SPARC 2021

Against All Odds

Online 30th June - 1st July 2021

Book of Abstracts

SPARC 2021 Book of Abstracts

ISBN: 978-1-912337-49-1

Published by:
The University of Salford
Salford
Greater Manchester
M5 4WT
United Kingdom

Review Panel:

Hannah Bury
Shobha Gowda
Tracy Ireland
Louise Mitchell
Evelyn Oginni
Eta Ojiji
Dr Tanja Poppelreuter
Khyati Shukla
Andrea Stein
Wendy Taylor
Helen Whitehead
Davina Whitnall

Design & Layout: Tracy Ireland t.j.ireland@salford.ac.uk.

Preface

Welcome to the Book of Abstracts for the 2021 SPARC conference. Our conference is called "Against All Odds" as we celebrate the achievements of our PGRs and their supervisors, who have continued to excel despite the most challenging circumstances. For this reason, we showcase the work of our PGRs alongside the outstanding supervision that they receive, with our Doctoral School Best Supervisor awards. We also focus on developing resilience and maintaining good mental health in the research environment, supported by exceptional keynote speakers, including our very own Dr Michelle Howarth and Ruby Wax OBE, which makes this year's conference extra special.

Once again, we have received a tremendous contribution from our postgraduate research community; with over 72 presenters, 8 Three-Minute Thesis finalists, and poster presentations curated on our Figshare repository, the conference showcases our extraordinarily vibrant, inclusive, and resilient PGR community at Salford. These abstracts provide a taster of the diverse and impactful research in progress and provide delegates with a reference point for networking and initiating critical debate. Why not take advantage of the online sessions by posting a comment, hanging out in our virtual networking space, or by messaging an author to say "Hello" and find out more? 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 the past year has 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.

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 also follow us on Twitter @SalfordPGRs.

We particularly welcome taught students from our undergraduate and master's programmes as audience members. 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.

Dr Ursula Hurley
Director of the Doctoral School
University of Salford
u.k.hurley@salford.ac.uk

Contents

On the Security Challenges of 5G Connected Drone Transportation System

Aagi Mariam Thomas

School of Science, Engineering and Environment
Email: a.m.thomas1@edu.salford.ac.uk

Supervisors
Dr Sana Belguith – s.belguith@salford.ac.uk
Dr Tooska Dargahi – t.dargahi@salford.ac.uk

Abstract

Unmanned aerial vehicles (UAV) known as drones are emerging as one of the autonomous vehicles, utilized to transport packages, food, medicines, or other goods. It was also widely used by the military, aviation and civil sectors for a wide range of applications from surveillances, search and rescue to disaster management relief. A drone delivery system can be an effective solution for timely deliveries. Drones need wireless connectivity to transfer images and video, commands, sensor measurements and other mission-oriented data to the controller. A standardised cellular network with widespread coverage could provide comprehensive, high quality and secure connectivity that enables cost-effective drone operation beyond the line of sight. 5G network is an emerging technology that connects multiple devices such as autonomous vehicles, medical devices, smartphones, wearables, smart refrigerators, smart door lock, smart fire alarms and so on. It delivers higher data speeds, low latency and more reliable connectivity compared to the older network generations, enabling connecting different devices at a time. Since it has higher performance and improved efficiency, 5G is going to expand the mobile world to new realms. Thus, drones can benefit from 5G to perform their intended functions. Drones operate in unsupervised hostile areas as well as supervised areas where they are vulnerable to security threats such as hacking, hijacking, and malicious attacks. In the event of security attacks, the drone operation may be stopped, due to the breach of the security requirements such as confidentiality, authentication, integrity and availability. This paper thus reviews the security challenges and attacks on UAVs, the possible countermeasures, and identifies future research directions.

Keywords

Unmanned aerial vehicle, 5G, transportation, confidentiality, authentication, integrity

Format

Oral presentation, Poster

Sustainability and the Islamic Framework of Development: The Analysis of Socio-economic Factors and Islamic Ethical Values-based Business

Abdul Aziz Ibrahim

Salford Business School
Email: a.a.ibrahim@edu.salford.ac.uk

Supervisor
Prof Hassan Yazdifa – h.yazdifar@salford.ac.uk

Abstract

Sustainability has become a global discourse more intensively for the last three decades. The two United Nations' sustainable development framework, Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs), are considered benchmarks of country-level sustainability attainment. Recognizing the SDGs as the existing framework in promoting the global developmental agenda, its principal rules governing social, economic, and environmental development can be considered consistent with the Islamic tenets.

This study offers an extended review of the relevant literature concerning a question on whether Islam promotes a distinct model of development and contributes to framing complex development challenges. More specifically, the review provides a critical discourse on the classical Islamic legal theory on public affairs. Within these contexts, a narrative-based study of the use of the theory among Muslim-majority countries is considered. This will clarify the nature and goals of Islamic law as part of possible policies to achieve multidimensional welfare.

Moreover, this paper elaborates to what extent the socio-economic development factors and Islamic ethical value-based business affect the SDGs performance within Muslim-majority countries. The study uses a wide range of Islamic law literature and the SDGs Index to assess the extent of sustainable development achieved. The findings of this paper will provide valuable insights on the concept of sustainable development and welfare state within the Islamic frameworks. It also provides evidence of the relationship between Islamic ethical value-based business and sustainable development among Muslim-majority countries.

Keywords

Sustainable development, Islamic development framework, socio-economic factors, Islamic ethical value-based business, Muslim-majority countries

Format

Oral presentation

The Effect of Environmental Noise on the Health of Patients in Hospital Wards: Nurses as change agent

Abiodun Abolarinwa Abraham

School of Health and Society
Email: a.abraham2@edu.salford.ac.uk

Supervisor
Dr Natalie Yates-Bolton – n.yates-bolton@salford.ac.uk

Abstract

Sleep is a biological necessity that plays a critical role in patient recovery. However, the hospital wards which are supposed to be healing environment for patients, often have unnoticed environmental noise: especially at night. It has often been argued that noise is not given same attention as infection control, when designing hospital infrastructure. Although, noise is inevitable during an emergency or when there is need for continuous monitoring of patients with serious health conditions. Nonetheless, environmental noise at night, such as hand washing in the bay, alarms on patient monitors, wearing hard-soled shoes, transferring patients at night, speaking loudly by healthcare professionals, have been linked to increase the length of hospital stay for patients, stroke, high blood pressure, and sometimes unexplained anger. The recommended noise level by the World Health Organisation (WHO) for the daytime is 35 decibels (dB) and 30 decibels for the night time. Nevertheless, environmental noise in hospital wards such as medical and orthopaedic wards can reach 60 decibels (dB), while the Intensive Care Unit (ICU) and Medical Assessment Unit (MAU) can record an average of 80 dB.

The aim of this study, therefore, is to assess Medical Assessment Unit (MAU) nurses' perceptions of their role as change agents and their ability to enhance patient outcomes by reducing environmental noise on their wards. Questionnaires and interviews will be used to gather data from three NHS Trust hospitals in the Northwest of England.

Keywords

Environmental noise, change agent, patient outcomes, MAU

Format

Oral presentation

Adaptive Fuzzy Routing for 6G-Enabled Green Communication for Internet of Things

Abubakar Gidado Halilu

School of Science, Engineering and Environment
Email: a.halilugidado@edu.salford.ac.uk

Supervisor
Dr Martin Hope – m.d.hope@salford.ac.uk

Abstract
Evolution in wireless sensor and cellular networks technology has provided an atmosphere for seamless connections of Internet of Things devices by delivering low power and high data rate. Sixth generation (6G) is believed to play a key role in providing ubiquitous connection of numerous systems of Internet of Things devices with high data rate, low latency, and high mobility support as well as continuous effort for energy efficiency. Routing is an important aspect of communication in internet of things, it allows devices in the network to exchange information from one point to another. Hence, we propose an adaptive fuzzy (vague) routing protocol in 6G-Enabled devices which will use a fuzzy logic algorithm for path and preferred parent selection in internet of things. We aim to conduct several experimental simulations and we hope to compare their performances with the default standardized routing protocols in internet of things in terms of packet delivery, energy consumption, and end-to-end delay. Additionally, we hope to develop a mathematical model to validate results and, in the future, we intend to deploy the routing protocol on real systems supporting 6G communication.

Keywords
Internet of things, routing, 6G, fuzzy-logic, PDR

Format
Oral presentation

Indigenous Beliefs and Practices Associated with Women's Healthcare Choices During Pregnancy

Adedoyin Adeosun

School of Health and Society
Email: a.adeosun@edu.salford.ac.uk

Supervisors
Prof Alison Brettle – a.brettle@salford.ac.uk
Dr Dilla Davis – d.davis4@salford.ac.uk

Abstract

Effective antenatal care is pivotal in improving maternity care especially in low resource setting, where there is low utilization of the services of skilled birth attendants and high maternal mortality. The literature identified norms and values as part of the factors that may influence a woman's decision's regarding the choice of where to seek care during pregnancy. The aim of this study is to explore the indigenous factors which may affect women healthcare choices during pregnancy.

This ethnographic study was carried out in Ota, a community located in the south-western part of Nigeria, among 28 individuals consisting of pregnant women and different maternity service providers. Data was collected through semi structured interviews and observations. The analysis of the participant stories signpost to a complex external milieu where multiple factors vie to influence healthcare choices during pregnancy.

This study contributes to the body of knowledge by offering a theoretical rendering of 'supernatural power of healing' as the central theme. This unique perspective highlights the need to acknowledge biomedical model of care alongside indigenous practices such as the consumption of special soup made with snails for protection from evil spirits during pregnancy.

Keywords

Antenatal care, healthcare choices, pregnancy, Indigenous factors, maternity service providers

Format

Oral presentation

Radical Sustainability: Exploring the need for visualisation methods in geography to aid Innovation in Greening Urban Environments

Adelina Court

School of Arts, Media and Creative Technology
Email: a.court2@edu.salford.ac.uk

Supervisors
Dr Aileen Kelly – a.m.kelly@salford.ac.uk
Dr Michael Hardman – m.hardman@salford.ac.uk

Abstract

The green agenda is high on the national government agenda, with a new £40 million scheme to encourage a sustainable recovery alongside policies, such as the 25 Year Environment Plan and other tools, pushing more investment into the area. With this push, we are now seeing innovation in urban green infrastructure: from pocket parks to the Americanised models of community gardens, becoming more frequent across our cityscapes. This paper critically explores the rise of 'radical sustainability' and the need to embrace new forms of urban green infrastructure. We present a case study of a multifunctional forest school in Salford, reflecting on our work in enabling the project, along with its potential impacts. The multidisciplinary team made up of an urban geography, a contextual studies scholar, and an illustrator, also present a visual methodology framework which could be replicated in future studies. The paper demonstrates the transformative nature of radical schemes and calls for more funding to push forward the practice in the North West and beyond.

Keywords

Urban agriculture, green infrastructure, planning, regeneration, geographical methods

Format

Poster

An Investigative Study on University Students' Knowledge and Attitudes towards the Food Dome in the Eastern Province of the Kingdom of Saudi Arabia

Alexander Woodman

School of Health and Society
Email: a.woodman1@edu.salford.ac.uk

Supervisors
Dr Margaret Coffey – m.coffey@salford.ac.uk
Dr Anna Cooper-Ryan – a.m.cooper-ryan@salford.ac.uk

Abstract

Background: Similar to global trends, Saudi students face significant lifestyle changes as they leave their home environment, enter university, and develop new habits. As a result of these changes, new health-related behaviours can be established, including unhealthy diets, low levels of physical activity, and sedentary behaviours. The Food Dome dietary guidelines were developed in 2012 to prevent the most prevalent diet-related diseases for the Arab countries. However, since then, no studies have explored knowledge and attitudes about the Food Dome dietary guidelines. This research aims to explore the relationships between weight, nutritional behaviours, and knowledge and attitudes in relation to the Food Dome among 18-25-years-old university students in the Eastern Province of the Kingdom of Saudi Arabia (KSA).

Methods: The orientation for this research has been mixed-methods, including quantitative and qualitative research elements to address the research aims and objectives. In phase one of this study, the Arab Teens Lifestyle Study (ATLS) was used, and a new Food Dome questionnaire was developed and validated to analyse knowledge and attitudes about the Food Dome dietary guidelines.

Results: The knowledge analysis of the Food Dome questionnaire resulted in several emerging patterns. This included a lack of knowledge about Food Dome, food group consumption frequencies and knowledge of specific food groups serving sizes (e.g., cereals and their products, vegetable, meat). Attitude and behavioural analysis showed that almost half of the participants made the correct nutritional choices (as per Food Dome) despite a lack of knowledge and were mostly in the normal weight category.

Keywords

Attitudes, behaviour, knowledge, Food Dome, Saudi Arabia, students

Format

Oral presentation, Poster

Development of a Novel Method to Measure Oxidative Stress in Single Cells

Amy Foster

School of Science, Engineering and Environment
Email: a.foster6@edu.salford.ac.uk

Supervisor
Dr David Greensmith – d.j.greensmith@salford.ac.uk

Abstract

In many diseases, molecules called reactive oxygen species (ROS) increase in number. If the levels of ROS exceed the body's ability to remove them, this causes oxidative stress (OS). OS damages the cells of the body which prevents normal organ function. To better understand this, we need ways to measure the relative level of OS in single cells. We can do this by adding fluorophores to cells. Fluorophores are molecules that emit light in response to changing cell conditions. CellROX is a fluorophore that gives off light when OS increases, so we can detect that light to measure levels of OS. However, current techniques are laborious and not suitable for all cell types.

To overcome this, we developed the use of the Biotek Cytation live cell imaging system to measure OS with CellROX fluorophores. To optimise the method, we used the ROS hydrogen peroxide (H2O2) to mimic OS in a cancer cell line. Our first experiments sought to optimise the method and (1) showed the technique to be more reliable when cells are loaded with CellRox dye after treatment with H2O2 (not before as per convention) while (2) ascertained an optimal cell density. We tested the method by treating cells with increasing concentrations of H2O2 and were able to detect the resulting increase of OS.

We show the Cytation imaging system, when used with CellRox fluorophores, can measure OS in living cells. The technique ought to be useful for any scientist who wishes to understand the role of OS in disease.

Keywords

Oxidative stress, fluorescence, methodology, CellRox

Format

Oral presentation

Lab-in-the-Field: Reducing Illegal Trade of Shark and Ray Products in Indonesia

Andhika Prasetyo

School of Science, Engineering and Environment
Email: a.p.prasetyo@edu.salford.ac.uk
Twitter: @dhika_fishery

Supervisors
Dr Allan McDevitt – a.mcdevitt@salford.ac.uk
Prof Stefano Mariani – s.mariani@ljmu.ac.uk
Dr Joanna Murray – joanna.murray@cefas.co.uk

Abstract

The need to balance shark and ray conservation and the socio-economic objectives of their fisheries requires careful monitoring. This is a significant challenge for countries like Indonesia, which has the largest shark and ray landings in the world. Monitoring the shark and ray trade is particularly difficult due to the processing of shark and ray products, which often end up lacking features which identify the species. Our overall goal was to investigate the use of portable DNA-based tools for identifying species used in the shark and ray trade. Specimens collected at various sites around the Island of Java and 22 species (a total of 154 samples) were selected. The aim was to test and validate this rapid and portable molecular identification tool to reliably identify and distinguish individual species. This was based on an innovative real-time PCR protocol which generates two unique curves per specimen. Those species-specific signatures were then plugged into a machine learning algorithm for autonomous species identification. We were able to successfully identify CITES-listed shark species from fresh specimens and processed derivative products. As part of this project we will devise a procedure that could become a reliable field tool for species authentication purposes for live monitoring in the shark and ray trade.

Keywords

Lab-in-the-field, elasmobranchs, DNA barcoding, trade monitoring, Indonesia

Format

Oral Presentation, Poster

PhD Students' Experiences in Times of COVID

Andrea Stein

School of Health and Society
Email: a.m.stein@edu.salford.ac.uk
Twitter: @StressPGR

Supervisor
Dr Rod Dubrow-Marshall – r.dubrow-marshall@salford.ac.uk

Abstract

In 2020 a new disease became a global pandemic, a year later the Coronavirus (COVID-19) has affected almost each and every one of us globally. The World Health Organisation (WHO) warned this pandemic could negatively affect mental health. This is mainly due to governmental mandated safety measures, of self-isolation, quarantine and social distancing. These new changes have led to a 'new normal' disrupting regular daily activities such as working at the office, exercising at the gym, or even socialising with family and friends. Current trends show an increase in loneliness, stress, anxiety, depression, sleep disturbances, domestic violence, alcohol and substance abuse.

This research originally intended to investigate mental health experiences of PhD students, however preliminary interview findings suggest that COVID-19 has affected the daily life and mental health of PhD students at two Manchester universities; University of Salford and University of Manchester. PhD students have reported experiencing feeling disconnected from others, feelings of isolation, lower mental health, decreased well-being and challenges to work life balance. For the majority of interviewed students, work was transferred from university offices during office hours to the endless day of working at home and well into the night. The same students will be interviewed a year later, to gather further experiences and themes. It is hoped to gather data on both general PhD experiences, mental health and COVID reflections. It is aimed to better establish the nature of student mental health for Greater Manchester PhD students and the service needs of this population.

Keywords

PhD students, COVID-19, mental health, well-being, PhD experiences

Format

Oral Presentation, Poster

Synergistic Action of Doxorubicin and *Boswellia* Oleoresin Extract on Acute Lymphoblastic Leukaemia

Anna Borun

School of Science, Engineering and Environment
Email: a.borun@edu.salford.ac.uk

Supervisors
Dr David Greensmith – d.j.greensmith@salford.ac.uk
Mr Matthew Jones - m.a.jones5@edu.salford.ac.uk

Abstract

Doxorubicin (DOX) is one of the main chemotherapeutic drugs used for treatment of acute lymphoblastic leukaemia (ALL). However, the concentration that can be used is limited as it can cause multiple organ failure. For this reason, scientists continue to seek new natural compounds for the treatment of cancer. One of these with promise is resin collected from *Boswellia* trees. It has been used in traditional medicine for centuries, with our own studies showing it possesses anti-cancer potential whilst minimally affecting normal cells. This study aimed to identify if resin from the *Boswellia* trees can enhance the activity of doxorubicin and reduce the required concentration. Cancer and normal cells were grown in our lab before exposing them to DOX and *Boswellia* resin on their own and in combination. We then used laboratory tests to measure whether these preparations were able to kill cancer cells and preserve normal cells. Finally, we have used statistical tools to evaluate the effect of resin and DOX combination therapy.

Our study showed that *B. carterii* resin and DOX combined treatment killed cancer cells and it did so by triggering a biological process that prevents cancer cells multiplying. Normal cells were not affected by this treatment suggesting that its action is very specific. This is important as ultimately it may result in patients having less side effects during anti-cancer treatment. Statistical analysis of combined therapy showed that it acts on cancer cells synergistically, confirming that the combination is more powerful than treatment with DOX or resin alone.

Keywords

Leukaemia, *boswellia*, synergy, chemotherapy, phytopharmaceuticals

Format

Oral presentation

Questionnaires to Investigate the Usage of Personal Electronic Devices and the Impacts on Musculoskeletal Pain in Children Pre and Post COVID-19 Lockdown

Anna Clark

School of Health and Society
Email: a.clark23@edu.salford.ac.uk

Supervisors
Dr Anna Cooper-Ryan – a.m.cooper-ryan@salford.ac.uk
Dr Tamara Brown – t.m.brown@salford.ac.uk
Dr Steve Preece – s.preece@salford.ac.uk

Abstract

Personal Electronic devices (PEDs) usage has increased in children over the past decade. During the COVID-19 pandemic children as young as four were asked to do schoolwork on PEDs. With this increased usage there is a need to understand how this may impact children's musculoskeletal (MSK) pain (i.e. neck, back, shoulder, wrist, knee pain).

The two online questionnaires used were based on established questionnaires, with addition developed questions. The questionnaire aims were to understand any association between reported MSK pain of those aged 7-17 and the use of PEDs and if this differed during the COVID-19 pandemic. Participants were recruited via social media, and schools. N=503 participated between April-October 2019 and n=316 between January-May 2021. The results were analysed to investigate the link between PED usage and MSK pain.

Pre covid-19 results indicated 27.0% (n=112) and 38.4% (n=154) of participants didn't use laptops and desktops, respectively, and used more portable devices (smartphones and tablets). Reported tablet usage decreased between the two time points (87.7% (n=452) to 76.5% (n=205)); desktop usage also reduced considerably (11.57% (n=31). However, there was an increase in laptop usage during COVID-19 (49.63% (n=133)).

The highest reported pains were neck and back at both time points (neck 30.9% (n= 130) vs 23.9% (n=68), back 25.9% (n=109) vs 22.4% (n=60)). Pre COVID-19, back pain was the most common reason for participants to miss school, but this changed to neck pain during COVID-19.

Children are experiencing musculoskeletal pain and using portable PEDs more. Further research is needed to understand the impact of continued high usage post COVID-19 effects.

Keywords

Musculoskeletal pain, personal electronic devices, children, technology usage, COVID-19

Format

Oral Presentation

Do anthracyclines elevate intracellular oxidative stress?

Anthony Purcell

School of Science, Engineering and Environment
Email: a.purcell@edu.salford.ac.uk

Supervisors
Dr David Greensmith – d.j.greensmith@salford.ac.uk
Ms Amy Foster - a.foster6@edu.salford.ac.uk

Abstract

Anthracyclines are a type of anti-cancer drug. While they are highly effective at treating cancer, in some patients they cause heart failure, though it isn't clear why. We do know that anthracyclines increase the number of highly damaging molecules called reactive oxygen species (ROS). This leads to a condition called oxidative stress which kills cancer cells. However, oxidative stress also causes the heart to fail, so to prevent this we must understand to what extent anthracyclines increase cellular oxidative stress.

To do this we developed a technique to measure oxidative stress in single cancer cells. We then co-treated cancer cells with anthracyclines and a compound known as an antioxidant which protect cells against oxidative stress. This was to ascertain if we could reduce damaging levels of oxidative stress while maintaining an anti-cancer activity.

Our findings show that clinically relevant concentrations of anthracyclines increase oxidative stress in cancer cells leading to their death. When cancer cells were co-treated with antioxidants, oxidative stress was decreased but fewer cancer cells were killed.

Our data demonstrates that anthracyclines do kill cancer cells by increasing oxidative stress. It is likely that this is also the case in heart cells which may contribute to anthracycline-induced heart failure. Though we need to confirm this, reducing oxidative stress in the heart remains a logical way to prevent heart failure. However, our data also shows we must specifically target oxidative stress in the heart so as not to reduce the effectiveness of anthracyclines as an anti-cancer drug.

Keywords

Cancer, oxidative stress, anthracyclines, chemotherapy

Format

Poster

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

Asma Sana

School of Science, Engineering and Environment
Email: a.sana1@edu.salford.ac.uk

Supervisor
Dr Natalie Ferry – n.ferry@salford.ac.uk

Abstract

The ever-increasing human population, high economic growth and rise in the demand of resources has become a challenging reality in the last few decades. The inevitable consequences of which are degradation of the environment and hence making humankind vulnerable to environmental borne health issues and destruction of the environment on which we depend for life. Out of many unsustainable practices' humans do, the use of different kinds of plastics in a consumer economy is becoming more extensive. Plastics are diverse group of synthetic or semi synthetic complex polymers. Due to diverse chemical composition, plastics possess many characteristics that increases its usability on large scale. Total production of plastics around the world reached 359 Mt in 2018 which was just 245 Mt in 2008. Plastic Pollution is recognized as an anthropogenic change to surface of earth. From 1950 till 2015, 6.3 billion tonnes of plastic waste were generated. The potential implications of plastic pollution have been reported directly or indirectly on marine or terrestrial organisms including humans. Particularly, the micro and nano forms of plastic increase the bioavailability of plastic particles leading to their accumulation at tissue level disrupting organ systems. Moreover toxicity, bioaccumulation and degradation of harmful organic pollutants is been reported to be greatly influenced by microplastics. This research intends to assess fresh water samples for presences of micro/nanoplastic particles. The study will focus on quantification of reported micro/nanoplastic particles through novel detection methods. Moreover, the potential impact and degradation mechanisms will be investigated in this research.

Keywords

Environment, plastic pollution, microplastics, toxicity

Format

Oral presentation

Developing a Contextualised Framework for Culture-led Urban Development Through the Concept of Creative Hub

Attieh Moezoddin

School of Science, Engineering and Environment
Email: a.moezoddin@edu.salford.ac.uk

Supervisor
Prof Hisham Elkadi – h.elkadi@salford.ac.uk

Abstract

Regenerating cities and adapting them to contemporary life circumstances is essential for improving cities' economic, social, and cultural situations. In order to regenerate cities, we, therefore, need to pay more attention to the cultural aspects of how they were developed and maintained.

The research aims to examine the concept of creative hubs, based on their cultural context, to regenerate cities based on social, economic, environmental, and cultural innovations.

The creative hub concept aims to build strategies for achieving a new sustainable development model that is consistent with the spirit of the time in response to the following question:

How can cities achieve sustainable development through the concept of a creative hub? Moreover, how can we use the interaction between Art & Culture, Knowledge-based organizations, and Community projects to regenerate cities?

This research builds on the relevant literature to demonstrate the importance of the links between local culture and the urban sustainable development process. Culture-led sustainable urban development encompasses multiple steps that may include complementary quantitative and qualitative criteria and multiple decision-makers. Therefore, in this research, a hybrid Fuzzy Multi-Criteria Decision Making (MCDM) approach is used for identifying and choosing alternatives based on the values and preferences of the decision-makers. The MCDM model integrates the fuzzy Delphi method (FDM)", fuzzy Analytical Hierarchy Process (AHP), and fuzzy Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method for identifying the priorities of factors that affecting and challenging sustainable development and meanwhile finding the best strategies to overcome these challenges.

Keywords

Culture, creative hub, sustainability, urban development, Multi Criteria Decision Making (MCDM) model

Format

Oral presentation, Poster

Skin Microbiota in Diabetes Mellitus

Aveen Sabir

School of Science, Engineering and Environment
Email: a.t.sabir@edu.salford.ac.uk
Twitter: @AveenSabir

Supervisors
Dr Joe Latimer – j.latimer2@salford.ac.uk
Dr Sarah Withers – s.b.withers@salford.ac.uk

Abstract

How our body interacts with the trillions of microorganisms that live on, in and with us, is as much what makes us human as our own cells. Research into host-microbiota interactions in relation to health and disease is a hot topic. Diabetes mellitus (DM) is a chronic condition which places significant burden on the health care system. Obesity, innate immune response and skin complaints are common in this cohort of patients. The skin microbiota has vital role in inhibiting skin colonization by pathogenic microbes and modulating the innate and adaptive immune systems; however, very limited data are available with regards the role of skin microbiota in DM. We have performed a meta-analysis and systematic review; despite differences in demographics, personal hygiene, glycaemic level and history of antibiotics, *Staphylococcus* was the main species involved with skin-related complications of DM. We will now work towards developing *in vitro* and *ex vivo* cell and tissue models to understand the significance of these interactions and address the role of skin-microbiota interactions in DM. The work will involve initially investigating the interaction of *S. aureus* and *S. epidermidis* metabolites with keratinocytes, fibroblasts and adipocyte cell lines in normal and hyperglycaemic medium. We will move towards using more complex 3D skin models later. The change in these cell lines will be investigated by using a variety of methods such as ELISAs, viability, proliferation, migration, and apoptosis assays.

Keywords

Skin microbiota, diabetes mellitus, *S. aureus*, host-microbiome interaction, obesity

Format

Poster

Identification and Validation of Competencies Required by Kenyan Registered Nurses Working in Adult Intensive Care Units: A modified Delphi study

Beth Waweru

School of Health and society
Email: b.waweru@edu.salford.ac.uk
Twitter: @bethwaweru2

Supervisors
Prof Jacqueline Leigh – j.a.leigh4@salford.ac.uk
Dr Melanie Stephens – m.stephens@salford.ac.uk
Dr Eunice Ndirangu – eunice.ndirangu@aku.edu

Abstract

Nurses form the largest professional group among the Intensive Care Unit therefore their proficiency is key in provision of quality healthcare. This proficiency involves specialised knowledge, skills and attitude on the assessment, management, and care of the highly dependent patients with life threatening conditions. Many developed countries across the world have developed critical care competency frameworks for their registered nurses that focus on the needs of a critically ill patient and include practice competencies underpinned by knowledge and behaviors, and the ethos of critical care as its key components. The frameworks were introduced to address issues such as, ensuring a smooth transition of novice and inexperienced nurses into ICU, development of an ICU competency-based curriculum, ensuring continuous professional development of ICU nurses, assessment of competence of ICU nurses, and standardization of ICU nursing care. This is not the case in Kenya as the curricula are more content based rather than competency based. This leads to inconsistencies in the care provided by nurses across the country and low-quality care. Competency frameworks have been shown to provide consistency in clinical practice. The results of this study are envisioned to provide a building block for development of competency framework. This may help harmonize clinical practice across the country and consequently impact the quality of care and patients' outcomes positively. The competencies may provide insight to the curriculum developers and educators, to consider inclusion of some of the competencies as a pre-qualification requisite for final year nursing students.

Keywords

Competencies, intensive care unit, registered nurses, competency framework

Format

Oral presentation

Feasibility of Implementing a Child Development Counselling Program for Caregivers of Children with Sickle Cell Disease (SCD) Aged 0–3 Years in Uganda

Caroline Namukwaya

School of Health and Society
Email: c.namukwaya@edu.salford.ac.uk

Supervisors
Prof Alison Brettle – a.brettle@salford.ac.uk
Dr Anna Cooper-Ryan – a.m.cooper-ryan@salford.ac.uk

Abstract

Poor child development is a large problem in Uganda. One group affected is children with sickle cell disease, as their health issues mean they do not get an opportunity to develop properly through activities such as play. This group of children and carers attend outpatients regularly for health checks. The World Health Organization (WHO), in conjunction with United Nations Children's Fund (UNICEF), has developed a Care for Child development program for Caregivers (CCD) where health professionals train carers to develop skills and knowledge to improve their children's health through activities such as play.

This study implemented this training programme with health professionals and carers at an outpatient sickle cell disease clinic in Uganda. Questionnaires, focus groups, and interviews were used to determine the feasibility of delivering the program and understanding whether the program improves the knowledge and skills of the carers. This was in anticipation of improving the development of children aged 0-3 years with sickle cell disease.

Results indicated a significant improvement in knowledge and skills in core areas of care for child development, i.e., responsivity, acceptance of sub-optimal behaviour, avoidance of restriction and punishment to the child, carer–child interactions, and availability of learning materials. That led to behaviour change in the carers' parenting practices. In addition, caregivers, nurses, and clinic managers indicated that it was feasible to implement a child development counseling program at the clinic despite a few challenges like space.

Keywords

Child development, caregivers, Sickle cell disease, training program, behaviour change

Format

Oral presentation

Barriers and Facilitators to Creativity for Neurodivergent and Neurotypical Individuals within Creative Workplaces

Carolyn White

School of Health and Society
Email: c.e.white1@edu.salford.ac.uk

Supervisor
Dr Adam Galpin – a.j.galpin@salford.ac.uk

Abstract

Neurodivergence refers to those with conditions such as Autism Spectrum Condition (ASC), Attention-Deficit/Hyperactivity Disorder (ADHD) and dyslexia. There are many people who identify as neurodivergent and work within creative roles. Research into creativity and neurodivergent conditions has been limited to measuring the extent to which different neurodivergent groups are creative. The current research, in collaboration with the BBC, looks to understand which factors help or hinder creative working for people who are neurodivergent. Neurodivergent and neurotypical individuals responded to a survey designed to assess barriers and facilitators to creativity in the workplace. Free text boxes asked what helped and hindered workplace creativity, as individuals and when working as part of a group. Using existing research from neurodiversity and creativity literature, the survey included ratings of factors known to affect creativity or affect those with neurodivergent conditions.

Results showed there were similarities between which factors affected neurodivergent and neurotypical respondent's creativity in the workplace. However, those with neurodivergent conditions reported being more affected by these factors than neurotypical respondents. Analysis of respondents' comments showed respondents were affected by factors within the physical workplace environment, e.g. noise, difficulties in interaction with colleagues, e.g. during meetings, and factors related specifically to common workplace creative activities, e.g. during brainstorming sessions.

This research aims to help the creative industries to minimise hindering factors to creativity (such as a noisy work environment or too much social pressure) and maximise the creative potential of those with neurodiverse conditions.

Keywords

Neurodivergent, neurotypical, creativity, creative workplace

Format

Oral presentation, Poster

The Urban Water Supply System in Nigeria: Unmasking the Critical Stakeholders

Charles Kyom Bijimi

School of Science, Engineering and Environment
Email: c.k.bijimi@edu.salford.ac.uk
Twitter: @charliebull2

Supervisor
Dr Kwasi Gyau – k.a.b.gyau@salford.ac.uk

Abstract

Urban water supply is a critical component of the urban infrastructure and service provision within cities in Nigeria. However, this urban water supply system faces a myriad of challenges such as financial, environmental, technological, demographic, and socio-economic challenges. Studies have indicated a lack of clarity in the roles and responsibilities of relevant actors, which is a contributing factor to the challenges. In addition, the issues of jurisdictional conflict in terms of water governance have further complicated the challenges.

This study seeks to analyse the extent of the role and impact of the several stakeholders in Nigeria's urban water delivery system to identify the key stakeholders to help develop sustainable urban water governance and management. The paper will also discuss the existing issues in Nigeria's urban water delivery system to further contextualise the study and identify several stakeholders from the literature review. A stakeholder analysis will be conducted using the perspectives of experts in the urban water supply sector to make recommendations that will address the governance of urban water supply in line with the Sustainable development Goals.

Keywords

Stakeholders, water governance, participation, management, urban water supply

Format

Oral presentation

Investigating the Role of Polymerase-γ (POLG) in Breast Cancer

Chiara Chinigo'

School of Science, Engineering and Environment
Email: c.chinigo1@edu.salford.ac.uk

Supervisors
Prof Michael P. Lisanti – m.p.lisanti@salford.ac.uk
Prof Federica Sotgia – f.sotgia@salford.ac.uk

Abstract

Breast cancer is the most frequent tumour-type in women and represents the driving cause of death from cancer. In this scenario, targeting tumour cell diversity could have important therapeutic implications. Indeed, cancerous lesions are characterized by a 'cell hierarchy' whereby a sub-population of cells, termed cancer stem cells (CSCs), have the ability to self-renew and are considered the main driver of drug-resistance and cancer spread. Therefore, understanding unique changes in energy production is an emerging topic in cancer stem cell biology. Recently, mitochondria have been shown to be key players in cancer cell energy production. Many energy-producing pathways are altered during tumorigenesis, highlighting a key role of cell energy in cancer development. For example, there is a need for further clarity on how specific regulatory gene(s) affect mitochondrial function and stem cell activity. The Polymerase-γ (POLG), is the only DNA-polymerase present in human mitochondria, and could be a potential target for anti-cancer therapy. Polymerase-γ plays a crucial role in copying mitochondrial DNA (mt-DNA) and its repair, by regulating mt-DNA copy number in cancer stem cells. In our study, we generated breast cancer cells with an excess or a lower amount of POLG subunits, and have begun to evaluate their behaviour. More specifically, we found that these changes can significantly alter cell energy requirements and stem cell like features, as well as cell growth and motility. In conclusion, our findings on POLG may have important implications for the clinical prevention of cancer spread, using a therapeutic approach for targeting mitochondrial metabolism.

Keywords

Cancer stem cells (CSCs), breast cancer, metabolism, mitochondrial OXPHOS, polymerase-γ (POLG)

Format

Oral presentation, poster

Alcohol, Young People, and the Police

David Junior Gilbert

School of Health and Society
Email: d.j.gilbert@edu.salford.ac.uk

Supervisors
Prof Penny Cook – p.a.cook@salford.ac.uk
Dr Clare Allely – c.s.allely@salford.ac.uk
Dr Raja Mukherjee – raja.mukherjee@sabp.nhs.uk

Abstract

The results from my work will help to inform the police on how to work with young people whose brain has been damaged by alcohol. Many young people break the law, get in trouble with the police and many end up in prison. There are different reasons why this happens, and one reason may be because when the young person was an unborn baby in the womb, alcohol damaged their developing brain. When alcohol affects the baby's brain, it can make the growing child unable to understand rules which can cause them to break the law and get in trouble with the police.

I will interview people whose brains have been affected by alcohol and also, interview their parents or carers to understand the other things that make them get in trouble with the police. After the interviews, I will use some tests on a computer to measure some other abilities of the young people like their memory and intelligence.

Keywords

FASD, criminal justice, fetal alcohol spectrum disorders, CJS, alcohol

Format

Oral presentation, Poster

Faith, Finances, and Social Capital: Socio-ecological factors that influence health literacy in women diagnosed with the breast cancer in Kenya during their treatment journey

Dinah Kassaman

School of Health and Society
Email: d.kassaman@edu.salford.ac.uk
Twitter: @DianaKassaman

Supervisors
Prof Alison Brettle – a.brettle@salford.ac.uk
Dr Gaynor Bagnall – g.bagnall@salford.ac.uk
Prof Sharon Brownie – Dr.s.m.brownie@gmail.com

Abstract

A breast cancer diagnosis is a stressful experience that requires patients and their families to learn about the disease, make decisions about the ensuing treatment and cope with the side effects. It follows then that, having the right information helps patients understand the disease and facilitates their decision making and coping. Health literacy (HL) thus plays a crucial role in healthcare worldwide. Information provided to women about breast cancer may help them to be diagnosed earlier or provide them with better experiences during their cancer journey thus improving their quality of life.

Guided by the Socio-Ecological Model, this study used qualitative methods to explore factors that influenced how women attending private and public hospitals accessed, understood, and used information in relation to breast cancer.

The results highlight factors which enhanced or were barriers to health information access and use. The study further identified gaps in information provision to patients by healthcare providers and illuminated the role of social capital in HL. The results will be used to improve healthcare education and practice, inform further research and policy to ensure that women in Kenya receive appropriate information about breast cancer and its treatment.

Keywords

Health literacy, breast, cancer, health information, cancer journey

Format

Oral Presentation

Experimental study to remediate the effect of salt precipitation and deposition during CO2 injection in deep saline aquifers

Donatus E. Edem

School of Science, Engineering and Environment
Email: d.e.edem@edu.salford.ac.uk

Supervisors
Dr Amir Nourian – a.nourian@salford.ac.uk
Dr Meisam Babaie – m.babaie@salford.ac.uk

Abstract

The extent of salt deposition during CO2 storage in deep saline aquifers underground can cause reduction in storage capacity of the underground storage site. This can significantly reduce CO2 injectivity and the amount of CO2 stored in the host formation. This work investigates experimentally the mitigation strategies of opening the pore spaces of the reservoir formation to enhanced CO2 storage. This was performed on a core sample using laboratory core flooding process. The core samples were saturated with brine of different concentrations (5, 10, 15, 20, 25 wt.% NaCl) and CO2 was injected into the core at the rate of 3 ml/min. The porosity and permeability of the core samples were measured before and after core flooding test respectively. Distilled water was then used to flood the core sample after the CO2 storage as the mitigation strategy with the view of dissolving the deposited salt within the pore matrix of the rock core. The core flooding results indicated reduction in porosity between the range of 1.9% to 40% while permeability impairment ranged from 9% to 69% of the original permeability. Injection of distilled water during remediation tests effectively opened the pore spaces and pore throats with porosity and permeability increasing in the range of 85% to 97.5% and 70% to 80% respectively. These findings provide the fundamental approach in dissolving deposited salt and improving CO2 injectivity.

Keywords

CO2 injectivity, porosity, permeability, salt precipitation, core flooding

Format

Oral presentation

Documenting Data about Women Artists in the University of Salford Art Collection

Enrique Tabone

School of Arts, Media and Creative Technology
Email: e.tabone@edu.salford.ac.uk
Twitter: @enriquetabone

Supervisor
Dr Toni Sant – a.sant2@salford.ac.uk

Abstract

The University of Salford's Art Collection was established in c.1968. Out of about 700 artists whose works have been acquired for this collection, only about 70 are attributed to women. Since 2013, when the collection started being curated systematically, rather than through ad hoc acquisitions, the gender balance has improved. Nevertheless, only 35% of works acquired since then are by women artists. Through data analysis, employing Wikidata tools, this project reveals how works by women artists can be given greater public visibility. It also suggests ways for addressing the gender gap, through a better understanding of the collections holdings and potential action points in terms of acquisition policies.

Wikidata is an open structured data repository that enables information to be organized in useful ways. Employing data visualization tools on the wiki platform, this research project aims to develop a workflow model for processing essential information about the University of Salford's Art Collection current holdings and new acquisitions. Initial findings enable the collection managers to get a better picture of the gender gap and plan data-based ways to present works in the collection. All this is useful for the potential revision of acquisition priorities, not only for new works but also in terms of balancing gender representation through historical acquisitions.

This presentation will demonstrate the proposed workflow model and data visualization examples based on the University of Salford's Art Collection dataset. This enables engagement with decision makers, revealing information that could otherwise be lost in spreadsheets and text-based documents.

Keywords

Data visualisation, data science, feminism, University of Salford Art Collection, Wikidata

Format

Oral presentation

Infrastructure Delivery System in Nigeria: An approach to unveil the darkness in its bureaucracy using viable infrastructure delivery model (VIDM)

Esozhim Joy Ogbugo

School of Science, Engineering and Environment
Email: e.j.ogbugo@edu.salford.ac.uk

Supervisors
Prof Peter McDermott – p.mcdermott@salford.ac.uk
Dr Greg Watts – g.n.watts@salford.ac.uk

Abstract

This study aims at investigating usability and reliability of Viable Infrastructure Delivery Systems Model VIDM to actualise an effective infrastructure delivery system (IDS) in Nigeria and the United Kingdom focusing on procurement Standard Operating Procedures (SOPs). VIDM is a model developed at the University of Salford by Dr. Bankole Awuzie since 2014. The author is mainly interested in the application of viable system model (VSM) from the general literature and establishing a conceptual model for unveiling the darkness 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. This study is guaranteed to explore the pros and cons surrounding the newly developed VIDM and provide evidence for using VIDM to actualise effective infrastructure Delivery Systems focusing on procurement Standard Operating Procedures (SOPs) in the oil and gas, construction sector for infrastructure delivery in Nigeria.

The research will seek to test how best VIDM will be implemented in the organisational structure using structured, and unstructured interviews as research methods, this will be administered through the relevant stakeholders. Intra-case and cross-case analysis will be employed to extract facts from the data gathered. NVivo software will be employed and the findings will be analysed thoroughly.

The model has been validated, but the usability and reliability of the model must be determined by stakeholders to whom it is intended. The result derived from VIDM will be reliable prior to its usability in the organisation.

Keywords

Infrastructure, policy implementation, engineering, construction, stakeholders

Format

Oral presentation

Towards Energy Recovery from Waste in Developing Countries: An analysis of the prospects and challenges of waste management in Abuja, Nigeria

Eta Ojiji

School of Science, Engineering and Environment
Email: e.e.ojiji@edu.salford.ac.uk

Supervisors
Mr Andrew Clark – a.p.clark@salford.ac.uk
Dr Michael Hardman – m.hardman@salford.ac.uk

Abstract

Waste generation is a natural product of urbanization, economic development, and population growth. Globally, 2.01 billion tonnes of municipal solid waste (MSW) is generated annually and this is expected to increase to 3.40 billion tonnes by 2050, with projections showing that most of the increase will be in the Sub-Saharan Africa region. Nigeria like other developing countries in the region is faced with the problems of open dumping, low waste collection rates and ineffective waste management policies. Growing concerns about the negative consequences on health, the increasing awareness of the need for environmental sustainability, and the need for energy security have triggered the interest of governments in waste-to-energy (WtE) technologies, as an effective means of simultaneously dealing with the problems of waste management and electricity access. However, the selection and introduction of these technologies require knowledge of waste characteristics, comprehensive legal frameworks, and efficient waste management systems. This research examines the challenges of the Nigerian waste management system from a socio-demographic point of view. Using both quantitative and qualitative methodologies, this research aims to construct a conceptual waste management framework for the introduction of new technologies. The study methods are carried out in two phases consisting of questionnaire surveys, a waste composition analysis, focus group meetings, and semi-structured interviews. Preliminary findings from the data analysis show that the challenges of open dumping and low waste collection rates occur in all income groups. However, there is a lack of information and communication regarding waste management in mostly low-income areas.

Keywords

Waste management, waste-to-energy, sustainability, circular economy

Format

Oral presentation, Poster

How do Bacteriophages Affect the Fitness of *Pseudomonas aeruginosa*?

Grace Plahe

School of Science, Engineering and Environment
Email: g.plahe@edu.salford.ac.uk
Twitter: @GracePlahe

Supervisors
Dr Chloe James – c.james@salford.ac.uk
Dr Ian Goodhead – i.b.goodhead@salford.ac.uk

Abstract

The Liverpool epidemic strain (LES) of the bacterium *Pseudomonas aeruginosa* is a key opportunistic pathogen and major cause of death in cystic fibrosis (CF) patients. This is due to the bacterium becoming established in the patient's lungs and forming hard to remove communities called biofilms. These biofilms are incredibly hard to treat as the bacteria are surrounded by a protective polysaccharide matrix which enables tolerance and resistance development against antibiotics.

The success of LES strain is thought to be influenced by several prophages that are present in its genome and have been associated with increased competitiveness in the CF lung. Prophages are the integrated genomes of a type of virus called bacteriophages that can infect and destroy their host bacteria by bursting out of them or, as in this case, become part of their hosts DNA and provide fitness advantages. Active phages are very common in the CF lung and infecting *Pseudomonas aeruginosa* strains commonly have many prophages integrated into their genome, but little is known about the co-operative interactions between the two. This project investigates the relationship between three active phages of LES and the model bacterial host strain PA01. *In vitro* culture experiments revealed that the prophages affect the growth rate of their bacterial host differently depending on the conditions. Furthermore, infection model experiments indicated that prophage carriage reduces the severity of disease when challenging the wax moth larvae *Galleria mellonella*. These data suggest that the LES prophages may contribute to adaptation for longer survival *in vivo*.

Keywords

Bacteria, *Pseudomonas aeruginosa*, Cystic fibrosis, bacteriophage, biofilm, Liverpool epidemic strain

Format

Oral presentation

Femininity, Madness, and Disability in Nineteenth-Century Children's Literature and Disney Live-Action Film

Hannah Bury

School of Arts, Media and Creative Technology
Email: h.j.bury@edu.salford.ac.uk
Twitter: @hannah_bury_

Supervisors
Dr Jade Munslow Ong – j.munslowong@salford.ac.uk
Dr Jane Kilby – j.e.kilby@salford.ac.uk

Abstract

This paper explores the relationship between femininity, madness, and disability in nineteenth-century children's literature and Disney live-action film adaptation. In this paper, I outline some of the ways in which constructions of "normal" femininity can be destabilised when female characters are associated with mental illness and/or disability. I also argue that literary and filmic representations of fictional characters can support efforts to highlight and celebrate marginalised identities. This is important because young people with mental illness and/or disabilities may not always relate to the normative, able-bodied characters they read about in books or watch on screen. Drawing upon nineteenth-century children's literature and Disney film together is necessary because these literary texts have never been out of print, and they continue to influence and entertain generations through film adaptation. Focusing on some of the connections between femininity, madness, and disability in children's literature and film, this paper will emphasise the significance of making diverse representations of identity visible. The importance of children's literature and Disney film is especially topical in light of the ongoing COVID-19 crisis. Children are spending more time indoors, using fantasy literature and film as a way of escaping reality and imagining a more positive future. As such, the continued relevance and impact of these literary texts and films cannot be overlooked in the twenty-first century.

Keywords

Children's literature, Disney, femininity, madness, disability

Format

Oral presentation

The Negative Effects of Gender Stereotypes on Women in Music

Hannah Perry

School of Arts, Media and Creative Technology
Email: h.perry@edu.salford.ac.uk

Supervisor
Prof Alan Williams – a.e.williams@salford.ac.uk

Abstract

Gender inequality in music has been well documented for decades. Academics have analysed lack of access to musical spaces for people identifying as women; the so called "boys' club" excluding women from networking; and mechanisms in the documentation of the musical cannon focusing on male achievements. However, the current academic debate rarely uses a combined approach linking both numerical data with a theoretical sociological analysis, nor does recent study in the field use wide-ranging data sets. This study aims to contribute to the discussion of women in music by understanding gender stereotypes in music and explore how these occur in society. Through a mixed methodology approach, the study will count the number of women present in musical platforms such as Glastonbury Festival, Coachella Festival, Leeds and Reading Festival, Download Festival, Rolling Stone Magazine, The Rock and Roll Hall of Fame, and the Air Guitar Championships, which will be examined through several theoretical lenses: genre and sociological analysis, Michel Foucault's gaze theory, and feminist theory - including concepts of the "other" and the somatic norm. I argue that musical genre has replicated gender stereotypes performed in society, thus creating extreme gender inequality in music. Ultimately, the study displays a shocking deficit of female performers in major musical spaces of visibility from the 1970s to 2019, which does not dramatically improve overtime, despite the proclaimed postfeminist advances in Anglophone societies. I argue that musical genres have replicated gender stereotypes practiced in society, thus creating extreme gender inequality in music.

Keywords

Popular music, gender, feminism, culture, society

Format

Poster

Why do Primates Have Big Brains?

Helen Chambers

School of Science, Engineering & Environment
Email: h.r.chambers@edu.salford.ac.uk
Twitter: @misshrchambers

Supervisor
Dr Sean O'Hara – s.ohara@salford.ac.uk

Abstract

Monkeys and apes have relatively large brains when compared to other mammals. Why is this and what is the reason for increased brain size? Many researchers have long been intrigued by this question, and those variables thought responsible for producing large brains. Primates have received substantial attention in the literature, most notably due to differences in brain and body size, but also since they have complex social lives and use tools. The "social brain" hypothesis suggests complex social lives to be the key driver leading to increased brain size, and has garnered much support, mostly from studies of primate sociality. Despite this, more recent research has failed to find support for sociality. Instead, there is now emerging evidence suggesting ecological factors, such as diet, better predict brain size in primates and carnivores. Life-history variables, such as gestation length, further confound research efforts, due to the influence they exert on developmental processes e.g., brain growth. Therefore, in efforts to regain clarity within the field, here, the relative importance of social, ecological and life-history variables were re-evaluated in primate lineages. Concurring with recent research, evidence is found showing consistent associations between brain size and ecological factors; however, critical evidence was also found for sociality acting as a driver of brain size. Life-history associations reveal large-brained primates are counterbalancing the costs of producing brain tissue through extended developmental periods and extended maximum lifespan. Thus, incorporating multiple variables in studies of brain size appears favourable in terms of capturing all the potential factors causing changes in brain size.

Keywords

Brain size, primates, sociality, ecology

Format

Oral presentation

Mapping Differences in Mammalian Distributions and Diversity Using Environmental DNA from Rivers

Holly Broadhurst

School of Science, Engineering and Environment
Email: h.a.broadhurst@edu.salford.ac.uk
Twitter: @BroadhurstHolly

Supervisor
Dr Allan McDevitt – a.mcdevitt@salford.ac.uk

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 is DNA that has been shed into the surrounding environment and can be collected though an environmental sample such as water or soil. In this study, environmental DNA from water samples along two rivers and a beaver enclosure were used to detect multiple species and map their distribution. These detections were used to measure differences in both diversity and structure of the mammalian communities surrounding the rivers. The sampling effort to collect environmental DNA data for the detection of terrestrial and semi-aquatic mammals was assessed for each order. Environmental DNA detected 25 wild mammal species from five orders in two days of sampling, representing the vast majority (82%) of the species expected in the sampling area. This included critically endangered and invasive species. Community structure differed across both rivers and each mammalian order, with one river harboring greater mammalian diversity than the other. Sampling effort varied between each order of mammals, with greater effort required to detect carnivores. This study highlights the potential use of environmental DNA data for detecting whole communities in very short timeframes and investigating the diversity mammalian communities.

Keywords

Community, mammals, metabarcoding, semi-aquatic, terrestrial

Format

Oral presentation

Construction/Assembling of a Novel Dbd Plasma Reactor Cap Using Polytetrafluoroethylene (PTFE)

Ibrahim Yusuf Bakoji

School of Science, Engineering and Environment
Email: i.y.bakoji@edu.salford.ac.uk
Twitter: @engrbakoji

Supervisor
Dr Meisam Babaie – m.babaie@salford.ac.uk

Abstract
3D-printing technology implementation has opened new frontiers in engineering, material science, chemistry, and medicine. A plasma reactor is an invention and crucial device in the plasma field of engineering. This research aims to test and determine the feasibility of assembling a Dielectric barrier discharge plasma reactor (DBD) with new caps fabricated using Fused Deposition Modelling (FDM) with a 3D printer. The material properties of Polytetrafluoroethylene (PTFE) is explored to establish appropriateness for use in the reactor setup or yet as a solid material in the plasma reactions. Overall, this process give emphasis to the advances and prospective utilisation of a combination of CAD and 3D technology in the successful assembly of a plasma dielectric barrier discharge (DBD) reactor.

Keywords
3D printer, DBD reactor, plasma, PTFE Cap

Format
Poster

Examining Human - Wild Carnivore Conflicts in Kargil Trans-Himalayas, India

Iftikar Ali

School of Science, Engineering and Environment
Email: i.ali19@edu.salford.ac.uk
Twitter: @iftee_hor

Supervisors
Prof Robert Young – r.j.young@salford.ac.uk
Prof Jean Boubli - j.p.boubli@salford.ac.uk

Abstract

As the human population is expanding, the demand for land and other natural resources is also increasing rapidly. This has led to the destruction and degradation of wildlife habitats around the world. Human encroachment into wild habitats increases competition with wild animals for food, shelter, and other resources. The inevitable human interaction with wildlife often gives rise to human-wildlife conflicts inflicting losses on both sides. Despite the lack of scientific records in Kargil, India, there appears to have been an increase in human-wild carnivore interactions evidenced through undocumented cases. In this region, livestock rearing is one of the essential sources of income for the local human population. The local sharp decline in the prey species causes carnivores to enter human settlements in search of food ultimately results in attacks on livestock.

The snow leopard (*Panthera uncia*), Tibetan wolf (*Canis lupus chanco*), Himalayan brown bear (*Ursos arctos isabellinus*), and fox (*Vulpes vulpes*) are primarily responsible for livestock loss in Kargil. Due to livestock depredation by wild carnivores, local farmers incur severe economic and psychological losses, and they sometimes resort to retaliation killing of the carnivores. Therefore, research is necessary to understand the pattern of human-wild carnivore conflicts in Kargil, and the impact of human behaviour on wild carnivores and vice versa. This study focuses on gathering data on the level and magnitude of human conflict with wild carnivores. Whilst also furthering understanding of various socio-economic factors, the study will give an insight into the human perception towards wild carnivores.

Keywords

Human-carnivore conflicts, humans' perspective, Ladakh, livestock, snow leopard

Format

Oral presentation, Poster

Metal Organic Frameworks – A New Drug Delivery Approach to Improving the Treatment Outcome of the Childhood Cancer, Neuroblastoma

Izuchika Nduka

School of Science, Engineering and Environment
Email: i.o.nduka@edu.salford.ac.uk

Supervisors
Dr Rosa Arrigo – r.arrigo@salford.ac.uk
Dr Sara Namvar – s.namvar@salford.ac.uk

Abstract

Neuroblastoma is a common type of cancer found in children. It is responsible for 15% of all childhood cancer-related deaths. Treatment strategies used till date includes surgery, radiotherapy, chemotherapy, and immunotherapy. Yet, the therapeutic outcome remains poor, necessitating the need for new therapeutic approaches. Recent evidence suggests that compounds isolated from the fungi, *Aspergillus fumigatus*, exhibits some anti-cancer effects. However, targeting these compounds specifically to the cancer cells with minimal or no toxicity to surrounding healthy cells is still a challenge. Hence, the need for a nanoparticulate drug delivery system. Metal organic frameworks (MOFs), an exciting development in the field of material chemistry and engineering, is deemed fit for this purpose because of their high design flexibility, surface area, porosity, thermal stability, and chemical composition. My PhD project aims to isolate some anti-cancer compounds from *Aspergillus fumigatus*, encapsulate these compounds within selected MOFs, and specifically target them to neuroblastoma cells.

In this contribution, I will highlight some MOFs that have been synthesized in our lab and how they can be used for targeted delivery in cancer treatment. I will also show that the filtrates from two species of *Aspergillus fumigatus* can kill neuroblastoma cells.

These results have provided the foundation needed for the further studies that will be carried out in this project. These studies will involve an exploration of ways to isolate which compound(s) present in the fungi filtrates is responsible for killing the neuroblastoma cells, and ways to optimize the already synthesized MOFs for better targeted delivery.

Keywords

Cancer, neuroblastoma, MOFs, *Aspergillus fumigatus*, anti-cancer

Format

Oral presentation, Poster

Predicting the Maximum Tolerable Arsenic Concentrations in Soil and Irrigation Water in Asia for the Cultivation of Rice: A machine learning based meta-analysis

Jajati Mandal

School of Science, Engineering and Environment
Email: j.mandal1@edu.salford.ac.uk
Twitter: @JAJATI10687413

Supervisors
Prof Michael Wood – m.d.wood@salford.ac.uk
Dr Simon Hutchinson – s.m.hutchinson@salford.ac.uk
Dr Debapriya Mondal – dmondal@sgul.ac.uk

Abstract

Arsenic (As) contaminated irrigation water increases human exposure through the water-soil-crop transfer pathway. This exposure route has significant public health implications, particularly in the Asian countries where rice is a major dietary component. A permissible level (known as a guideline value) has been set for As in drinking water. There have been few attempts to quantify guideline values for soil and irrigation water, but the FAO and WHO have established a 'Codex recommendation' for maximum allowable inorganic As concentrations in rice grain: 0.35 mg kg-1 (husked rice) and 0.20 mg kg-1 (polished rice). Through meta-analysis, Decision Tree-based machine learning and logistic regression modelling, we evaluated the relationship between As concentrations in rice grain, soil and irrigation water. Soil As (rather than irrigation water As) was a stronger predictor of As in rice grain. Both the Decision Tree and, to a lesser extent, the logistic regression models successfully predicted the concentrations of soil above which As in grain would exceed the Codex recommendation. Given the better performance of the Decision Tree model, we used this approach to derive a proposed guideline value for As in soil at 14 mg kg-1. Despite the limitations of modelling complexities, our findings inform the determination of maximum permissible As concentrations in soil used for rice cultivation in Asia.

Keywords

Arsenic, rice, soil, irrigation water, meta-analysis, decision tree

Format

Oral presentation

Mental Health and Universal Credit: Investigating Claimant Experiences

Joe Pardoe

School of Health and Society
Email: j.pardoe@edu.salford.ac.uk

Supervisors
Prof Lisa Scullion – l.scullion@salford.ac.uk
Dr Mark Wilding – m.a.wilding@salford.ac.uk

Abstract

The roll-out of Universal Credit (UC) has been highly contentious within media and political spheres, drawing substantial interdisciplinary academic research interest in the years since its initial implementation in 2010. Replacing six former ('legacy') means-tested welfare benefits, UC is accessed by a range of populations in very disparate circumstances, including those who may be vulnerable to experiencing mental health adversities; much research suggests that such individuals see their mental health implicated at various stages in the process of claiming. Where prior research may have sought to reveal an interrelationship between aspects of claiming UC and mental health, often in a causal capacity, for my own qualitative research, I was interested in attempting to ascertain how UC claimants might identify for themselves where relational links exist, generating inductive data. Further, it has been found that circumstances of poverty can also increase vulnerability to mental health challenges, and UC was specifically targeted at alleviating poverty (through 'steering people into work'). As such, I spoke to people in Salford, a locality with a nationally high rate of poverty, who were claiming UC at the time of being interviewed, with the aim of providing a platform for them to voice their subjective reflections about how they experienced their mental health within the context of claiming UC. At this late stage in my PhD, I am pleased to be able to share the unique findings from my research, which I believe will complement what is already understood about claiming UC through a mental health lens.

Keywords

Universal credit, mental health, welfare, qualitative, social policy

Format

Oral presentation

Characterisation and Interaction Properties of 3D Printing Concrete

Joseph Osamwonyi Ediae

School of Science, Engineering and Environment
Email: j.o.ediae@edu.salford.ac.uk

Supervisors
Dr Levingshan Augusthus Nelson – l.augusthusnelson@salford.ac.uk
Dr Yu Wang – y.wang@salford.ac.uk

Abstract

This research aims to study the interaction properties of 3D printing concrete as the construction industry moves towards Automation. Today's construction industry faces the challenge of cost reduction, lead time, reducing damage to the environment, and solving the workforce and safety challenges. 3D printing concrete offers solutions to these challenges faced by the construction industry, being cost-effective, reducing workforce utilisation, reducing construction time, being environmentally friendly, and lessening material waste

3D printing concrete is the manufacture of concrete without formwork, know as Additive manufacturing concrete, generally mentioned as 3D printing concrete, which can potentially automate the housing sector's construction. 3D printing concrete has excellent benefits: time reduction in the building since no formwork is required; construction of complex geometry with ease; and the potential of high-quality construction with reduced waste. 3D concrete printing material requirement is within reach, as performance base material specification is possible as concrete material technology has reached the advanced stage.

It's the understanding of the vital variable influencing the firmness and movement of concrete under pressure and freshly mixed concrete, with minimal loss of consistency for easy transportation via the pipe to the outlet of the printer head to print concrete. That is relatively firm, consistent and adhesive after extrusion to carry its self-weight and weight of subsequent printed concrete layers without collapse.

This study characterises and understands the interaction behaviour between layers of 3D printed concrete.

Keywords

3D printing concrete, automation

Format

Oral presentation

Adopting Lean Construction Concepts in UK Affordable Housing Projects: Benefits, Barriers and Strategies

Joseph Essuman

School of Science, Engineering and Environment
Email: j.b.essuman@edu.salford.ac.uk

Supervisors
Dr Sara Biscaya – s.biscaya@salford.ac.uk
Dr Tanja Poppelreuter – t.poppelreuter@salford.ac.uk

Abstract

Uneven supply and demand for Affordable Housing (AH) in the UK have only made housing market prices volatile, even as homelessness and poor housing conditions continue to prevail. The statistics remain stark. In England alone, about 500,000 households are homeless or living in unsatisfactory housing conditions; while current affordability ratio (7.84) averages above 2010 to 2016 levels (6.85-7.2) per Government Statistics.

Several empirical studies have suggested building more Social Housing and altering land use planning and fiscal policies such as the Land Compensation Act 1961 and Stamp Duty Tax to tackle housing inadequacy and affordability problems. However, primary research addressing the role of construction process improvements and Lean for AH delivery in the UK, is limited. Lean is a management philosophy that optimises both production efficiencies and value. Delivering affordable homes with satisfactory conditions is challenging as trade-offs tend to occur between consumer's interests and production efficiencies. Since, similar concerns have been addressed in manufacturing, health and civil construction fields with Lean production; the paper will assess its implications for UK Affordable Housing.

The main question that will be answered is: How can Lean Construction improve delivery of quality Affordable Housing in the UK? Additional questions relating to benefits of Lean, its implementation barriers within current housing policy context and solution to barriers will be addressed in order to achieve study goal. Findings will help bridge gap on Lean Construction in the UK housing policy context and provide innovative solutions to operational challenges facing housing providers.

Keywords

Affordable housing, lean construction, policy

Format

Oral presentation

The Implementation of a Flexible Scope of Accreditation

Julie Johnson

School of Health and Society
Email: j.a.johnson3@edu.salford.ac.uk

Supervisors
Prof Paula Ormandy – p.ormandy@salford.ac.uk
Dr Lesley Lappin – l.p.lappin@salford.ac.uk

Abstract

Accreditation is a procedure by which an authoritative body gives formal recognition that a laboratory is competent to carry out procedures according to specified standards. The rationale being that if these standards are met there is a level of assurance that the service provided is of an acceptable level of quality. Throughout the NHS, laboratories have been encouraged to implement accreditation as a tool with which to demonstrate an acceptable level of service quality. However, evidence to substantiate there is any true benefit of accreditation is lacking.

The current process for a laboratory to obtain accreditation is time consuming, bureaucratic, and costly, with demands on the laboratory which can delay innovation and improvements to the patient service. In European medical laboratories, an alternative approach has been adopted successfully. This alternative approach uses a Flexible rather than a Fixed scope of Practice which may benefit experienced laboratories, allowing autonomy within their accredited scope to remain patient focused and to adapt to innovation and science in a timely cost-effective manner. This approach has not yet been fully explored within the UK.

This single centre case study aims to analyse the implementation of the Flexible scope accreditation using a quasi-experimental design with a mixed method approach for data collection. Longitudinal data will be collected to evaluate the implementation of the Flexible Scope using a retrospective-prospective study design to validate and verify the overall impact of implementing a Flexible scope on an NHS laboratory service.

Keywords

Flexible scope, accreditation, standards, medical laboratory

Format

Oral Presentation, Poster

Air Pollution Perceptions and Responses: A Cross-Cultural Comparative Study and Analysis of Nigeria and the United Kingdom

Kevwe Olomu

School of Science, Engineering & Environment
Email: k.g.olomu@edu.salford.ac.uk
Twitter: @MsOlomu925

Supervisor
Mr Andrew Clark – a.p.clark@salford.ac.uk

Abstract

This research is on air pollution perceptions and responses, entailing a cross-cultural comparative study and analysis between Nigeria and the United Kingdom. Air pollution is a problem that is ubiquitous in most parts of the world and is one of the key global environmental health risks, ranking fourth in global causes of premature death. The problem cannot be eradicated, but rather, it can be controlled, minimized, and mitigated to reduce the adverse impacts. In Nigeria, perceptions of air pollution issues and attitudes towards tackling these issues remain unsure. Managing air pollution can be said to face several multifaceted challenges ranging from weak policy framework and inadequate expertise to lack of equipment and infrastructures. The UK on the other has developed a robust monitoring mechanism, regulations, and enforcement laws in place to tackle air pollution issues, but it remains a problem at the local level. The primary focus of the research is to investigate and compare the awareness, opinions, views, and attitudes of different stakeholders within the context of air pollution, and their responses to air pollution events, as well as interventions aimed at tackling air pollution. Furthermore, the research will be exploring the role of media in reporting air pollution events and risk communication. The research aims to contribute to knowledge with this field of enquiry, propose guidelines and recommendations that take into account the different stakeholders' perceptions and responses, and provide an evidence-based approach for the feasibility, adoption, and acceptance of effective air pollution management strategies in Nigeria.

Keywords

Air pollution, air quality, public perceptions, air quality management, risk communication

Format

Oral presentation

Enhanced Capacity Predictive Model of Li-Ion Batteries

Khyati Shukla

School of Science, Engineering and Environment
Email: k.h.shukla@edu.salford.ac.uk

Supervisors
Prof Samia Nefti-Meziani – s.nefti-meziani@salford.ac.uk
Prof Steve Davis – s.t.davis@salford.ac.uk

Abstract

As a result of its high voltage, power and better performance at low temperature, Li-Ion batteries are widely used in numerous electrical or electronics applications. One of the significant challenges for adequate battery power consumption lies in accurate capacity prediction. Another term that is necessary to evaluate is the End-of-life criteria. Generally, this is measured as the battery's energy reduces to around 80% of its beginning-of-life or the factory settings. At this point, the battery must be replaced to ensure uninterrupted operation in the application it is being used. These days machine learning algorithms are popular. They require a lot of data to process and provide a predictable outcome. Data-based predictive models are quick to deploy and give accurate capacity predictions, and thus, used extensively. However, for data-based prediction models, a fine selection of features (measurements) from the battery plays a crucial role in achieving the desired performance and accuracy.

In this project, an improvement in feature selection of an existing machine learning model for capacity prediction is proposed and validated using different machine learning algorithms (FNN, CNN, LSTM). The existing model has the feature selected limited to individual values of measured (battery terminal) voltage, current and temperature. The difference of respective voltage and current values at the battery supply source and the battery terminal is the modification considered in the new model. The modified model provides a better result as it considers both source and terminal values as a reference and maintains the uniformity of measurement.

Keywords

Li-Ion batteries, capacity prediction, machine learning, feature selection, end-of-life

Format

Poster

Yoga or Pilates for Older Adults with Chronic Musculoskeletal Conditions?

Laura Denham-Jones

School of Health and Society
Email: l.denham-jones@edu.salford.ac.uk

Supervisors
Dr Nicola Spence – n.spence@salford.ac.uk
Mr Tim Pigott – t.m.c.pigott@salford.ac.uk
Ms Lynne Gaskell – l.e.gaskell@salford.ac.uk

Abstract

Exercise interventions for older adults play an important role in public health as people work into later years. While age can exacerbate musculoskeletal conditions, this can be mitigated with appropriate physical activity.

Yoga and Pilates are the top group exercise choices in the UK and particularly popular among women, who are more prone to experience chronic musculoskeletal conditions. Systematic reviews by the researcher found that both are safe, adaptable interventions for chronic musculoskeletal conditions in a >70% female sample, mean age 50+. Yoga was effective for osteoarthritis and neck pain, improving physical functioning for osteoarthritis and sarcopenia. Pilates was effective for back, neck, osteoarthritis, and osteoporosis pain. Back and neck patients showed significant functional and quality of life effects. Pilates had benefits over a broader range of outcomes than did yoga without specific modifications and neither was found superior to other exercise comparators. This suggests that preferences are not always linked to orthopaedic health outcomes, and a mixed methods approach might lead to a better understanding of what participants experience, and what is important to them, when exercising.

The next phase is a survey of the 50+ population exploring exercise habits, motivators, barriers, and perceived benefits. Finally, a trial and subsequent focus group will compare yoga and Pilates interventions specifically designed for this age group. The aim is to determine best practice in delivery and the relative benefits of age-targeted Pilates and yoga classes, addressing the value of including these on class timetables in the yoga, Pilates, and fitness communities.

Keywords

Yoga, pilates, ageing, exercise, musculoskeletal conditions

Format

Poster

Accidental Choreographies – Unfolding Dance Improvisation within Motion Capture Environment

Lucie Sykes

School of Arts, Media and Creative Technology
Email: l.sykes2@edu.salford.ac.uk
Twitter: @Lucie.Sykes.Research @LucieLeeDance

Supervisors
Dr Joanne Scott – j.e.scott@salford.ac.uk
Dr Richard Talbot – r.talbot@salford.ac.uk

Abstract

Motion capture (MoCap) technology captures motion data of the physical object/body, which is mapped on a digital three-dimensional model and visualised in digital and external environments. It is often used to develop a motion capture dance library allowing an infinite number of dance compositions.

Improvisation is a choreographic tool and it is a skill that enables the dancer to experience new ideas and to craft innovative material during the creative process. How can the dancer/choreographer be innovative enough while improvising in digital environments? Is it possible for a dancer to control composition in a meaningful way in real-time?

To address these problems, I am proposing the development of the Chance method called accidental choreographies. Accidental choreographies are informed by the active and inactive skeleton markers and the built-in line visualisation in the Motive software. These actions enable the performer to develop movement phrases during a performance in real-time.

Chance method, founded by choreographer Merce Cunningham, is a semi-improvisational form of choreography to provide elements of surprises in composition. The accidental choreographies method is an innovative approach to improvisation and composition with the use of new technologies. It offers an element of unexpected and unfolding dance improvisations.

Keywords

Innovative method, motion capture, improvisation, chance method, choreography

Format

Oral presentation

Exploring Experience of Romantic Relationships and Sex Education in Adolescents and Young Adults with Neurodevelopmental Disorders

Magdalena Smusz

School of Health and Society
Email: m.p.smusz@edu.salford.ac.uk
Twitter: @MagdalenaSmusz

Supervisors
Dr Clare Allely – c.s.allely@salford.ac.uk
Dr Amy Bidgood – a.bidgood@salford.ac.uk

Abstract

The existing literature indicates that the current sex education provided in schools/colleges in the United Kingdom (UK) is not always appropriate for all young people with Autism Spectrum Disorder (ASD). There appears to be little understanding on the subject with regards to young people with Attention-Deficit/Hyperactivity Disorder (ADHD) and a dual diagnosis (ASD co-occurring with ADHD). Research suggests that, compared to neurotypical peers, young people with ASD tend to receive much less support on sexual topics from their parents, who often feel that they lack the appropriate skills to help their children with some sex-related issues. Some young people with ASD and ADHD lack an understanding of the social nuances of dating and intimacy, which is crucial for developing and maintaining romantic relationships. This study investigates young people's opinions on their sex education. It also investigates what suggestions they may have to improve the current sex education. Additionally, it examines whether there are any differences in the experiences of romantic relationships between individuals with neurodevelopmental conditions (ASD, ADHD, ASD co-occurring with ADHD) and their neurotypical peers. Finally, it explores caregivers and educators' views on the topic, including whether they would like to receive any (additional) support to feel better equipped at discussing sexual topics with the youth. The study comprises three groups: educators, caregivers, and young people. It aims to recruit 180 participants per group. Descriptive and content analyses will be used to analyse the data. The study's findings may help to inform what modifications could be proposed to the current sex education programmes within schools/colleges to make them more appropriate for young people with neurodevelopmental conditions.

Keywords

Sex education, romantic relationships, autism spectrum disorder, ASD, attention-deficit/hyperactivity disorder, ADHD

Format

Oral presentation

Activities of Daily Living of Relevance to Persons with Upper Limb Absence in Uganda and Jordan with which to Inform the Design of a Prosthetic Wrist Unit

Martha Mulerwa

School of Health and Society
Email: m.mulerwa@edu.salford.ac.uk
Twitter: @MulerwaMartha

Supervisors
Prof Laurence Kenney – l.p.j.kenney@salford.ac.uk
Prof David Howard – d.howard@salford.ac.uk
Dr Robert Ssekitoleko – rsseki@gmail.com
Dr Margaret Donovan-Hall – mh699@soton.ac.uk

Abstract

Most upper limb prostheses on the market come from Europe and the USA, are expensive and require technical expertise to fit and maintain. Although it is not possible to know with certainty, it is reasonable to assume that the designers are unlikely to be basing their designs on requirements of persons with upper limb amputation (PWULA) residing in low-and-middle-income-settings (LMIS). This abstract reports on preliminary work to understand the requirements for a prosthetic wrist, which would be suitable for the needs of PWULA in this population. Specifically, the aim was to identify a set of ADLs relevant to PWULA in LMIS for use in an experimental study, with which to inform the design of a prosthetic wrist suitable for these settings.

Following ethical clearance, secondary analysis was carried out of interviews with PWULA living in Jordan and Uganda, collected as part of the Fit4Purpose project. Conceptual content analysis was used to identify relevant ADLs using in NVivo software. The set of activities mentioned by seven or more participants and are relevant in LMIS were identified. To assess the validity and transparency of the coding frame 25% of the data was analysed by two examiners.

While most women identified house chores, most men identified work-related activities. The following activities were selected for use in the subsequent study, washing clothes, preparing food, dressing up, carrying objects, driving, digging and reading and writing. Substantial agreement between the two raters with a cohen's kappa (κ) = 0.753, $p < 0.005$ was found.

Keywords

Upper limb absence, activities of daily living, postures, conceptual content analysis, low-and-middle-income-settings

Format

Oral presentation, Poster

The Development and Initial Use of a Website to Provide Technical Support and Aid Recruitment of Participants to a Research Study

Matthew Ford

School of Health and Society
Email: m.ford@edu.salford.ac.uk

Supervisors
Prof Anthea Innes – a.innes1@salford.ac.uk
Prof Andrew Clark – a.clark@salford.ac.uk

Abstract

Against the backdrop of the COVID-19 pandemic and the introduction of restrictions on face-to-face contact and the shielding of vulnerable people, a new method of recruitment and technical training was required for my doctoral study. The study sought to involve individuals living with dementia and their care partners in the use of a GPS tracking device alongside their everyday lives. The research aimed to explore how this technology impacts upon their lives through focus groups, interviews and a three-month period of use. Prior to the pandemic, my methodology involved group presentations to locally run dementia support groups, followed by one-to-one training sessions on how to use the device under evaluation. Following government restrictions, national lockdowns and stay at home orders, this methodology was suddenly unsafe, and needed changing. In response to these shifting circumstances, I developed a website with the purpose of promoting the study, facilitating recruitment and teaching participants remotely how to use this technology. Features such as a live chat system for technical support, step-by-step instructional videos, researcher blog and a downloadable user guide were developed. Whilst I was originally sceptical, having knowledge of the digital divide and the apparent challenges of digital engagement for older people, the situation which transpired was very different than I anticipated. In developing a website, I have been able to reach a wider audience, and with a blended approach of creating a digital user guide, with online and telephone support, I have been able to successfully recruit and teach participants, as well as creating a conversation with the dementia community about the use of GPS tracking devices.

Keywords

Recruitment, COVID-19, digital engagement, dementia, technical support

Format

Oral presentation

Understanding the Human under the New Wave of Ontologies

Max Sampson

School of Health and Society
Email: m.w.sampson@edu.salford.ac.uk
Twitter: @maxwsampson

Supervisors
Dr Carlos Frade – c.frade@salford.ac.uk
Dr Gaynor Bagnall – g.bagnall@salford.ac.uk

Abstract

In the past twenty years, many social theorists have become increasingly concerned with an embedded assumption of human-privilege in the study of being (ontology). Human-privilege, within a theory of being, arises when objects and entities are conflated with how humans interact with them, e.g., through experimentation and discourse.

This has led to a new wave of theories of being that have attempted to place humans on equal footing with other entities. The New Materialists (NMs) are one group of these theorists. NMs believe the human-privilege arising from earlier focus on human discourse can be resolved with a greater focus on material. This is done by treating material as an actor, contributor in discourse and/or in possession of agency. That material takes on capacities usually imagined as human-only actions, what it means to be human is implicitly changed.

As a case study, this presentation will consider the production of a methodology, in the form of conceptual analysis, created to evaluate the figure of the human in New Materialism; will discuss the preliminary key features of the Human, in particular, the notion of embodied individualism; and discuss the limits of this methodology under other theories of being. These figures of the human will be applied towards the question of human rights in light of climate change.

Keywords

Ontology, new materialism, social theory, embodied individualism

Format

Oral presentation

Reducing the Off-target Effects of Chemotherapy Using Nanomedicines

Michael Greenwood

School of Science, Engineering and Environment
Email: m.greenwood2@edu.salford.ac.uk

Supervisor
Dr Zeljka Krpetic – z.krpetic@salford.ac.uk

Abstract

Gold nanoparticles are inert and non-toxic, with a highly customisable morphology and surface chemistry that allows for the loading of drugs and carefully selected cancer-targeting molecules. Our research focuses on investigating the role of the size, shape, and surface chemistry of gold nanoparticles in the delivery of clinically available chemotherapeutics, revealing the underlying mechanisms that may allow one type of nanomedicine advantages against particular types of cancer.

Ultimately, target specificity towards cancers of interest will be optimised, significantly lowering the overall dose of chemotherapeutic drugs that need to be administered to a patient, and thereby blunting the many negative side-effects of such therapy.

Keywords

Gold, nanoparticles, chemotherapy, drug delivery, nanomedicine

Format

Oral presentation

The Development of a Standardised Positioning and Compression Protocol for Use Within UK Breast Screening and Symptomatic Services

Muniratu Aliu Osmanu

School of Health and Society
Email: m.a.osmanu@edu.salford.ac.uk

Supervisors
Dr Claire Mercer – c.e.mercer@salford.ac.uk
Dr Katy Szczepura – k.szczepura@salford.ac.uk

Abstract

Background: Mammography is associated with pain/discomfort and this is mainly due to positioning and the compression applied to the breast. The aim of the research is to develop an evidence-based positioning protocol that may help reduce pain/discomfort experienced during mammogram. The angle of imaging plate on side-to-side mammogram projection plays a vital role in the distribution of pressure through the breast. When the imaging plate angle is perpendicular to the sternum during compression, there should be an even pressure balance and increased breast coverage. This could result into a less painful procedure.

Method: A phantom study was conducted on a model torso with breast attachment. A digital inclinometer was used to take the angle of model's sternum before it was positioned for MLO. Xsensor pressure mat was secured to the surfaces of the compression paddle and imaging plate to read and record pressure distribution applied on the breast phantom. Compression of 10daN was applied to breast phantom and pressure readings and breast footprint were recorded with the imaging plate at various angles in the multiples of 5 from 40^0 to 70^0. Numerical pressure data recorded on the mat was transferred onto Excel and analysed.

Results: Imaging plate angles at 55^0 to 65^0 produced a more even pressure and area balance. The recorded sternal angle of model was 60^0.

Conclusion: When the imaging plate angle is parallel or close to the angle of the sternum, there is an even distribution of pressure and area. A study in human female volunteers using this method is in progress.

Keywords

Mammography, positioning, compression, pain

Format

Oral presentation, Poster

Helping People to Help Themselves: the Development and Evaluation of a Peer-Supported Model of eTherapy (digital therapy) in the Management of Anxiety and Depression in Adults

Nicola Lidbetter

School of Health and Society
Email: n.lidbetter4@edu.salford.ac.uk

Supervisors
Prof Alison Brettle – a.brettle@salford.ac.uk
Dr Deborah Robertson – d.a.f.robertson@salford.ac.uk
Dr Elaine Beaumont – e.a.beaumont@salford.ac.uk

Abstract

Computerised therapy or eTherapy has existed for over 20 years and is credited with widening access to evidence-based psychological therapies, particularly Cognitive Behavioural Therapy (CBT). Since its introduction to the primary care mental health landscape in England, eTherapy has predominately been delivered as a clinician-supported, low intensity intervention, as part of the Improving Access to Psychological Therapies (IAPT) initiative. IAPT was established to provide evidence-based psychological support to individuals affected by common mental health difficulties; predominately anxiety and depression.

Whilst the effectiveness of eTherapy programmes in the treatment of anxiety and depression is well established and to a degree, the acceptability of the approach, few studies have been undertaken in real-world settings to ascertain how eTherapy as an intervention works in community settings and whether it achieves positive outcomes and is acceptable to clients. Even more scarce is published research on eTherapy service delivery models with most studies focusing on eTherapy programmes. As eTherapy is typically supported by clinicians, this is the model of delivery that has been studied the most. There is an absence of research that focusses on eTherapy delivery models that utlilise and integrate peer support as opposed to clinician or therapist-supported eTherapy.

The PhD describes the development and evaluation of an innovative model of peer-supported eTherapy service delivery, developed in a charity, commissioned to deliver low intensity IAPT services in the treatment of anxiety and depression in adults.

Keywords

eTherapy, peer support, anxiety, depression

Format

Oral presentation

Community Stakeholders Involvement as a Prerequisite for Project Success

Obinna Ebiega-Oselebe

School of Science, Engineering and Environment
Email: o.ebiega-oselebe@edu.salford.ac.uk

Supervisors
Dr Anthony Higham – a.p.higham@salford.ac.uk
Dr Greg Watts – g.n.watts@salford.ac.uk

Abstract

The emphasis on participation in construction projects in recent decades has resulted from a backlash to large-scale top-down development projects. Additionally, community engagement is seen as critical for securing community decision-making and ensuring equal access for all members. On the other hand, construction project success and failure are virtually often judged only from the client's or construction professional's viewpoint, using time, cost, and quality as criteria. This study, therefore, aimed at empirically investigating the involvement between the local community and the Nigerian construction industry to ascertain the best practice for achieving successful projects within the community.

A qualitative research method was proposed. As the study spans through three mega building construction projects, a purposeful and snowballing sampling procedure was also used to select thirty-two respondents. A case study and semi-structured interview schedule was used for data collection while thematic analysis was used for data analysis. The community participants were also in attendance for a focus group meeting as the researcher needed to test pre-conceived notions and findings. In conclusion, the extent of community participation was low in the decision-making process of the projects. Hence the reason for unsuccessful projects within the Nigerian community. Without the true involvement of the local community stakeholders in the decision making of a project, mistakes in project failure may be repeated, and related economic development hindered. This is the case of the Nigerian community.

Keywords

Construction project success, project failure, community engagement, construction projects and the local community

Format

Oral presentation

The Role of Extracellular microRNA in the Treatment of Medulloblastoma

Oyindamola Amusan

School of Science, Engineering and Environment
Email: o.p.amusan@edu.salford.ac.uk

Supervisors
Dr Arijit Mukhopadhyay – a.mukhopadhyay@salford.ac.uk
Dr Caroline Topham – c.h.topham@salford.ac.uk

Abstract

Medulloblastoma (MB) is one of the most common, aggressive forms of childhood brain cancer. It has a poor detection in its early stage which affects treatment. Currently, the treatment for MB includes surgery, radiation, and drugs to kill the cancer cells, which results in severe and long-term side effects. However, research has shown that cancerous cells releases a large amount of membrane bound extracellular vesicles, otherwise called (EVs). EVs plays an important role in cell-to-cell communication and serve as carriers for biological materials such as DNA, RNA, and microRNAs. EVs are known to be disease marker in human diseases including cancer, microRNAs are discovered to be loaded in the EVs. Hence, microRNA carried by EVs may highlight a new mechanism in cancer progression, which leads to the identification of disease markers that can be used in the long run for the treatment of MB. This research explores the role of microRNA carried by EVs in improving the treatment of MB. We have studied the effect of an approved drug compound (Cisplatin) used as a standard treatment on MB, on a brain cell (MB03) to examine the presence of selected extracellular microRNA released from brain cell line. After treatment with Cisplatin, we checked the altered expression of selected microRNAs released from brain cell line, to evaluate the functional role of the selected microRNAs. To this end, the focus of this research is to identify extracellular microRNAs as a possible disease marker, for early detection and hence, improving the treatment of MB.

Keywords

Medulloblastoma, extracellular vesicle, microRNA, treatment, disease marker

Format

Oral presentation, Poster

Service-Dominant Logic in Sports: A Literature Review

Pin-Yu Yu

Salford Business School
Email: p.y.yu@edu.salford.ac.uk
Twitter: @PaulineYuPY

Supervisors
Dr Alex Fenton – a.fenton@salford.ac.uk
Dr Neil Fowler – n.fowler1@salford.ac.uk

Abstract

Social media provides two-way communications and interaction for both brands and customers, and this generates value through relationship marketing. 3.6 billion people were using social media in 2020 globally and this is increasing especially in the realm of sports, consisting of 52.6 % of sports fans accessing online sports content via devices. Compared to other industries, sports fans are more inclined to connect to their favourite brands and this makes sport a unique industry for service-dominant logic (SDL) research. SDL means brands and customers are co-creators of value in both direct and indirect interactions. Relationship marketing through the lens of SDL affects the value of customers, created with the brands by the total co-creation process of all elements. The purpose of this poster is to expand upon the work of "the role of social media in the co-creation of value in relationship marketing: a multi-domain study". The study will therefore identify and categorise contribution and findings matched to SDL criteria and suggest opportunities for future research from the literature focusing on fans relationships. The role of fans has been increasingly emphasised both in sports marketing and academia; therefore, this will have both academic and practical value to investigate the effective implementation of social media as a relationship marketing tools with SDL perspectives. It also aims to emphasise the role of customers for social media and relationship marketing, contributing fans' perspectives in sports to customer-dominant logic theory and the lens of fans for sports practitioners.

Keywords

Relationship marketing, service-dominant logic, social media, sports, fans

Format

Poster

Cancer Nanotechnology: Design of Multimodal Gold Nanoparticle-based Chemotherapeutics

Pouria Rafati

School of Science, Engineering and Environment
Email: p.rafati@edu.salford.ac.uk

Supervisor
Dr Zeljka Krpetic – z.krpetic@salford.ac.uk

Abstract
Clinically available cancer therapies are restricted to radiation, chemotherapy, and surgery, all often resulting in damage to healthy tissues and causing the risk of cancer recurrence. Nanotechnology-based chemotherapeutics offer targeted therapies, selective treatments, along with a personalised medicine approach. They involve synthetic nanoparticles specifically conjugated with chemotherapy drugs, which can ultimately lead to improved distribution in biological fluids, increased systemic circulation times, protection from degradation by cellular components, and reduced systemic toxicities.
Specifically, gold nanoparticles represent an excellent choice for anticancer applications due to their biocompatibility, tunable optical properties, and advanced surface functionalisation. Currently, nanoparticle design for anticancer applications is focused around the design and development of novel multimodal and multifunctional, biocompatible nanoparticles for use in cancer therapy and cancer diagnostics. These particles provide an opportunity to reduce common side-effects of traditional chemotherapy drugs and enable optimal dose delivery to the targeted tissues.
This interdisciplinary PhD project is focused on the design and synthesis of novel functional gold nanoparticles and high-throughput evaluation of the in vitro response on a range of cancer cell lines. Moreover, this study will investigate the complex mechanisms of cellular uptake of these nanoparticles designed as drug delivery vehicles. Thus, the project has the potential to contribute to the development of state-of-the-art nanoparticle-based cancer treatment strategies.

Keywords
Gold nanoparticles, cancer nanotechnology, drug delivery, multifunctional nanoparticles

Format
Poster

Talking as Restorative Justice: A Conversation Analysis of Victim-Offender Meetings

Rachel Langford

School of Health and Society
Email: r.langford2@edu.salford.ac.uk

Supervisors
Prof Chris Birkbeck – c.h.birkbeck@salford.ac.uk
Prof Greg Smith – g.w.h.smith@salford.ac.uk

Abstract

Restorative justice is an alternative response to crime in comparison to more punitive sanctions imposed through sentences at court. It is based on direct interaction between the victim and offender who are brought together to talk about the impact of crime. This study used audio-recordings of five restorative justice meetings including adult offenders. The recordings were transcribed and examined using the method of conversation analysis which investigates how social activities are accomplished through talk. The purpose of this research was to examine the institutional objectives achieved in the talk, the formality of the talk, how questions were asked and answers were responded to, revealing finer details of the interaction. Findings revealed that facilitators asked questions and victims and offenders answered them. The answers given were assessed by facilitators for adequacy and accounts were persuasively re-narrated when they did not align with the objectives of the meeting. Asymmetry was demonstrated when the talk of offenders was heavily scrutinised and challenged by facilitators which was comparable to the talk of victims which was accepted and supported. A question was asked that offenders interpreted as an invitation to apologise. Through the question-answer framework, some apologies were directed at victims and received a response. Other apologies were directed at facilitators, resulting in no response from victims. These apologies were less effective because no response meant the apologies could not be accepted. Overall, institutional talk, asymmetrical relationships between facilitators, victims and offenders and the attendance of the victim contributed to the achievement of offender restoration.

Keywords

Restorative justice, conversation analysis, institutional talk, asymmetry, restoration

Format

Oral presentation

Living Walls and its Implementation in the Semi-Arid Region

Rakiya Abubakar

School of Science, Engineering and Environment
Email: r.abubakar@edu.salford.ac.uk

Supervisor
Dr Yingchun Ji - y.ji@salford.ac.uk

Abstract

As the effects of climate change spread across the globe, sustainable solutions from different walks of life continue to emerge. Sustainable practice of greening the built environment continues to receive great attention as part of the solution to mitigate the effect of climate change. Living wall system refers to planting on the vertical surfaces of buildings either upright or sloping surfaces. Living wall system as climate mitigation tool modifies negative environmental issues due to its numerous benefits. There is need for more empirical data on living wall system to enhance its application. While living wall systems are an integral part of strategies to mitigate against environmental impact of climate change in Europe, the technique has not been explored in sub-Saharan Africa especially Nigeria.

This research aims to review the living wall systems and subsequently determine their potential application in parts of Nigeria and other semi-arid regions of the world. Plant species that thrive in the region will be reviewed from literature and their relationship with living wall design will be evaluated. Furthermore, the generated knowledge will be investigated under various scenarios using the envi-met simulation model. The outcome from this research would provide design guidelines for building professionals and government on implementation of the living wall system.

Keywords

Sustainable practice, Greening, living wall system, climate mitigation tool, Envi-met simulation model

Format

Poster

Soft Landing and the Construction Industry

Raphael Adeyinka Adesina

School of Science, Engineering and Environment
Email: r.a.adesina@edu.salford.ac.uk
Twitter: @akokura1

Supervisors
Prof Jason Underwood – j.underwood@salford.ac.uk
Mr Andrew Fleming - a.j.fleming@salford.ac.uk

Abstract

The construction industry worldwide has large numbers of professionals in different areas of specialisation working on any given project. The planning and processes of construction are complex. This means that these professionals always work in their areas of specialisation with intention of delivering building as planned in the design. But these professionals work perfectly in their areas of specialisation without collaborating at an effective level. This makes producing building costly and needing extended period beyond set deadlines. A lot of materials that affect the environment are used in producing these buildings.

To change these adversarial working conditions, the construction industry, working with government came up with some guidance on collaborative working where professionals and other stakeholders come together from project inception to partake in the construction process. This is known as soft landing. Soft landing ensures that people involved in producing buildings work together in ways that deliver more efficient buildings fit for purpose and kind on the environment.

Soft landing is initiated by the project client and could be made contractual. Soft landing ensures that a synergy of people, process and technology are used to the best advantage of producing buildings and structures that can be understood by end users and managed even some years after the building has been put to use.

Keywords

Soft landing, professionals, process, construction, collaboration

Format

Oral presentation

Coordination of Development and Operations Activities in Agile Software Development

Ruth Macarthy

School of Science, Engineering and Environment
Email: r.w.macarthy@edu.salford.ac.uk

Supervisor
Dr Julian Bass – j.bass@salford.ac.uk

Abstract

Productivity in software development is highly dependent on the effective coordination of the activities involved and on the interrelationship among the actors. DevOps (Development and Operations) is described as a software engineering culture and philosophy that utilises cross-functional teams, to build, test, and release software faster and more reliably through automation. Research claim that its adoption improves quality, security, and better collaboration in software development. However, organisations are faced with a wide range of choices, and very few guidelines on how to navigate through a plethora of valuable information, to successfully implement DevOps. This poses significant risks and has motivated us to investigate its implementation in practice. The PhD adopts an iterative empirical study approach, primarily based on interview with industry practitioners. A total of 27 industry practitioners across 15 organisations were interviewed. Transcripts of interviews were coded and analyzed using a method informed by Grounded Theory. Firstly, the study investigated the perception of DevOps and its associated practices. It provides empirical evidence of four different modes, and a novel taxonomy of DevOps implementation. Secondly, we explored the identified modes to understand the factors influencing such implementation. Our research show correlation between skillsets and the strategies of DevOps implementation. We conclude that the choice of organisational DevOps implementation strategy should generally be based on a consideration of technologies, processes, culture, and skillsets as top-level concerns. We combine the findings from our exploratory study and literature to develop an adaptive model aimed at providing guidance for DevOps implementation in organisations.

Keywords

Devops implementation, software development, work coordination, DevOps strategies, DevOps

Format

Oral presentation

A 3D Infection Model to Determine How d-Mannose Could Reduce Recurrent Urinary Tract Infections

Sakina Ahmed

School of Science, Engineering and Environment
Email: s.ahmed47@edu.salford.ac.uk

Supervisors
Dr Chloe James - c.james@salford.ac.uk
Dr Sarah Withers - s.b.withers@salford.ac.uk

Abstract

Urinary tract infections (UTI) are the second most common type of bacterial infection worldwide. They are often recurrent, annually affecting millions of people, mainly women. The increasing challenge of antibiotic resistance is severely threatening the success of current treatments and there is an urgent need for alternative strategies to reduce this disease burden. Uropathogenic *Escherichia coli* (UPEC) are the primary cause of UTI and cause disease by binding to and invading the lining of the bladder. We are using a 3D infection model to investigate UPEC binding in the presence of urine collected from women enrolled on a clinical trial of d-mannose, which has been proposed to reduce *E. coli* binding. We compared the growth of three types of UPEC in artificial urine. All grew more slowly in urine than in nutrient-rich bacterial growth medium. However, strains CFT073 and 536 were better adapted to this environment than UTI89. Next, we grew specialised cells from the lining of the human bladder and differentiated them on porous membranes to establish a 3D model of a bladder lining. We then used a gentamycin protection assay to show that CFT073 can bind to the differentiated bladder cells and that both can withstand exposure to urine for 24 hours. The initial results suggest that CFT073 binding was reduced in the presence of urine in sample 7 and 9, compared to the control groups. Our data will provide a mechanistic understanding of how prophylactic d-mannose may prevent recurrent UTI and reduce the global burden of disease.

Keywords

UPEC, UTI, D-mannose, adhesion, binding

Format

Poster

Cybersecurity Excellence Framework for Bahrain's Fintech Stakeholders

Salah AlBenJasim

School of Science, Engineering and Environment
Email: s.k.albenjasim@edu.salford.ac.uk
Twitter: @albinjassim

Supervisors
Dr Tooska Dargahi – t.dargahi@salford.ac.uk
Prof Haifa Takruri – h.takruri2@salford.ac.uk

Abstract

According to a Chinese saying, when the winds of change blow, some people build walls and others construct windmills. Winds of change are blowing across the financial systems, with services and advancements in Financial Technology (FinTech) influencing all aspects of the financial sector, and generating a continual stream of innovations. Despite FinTech's advantages in efficiency improvement for financial services channels, competition enhancement, and financial inclusion promotion, it creates new challenges that endanger financial institutes' stability and integrity in general. Cyber-attacks such as (Phishing, Denial of Service, Malware, etc.), are used to threaten the security of FinTech. Therefore, Cybersecurity is a concern to be addressed to properly manage risks while integrating FinTech electronic services.

This research will look into the definition of FinTech, highlight the challenges that FinTech faces, and find what measures can effectively manage the FinTech cybersecurity risks. Furthermore, it provides an overview of the commonly adopted cybersecurity standards in the banking industry. The research will use these standards as the basis for proposing a cybersecurity framework for FinTech's stakeholders in Bahrain, as regulation for this subject is still recent. A framework that ensures an excellence level by creating a balance that optimises its advantages while lowering potential cyber threats to the financial system - in other words, the correct blend of walls and windmills. Bahrain is used as a research field to illustrate the critical aspects involved in developing such a framework through research questionnaires, in-depth interviews of executives, and business studies. This research endeavours to raise the level of cybersecurity and trusted electronic environment for both the customers and FinTech in Bahrain.

Keywords

Cybersecurity, FinTech, framework, Bahrain

Format

Oral presentation

Building a Disaster Resilient Energy Sector in the United Arab Emirates

Saqer Al Qassimi

School of Science, Engineering and Environment
Email: s.s.h.alqassimi@edu.salford.ac.uk

Supervisor
Dr Claudia Trillo – c.trillo2@salford.ac.uk

Abstract

The purpose of this research is to examine the vulnerability and resilience of the energy sector in the United Arab Emirates that shape the development of disaster and resilience planning as well as to identify the barriers this resilience building process could come up against.

To support the attainment of this broad aim this research undertakes a thorough examination of the literature on the subject of disaster risk reduction, vulnerability and resilience helped contextualise these key concepts within the field of emergency management. The elements that shape and build resilience in the energy industry were identified, both at physical (protection of infrastructure and equipment against damage) and organisational level (development of staff competence and leadership).

The risks most relevant to the UAE landscape were recognised as being those related to tropical storms, climate change and geological activity, while the possibility of terrorism, either through physical means or through cyber-attacks, was the most potent manmade threat.

Preliminary results indicate a changing typology of disasters and threats, namely cyber warfare and drone attacks, featured prominently in interviewee's answers. Preliminary findings indicate the need to involve multiple stakeholders in the disaster risk reduction process, along with the need to implement strict regulation in the sector.

A proactive management and enough resources and capabilities to allocate to disaster preparedness and management were identified as some of the most crucial points for their organisation and for the energy sector in the UAE as a whole. Positive actions can include wider engagement of the relevant stakeholders in the disaster planning and mitigation procedures.

Keywords

Risk management, disasters, resilience, energy security, emergency planning

Format

Oral presentation, Poster

Cellular Exploration of Childhood Cancers

Shazia Begum

School of Science, Engineering and Environment
Email: s.begum23@edu.salford.ac.uk

Supervisor
Dr Anna Akinshina – a.akinshina@salford.ac.uk

Abstract

Rhabdoid tumour (RT) is a rare but aggressive form of cancer affecting children under the age of 1 year. These tumours typically grow in brain and kidneys. This cancer is difficult to cure and the survival is poor, only 31% of the diagnosed babies living to the age of 1 year. Although a vast range of cancer treatments already exist and developing new techniques may seem futile, the reality is that many of these treatments are not "child-friendly".

Treatments like chemotherapy are aggressive and highly toxic to children. Chemotherapy drugs target rapidly dividing cancer cells, but also damage healthy cells in children. This can result in long-term side effects such as heart problems or brain disorders. Therefore, there is a need for less toxic treatments for children.

In this research the RT cells (called A204 cell line) were used to study their interactions with loratadine and carvacrol. Loratadine is a common anti-allergy drug and carvacrol is a compound from essential oils used in food and cosmetics. Both these drugs show anticancer properties and here they are repurposed as potential treatment for RT.

To see if the drugs would work, their cytotoxic activity was tested experimentally and computationally. Results show these drugs can kill cancer cells but not healthy cells. The drugs were able to produce a synergistic effect when used in combination, where the combined effect of the drugs was better than that produced individually. These findings suggest potential benefits repurposing of already approved drugs for treatment of childhood RT.

Keywords

Rhabdoid tumour, molecular modelling, drug repurposing

Format

Poster

Exploring the Lived Experiences of the Sense of Self in Codependency

Simona Merlusca

School of Health and Society
Email : s.merlusca@edu.salford.ac.uk

Supervisors
Dr Mark Widdowson – m.widdowson@salford.ac.uk
Dr Donna Peach – d.peach@salford.ac.uk

Abstract

A term that covers problems and difficulties faced by people in different areas of their lives (such as mental health, physical health, addiction) under one umbrella is codependency. There is a lot of debate in the academic, clinical and self-help literature in attempts made to define codependency. The construct has been explained by different theorists in terms of dysfunctional behaviours in intimate relationships in adulthood (especially in relationships with an alcoholic partner), personality disorder, addiction.

Research completed so far has tried to explain codependency by looking at different theories which have the development of the 'self' at their core. This research project aims to explore how people who have experienced codependency view themselves, and feel about themselves. Adopting a phenomenological approach, the current study looks at how this way of feeling about themselves has impacted on different areas of their lives such as their relationships, work, actions and behaviours. The current study also looks at what coping mechanisms they have used to protect the way they see themselves, and what kind of interventions supported them to change their view of self, changes which led to them having a better life.

Using qualitative research, this study will employ interviews to explore the thoughts and experiences of participants around their construct of 'self' in more depth.

The results of this research will be provided to the research community and other stakeholders. Furthermore, this will help people experiencing codependency have their voices heard.

Keywords

Experiences, codependency, sense of self, support, intervention

Format

Poster

The Lived Experiences of Older Volunteers in the Charity Retail Sector

Siobhán Kelly

School of Health and Society
Email: s.a.kelly2@salford.ac.uk
Twitter: @ssiobhan

Supervisors
Prof Andrew Clark – a.clark@salford.ac.uk
Dr Gaynor Bagnall – g.bagnall@salford.ac.uk

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 in later life, 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 seeks to answer the question: what is the lived experience of volunteers aged 65+ working within the charity retail sector in the North West of England? By ethnographically investigating the participants' everyday life, the project aims to provide fresh insight into people's experiences of ageing in this setting and inform how the contemporary charity shop can continue to exist as a complex space of inclusion. In this paper I will: discuss preliminary findings about the nature of charity shop work for older volunteers; explore the impact of 'professionalisation' on the older person engaging in charity shop work; raise questions about this groups future place in the sector; and consider how the COVID-19 pandemic has reshaped the way older people both use and imagine this space.

Keywords

Ageing, social connectedness, social inclusion, charity shop, volunteering

Format

Oral presentation

Role of sEVs microRNA in Lung Cancer

Sowmya Chinta

School of Science, Engineering and Environment
Email: s.chinta@edu.salford.ac.uk
Twitter: @SowmyaSubash

Supervisor
Dr Arijit Mukhopadhyay – a.mukhopadhyay@salford.ac.uk

Abstract

Extracellular vesicles (EVs) are tiny membrane-bound bubbles released naturally by different cells, tissues, and organ systems. These EVsplays an important role in providing cellular communication. EVs are sub-categories based on their size ranging from 30nm to <200nmas small extracellular vesicles (sEVs) and >200nm as medium/large (mEVs / lEVs) extracellular vesicles. EVs carry cargo such as nucleic acids, proteins and represents their mother cells. These particles can be obtained from bodily fluids like blood, urine, serum and milk. Therefore, EVs can be used as a disease marker. This project focuses on microRNAs located on chromosome 14, known to be dysregulated in lung cancer as a possible disease marker for smoking and E-liquid, released via sEVs from human lung cells. First, our experimental plan includes culturing cancer cells and normal cells treated with 100uM cigarette smoke and E-liquid for 72 hrs compared to untreated. After treatment, we isolated sEVs and RNA from sEVs. Next, sEVs were quantified using a BCA protein assay. Further, these sEVs were studied for concentration using nanoparticle tracking analysis. The results revealed higher sEV concentration with cigarette smoke and E-liquid treatment innormal cells. In contrast, cancer cells showed lower sEV concentration with treatment. Both compared to untreated cells. Finally, E-liquid showed miRNA -323-5p and miRNA-758-5p expressed in the opposite direction in both cancer and normal cells, whereas with cigarette smoke, these two were downregulated. Thus, we suggest these two miRNAs can potentially serve as a non-invasive disease marker for E-liquid.

Keywords

Lung cancer, extracellular vesicles, E-liquid, small extracellular vesicles(sEVs), microRNA

Format

Oral presentation

The Impact of Environmental Conditions on Quality Control Procedures in Mammography

Stamatia Papathanasiou

School of Health and Society
Email: s.papathanasiou@edu.salford.ac.uk

Supervisors
Dr John Thompson – j.d.thompson@salford.ac.uk
Dr Katy Szczepura – k.szczepura@salford.ac.uk

Abstract

Objective: Mammography is a technically demanding x-ray examination that requires the highest standard of image quality used for the early detection of breast cancer. Quality control (QC) ensures that the equipment in the diagnostic imaging process is functioning and maintained at the highest level. This research investigates the impact of different environmental conditions on these quality control procedures.

Methods: 9 images from a test object were evaluated by participants under different environmental conditions including 3 different illumination levels (low, medium and high), white and gray wall colours and 2 different specifications of computer monitor (high and low technical characteristics). The participants identified the number of visible structures in all images and all environmental conditions; 12 conditions in total. The presence of reflections on the surface of the monitors were all also investigated for the 12 conditions.

Results: Great variation in the number of visible structures in the different environmental conditions. A preference for gray wall colour, lower ambient light and a monitor with high specifications was identified. Furthermore, it was revealed that white wall colour increased the presence of reflections at the faceplate of the monitors.

Conclusion: High ambient light and a white wall colour contributed to increased reflections on the surface of the monitors. This has a negative impact on the technical evaluation of images during QC procedures. This may lead to a detrimental impact on service delivery.

Keywords

Mammography, quality control, viewing conditions

Format

Oral presentation, Poster

Enabling Urban Agriculture in the Global North and South: A Comparative Study of the UK and Nigeria

Tayo Ajisope

School of Science, Engineering and Environment
Email: t.a.ajisope@edu.salford.ac.uk

Supervisors
Dr Michael Hardman – m.hardman@salford.ac.uk
Mr Andrew Clark – a.p.clark@salford.ac.uk

Abstract

With urban populations rising and an estimated 10 billion people on the planet by 2050, there is an urgent need for more food-resilient cities. In hand with this population rise, it is expected that some 70% of people will live in cities. The coronavirus pandemic has put further strain on the global food systems due to the restriction of movement, which has disrupted movement of people and products causing a significant reduction in access to agricultural labour. The practice of Urban Agriculture (UA) has been relatively successful in the Global North (GN), but the situation is different in the Global South (GS) due to limitations such as policy changes, urban planning, and land availability. Generally, UA has a long history in the GS, however, formal UA is still scarce. This research appraises UA activity in the GN and GS, exploring existing practices and future potential in the UK and Nigeria, particularly about upscaling practice. The research adopts a qualitative research methodology to critically compare approachesto city food growing in both locations. Some clear indications show inadequate enlightenment on new UA methods in the GS, non-inclusion of UA in planning and zoning and absence of favourable policies supporting UA. Data collected from both locations will help to provide a detailed assessment and an understanding of the impact of UA on food security and sufficiency.

Keywords

Urban agriculture, food sustainability, food security, food policy, food sufficiency

Format

Oral presentation, Poster

Changing Images of Disability in British Television Drama

Terry Hall

School of Arts, Media and Creative Technology
Email: t.hall3@edu.salford.ac.uk
Twitter: @almosttheDR

Supervisors
Dr Richard Hewett – r.j.hewett@salford.ac.uk
Prof Andrew Willis – a.willis@salford.ac.uk

Abstract
Changing Images of disability in British television considers four decades of images of disability, particularly focusing on appearances of disability in telefantasy and long form social realist drama. It is the first study to consider non-disabled characters played by disabled actors, such as Nabil Shaban who played the grotesque alien Sil in *Doctor Who* (BBC, 1963-). Shaban's disability furthered the uncanny appearance of the alien, but it also created a conversation about what roles a disabled actor can and cannot be cast in. Shaban in his interview with me expresses the reluctance he experienced from producers at the time for him to portray anything more than an alien. As broadcasters have become more inclusive the roles given to disabled people have changed, such as actress Rachel Denning. Denning is the first an actor of restricted height to play a human character, not an alien, in *Doctor Who*; but it took 32 years for this change to transpire. This work includes the interviews with disabled actors such as: Nabil Shaban, Rachel Denning, Francesca Mills, Jimmy Vee, Cherylee Huston, Ellie Wallwork, and Casting Director Andy Pryor. Authentic portrayals of disability did not begin to emerge till the late 2000's, in social realist dramas like *EastEnders* (BBC, 1985), but they relied on stereotyping disabled people, reducing them down to the evil avenger. Contemporary images of disability are authentic, but it has taken a long time for this change to take place, because of the attitudes of those in the television production industry.

Keywords
Disability, inclusive, telefantasy, long form social realist drama, changing

Format
Oral presentation

The Transferability of Plant Pest Models

Thomas Taylor

School of Science, Engineering and Environment
Email: t.h.taylor@edu.salford.ac.uk

Supervisors
Dr Stephen Parnell – s.r.parnell@salford.ac.uk
Dr Katherine Yates – k.l.yates@salford.ac.uk

Abstract

Plant diseases have increased dramatically in recent times with significant environmental and economic impacts. Surveillance for early detection of new epidemics is crucial for successful control and eradication. Parnell et al (2015) introduced a 'rule of thumb' to determine how much and how often surveillance should be performed to achieve early detection. However, the accuracy of the rule of thumb over large spatial scales with heterogenous and aggregated host population is not fully known, but is the key to its practical application. We run thousands of simulations on similar but not identical plant distributions, generating a disease outbreak. We experiment with the variables that affect the epidemic such as the dispersal scale of the pathogen, the aggregation of the landscape, and the transmission coefficient that contributes to the recently famous basic reproduction number. Using a computer simulated monitoring program, we calculate how far an epidemic has spread before being detected and compare this to our prediction prior to observation. Is there is a significant gap between our rule of thumb prediction and the simulated outcome? Can we predict how accurate our rule of thumb will be in different scenarios? For example, how will our confidence in the rule of thumb change for a forest disease (Ash dieback) as compared to a crop disease (Tomato blight)? With the significance of novel invasive plant pests increasing globally, tools such as the rule of thumb, are sorely needed to allocate appropriate surveillance resources.

Keywords

Plants, disease, epidemiology, prediction, surveillance

Format

Poster

Can The Cells' Messengers Tell Us About the Secret Changes that Occur in Neurodegeneration?

Toby Aarons

School of Science, Engineering and Environment
Email: t.aarons@edu.salford.ac.uk
Twitter: @Toby_Aarons

Supervisors
Dr Gemma Lace – g.l.lace-costigan@salford.ac.uk
Dr Arijit Mukhopadhyay – a.mukhopadhyay@salford.ac.uk

Abstract

Neurodegenerative diseases, such as Alzheimer's disease, are associated with changes to the brain that go beyond what is seen in normal ageing. These changes include the build-up of abnormal protein that accumulates in and around brain cells as well as the progressive damage of these cells. These changes result in the symptoms of dementia, including memory loss and behavioural changes.

The changes observed in the brains of patients with neurodegenerative diseases occur in a progressive manner, starting in areas of the brain responsible for memory, with other areas of the brain affected after. This suggests that the abnormal protein and damage is spreading between cells.

The mechanisms that cells use to maintain their health include the release of small vehicle-like bubbles that contain different biological molecules. These vehicles can then be picked up by other cells that can take up the cargo being carried. In Alzheimer's disease, cells that are being stressed by the conditions of the disease release vehicles that contain different cargo to what they would if they were healthy. These changes that occur during the progression of the disease are not only found in the brain, but also in cells across the body.

We aim to measure how the cargo in these vehicles changes in Alzheimer's disease, and determine whether these changes can be used as biomarkers of the early changes of the disease. We hope that this can improve diagnosis and treatment of Alzheimer's disease.

Keywords

Alzheimer's disease, neurodegeneration, extracellular vesicles, microRNA, biomarkers

Format

Oral presentation

Message Prioritization for Disaster Scenario Optimized Link State Routing Protocol

Umar Aliyu

School of Science, Engineering and Environment
Email: u.aliyu@edu.salford.ac.uk

Supervisors
Prof Haifa Takruri – h.takruri2@salford.ac.uk
Dr Martin Hope – m.d.hope@salford.ac.uk

Abstract

Energy efficient communication networks have become a necessity for every society, especially in areas with commonly occurring natural and artificial (human-made) disasters. However, most research focuses on design and implementation of networks for emergency response and disaster recovery operations based on restoration of telecommunication infrastructure using expensive and non-flexible technologies, such as complete network infrastructure in box or on car. In addition, some of the networks proposed in the literatures, are only accessible to rescue team members but not available to disaster victims and rescue volunteer workers who help rescuers with firsthand information about disasters. Therefore, this study not only proposed disaster communication network that can be used by rescue team, disaster victims and rescue volunteers, but also prioritizes ALERT message delivery based on battery level of mobile phones. ALERT message prioritization techniques classify mobile phones into four priority groups - Critical, High, Medium, and Low priorities, thereby prioritizing both message delivery and message status notification for devices with low battery energy. The proposed Message Prioritization for Disaster Scenario Optimized Link State Routing Protocol was implemented in Network Simulator (NS-3.29) based on disaster area network and compared with Optimised Link State Routing Protocols (OLSR) version 1 and 2 routing protocols. The simulation results shows that the proposed routing protocol performs better than the OLSR version 1 and 2 routing protocols in terms of energy conservation, packets delivery, end-to-end delay, and control overhead when simulating 50, 100 and 200 mobile phones. These improvements reveal that the proposed routing protocol extends the lifespan of low battery devices and increases message delivery, leading to a better mental state of such victims during disaster recovery and rescue operations.

Keywords

Message prioritization, low battery devices, energy efficient, disaster communication, routing protocol

Format

Oral presentation

Developing an Interactive Digital Framework for BIM Adoption: The Nigerian Small Medium Architectural Firms

Usman Makarfi

School of Science, Engineering and Environment
Email: u.u.makarfi@edu.salford.ac.uk
Twitter: @uumakarfi

Supervisor
Prof Jason Underwood – j.underwood@salford.ac.uk

Abstract

Building information modelling (BIM) has solidified its position in bringing efficiency to the Architecture, Engineering and Construction (AEC) industry. However, the shift to its adoption and implementation in emerging markets such as Nigeria has brought distortion in both the business processes and environment of the Small and Medium Architectural Firms (SMAFs). However, due to their limited capacity to absorb the costs associated with BIM adoption, the need to understand the process is a priority in order to ensure that resources are managed effectively during this shift, the need for understanding the process of BIM adoption in order to prioritise the management of their limited resources is eminent. Hence, this research aims to introduce an interactive framework for understanding BIM adoption within the Nigeria SMAFs. For this purpose, both quantitative survey and qualitative semi-structured interview research methods were adopted for the empirical enquiry. Furthermore, the data collected from the survey and interviews were analysed and synthesised to extract the main factors that influence BIM adoption within the Nigerian SMAFs and to establish the relationship between the factors. The main factors identified include organisational capability, individual competence, environmental control and technology quality. Thus, these were used to develop a framework for understanding the adoption of BIM within the Nigerian SMAFs. However, to create an interactive prototype of the framework, an online platform for designing mobile application prototypes (Figma) was used. The prototype was used in validating the BIM adoption framework based on its usefulness, practicability and ease of use.

Keywords

Building information modelling, model construct and framework, adoption, digital prototype, Nigerian small and medium architectural firms

Format

Oral presentation

Three Minute Thesis™

An Empirical Investigation of Agile Methods for Cybersecurity

Abdulhamid Aliyu Ardo

School of Science, Engineering and Environment
Email: a.a.ardo@edu.salford.ac.uk

Supervisors
Dr Julian Bass – j.bass@salford.ac.uk
Dr Tarek Gaber – t.m.a.gaber@salford.ac.uk

Abstract

Agile methods have widely been adopted by software development companies because of their ability to improve the flexibility, reliability, productivity, and quality of software products. They were developed mainly to address some of the inherent problems observed in traditional development methods which include high delivery costs and time consumption, wastages and lack of customer involvement, among others. This research explored agile methods security from a practitioner perspective. Neglecting security during system design using agile methods increases the risk of software attacks. Thus, there is a need to make security an integral part of the agile software development process. In this research, data was collected through semi-structured interviews from 8 agile practitioners spread across different sectors of the United Kingdom (UK) economy who participated in the study between August and November 2020. The research participants were recruited using a snowball sampling technique. A method informed by the grounded theory methodology approach was used for data analysis. The key finding of the study is the absence of dedicated security collaboration practices in agile. We did not find evidence of how agile practitioners consider security in their ceremonies. Other findings include the description of how organizational security culture is built in different software development companies. The practitioners involved in this study have described how security is the responsibility of security specialists or a security team. Also, the security resource constraints faced by agile practitioners were presented. The main contribution of this paper is the creation of a descriptive theory showing how practitioners manage security concerns during the software development process.

Keywords

Agile methods, agile practitioners, grounded theory, security collaboration, security culture

Examining Human - Wild Carnivore Conflicts in Kargil Trans-Himalayas, India

Iftikar Ali

School of Science, Engineering and Environment
Email: i.ali19@edu.salford.ac.uk

Supervisors
Prof Robert Young - r.j.young@salford.ac.uk
Prof Jean Boubli - j.p.boubli@salford.ac.uk

Abstract

Wild carnivores form an essential part of the global ecosystem and the variation in their population directly impacts the ecology of a region. Human – wild carnivore conflicts are considered to be one of the main drivers for the decline in the population of wildlife species across the globe. Despite the lack of scientific records in Kargil, India, there appears to have been an increase in human-wild carnivore interactions evidenced through undocumented cases. In this part of the trans-Himalayas, livestock rearing is one of the essential sources of income for the local human population. The sharp decline in the prey species in the area causes wild carnivores to enter human settlements in search of food ultimately results in attacks on livestock. The snow leopard (*Panthera uncia*), Tibetan wolf (*Canis lupus chanco*), Himalayan brown bear (*Ursos arctos isabellinus*), fox (*Vulpes vulpes*), and the Eurasian lynx (*Lynx lynx*) are primarily responsible for livestock loss in Kargil. Due to livestock depredation by wild carnivores, local farmers incur severe economic and psychological losses, and they sometimes resort to retaliation killing of the carnivores, resulting in the decline in the population of some of the endangered species of the region. Therefore, intensive research is necessary to understand the pattern of human-wild carnivore conflicts in Kargil, and the impact of human behaviour on wild carnivores and vice versa. We are implementing quantitative as well as a qualitative methodological approach to get an overview of the level and magnitude of human-carnivore conflicts and also trying to understand the peoples' perception of wild carnivores in Kargil, India. To understand the distribution of the population of the main prey species, Asiatic Ibex (*Capra sibirica*) we will be adopting the Double Observer survey method. This study will assist the future conservation action plans to conserve the endangered wildlife species of the region.

Keywords

Biodiversity conservation, human's perception, Kargil, livestock, Trans-himalayas

New Methods to Study Birds in the Chernobyl Exclusion Zone

Helen Whitehead

School of Science, Engineering and Environment
Email: h.c.whitehead@edu.salford.ac.uk
Twitter: @whitehead_helen

Supervisors
Prof Michael Wood - m.d.wood@salford.ac.uk
Prof Bill Davies - w.davies@salford.ac.uk

Abstract

Each time Chernobyl is mentioned in conversation, people think of a desolate area with deformed wildlife but instead it is thriving. This year marks 35 years since the nuclear accident at the Chernobyl Nuclear Power Plant and our knowledge of radiation effects on wildlife continues to grow. Birds are one of the main groups of animals studied in the Chernobyl Exclusion Zone and the reported effects of radiation are mixed. An interesting theme observed in all the studies conducted on birds is the methods that are used, they are considered traditional, but they could also be described as out of date. New, innovative, and up to date methods are now being used to investigate bird abundance and diversity in the Chernobyl Exclusion Zone.

Bioacoustic monitoring involves recording units being deployed into the study location to record the soundscape. These recordings open a whole new way to study birds and provide the opportunity to experience Chernobyl in a completely new way. My research has used new methods including acoustic indices and classifiers to investigate if and how radiation is affecting birds. Both methods have found that radiation is having no significant effect on birds and instead it is ecological factors such as habitat and time of day that are. These new methods will shed a new light onto the true effects of radiation on birds in the Chernobyl Exclusion Zone.

Keywords

Birds, radiation, Chernobyl, effects, wildlife

Doing a PhD in 'COVID time': what have we learned?

Andrea Stein

School of Health and Society
Email: a.m.stein@edu.salford.ac.uk
Twitter: @StressPGR

Supervisor
Dr Rod Dubrow-Marshall – r.dubrow-marshall@salford.ac.uk

Abstract

COVID-19 has affected almost each and every one of us globally. The World Health Organisation (WHO) warned this pandemic could negatively affect mental health. This is mainly due to governmental mandated safety measures of self-isolation, quarantine and social distancing. This change has disrupted regular daily activities such as working at the office, exercising at the gym, or even socialising with family and friends. Current trends show an increase in loneliness, stress, anxiety, depression, sleep disturbances, domestic violence, alcohol and substance abuse.

This research originally intended to investigate mental health experiences of doctoral students, however preliminary interview findings suggest that COVID-19 has affected the daily life and mental health of doctoral students at two Manchester universities (University of Salford and University of Manchester). PhD students have reported experiencing feeling disconnected from others, feelings of isolation, lower mental health, decreased well-being and challenges to work life balance. For the majority of interviewed students, work was transferred from university offices during office hours to the endless day of working at home and well into the night. These reflections are aimed to improve understanding the nature of student mental health for Greater Manchester PhD students and how considerable disruptive change/s brought on by an event can influence behaviour. These findings are hoped to lead to implementations to better the service needs for PhD students nationally and internationally.

Keywords

Doctoral students, COVID-19, mental health, well-being, PhD experiences

Air Pollution Perceptions and Responses: A Cross-Cultural Comparative Study and Analysis of Nigeria and the United Kingdom

Kevwe Olomu

School of Science, Engineering and Environment
Email: k.g.olomu@edu.salford.ac.uk

Supervisor
Mr Andrew Clark – a.p.clark@salford.ac.uk

Abstract

Imagine living in an area where you do not have to worry about the quality of air you breathe or the impacts that the air pollution may have on your health or the environment. Currently ranked as the 4th leading cause of premature deaths globally, air pollution is a problem that cannot be eradicated, but rather, it can be controlled, minimized, and mitigated to reduce the adverse impacts. Many cities across the world have implemented different strategies to help gather data that can be used to better understand the causes of air pollution and identify hotspots to improved actions aimed at reducing pollution levels and protect public health.

Are there applicable management strategies for air pollution in a country like Nigeria where perceptions of and attitudes towards tackling air pollution issues remain unsure? How about a nation like the United Kingdom that has developed a robust monitoring mechanism, regulations, and enforcement laws in place to tackle air pollution issues, but it remains a problem at the local level? My research seeks to address these questions by exploring the perceptions and responses of stakeholders in Nigeria and the UK towards air pollution. My research is important because it aims to contribute to knowledge with this field of enquiry, propose guidelines and recommendations that take into account the different stakeholders' perceptions and responses; it will provide an evidence-based approach for the feasibility, adoption, and acceptance of effective air pollution management strategies in Nigeria.

Keywords

Air pollution, air quality, air quality management, public health, sustainability

Transferability of Plant Pest Models

Thomas Taylor

School of Science, Engineering and Environment
Email: t.h.taylor@edu.salford.ac.uk

Supervisors
Dr Stephen Parnell - s.r.parnell@salford.ac.uk
Dr Katherine Yates - k.l.yates@salford.ac.uk

Abstract

The Food and Agricultural Organisation (FAO) estimates that up to 40 percent of global crop production is lost to disease annually; costing the global economy around £170 billion per year. Bacteria, fungi, parasites, viruses and pests all contribute to the ongoing challenge of worldly food production and protecting plants with major cultural and ecological significance. These pathogens are increasing sharply with climate change and increases in global trade and travel. Epidemiological models have been increasingly used to inform plant disease surveillance and management strategies in recent times. Yet many of these epidemics escape detection far too long because there is not enough information on how surveillance relates to disease incidence (the total amount or damage of a disease). Recent research has indicated there is a mathematical relationship between surveillance, disease growth rate and disease incidence at detection. Knowing how much damage a plant disease has caused before detection allows the appropriate amount of surveillance resources to be allocated to a specific disease threat. In this project we developed dynamic models that simulated disease spread and surveillance strategies. Using the same software, we made the prediction of disease incidence when detected. Our research indicates that the accuracy of the prediction changes with different plant pathogens. We are investigating this changing uncertainty by creating many realistic plant disease scenarios. With this information at hand, we can increase the accuracy of the approach in realistic landscapes and facilitate its practical application by National Plant Protection Organisations (NPPOS) such as Defra in the UK.

Keywords

Plants, epidemiology, surveillance, prediction, prevention

Alcohol and the Police

David Junior Gilbert

School of Health and Society
Email: d.j.gilbert@edu.salford.ac.uk

Supervisors
Prof Penny Cook – p.a.cook@salford.ac.uk
Dr Clare Allely – c.s.allely@salford.ac.uk
Dr Raja Mukherjee – Raja.mukherjee@sabp.nhs.uk

Abstract

Fetal alcohol spectrum disorder (FASD) is a range of conditions that could result from the consumption of alcohol during pregnancy. The consumed alcohol can cause brain damage in the unborn child, sometimes facial deformation, and a lot of times behavioural problems in the affected individual. Research has shown that individuals with FASD are NINETEEN times more likely to encounter the criminal justice system in comparison to their counterparts who do not have FASD. FASD is much more common than you might think: an estimated 3% of young people in the UK may have it. Despite this, almost no research has been carried out on individuals with FASD and the criminal justice system.

My current research aims to explore the factors that predispose individuals with FASD to encounters with the Criminal justice system using two studies. Study 1 will be a qualitative study where I will recruit individuals with FASD alongside their parents/carers. I will interview them to understand the predisposing factors to encounters with the criminal justice system. I will employ NViVo, a data organisation software to collate my data and thematic analysis will be employed to analyse the data. Study 2 will be a psychological assessment study. I intend to recruit individuals with FASD aged 11 – 17 years old and then carry out psychological assessments to assess: memory, IQ, impulsivity, and interrogative suggestibility.

I hope my research will shine a light on the vulnerabilities of people with FASD in the criminal justice system.

Keywords

FASD, criminal Justice, Fetal alcohol spectrum disorders, CJS, alcohol

Indigenous Beliefs and Practices Associated With Women's Healthcare Choices During Pregnancy

Adedoyin Adeosun

School of Health and Society
Email: a.adeosun@edu.salford.ac.uk

Supervisors
Prof Alison Brettle – a.brettle@salford.ac.uk
Dr Dilla Davis – d.davis4@salford.ac.uk

Abstract

Effective antenatal care is pivotal in improving maternity care especially in a low resource setting, where there is low utilization of the services of skilled birth attendants. The literature identified norms and beliefs as part of the underlying factors which affect a woman's decision regarding where to seek care during pregnancy.

The aim of this study is to explore the indigenous beliefs and practices which may affect women's healthcare choices during pregnancy. An ethnographical exploration of the local factors associated with women's healthcare choices in Ota, a community located in the south-western part of Nigeria was carried out among 20 pregnant women and 8 maternity service providers. Data was collected through semi-structured interviews and observations. The analysis was conducted using the socio-ecological framework.

Powerful beliefs centred around the consumption of special soup made of snails and the belief in supernatural powers are part of the findings from this study. This study contributes to the body of knowledge by offering a theoretical rendering of 'supernatural power of healing'. This unique perspective highlights the need to acknowledge indigenous practices alongside orthodox system of care. Thus, antenatal care is not just going to the hospital to seek care, but it equally encompasses engaging in local practices for protection from evil spirits.

Keywords

Antenatal care, healthcare choices, pregnancy, indigenous factors, maternity service provider