with clinicians and expand opportunities for future research.

Keywords

Chronic pancreatitis, social media, support

Format

Poster

The Value of Ethnography in Nurse Led Palliative Care Research: Revealing and rendering explicit health care assistants, porters and domestics experiences and role in the social organisation of end of life care

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Abstract

Recognising the importance of the entire health care team and its impact on quality patient centred care is essential, with health care support staff often the first encounter a patient or family member has with a hospital. Yet these groups are rarely mentioned or included in service evaluation or research studies. Staff encounters with patients' who are dying, can affect all staff, including those under study, who are integral in end of life care. Yet their role is either not known, or easily visible - largely happening 'behind the scenes' or 'backstage'. Guided by the principles of ethnography, this innovative research -designed and conducted at the height of the COVID-19 pandemic, uses a qualitative, naturalistic (closely imitating real life) approach. The primary data gathering method being participant observation - shadowing and following their everyday routines and deepened through semi-structured, qualitative interviews with 15 staff across the staff groups. Insights from observational fieldwork and interviews will be explored using tropes (mini-cases/episodes), *'telling tales from the field'* and through 2nd order analysis of the literature. Summarised and grouped at this stage for ease, these preliminary insights include: *Sensory, tacit knowledge (understood/implied without being stated), embodiment (sense), interaction order, transition points, architecture (use of space), rituals, rhythms (custom/practices) and invisible forms of labour*. Using ethnography, as a means of further understanding these lived, shared experiences should be considered more widely in terms of reciprocal/inclusive learning, equality and diversity. The suspected impact in clinical practice includes recognition, valuing and inclusion across these staff groups.

Keywords

Ethnography, health care support staff, social organisation, end of life care

Format

Poster

The Role of Tumour Necrosis Factor-Alpha in Coronary Artery Disease

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Abstract

Coronary artery disease (CAD) is a common type of heart disease and associated with high rates of death worldwide. In CAD, levels of a chemical messenger know as tumour necrosis factor-alpha (TNF-α) are increased but we do not know by how much. In other heart diseases, TNF-α is associated with reduced heart function, but we do not know if this is the case in CAD. Therefore, our study aimed to measure levels of TNF-α in patients with CAD then ascertain if those levels were associated with reduced heart function.

We collected blood from CAD patients scheduled for surgery. We used specialised equipment to measure levels of TNF-α in those samples which were then correlated to measurements of patient heart function. Various measurements were used to represent heart function, including stroke volume and end systolic volume (which tell us how well the heart contracts during a heartbeat) and end diastolic volume (which tells us how well the heart relaxes between heartbeats).

TNF-α levels were between 0.05 and 16.77 pg/ml; at the lower end these levels are considered normal, and at the upper end are levels expected in disease. Stroke volume, end systolic volume or end diastolic volume did not depend on levels of TNF-α. These preliminary findings suggest that TNF-α does not alter heart function in CAD. However, we must increase the number of patients included in our study before we can fully trust our findings.

Keywords

Coronary artery disease, heart, tumour necrosis factor-alpha, cytokines

Format

Poster

Three Minute Thesis™

Understanding the Functional Characteristics of Adjustable Lower-limb Prosthetic Sockets

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Abstract

Only around 54% of individuals with lower limb amputations are mobile outside of their own homes. This is mainly due to their prostheses being uncomfortable or not functioning how intended, often caused by the prosthetic socket, which is where the prosthesis attaches to the remining limb. The socket performance is described by its ability to limit any relative movement between the remaining limb and the prosthesis.

Recently, adjustable prosthetic sockets, where the user can adjust the tightness of the socket, have gained interest due to their ability to accommodate changes in limb volume and therefore increase user comfort. However, little is known about the impact of changing the socket tightness in specific areas. We aim to use adjustable sockets to systematically change the pressure applied in different areas of the socket, thus allowing us to investigate the relationship of tightness on the performance of the socket, and how this performance influences different measures of user ambulation (gait).

The main study will investigate adjustable socket tightness on a range of participants and due to the small sample populations in prosthetics research a finite element computer simulation will allow us to investigate the relationships further through changing the anatomical characteristics of the limb, such as soft tissue mass or limb length. By understanding this, we hope that the reverse can also be applied, where an amputee's gait is analysed and informs how their socket could potentially be improved to reduce the prosthesis movement, and potentially increasing prosthetic users' quality of life!

Keywords

Limb loss, prosthetics, gait stability, interface, motion tracking

Format

Three Minute Thesis™

The Attitudes of General Practices Towards Clinical Research

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Abstract

During financial year 2021/22, over 90% of General Practices (GPs) recruited at least one participant to a National Institute for Health and Care Research (NIHR) portfolio study in Thames Valley and South Midlands. This figure varies across regions, falling to roughly 40% in Greater Manchester, suggesting an inequality in access to potentially life changing research (NIHR, 2022). Such as the PANORAMIC study which provided vital research into oral antivirals for COVID 19, recruiting more than 26,000 people (Pulse, 2022). This is despite the support offered by the NIHR to help general practices to facilitate clinical research.

Various factors must be considered as potential causes, such as patient population, funding, and regional deprivation, however, very little literature exists regarding the barriers, motivations, and incentives towards research in practicing general practitioners in England.

To address this, a series of digital and face to face data collection activities will take place, initially in Greater Manchester, and later from a sample of the GPs across all regions. The aim of which, to identify the barriers and challenges facing practices that reduce their likelihood of engaging clinical research, as well as potential incentives and motivational factors that would support or encourage them to take part.

Knowledge gained from these activities will help inform researchers, research organisations and the NIHR, to provide support and opportunities for GPs across England, ensuring that more of the population have access to clinical research opportunities through their general practitioners.

Keywords

Clinical research, Behavioral theory, General practice, Barriers and challenges, Incentives and motivations

Format

Three Minute Thesis™

Factors that Influence the Performance of Plastic, Rigid Ankle-foot Orthoses During the Management of Walking in Children with Cerebral Palsy

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Abstract

Walking is critical to an individual's participation in daily activities. It is characterised by stablity and energy efficiency, which are maintained via control of the ground reaction force (GRF), a force of equal and opposite to individual's centre of mass whilst the foot is in contact with the floor. It's alignment in relation to the joints of the lower limbs determines the external forces acting on them, influencing joint motion and these fundamental characetristics. As a result of restricted development of the musckuloskeletal and nervous systems, children with cerebral palsy have the limited ability to control the GRF, significantly impacting their participation and independence.

Rigid, plastic ankle-foot orthoses (AFOs) are prescribed to regulate GRF alingment in the abscence of the typical control mechanisms. To achieve this, they directly restrict ankle motion, which requires sufficient stiffness to resist deformation during walking, and indirectly alter GRF alignment with the knee and hip, by manipulating shank inclination using heel-height. Unfortunately, robust evidence surrounding the influence of stiffness and heel height on AFO performance is limited, meaning sub-optimal ankle-foot orthoses may be prescribed due to a lack of justification for clinical decision making.

Therefore, my 3 minute thesis aims to explore the relationship of these properties on AFO clinical performance in bench testing and walking trials. If successful it will demonstrate how to optimise the performance of rigid AFOs, whilst forming the foundations of an evidence base, required to alter current practice.

Keywords

Cerebral Palsy, Ankle-foot Orthoses, Paediatrics, Stiffness, Segmental Alignment

Format

Three Minute Thesis™

Nanoparticles Synthesis for Next Generation Antimicrobial- To Fight Antibiotic Resistance

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Abstract

The dramatic increase of drug resistant pathogens to antimicrobial agents has been alarming over the past few years, posing a major global health threat as declared by the World Health Organization (WHO). According to the Centers for Disease Control and Prevention (CDC), the world is about to enter a "post-antibiotic era" in which bacterial infections will be the leading cause of death rather than cancer. The investment in research and development of novel protocols to design effective antimicrobial agents are urgently required to fight resistant pathogens, and to challenge the antimicrobial resistance (AMR) crisis. Nanoparticles extensively emerged as a potential alternative therapeutic option to challenge resistant pathogens and overcome infectious diseases. The success of these nanoparticles strongly relies on their tunable surface chemistry yielding particles attached with drugs of choice providing target specificity, improved drug delivery and higher reactivity. Metallic nanoparticles appeared to have the most potential of all nanoparticles and have piqued tremendous interest in the field of research. This interdisciplinary project focuses on the design and development of novel metallic nanoparticles, namely silver, gold and copper. It implements a systematic study approach to the role of the multifunctionality aspect of these nanoparticles exploring the role of the shape, size, and morphology of nanomaterials on the antimicrobial effects. The work also describes the development of robust protocols for antimicrobial testing *in vitro* of the nanoparticles of complexed shapes, and advanced surface modifications devised to target and kill pathogens that are at the top priority list of the World Health Organisation.

Keywords

WHO, CDC, Antimicrobial Resistance (AMR), Metallic Nanoparticles

Format

Three Minute Thesis™

Developing Climate-Smart Transit-Oriented Development for the Greater Cairo Region (GCR)

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Abstract

The urban environment in our cities is like a puzzle. Buildings, infrastructure, roads, and traffic are the puzzle pieces, and the image is the environment. While placing the puzzle pieces wrongly spoils the image's arrangement, the inappropriate configuration of the urban structure's elements spoils the environment. The idealistic image of the city contains people walking safely on roads surrounded by green areas and clean buildings, and the environment is breathing. But this image is not realistic; it is just what we hope. The fact is that our cities are highly congested with traffic and burdened by high levels of pollutants. Therefore, Transit-Oriented Development (TOD) has emerged as an urban design approach, calling for creating walkable neighbourhoods around public transport stations where housing, jobs, and daily needs are offered within walking distance to encourage people to walk, cycle and use public transportation. Unfortunately, sometimes the scene in the TOD could become environmentally devastating, especially when TODs nodes become congested and highly polluted with traffic at peak hours. That happens because the TOD planners focus on the technicalities of the planning aspect and overlook the social aspect and public engagement. As TOD requires elaborated planning principles, it also requires social engagement and political support. This research investigates what leads TOD to fail in relieving traffic congestion and how to incorporate social participation with political empowerment in TOD development. This research would provide guidelines for TOD to be kind to climate, boosted by technology, promoted by the community, and empowered by the policy.

Keywords

Transit-Oriented Development (TOD), Sustainable Urban Development, Traffic Congestion- Air Pollution

Format

Three Minute Thesis™

A Holistic Approach for Promoting Community Engagement in The Decision-Making of Risk-Sensitive Urban Planning

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Abstract

In the face of increasing extreme climate events, communities are often excluded from decision-making in urban planning, despite their tacit knowledge and experience in disaster response. This marginalisation poses a significant challenge in creating safe, resilient, and equitable cities, consequently achieving the United Nations Sustainable Development Goal 11. To address this, there is an urgent need for governments to introduce and enforce processes that allow citizens, including vulnerable communities, to participate in development planning. This study, based in Sri Lanka, provides a comprehensive approach to promoting community engagement in risk-sensitive urban planning (RSUP). Through interviews with 44 experts and community participants, the study identified six key themes: barriers, enablers, stakeholders, best practices, participatory methods, and community transformation indicators with their relationships to develop a practical framework for community engagement in RSUP. The study found that the absence of legal provisions for inclusive planning and political dynamics and corruption are critical barriers to community engagement in RSUP, while digital telecommunication infrastructure is a driving enabler. A multi-stakeholder approach was proposed, with state agencies for urban development and disaster management being accountable for promoting community engagement at the national level, while NGOs and IGOs have more power in empowering locals. The final framework provides a four-stage community engagement process: setting up; developing the participatory intervention; implementing the framed intervention; post-engagement. This framework provides valuable practical guidance for implementing participatory development practices and evaluation by clarifying and detailing how community transformation and consequent system changes can emerge through inclusive planning.

Keywords

Community Engagement, Climate Change, Disaster Risk Reduction, Urban Planning, Risk-Sensitive Development

Format

Three Minute Thesis™

Fetal Alcohol Spectrum Disorder: Fitness to Participate in the Criminal Justice System in England and Wales

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Abstract

There is an issue of whether a person with Fetal Alcohol Spectrum Disorder can receive a fair trial in England and Wales. Fetal Alcohol Spectrum Disorder (FASD) is a term used to describe - the permanent impact - on the brain and body - of individuals exposed to alcohol whilst in the womb. People with FASD can have difficulty with planning, organising, verbal comprehension and reasoning skills. They often have speech and language issues, difficulty with concentration, attention, emotional and behavioural regulation. People with FASD are 19 times more likely to be involved in the Criminal Justice System. For a person to have a fair trial they need to understand the charges made against them, decide how to plead, instruct solicitors, follow proceedings, give evidence in their own defence and participate effectively in a trial. Research has shown that there is a distinct lack of awareness of FASD within the legal profession and the difficulties that people with FASD face. This research will be made up of three studies: 1) A systematic review of the abilities required to participate effectively in criminal proceedings, including case law, and the known difficulties experienced by people with FASD. 2) Testing a population with FASD, using measures identified by the systematic review, against a population without FASD. 3) Questioning legal professionals about their understanding of FASD and their training needs. The information gained from this research will be used to increase the knowledge of FASD throughout the legal profession and inform legal policy.

Keywords

Criminal justice, fetal alcohol spectrum disorder, FASD, fitness to participate, fitness to stand trial

Format

Three Minute Thesis™

Considering the Environmental Impact of Commercial UAV (Drone) Noise

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Abstract

Drones are an emerging technology that could revolutionise and bring real benefit to both private and public sectors such as parcel delivery, infrastructure inspections and emergency services response. Whilst there is a desire implement Drone technology across the world for a variety of reasons, the issue of noise pollution has and the potential noise impacts on individuals and communities are not yet fully understood. Drones are unlike most other sources of noise owing to the particularly complex and unusual character of their sound. There is significant high frequency content and movement within the sound meaning making it easily distinguishable from other types of noise such as road traffic or conventional aircraft. The purpose of this research is to develop a framework for the noise assessment of drone operations that can be implemented to reduce the risk of adverse noise impacts on exposed communities. In order to achieve this goal the work is divided into three key stages, the collection of high-quality acoustic field measurements of Drones, listening experiments designed to assess response to Drone noise stimuli and environmental noise impact modelling. By developing a robust framework the hope is that adverse noise impacts associated with such vehicles can be reduced and the tranquility of our communities are protected

Keywords

Drones, Noise Annoyance, UAS, Public Acceptance, Listening Experiments

Format

Three Minute Thesis™

Decolonising SOE: The activities and attitudes of the Special Operations Executive beyond Europe

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Abstract

This research aims to decolonise the history of the Second World War Special Operations Executive (SOE) in the Global South. The research focuses primarily on the areas of Latin America and Africa, as opposed to the more 'traditional' Eurocentric approach of other SOE histories. This research is, primarily, based on the remaining SOE archive held in the National Archives at Kew with the aim to answer a number of questions.

- What did SOE do in Latin America and Africa?
- What were the attitudes of SOE officers to indigenous peoples?
- What impact did these attitudes have?

An important part of decolonising the history of SOE in these regions is to consider the indigenous perspective of the history. Traditional studies of SOE, when considering impact, for example, generally limit their scope to operational concerns and the impact on SOE itself. This research will examine the impact of attitudes from the bottom up, how decisions and actions affected local populations.

The significance of this research is two-fold. Firstly it is important to the study of SOE itself, as the first investigation of the organisation in Latin America and Africa. Secondly in the context of the modern British intelligence community, which has been striving for diversity within itself for a number of years now, this research provides an invaluable starting point for efforts to quantify the progress made by the intelligence community to date, without which it would be impossible to plan for progress still yet to be made.

Keywords

Intelligence, Second World War, SOE, Decolonisation, Global South

Format

Three Minute Thesis™

Investigating Small Extracellular Vesicle MicroRNA Biomarkers in Alzheimer's Disease and Frontotemporal Dementia

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Abstract

Over 885,000 people aged over 65 in the UK suffer from dementia, with numbers rising to 1.6 million in 2040. Around £34.7 billion is spent annually on the cost of dementia in the UK, which on average per person is around £32,250, most of which will be paid by people with dementia and their families. Sadly, there is no current clear-cut way to diagnose the different diseases that cause dementia, meaning that with predicted increasing numbers comes the increasing financial and emotional strain on families throughout the UK.

Small extracellular vesicles (sEVs) are miniscule delivery packages that transport various molecules throughout the body that could play a role in future diagnostic methods. Although certain sEV content has been shown to contribute to diseases such as Alzheimer's disease (AD) and frontotemporal dementia (FTD), analysing these cargoes to observe differences between diseases may improve current diagnostics.

MicroRNA are small molecules that act as fine tuners by reducing/halting certain processes in the body and are found within sEVs. Evidence suggests miRNA influence dementia risk through modulating neuroinflammation and cell signaling. This study aims to categorise specific miRNA as biomarkers for AD and genetic variations of FTD.

Identifying disease variations in sEV miRNA cargoes will enable the identification of novel disease biomarkers for use in the early detection and diagnosis of different dementia subtypes. Differentiating between these will allow patients to receive tailored and correct treatment to eventually combat dementia.

Keywords

Dementia, Extracellular Vesicles, MicroRNA, Biomarkers

Format

Three Minute Thesis™

Embodied Dance Approaches: Sculptural Qualities of improvising bodies within motion capture environments

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Abstract

Embodied dance improvisation is a type of dance where the dancer has the freedom and spontaneity to create movement in the moment rather than following pre-planned steps. The dancer focuses on the lived experience and sensations of the movement in the body. The body knowledge in dance improvisation is often studied in isolation from other disciplines. My practice as research introduces the interdisciplinary approach to embodied dance improvisation within motion capture environments. By wearing a special suit with markers, the dancer's movement is tracked by the array of cameras in real-time. The motion data are mapped onto the three-dimensional digital model presented to the dancer as skeletal dots. Also, the dancer's movement pathways are visualised as a digital trace-form as lines, dots, blobs, and particles.

The dancer sees and responds to these visualisations in real-time and activates *sculptural qualities* of these experiences. The emergence of *sculptural qualities* is defined as processes of ***shaping*** - processual and relational. Through dancers' awareness of the body-mind connection, they shape their physical and virtual bodies and the environment. With that knowledge, they are reshaping the habitual movements towards the new variations of different sculptural forms, shapes, and lines with expending-contracting and opening qualities through **repetition, accidental micro-choreographies, stillness (as a state), and T-pose with stillness**.

This research provides a framework for improvisational practice in motion capture environments that engages the movement practitioner with experience as a holistic environment, as opposed to methods that capture movement for other purposes.

Keywords

Embodiment, Dance Improvisation, Motion Capture, sculptural form and qualities, Awareness

Format

Three Minute Thesis™

Fintech and Money Laundering in Nigeria: The role of Financial Regulations and Financial Literacy

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Abstract

The research objective is to investigate the moderating effect of financial regulation and financial literacy on the relationship between Financial Technology (FinTech) and money laundering in Nigeria. This has become extremely important given the reported cases of FinTech companies using their platforms to launder illegal proceeds from developed to developing economies. Establishing the effect of FinTech on money laundering and identifying the moderators of the relationship is extremely important for knowledge creation and policy formulation. This study fills an important gap by undertaking sample survey of 248 respondents in Nigeria. The data for the study was collected by using a structural questionnaire. The results of the study indicate a significant relationship between FinTech and money laundering. It was found that financial regulation moderates the relationship between FinTech and money laundering in Nigeria however, the result indicates that financial literacy does not moderate the relationship between FinTech and Money laundering in Nigeria. The findings of this study serve as a springboard for regulatory responses to mitigate the adverse effect of FinTech on money laundering. The study recommends urgent regulatory intervention to reduce money laundering related issues with the next generation of cash and payment infrastructure, cryptocurrency, and central bank digital currency infrastructure, while promoting inclusiveness, safe, private, transparent, and interoperable payment system. Additionally, the findings of the study highlight the influence of FinTech in fueling money laundering in Nigeria and how financial regulations have influence on changing the direction of this relationship in Nigeria.

Keywords

Fintech, money laundry, financial regulations, financial literacy, Nigeria

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