SPARC 2017 Book of Abstracts

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Preface

Welcome to the Book of Abstracts for the 2017 SPARC conference. This year we not only celebrate the work of our PGRs but also the 50th anniversary of Salford as a University, which makes this year's conference extra special. Once again we have received a tremendous contribution from our postgraduate research community; with over 130 presenters, the conference truly showcases a vibrant PGR community at Salford. These abstracts provide a taster of the research strengths of their works, and provide delegates with a reference point for networking and initiating critical debate. With such wide-ranging topics being showcased, we encourage you to exploit this great opportunity to engage with researchers working in different subject areas to your own. To meet global challenges, high impact research inevitably requires interdisciplinary collaboration. This is recognised by all major research funders. Therefore engaging with the work of others and forging collaborations across subject areas is an essential skill for the next generation of researchers.

SPARC is part of a programme of personal and professional development opportunities offered to all postgraduate researchers at Salford. More details about this programme are available on our website www.pg.salford.ac.uk. You can also follow us on Twitter at @SalfordPGRs.

We also 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 the PGR Director for your School will be happy to advise; their details can be found at http://www.pg.salford.ac.uk/contact.

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Spatial Inequality in the Utilisation of Free Maternal Healthcare in Ghana: a Case Study of Greater Accra Region

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Abstract

The optimal health of mothers and newborns especially in sub-Saharan African countries including Ghana is achieved through equitable access and utilisation of appropriate and quality maternal and newborn healthcare services. As a strategy to reduce maternal mortality ratio (MMR) in Ghana, the government of Ghana introduced the free maternal healthcare policy in 2003 that aims at addressing the challenge of financial barriers to utilisation of maternity care. However, despite the implementation of the policy maternal mortality ratio is still a challenge especially in the Greater Accra Region of Ghana. The study therefore aims to explore spatial inequalities in utilisation of the free maternal healthcare in the Greater Accra region, Ghana. This study will also explore how the attitudes, perceptions and knowledge of mothers on the policy affect access and equity of access. Additionally, the study will explore providers' perception, experiences and challenges being encountered with the implementation of the policy that is affecting access and utilisation of maternity care.

This research, which will be an explorative study, will use qualitative research methodology. Qualitative data will therefore be gathered using in-depth interviews and focus group discussions. Purposive sampling techniques will be employed in selecting participants comprising of pregnant women with at least a child, Community Health Nurses, midwives, Deputy Directors of Nursing Services and Chief Nursing Officer. Findings of this study will highlight the need for the Government of Ghana and policy attention to move beyond free maternity care towards addressing the social determinants hindering equitable utilisation of maternity care.

Keywords

Free maternity services, equitable, maternal mortality ratio, utilisation, maternal health

Drug Interactivity Studies to Define Synergistic Anti-malarial Combinatorial Regimes for Emetine Dihydrochloride

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Abstract

The emergence and spread of artemisinin resistance to *Plasmodium falciparum* in Southeast Asia poses a serious threat to ongoing malaria control efforts. Unless new approaches are deployed rapidly, the health and economic burden related to the disease in tropical countries is certain to worsen. The development of treatments through drug repositioning may offer novel candidates permitting new combinatorial regimes with existing anti-malarials. The approach could present a much needed viable, accelerated route to expand the dwindling antimalarial therapeutic repertoire. Drug repositioning screens previously carried out in our laboratory reported the potent antimalarial efficacy (IC_{50} 47nM for *P. falciparum* K1 strain) of the anti-amoebic drug Emetine dihydrochloride hydrate. We present here the preliminary data from a study designed to define the combinatorial therapeutic potential of emetine with a panel of antimalarial drugs, in a bid to minimise non-target effects previously experienced with the use of the drug in amoebiasis. The rational discovery of novel synergistic drug combinations can be accelerated by predictions of combination effects through experimental studies. All combinations were analysed using the optimised CalcuSyn fixed-ratio method validated using the atovoquone-proguanil combination. Following a screen of current antimalarial compounds, our preliminary data identified AN16 as the combinatorial partner drug displaying maximum synergistic interactivity with emetine dihydrochloride. The isobologram plot and the combination index (CI) generated by the CalcuSyn software demonstrated that the interaction between emetine and AN16 is synergistic at IC_{50}, $1C_{75}$ and IC_{90} levels. The MTT cytotoxicity results indicated that the emetine-AN16 combination has a better selectivity index in comparison to emetine alone. The results support further in vivo investigation of the utility of emetine-AN16 combination as an alternative antimalarial treatment for drug resistance malaria.

Keywords

Drug resistance, drug repositioning, emetine, calcuSyn, synergy

Mammography Screening in Nigeria: Women and Practitioners' View on the Factors Affecting Attendance

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Abstract

Breast cancer is one of the leading causes of death amongst women. According to the World Health Organisation (WHO), a significant increase in the incidence of breast cancer is expected in developing countries (such as Nigeria) by 2030. However, mammography screening can significantly reduce the mortality and morbidity owing to breast cancer in women. In Nigeria, 70% of the breast cancer cases are reported at its later stages, and evidence concludes that the participation level of susceptible women in the mammography screening programme is low. This study aims to explore the factors affecting women's attendance in mammography screening in the Lagos state.

A descriptive qualitative approach is used to explore the views of susceptible women living in Lagos state. To gain the holistic understanding on this topic seven focus group discussions and face-to-face interviews with five mammography practitioners in Lagos state was conducted. The study was guided by the theory of care seeking behaviour, and participants were questioned through semi-structured interviews and focus group guides. The conventional content analysis method was used to analyse the information gathered from the participants. Results have shown that lack of awareness among women influences their knowledge on benefits and risks, thus exposing them to several forms of fear and cultural myths which may directly affect their attendance in mammography screenings. However, professionalism of mammography staff and government's role in providing an effective mammography screening service are factors found to externally influence women's attendance.

Substantially, the need for education within the society can be exaggerated, as the participants identified that education might improve awareness, reduce fear and improve women's attendance.

Keywords

Mammography-screening, attendance, breast cancer, health promotion

A Novel Posture Based Approach to Fall Detection

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Abstract

With a growing number of older adults, falls and their associated consequences are an increasing global health problem. It is widely accepted that there is an urgent need for improved automatic detection of falls, as current technology performs poorly and uptake is low.

We have developed a novel, posture based approach which characterises a fall as an unexpected transition from an upright to a lying posture. The design is based on the premise that older adults would most commonly lie when in bed, and would pause in a seated posture as they got into bed. Therefore, any transition from upright to lying without a 'reasonable' period of being in a seated posture would signify a fall.

The performance was evaluated using two datasets; 144 simulated falls carried out by 8 healthy adults and 171 days of free-living data from 99 patients in a geriatric rehabilitation ward. The latter dataset contained no known falls. Data were collected using an activPAL3 tri-axial accelerometer attached to the thigh.

The sensitivity to detect the simulated falls was 96.5%. In the free-living data set 0.72 false positives were detected per day. These results suggest this approach has the potential to outperform previous approaches. Despite far less development the results are comparable to the best published. The use of posture change as a method to detect falls shows great potential and the low false positive rate is particularly encouraging. This approach needs to be tested and developed further using real-world falls.

Keywords

Fall-detection, accelerometer, wearable, posture

The Role of Health Care Professional and Social Support Systems as Determinants of Self-care among Adults Diagnosed with Type 2 Diabetes Mellitus (T2DM) in Riyadh, Saudi Arabia

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Abstract

Diabetes mellitus is increasingly prevalent in Saudi Arabia and internationally. The aim of this study is to investigate the extent to which health care professional support and social networks act as determinants of self-care among adults diagnosed with T2DM in Riyadh, Saudi Arabia. This study employs the concurrent triangulation design, combining quantitative and qualitative methods. A convenience sample of adults (N=388) diagnosed with type 2 diabetes mellitus were recruited from two hospitals. Participants completed the Summary of Diabetes Self-Care Activities (DSCA) questionnaire, and semi-structured interviews were conducted with 10 males and 10 females with type 2 diabetes, while a further 12 interviews were conducted with health care professionals. Descriptive and inferential statistics were analysed using SPSS 22.0. Qualitative data was analysed thematically. The two sets of data will be compared in order to reach a conclusion of the findings. The findings of the study will contribute to the existing bank of knowledge by enabling health care providers to tailor diabetes self-care management educational programs to best fit the psycho-social and cultural needs of people in Saudi Arabia. Also, the results will demonstrate the importance of family and social network support in DSCA and support the Minister of Health's review of existing policies, procedures and protocols that focus on collaboration between health care professionals and family members of people with diabetes. Significantly, this is the first study to identify the role of health care professionals and social support impact on diabetes self-care activities among adults with type 2 diabetes in Saudi Arabia.

Keywords

Type 2 diabetes mellitus, self-care, social support, health care professional support

Role of Muslim Women in Family Decision-making: a Systematic Literature Review

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Abstract

Muslim consumer segment now represents the Fourth ‘Billion’ segment after China, India, and women overall around the world. Muslim population is increasing faster than the other segments in the UK. Muslim segment has a huge buying power of $1trillion to $2trillion not only in Muslim countries such as Turkey and Saudi Arabia but also in Muslim-minority countries such as UK, USA, and France. On the other hand, use of social media making these segments even more strong. Moreover, it is found that the role of women specifically has a great influence in the following stages of decision-making while holiday decision-making: information search, information processing, and determination of specific holiday package. Yet, this segment has been neglected by researchers. That is why mostly studies have been done on males. Researcher will specifically look at the role of Muslim women in family decision-making. Reasons to conduct the research on Muslim women are following: firstly Muslim population is growing very fast in all around the world which makes this segment important enough to be studied. Lastly, there is a very little research on the buying behaviour of Muslim women. This research will help the marketers to look at this potential segment. Moreover, it will give researchers a new topic to study. Researcher will do systematic literature review to analyse the role of Muslim women in the decision-making.

Keywords

Muslim women, family decision-making, social media

The Welfare Conditionality Impact on Roma Migrants in the UK

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Abstract

Over the last few decades, British welfare arrangements have become increasingly subject to conditionality, causing difficulties to families, with a disproportional impact on the most social vulnerable groups in society (i.e. young people, unemployed, lone parents, migrants, disabled people, entrenched homeless or children). To get hold of social benefits, welfare policies embodied explicit admissibility and behavioural conditions. Not meeting the stated conditions allows sanctions to be used to withhold part or all social assistance (Watts et al., 2014; Etherington and Daguerre, 2015). These were mainly associated to out of work benefits, but notable conditionality have also emerged in relation to social housing, anti-social behaviour, and homelessness policy (Watts et al., 2014; Dwyer, 2015). These concerns are of particular significance in relation to Roma migrants in the UK, widely recognised as an ethnic group exposed to social vulnerability across Europe (Cahn and Guild, 2008; Brown, Dwyer and Scullion, 2013; Brown et al., 2015). Acknowledging the importance of employment in social inclusion, especially when it comes to 'high risk groups' (see Labonte, 2004), the aim of the research is to explore the extent to which welfare conditionality improves or impedes Roma migrant's participation in the paid labour market in the UK.

The first part of my presentation will provide an overview on the evolution of the welfare conditionality in the UK revealing some of the important debates around the influence of the conditionality in British society. Furthermore, I will make available a brief outline of the Roma ethnic minority situation in Europe, with a specific emphasis on the previous debates on the relationship between Roma migrants in the UK and the British welfare. The third part of my presentation will reveal details of the research methodology and theoretical framework I will use for this research. The last section of the presentation will be reserved for a snapshot of some of the interviews I have done until now.

Keywords

Roma, welfare, welfare conditionality, benefits, migrants

Qualitative Experiences of Youths in Nigerian Borstal Institutions

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Abstract
This PhD is a qualitative exploration of the experiences of a sample of youths in Nigerian Borstal Institutions. The focus of the research is to capture youth's experiences of criminal justice in Nigeria from the moment of arrest, interviewing, charging, trial, sentencing and incarceration.

The motivation to undertake this study stems in part from the personal practitioner experience of the researcher as a Nigerian lawyer and her involvement in voluntary advocacy work with juveniles which revealed significant youth populations being held in adult prison facilities despite the illegality of this. Whilst this was the prompt, upon examining academic literature in the field, it was clear that the issue of juvenile custody in Nigeria has been afforded little attention across criminological, human rights and socio-legal fields.

The study utilised the use of an interpretative qualitative framework of inquiry using semi-structured in-depth interviews with youths in the 3 Borstal institutions in the 6 geo-political zones of Nigeria: Kaduna state, Ogun state and Kwara state. In particular, a total of 52 interviews were conducted: 36 youths, 8 parents and 8 Borstal officials. The qualitative mode used in this research is aligned to research objectives which centre upon the lived experiences of respondents.

An analysis of their experiences will not only seek to provide a voice for an under-researched community but also, in terms of theoretical knowledge, enable lived-examples of how 'justice' is being conceived by the respondents to be aligned against the framework of established criminal justice models.

Keywords
Youth offending, policing, punishment, youth justice, reformation

Interaction within Restorative Justice Conferences

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Abstract

The objective of my research project is to explore the interactions that take place within the context of a restorative justice conference by applying conversation analysis. Restorative justice (RJ) is a framework that seeks to engage victims and offenders in an effective response to crime. A restorative justice conference is a structured meeting that involves the victim and the offender. The conference is interactive in nature and the communication that takes place allows those involved to discuss and potentially resolve matters. While RJ conferences have been extensively studied in terms of take-up, levels of satisfaction and results, their communicative dimension has hardly been examined, particularly through conversation analysis (CA). There has, however, been some work which applies CA to mediation sessions - a similar kind of event to RJ conferences, but with a different objective and conversational dynamic. Data collection will consist of video/audio recordings of at least five RJ conferences. After data collection these conferences will be transcribed and CA will then be applied to them. Applying conversation analysis to restorative justice could greatly aid an understanding of what happens in a restorative justice conference. It could also have an impact on the work and training of facilitators by promoting awareness of the varying interactional difficulties that may arise, making one conference less successful than another. By promoting awareness of these difficulties, changes can be made to improve the service that is provided. Preliminary findings will be presented at the SPARC conference.

Keywords

Restorative justice, interaction, conversation analysis

Effective Collaborative Working between Nurses in a Multicultural Setting in Saudi Arabia: Barriers and Solutions

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Abstract
This research examines the factors that promote or impair effective collaborative working in a highly multi-cultural healthcare setting - a large hospital in Riyadh in the Kingdom of Saudi Arabia (KSA). A methodological strategy has been devised that uses a qualitative case study approach. Semi-structured interviews were used to understand better how nurses and nurse managers perceive culture and how this impacts effective and ineffective collaborative working.

Barriers and facilitators of multicultural nurses working together in any context and specifically in KSA context has not yet been studied, therefore the academic contribution of this will help to fill the gap in knowledge. A few studies have previously been conducted in Saudi Arabia but these focus on barriers to nurse-patient relationships, rather than multicultural nurses working together. A literature review has guided the development of an interview schedule, underpinned by the Purnell competence model (Purnell, 2002). The results of the all interview data have been collected and transcribed and partially analysed.
NVivo11 has supported qualitative data analysis.

The results of this thesis will inform the future nursing workforce strategies of the KSA Ministry of Health and ultimately impact on patient care through better working relationships.

Keywords
Multicultural, nurses, workforce, barriers, facilitators

Mechanical Properties and Microstructure of Titanium Alloys for Human Bone Replacement

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Abstract
Titanium and its alloy Ti-6Al-4V have been widely used as implant materials for a number of decades, in spite of the reported cytotoxicity of aluminium (Al) and vanadium (V). For this reason, Al and V free titanium alloys have been investigated in the literature, with novel titanium alloys composed of non-cytotoxic elements like molybdenum, (Mo), tantalum (Ta), niobium (Nb), zirconium (Zr), or tin, (Sn) having been developed. In addition to having exceptional corrosion resistance, when formed as a cubic β-phase alloy, they also have moduli of elasticity close to that of the bone-material they are replacing. In this study, β type alloys in the Ti-Mo-Nb-Ta system will be designed, which are expected to have greater performance for implant materials.

In this work, the unit cell volume of beta-phase Gum metal (Ti-Nb-Ta-Zr alloy) has been measured by synchrotron x-ray diffraction at pressure up to 72.4 GPa. From these data, the bulk modulus has been calculated, as 91.7 GPa using the Birch-Murnaghan equation of state. Using the same technique, the bulk modulus for Ti-7Mo-1O, Ti-7Mo and Ti2448 have been measured as 118.1, 50.6 and 116.2 GPa, respectively. The Ti-7Mo system exhibited the lowest bulk modulus compared with all other systems. The possibility of developing the Ti-Mo-Nb-Ta system in future and to study its mechanical proprieties more suited for biomedical fields and will be the subject of the focus.

Keywords
Elastic modulus, beta titanium, biomaterial, implant, titanium composites

Assessing Upper Limb Performance Outside the Clinic - the Reality of Myoelectric Prosthesis Use

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Abstract

Upper limb prostheses are provided to people with limb loss with a view to restoring cosmesis and function. Evaluation of these devices has to date largely involved one-off assessment(s) of the potential of a person to use their upper limb (clinical functionality). However, when it comes to assessing actual upper limb use outside of the clinic we have been reliant on self-report. Self-report is subject to inaccurate and potentially biased recall and provides, at best, average usage data. At present prosthetists have no objective measure of how (or even if) the prostheses they prescribe are used.

Wrist-worn activity monitors, comprising of tri-axial accelerometers, have been used successfully on numerous occasions to assess the upper limb activity of healthy anatomically intact people and, for example, people recovering from a stroke. Despite the obvious potential to quantify upper limb movements, the use of activity monitors for the assessment of upper limb prosthesis use has been surprisingly underexplored.

My PhD study is the first to assess everyday prosthesis use objectively using activity monitors; and is on track to become the largest experimental study of prosthesis users in the UK. I have also developed a new approach to the visualization of the temporal sequence of upper limb activity over the course of one week, based on Archimedean spirals. This approach, for the first time, allows for a detailed exploration of factors impacting on everyday use of the prosthesis. The results of the PhD will inform the future work of researchers, designers and clinicians.

Keywords

Upper limb amputee, activity monitoring, accelerometers, real-world usage, prosthetics

First Objective Data on the Stability of Older Users of Rollators

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Abstract
Walking aids (WA) are designed to provide structural support, and are widely used. Paradoxically, their use has been associated with increased falls-risk. Whilst this may be partially due to users' general vulnerability, there is also likely to be an association between the way in which a given device is used and falls-risk.

To address this, a thorough understanding of what constitutes stable WA use is needed. Hence, we have developed a new assessment method which, for the first time, considers user and device as a combined system. We first define the combined centre of pressure of user and WA to be the point through which the resultant ground reaction force for all feet of both the WA and user acts if the resultant moment acts only around an axis perpendicular to the ground.

The distance between this point and the closest boundary of the combined system is defined as the stability margin (SM); the lower the SM, the less stable is the system. Accordingly, we developed a load-cell instrumented rollator, data from which, when combined with information on the relative position and forces going through the anatomical feet, allows for the calculation of SM.

We report findings from a study of ten rollator users. Users walked in a straight line, turned 90° & 180°, crossed an obstacle, walked backwards, and negotiated a step up/down. Initial results show that, as compared to straight line walking, SM decreases whilst device loading increases for more challenging tasks such as turning or stepping up/down.

Keywords
Stability margin, rollator, real-world monitoring, walking aids, biomechanics

Speaker Recognition in Reverberation Environments using Multi-Condition Training

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Abstract
Speaker recognition techniques have been developed into a relatively mature status over the past few decades through continuous research and development work. Existing methods typically use robust features extracted from clean speech signals, and therefore in idealised conditions can achieve very high recognition accuracy. For critical applications, such as security and forensics robustness and reliability of the system is crucial. Reverberation is known to reduce performance; this paper presents a method to mitigate the impacts of reverberation upon speaker verification. Multi-condition enrolment approaches were explored to alleviate such detrimental impacts where the acoustic conditions were varied. Experimental results showed multi-condition enrolment presenting a significant improvement in the system performance.

Keywords
GMM, MFCC, speaker recognition, reverberate, robustness

Running: Force-Length Relationships and Foot-Strike Patterns

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Abstract
The spring mass model is the simplest mathematical model that can be applied to bouncing gaits. This model assumes a human runner behaves similarly to a single mass bouncing on a linear massless spring. The aim of this study was to test this assumption of linear elasticity, by investigating the linearity of the force-length relationship, and the energy loss to hysteresis over the stance phase of running.

Kinematic and kinetic data were collected for 28 participants, running at four different speeds. The force was calculated as the component of the ground reaction force acting along the line of the lower limb. A root mean square residual (RMSr) was used to assess how much the experimental force-length curves deviated from the assumed linear behaviour; and hysteresis was defined as the change in elastic potential energy associated with each force-length curve, normalised to body mass.

Results showed a significant difference ($p \leq 0.013$) between the groups for the loading portion of the force-length curve at speeds 1-3. The mean loading RMSr and hysteresis values for rear-foot strikers were consistently higher (65-95% and 25-87%, respectively) than those of the fore-foot strikers. These results show clear differences in the force-length relationships, and thus linearity and hysteresis, between fore- and rear-foot strikers. Furthermore, these results suggest that the assumption of linear elasticity is not necessarily appropriate for all foot strike patterns, and therefore modelling these runners using a purely passive system is not appropriate.

Keywords
Futures, motivation, careers, coaching theory

The Barriers that Affect Total Quality Management Implementation in the Oil Companies: the Case of Iraqi Drilling Company

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Abstract
Over the last two decades Total Quality Management (TQM) received a great deal of attention from researchers and academics across the world especially in developing countries including Iraq. Although, recently Iraqi oil industry has adopted Quality Management system as an approach to improve the performance of oil companies, yet the Iraqi oil industry is lagging behind the journey of TQM. This paper focuses on investigating the main barriers that hinder the effective TQM implementation in the Iraqi Oil companies. To achieve this aim the study conducted quantitative method consisting of 118 extensive questionnaire surveys to elicit the opinions and perceptions of managers of various management levels in one of the most significant oil companies in Iraq: Iraqi Drilling Company. The results identified barriers through empirical analysis of the primary data which are: resistance to change, weaknesses of effective training and developing, lack of TQM experts, bureaucratic management, poor understanding and insufficient knowledge, lack of teamwork, and lack of delegated authority and responsibility. The adoption of such results will support oil companies’ managers and decision makers in implementing TQM to improve performance to both: overcome the resultant TQM barriers and focus on effective implementation of TQM practices.

Keywords
Total Quality Management, TQM barriers, Iraqi oil industry

Experimental Study on the Shear Strength Parameters of Wet Sand

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Abstract
Shear strength is one of the most important soil engineering characteristics necessary for designing and analysing geotechnical structures, such as slopes, foundations, embankments, and retaining walls. Shear strength parameters indicate maximum stress that a soil can withstand before reaching failure. In granular soils, shear strength is a combined effect of friction and interlocking forces between soil grains. Variations in strength and density, and high permeability are negative properties of sandy soils, which can cause problems for construction.

The present study aimed to investigate and understand the effect of moisture content on the shear strength of low-cohesion soil through direct shear tests on mixtures of wet sand. The sandy soil used for this study was obtained from Leighton Buzzard silica sand from Leighton Buzzard town in Bedfordshire, England. A series of direct shear tests were carried out to determine the effect of moisture content on shear strength parameters, such as friction angle and apparent cohesion of the mixtures. Soil mixtures, with moisture contents of 2%, 4%, and 6% by weight, were examined by direct shear test under three normal stress values, of 9.8 kPa, 16.6 kPa, and 29.4 kPa. Dried sandy soil and water were mixed carefully until a homogenous blend was reached. The shear stresses and friction angles of the samples were computed using the direct shear tests, revealing that shear stresses increased with increasing normal stress. Moreover, the cohesion and friction angles increased with decreasing moisture content.

Keywords
Sand, wet soil, shear strength, direct shear test

Modified Steel Reinforcement to Mitigate Progressive Collapse in RC Structures

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Abstract

Insufficient ductility and or rotation capacity in reinforced concrete structural members could cause a premature rupture of reinforced concrete (RC) beams, eventually resulting in progressive collapse of the entire structure. Efforts are directed to mitigate progressive collapse in both codes of practice and current research by suggesting new techniques to increase the resistance of RC structures against progressive collapse. Catenary action is considered as the last line of defence in a structure to mitigate progressive collapse in the event of column loss. The catenary action mechanism requires that the concrete beam has significant continuity, ductility and enough tensile strength in the beam-column joint connection, which depends on the detailing of steel reinforcement. Hence, a new scheme is proposed to increase the rotation capacity of RC beams by determining plastic hinges at predetermined beam sections by provision of specific reinforcement detailing. The presence of this reinforcement will ensure that plastic hinges form at these proposed locations and reduce the effective rotated beam length. Therefore, under a given axial tension and middle joint displacement, the structural resistance contributed by the vertical projection of axial tension will increase. Experimental study was conducted to investigate the effect of these hinges on the progressive collapse capacity, by comparing the results with those obtained for normal RC beams. Test results showed that the proposed scheme was successful to increase progressive collapse capacity.

Keywords

Progressive collapse, reinforced concrete, steel detailing, catenary action

Gain-Scheduling Control for Railway Vehicle Semi-Active Suspension

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Abstract

This study presents the development of a non-linear control strategy for semi-active suspensions based Magnetorheological (MR) dampers for railway vehicle using gain-scheduling control. Various control strategies have been proposed to improve the performance of semi-active vibration control system. However, the main constraint for the semi-active suspensions is that the semi-active dampers are only possible to dissipate energy and they cannot develop a positive force when the damper velocity reverses because it would require a negative damper setting. In this case, the semi-active controller will simply employ a minimum damping setting hence a semi-active damper cannot create the necessary forces. The proposed design of the control strategy is focused on minimising the use of the minimum damper setting by using gain-scheduling control. The gain-scheduling control is used to generate the desired damping forces that achieve a condition that keeps the dampers in the normal working range of the dampers (i.e. satisfies the passively constraints) as much as possible. For the purpose of performance comparison, a semi-active controller based on skyhook damping control integrated with MR dampers and also a vehicle with passive suspensions are used as the benchmark, and are used as a reference case for assessment of the proposed design. Computer simulation using the model of a conventional bogie vehicle is performed in the Matlab Simulink environment to investigate the performance of different control strategies for secondary suspension system of the railway vehicle. The performance of the proposed controller is investigated in term of carbody acceleration and relative displacement of the suspensions. For a control design purpose and research assessment a generalised computer data is used to represent track irregularities. Then, for research assessment, real measured data for track irregularities are used. Numerical simulation for semi-active secondary suspension cases are given to show the effectiveness and efficiency of the proposed control strategy.

Keywords

Railway vehicle, semi-active suspension, MR damper, ride quality

Evaluating the Significance of Travel Plans in Shaping Commuting Practices within the University Sector of Greater Manchester

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Abstract

Finding a solution to reduce energy demand and greenhouse gas emissions of transportation is regularly portrayed as challenging and expensive. With many of the current initiatives aiming to provide incentives, particularly economic ones that alter the price of energy or carbon. Current transportation is heavily dominated by cars powered by fossil fuels, which contribute to a variety of social and environmental consequences. Even though people know about the consequences of driving cars, why is there a stubbornness to switch to more sustainable methods of transportation?

This project aims to evaluate the effectiveness of travel plans as a tool for managing and promoting sustainable travel behaviours within Greater Manchester's universities. To aid in the completion of the aim, an initial systematic literature review will be conducted to explore the existing studies and their findings. The presentation will focus on the results of the systematic literature review and how they relate to my study of social practice theory and commuting practice.

Keywords

Social practice theory, commute, travel plans, systematic literature review

The Effect of Vehicle Time Headway on Driver Response to the Amber and Red Traffic Light Signals

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Abstract

The vehicle time headway (time gap) is one of the surrogate safety measures that plays a significant role in traffic safety and performance. Shorter headways between two successive vehicles may increase the risk of tailgating or rear collisions. A study of vehicle headways was carried out near signalised intersections in Greater Manchester. The main aim of this study is to investigate the driver response to the traffic signal change from amber to red based on the time headways with the preceding and following vehicles. Video recording method was used to collect the relevant data at the onset of amber at a number of intersections in Greater Manchester. The collected data included the driver decision (STOP/GO) and vehicle position from the stopline. Based on eight hours' site observations, it was found that around 40% of the Red Light Running (RLR) drivers have a headway less than 3 sec with the preceding vehicles by increasing their speed to reduce the spacing particularly at distance (40-60 m) from the stopline at free flow conditions. However, this percentage was increased to 66.67% of RLR drivers who have less than 3 sec headway at distance less than (40 m) from the stopline to avoid possible conflicts with the following vehicles. The results of this investigation can be used in developing the car-following algorithms to predict driver behaviour such as red light violations or close-following behaviour at signalised junctions.

Keywords

Time headway, close-following, driver response, signal change, red light runnings

Seasonal Assessments of Vertical-flow Constructed Wetlands Treating Azo Textile Dyes

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Abstract
Wetlands have long played an important role as a natural purification system. Textile dyeing processes are the most environmental unfriendly industrial processes because the chemical reagents used are very rich in chemical compounds ranging in both of inorganic and organic products. In this study, two different azo dyes (Acid Blue 113 (AB113) and Basic Red 46 (BR46)) have been fed as part a of synthetic wastewater recipes to a laboratory-scale vertical-flow construction wetland set-up, comprising wetlands with gravel media as controls and wetlands planted with *Phragmites australis* (Cav.) Trin. ex Steud. (common reed) for each dye. Two different concentrations (5 mg/l and 200 mg/l) were used for each dye at two different hydraulic retention times (48 h and 96 h). For the low concentration of AB113, the best season for the dye reduction percentage was summer while autumn was the best season for dye reduction percentage in case of the high concentration. For low concentration of BR46, the reduction percentages regarding seasons, autumn, winter and spring were better than summer while, in case of high concentration, summer is the best season for the dye reduction percentage.

Keywords
Acid Blue 113, Basic Red 46, industrial wastewater, *Phragmites australis*, red bed filter

Developing Destination Branding: using Oman as a Case Study

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Abstract
Destination branding is a process used to develop a unique identity and personality different from those of its competitors. This includes a unique combination of both tangible and intangible product characteristics together with an added value that helps consumer evaluate their perceptions of the services offered. Destination branding aims to promote and sell attributes associated with tourism destination and to portray a positive image for the target market.

However, the application of the branding process in tourism destination marketing remains a topical issue. Destination brand building is a complex issue, not just because of the overlap of its services, corporates and product branding but also because of the multiplicity of its stakeholders, diverse customer bases and product offerings. The aim of the present study is to develop a comprehensive model for tourism destination branding using Oman as a case study. This will be achieved by examining the Omani context and its characteristics from the perspectives of the potential tourists (the demand side) and the Omani tourism providers (the supply side).

A mixed research approach is applied to analyse the destination brand components of the Sultanate of Oman; it makes use of quantitative and qualitative data collection techniques and analysis procedures. The images of Oman perceived by the international tourists are assessed via a structured questionnaire. Semi-structured interviews were conducted to collect data from key stakeholders involved in the Omani tourism management. The initial findings indicate that the potential tourist's perceptions consider the intangible attributes more than the tangible attributes. It is hoped that the research findings will offer the Oman destination marketers an opportunity to evaluate their destination branding strategies. Also, the findings will assist the Omani authority and other destinations to build their own brands.

Keywords
Oman, branding, tourism

How Does Edge Space Contribute to the Natural Capital of a City?

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Abstract

To test ideas within the UK government's new 25-Year Environment Plan, four Pioneer projects have been established, one of which, the Urban Pioneer, is in Greater Manchester. The Urban Pioneer aim is to improve the natural capital – the natural assets and services which contribute to human health and well-being – in the city. The Natural Capital of Edge Space, the private gardens and other smaller areas of green spaces in a city whose primary purpose is not to provide a public environmental service, is currently under-recognised. Private gardens alone constitute around 15% of the area of Greater Manchester, yet there is limited data on the characteristics and spatial diversity of this green space. Using aerial photography, the size, features and management level of Edge Space is being measured and analysed. Spatial patterns are emerging from these data as are patterns in natural capital value across an urban environment. As the purpose of natural capital is to benefit human well-being, the Edge Space account is being compared to data on multiple deprivation (2015) collected from national census data. By combining the detailed account of Edge Space with social data on the effects of social variation, the value of this hidden resource of natural capital is being exposed.

Keywords

Urban green space, Edge Space, urban pioneer, multiple deprivation, natural capital

The Influence of Social Media on Muslim Tourists Behaviour: the Context of Halal Holiday Travel

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Abstract
Social media is one of the "megatrends" that has had a significant impact on different practices of the tourism industry and the role and use of social media in the travel decision-making and travel planning process have been widely discussed in the tourism and hospitality literature. However, there is a clear paucity in investigating the role of social media with regards to halal friendly tourism. Micro and macro approaches of social media are applied in this study to investigate its impact on the decision-making and planning process with regards to halal friendly tourism. The literature review reveals terminological issues within the use of halal or Islamic holidays. Therefore, this presentation will attempt to clarify the ambiguities surrounding the term and the complexities underlying the sources of informing the meaning of halal within Islam. Halal friendly holidays were first introduced in 2008, although there are no sufficient sources that investigated social media use in halal friendly holidays. Therefore, the role of social media in the halal tourism planning including both the consumer and supplier perspectives are critical in understanding how UK Muslim families buy their desired holidays.

Keywords
Halal tourism, social media, travel decision-making process, tourism buying behaviour

‘The Secret of My Success’

Small Business Strategy and Performance in a Developing Economy: an Exploratory Analysis of Zimbabwe’s Small Business Sector

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Abstract
Considerably much has been written about the relationship between planning and performance in small firms and yet there is little agreement on the findings. Such a scenario calls for more research in the domain while attempting to maintain comparability in methodological approaches where possible. This study explores the relationship between formal strategic planning and performance in the small business sector of a developing economy. Drawing on the contingency theory of management, this study, inter alia, identifies knowledge gaps within the traditional contingency theory and in addressing such gaps, insightfully contributes to the body of knowledge in this domain. A mixed methods approach has been adopted for rigour in responding to the research questions and hypotheses. The study embraced a questionnaire-based survey with a sample of 392 owner-managers of SMEs in Harare, Zimbabwe. For a more comprehensive analysis of the planning performance relationship, a longitudinal approach was embraced over three periods. Correlation analysis is employed in establishing the nature of the relationships. Findings established so far reveal that there is no significant relationship between formal strategic planning and performance in the small business sector of a developing economy. Further, an interesting revelation is unearthed where the performance of formal strategic planners is not significantly different from that of non-planners. The study sheds new light on the interplay between the contingency approach and the relationship between formal strategic planning and performance in a developing, yet unstable economy.

Keywords
Zimbabwe, SMEs, strategy

The Role of Soft Issues in Project Management Success and Failure

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Abstract
To a large degree, project management has benefitted from several people-based strategies which have led to a greater dependence on the use of self-motivated project teams, cross-functional teams, and global networks to deliver projects. Yet, researchers suggest that the most challenging issues that project managers face are people issues - issues involving leadership, communication and motivation. How human factors are managed is essentially an important factor in the success of projects.

The main objective of this research is to identify the role of human issues such as leadership, and motivation in the success or failure of projects. In particular, it seeks to investigate the relationship between these factors and project success, and its implications for project management.

The qualitative research will use a combination of observation, focus groups and interviews of a selection of project managers from different project environments to attempt to answer the research question.

Keywords
Project success, project failure, leadership, motivation

A Critical Analysis of Graduate Recruitment in the Third Sector

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Abstract
There has been a 260,000 increase in the number of Third Sector Organisations (Charities, Social Enterprises and Cooperatives) over the past decade (National Audit Office, 2014). Third Sector Organisations' (TSO's) turnover in excess of £95billion, and employs 6.5% of the UK working population (O.N.S., 2015; Co-operatives UK, 2015; N.C.V.O, 2015; Social Enterprise UK, 2015).

At the University of Salford, the number of graduate students leaving University to work for TSO's is an average of 0.7% over a three-year period (D.L.H.E. 2012-14).

Graduates offer TSO's the opportunity to embrace contemporary business and management techniques, digital technologies, and untapped talent.

The methodology will be mixed and be formed by two strands, one quantitative to establish the issue and qualitative to help explore the reasons for this phenomenon.

The expected contribution to knowledge will be quantitative evidence of graduate employment in TSO's, a comparison of statistical data between H.E. institutions, and the development of framework for H.E. institutions to help promote graduate employment within TSO's.

Keywords
Graduate, recruitment, third sector

Analysing the Non-clinical Development of Healthcare Professionals on International Placements

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Abstract

Background - Increasing numbers of health professionals choose to undertake international placements, many in low resource settings. It has been suggested that such work has many developmental benefits for them and their UK employers.

- **Summary of Work** - A series of studies to examine learning of all healthcare professionals on international placements began with a meta-synthesis of existing literature. Delphi method was then used to gather consensus among stakeholders regarding key learning outcomes of international placements. This core outcome set was developed into a questionnaire and administered.
- **Results** - 156 benefits and costs of international placements were identified during the meta-synthesis. Of these, 116 were considered core and possible by stakeholders. The questionnaire responses are currently being analysed.
- **Discussion** - The results so far suggest there are many positive developmental outcomes for health professionals that undertake international placements. The meta-synthesis found positive outcomes in almost every academic piece and the core outcome set developed by stakeholders contained very few negative core outcomes.
- **Conclusions** - The core outcomes across all professions were largely non-clinical and could be loosely categorised within leadership, communication, cultural knowledge and personal development. However this work describes and explores the constituent components of the complex skills that are hypothesised in existing literature to develop as a result of international placements.

Take home message - When healthcare professionals undertake a placement they would never claim to develop all clinical skills equally and entirely, this complex skill-set would be divided into hundreds of constituent components. This research applies same approach to non-clinical skill development.

Keywords

Continued Professional Development, global health, international learning, health professionals

The Rhetoric and Reality of Talent Management in Higher Education Institutions: a Comparative Study of United Kingdom (UK) and Nigeria Education Institutions

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Abstract
Like many other businesses today Higher Education Institutions (HEIs) are confronted with the need to attract talented staff, particularly academic staff. This is rooted in demographic shifts and challenges, such as: an ageing workforce; shortages of skilled manpower; globalisation; increased mobility of workforce; economic immigrants; migration; Brexit and an ongoing so-called 'war for talent'. Consequently, this has triggered interest in talent management in many business sectors. It is questionable, however, whether and how the talent management is recognised and being managed by executive teams of HEIs.

This research intends to critically investigate and compare the perceptions of management and senior academic staff within HEIs in the UK and Nigeria of talent and their talent management strategies, and develop a conceptual model that epitomises the components of talent management and factors impacting on the practices within HEIs context.

A qualitative research approach is being adopted, using the principle of case study, utilising semi-structured interviews and focus groups conducted on a sample of HEIs in UK and Nigeria with the objective of allowing an understanding of the conceptualisation and operationalisation of talent management.

Keywords
Talent, talent management, Higher Education Institutions, recruitment, employee retention

‘The Social Network’

Dynamic Resource Allocation Algorithm for Internet Differentiated Services using the Concept of Network Function Virtualization

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Abstract
The Differentiated Services (DiffServ) architecture has been proposed for providing different levels of service to the Internet Protocol (IP) traffic. Current discussions in the DiffServ networks are focused on managing resources dynamically according to the traffic conditions of the DiffServ router (Per Hop Behaviour). Software Defined Networks (SDN) and Network Function Virtualisation (NFV) technologies have recently emerged to support researchers in managing network domains and to achieve better use of domain resources.

A new scheduling algorithm called “Dynamic Resource Allocation Management - Network Function Virtualization (DRAM-NFV)” is introduced in this presentation to allocate the service classes resources in the proportional delay DiffServ domains. DRA-NFV algorithm manages the resources among service classes within the edge routers of the DiffServ domains dynamically according to their traffic conditions and manages these resources between the DiffServ domains in the event of congestion based on their traffic conditions at the egress routers of the upstream domain and ingress routers of the downstream domain.

Different research scenarios have been used to test and evaluate the performance of the DRAM-NFV algorithm. The network simulator NS3 has been used to implement these scenarios. The results show that with the DRAM-NFV algorithm, the congestion levels in the congested and uncongested service classes at the ingress router of the downstream domain can be reduced. By reallocating the resources of the link that connects DiffServ domains, the utilisation of that link and the link utilisation at the destination for some service classes during the events of congestion can be improved. Moreover, the average end to end delay for some service classes can also be improved.

Keywords
NFV, DiffServ, SDN

PUED: a Deterrent Algorithm for Security Enhancement in Cognitive Radio Networks

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Abstract

Cognitive Radio Networks (CRNs) are prone to emerging coexistence security threats such as Primary User Emulation Attack (PUEA). Specifically, a malicious CRN may mimic primary (licensed) users' signal characteristics to force another CRN to vacate certain channels. While existing schemes are promising on detecting PUEAs, they are not able to prevent the attacks. In this paper, we propose a PUEA Deterrent (PUED) algorithm that can provide PUEAs' specifications: offender CRNs and attacks' time and bandwidth. According to criminology literature, there are many similarities between PUED and Closed-Circuit Television (CCTV) surveillance of vehicle theft in terms of: deterrence strategy, the reason of use, surveillance characteristics, surveillance outcome, and operation site. Very recent research showed that sophisticated CCTV systems have led to prevention of 80% of vehicle theft. Likewise, we believe that PUED will contribute to deterring 80% of PUEAs. In addition, to avoid considering the PUEAs as normal primary users activities, PUED periodically reports attacks details to the network's Cognitive Engine. As a consequence, this will prevent devising unreliable models for the attacked channels. Extensive simulations show that the effectiveness of the PUED algorithm in terms of improving in CRNs performance.

Keywords

PUEA, CRNs vulnerabilities, self-coexistence issue, network security

Achieving Higher Data Rate in Millimetre Wave 5G Networks through Spatial Antennas Distribution

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Abstract

To improve the data throughput in millimetre wave 5G networks, we have considered two scenarios for base station antennas distribution. The approach of Distributed Base Station (DBS) with remote radio units (RRU) is chosen as the envisioned architecture for future 5G network in the first scenario. This approach is compatible with cloud radio access network (C-RAN), as it has easier scalability and compatibility with future network expansions and upgrades. RRU has been used in this work as a way to sidestep the limited coverage and poor channel condition, which characterise millimetre wave communication. The results have shown significant improvements in terms of User Equipment (UE) throughput, average cell throughput, and spectral efficiency. In the second scenario, optimising the antenna spacing is considered in the base station array. Since the separation among antennas within the same antenna array is important factor in millimetre wave due to their short wavelength. The results show significant improvement in the network performance and provide better performance in terms of cell-edge data throughput.

Keywords

5G network, millimetre wave, distributed base station, remote radio unit, antenna spacing

The Design of a Smart Power Manager for Digital Communication Systems

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Abstract

The lack of process time limits the use of Dynamic Voltage / Frequency Scheduling in communication systems, although this technique is widely used in reducing power in digital systems. The process time affects the calculation of the time scheduling of the voltage which reduces power. When the system is a multistandard communication system that uses different frequencies, the need for huge hardware for each standard arises, which in turn increases the power consumption. A solution for this problem is to use a general purpose digital signal processor capable of dealing with a multistandard communication system. Still, power reduction may not be achieved because of the lack of process time. In this presentation, the problem is solved by using a smart power manager as a power controller to a 16-bit cyclic redundancy check circuit. This controller uses fuzzy logic, with frequency and the measured power of the circuit as its inputs, to produce the required voltage so that a reduction in the system power is achieved. The results show that an improvement in power reduction reaching up to 40% in low frequencies can be achieved using the proposed Dynamic Voltage / Frequency Scheduling technique.

Keywords

Cyclic codes, energy-efficient computing systems, fuzzy control, power control

Towards a Constructivist Grounded Theory of Digital Marketing Governance

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Abstract

Over 2017, the UK's digital marketing industry is set to generate a minimum of £17bn for the UK economy (IAB UK, 2015). Whilst seemingly prosperous, the velocity by which the digital marketing industry is moving has resulted in significant shortages in digital marketing talent, technical capabilities and strategic competencies (Royle and Laing, 2014).

To date, extant literature espouses a narrow view of the phenomenon, with a failure to comprehensively address the impact that the digital marketing skills gap is having upon wider stakeholder groups, other than that of digital marketing practitioners (Durkin, 2013). Further inquiry is critical as industry and trade driven research suggests that 78% of digital marketing clients are unhappy with their digital marketing agencies or consultancies (Hunt, 2014). A scoping preliminary literature review highlights deficiencies in accountability (Valos et al., 2010), competency (Durkin, 2013), governance (Leeflang et al., 2014) and ethics (Royle and Laing, 2014).

The current study adopts a dual theoretical lens by adopting Stakeholder Theory (Freeman et al., 2014) in conjunction with Charmaz's (2014) Constructivist Grounded Theory as the current studies methodology. Perspectives of stakeholders disaffected by the digital marketing skills gap will be collected and analysed in order to construct substantive theory. It is anticipated the current study will make an original contribution to existing digital marketing research and Stakeholder Theory literature, whilst also aiming to improve and protect stakeholder welfare within the industry.

Research findings to date suggest a need for reassessment of the traditional Stakeholder Theory model, emphasising the importance of Stakeholders yet to enter into a business transaction with a practitioner or agency.

Keywords

Digital marketing, digital marketing accountability, digital marketing ethics, digital marketing governance, digital marketing skills gap

‘An Inconvenient Truth’

Factors Influencing the Implementation of Sustainable Construction in Libya

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Abstract
This paper aims to explore factors affecting the success of strategic implementation of sustainable construction practices in the construction industries in Libya. Critical success factors for implementing sustainable building design in Libya have been identified. Such as steering and knowledge factors, technological and costs factors, and organisational and technical factors.

The negative impacts to the environment from the construction industry had led to a growing realisation that there is a need for a more sustainable responsible approach to the existing practices. In developing countries, the issues of environmental dissatisfaction on construction projects have regularly appeared in the present time, this growing attention pushes the government and professional bodies to be more proactive in alleviating this problem without oversight the need of development.

Creating sustainable construction depends on the knowledge and involvement of all people engaged in the industry. So, what is the level of understanding of this concept and application in the Libyan construction industry?

This paper focuses to explore the actions undertaken by the Libyan government, non-government organisations and construction players in applying sustainable building design practices within the Libyan construction industry and the progress so far, also highlights the research methodology proposed to investigate the awareness of the construction developers regarding this issue and whether these developers have absorbed the concept of sustainable construction in their current practices.

Keywords
Sustainable building design, sustainable construction, developing countries, Libyan construction industry, environment

Impact of Different Environmental Conditions on the Treatment of Azo Dyes Acid Blue 113 and Basic Red 46 using Wetland Ponds

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Abstract

A global increase in industrialisation has resulted in the rapid growth of textile industries in developing countries, leading to a high rise in the overall discharge of a broad range of pollutants including dyes, which frequently have mutagenic and carcinogenic effects on humans and animals depending on the receiving watercourses as a source for drinking water. In contrast to traditional high-rate wastewater treatment units, passive biological treatment technologies such as wetland ponds are a sustainable and cost-effective alternative technology to treat large quantities of contaminated water, especially in places where land costs are low. The aim of this study is to investigate the impact of different conditions on the dye removal using pond system. The objectives of this study were to (i) assess the system performance in terms of the main water quality parameters; (ii) evaluate the efficiency of *Lemna minor* L. (Common Duckweed) on the removal of dyes; (iii) compare the removal of chemical oxygen demand and the dyes with each other; (iv) monitoring the growth parameters of the plant. Findings indicate that the high temperature under controlled laboratory conditions positively impacted on the dye removal, and the removal efficiency of Basic red 46 outperformed the dye Acid blue 113 significantly ($P < 0.05$). This work will contribute to a better understanding of the performance of sustainable vegetated treatment ponds for dye pollution removal in long term study.

Keywords

Biological, controlled conditions, duckweed, textile industries, wastewater

Sustainable Public Food Procurement – Comparing UK with Sweden, Denmark and Germany

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Abstract
The research compares sustainable food procurement policies for public catering – particularly schools and nurseries but also hospitals and elderly care. It will examine purchasing of organic, local and regional food, improving animal welfare and reducing carbon footprint.

There are very substantial differences between the countries. Usage of organic food is much lower in the UK than in the other three countries. Sweden has the strongest policies in terms of introducing organic food, reducing food waste and meat usage and improving animal welfare but until recently has seen a rapid increase in food imports.

The aim of research is to examine the reasons for the policy similarities and differences between the countries. It will include case studies of individual local authorities.

The research will involve qualitative in-depth interviews with people in local government and NGOs along with reviewing extensive web-based information generated by national and local government, NGOs and the trade press.

The theoretical perspective is that of institutional theory, which focuses on the role of institutional environments in influencing the behaviour of individuals and organisations.

The research will compare and contrast institutional procurement arrangements. This will include pre-tender supplier engagement aimed at encouraging local suppliers, aggregation or sub-division of procurement contracts, combining or separation of distribution and supply.

Keywords
Procurement, sustainable, organic, local, carbon

Evolving Conservation: Introducing Evolutionary Considerations into Spatial Planning

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Abstract
Biodiversity is essential for all life on Earth, it underpins vital ecosystems services at all spatial scales, yet it is being lost at an alarming rate. Extinction rates are estimated to be 100-1000 times higher than those observed in the fossil records, with anthropogenic influences being the major driving force. It is widely accepted that biodiversity must be protected and spatial tools, such as protected areas, are increasingly employed to meet conservation objectives. Despite ongoing development in spatial conservation techniques, one aspect of biodiversity remains largely ignored: evolution. Evolution and evolutionary processes are instrumental in maintaining and generating biodiversity. However, examples of where evolution has been explicitly incorporated into spatial conservation planning remain rare, with metrics, such as species richness more often used. Here the importance of including evolution in spatial conservation planning is reviewed. This presentation will initially break down what exactly is meant by 'evolutionary considerations' and emphasise why it is imperative for conservation planning. A systematic review of the primary literature, which examined every study in which evolutionary considerations have been explicitly used within a spatial conservation plan, will then be discussed; presenting initial results from a total of ~20 studies, which show a favourability for the inclusion of genetic data but without wider consideration or acknowledgement for the importance of considering evolution in a holistic manner. This approach was designed to not only highlight the shortcomings of current spatial conservation but to facilitate the vital uptake of evolutionary considerations into contemporary conservation efforts.

Keywords
Evolution, spatial conservation planning

Evaluation of a Regression Model to Predict Wastewater Quality Parameters using Constructed Wetlands

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Abstract

Considering the global demand of high quality water for domestic and industrial applications, constructed wetlands have gained wider research interest for their environmental and safety benefits for waste water treatment. In this study, over two years of monitoring performance data from vertical-flow constructed wetland systems, receiving and treating domestic wastewater were collected and used to assess the treatment performance efficiency of wastewater by the systems. Overall, when percentage removal efficiency was calculated, it showed that all vertical flow constructed wetland filters have reasonably high removal performances for the water quality indicators, irrespective of filter set-up and operation. The system was found to be effective in pollutant removal with average efficiency. The research also investigated the capability and efficiency of linear regression model developed in R-language to predict water quality parameters with emphasis on biological oxygen demand (BOD) and chemical oxygen demand (COD). A combination of data set was considered to serve as an input including dissolve oxygen, electrical conductivity, turbidity, otho-phosphate phosphorous (PO_4-P), nitrate-nitrogen (NO_3-N), ammonia-nitrogen (NH_4-N). The predicted values of BOD and COD showed consistent agreement with their respective measured values. The performance of the model was measured and evaluated using various prediction criteria, which show the efficiency of the model and confirm its prediction accuracy. The results of root mean square error, regression coefficient, mean average percentage error and mean absolute error were also calculated. It was found that the regression model developed could be used successfully to predict the BOD and COD of the treated wastewater.

Keywords

Water quality variable, MAPE, R^2, RMSE, MAE

‘Planet Earth’

Residents Attitude and Perception of Environmental Risk from Adjacent Closed Landfill Sites

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Abstract

Closed landfills that operated before the Control of Pollution Act 1974 in the UK are generally believed to pose significant environmental risks as they are largely unregulated with no documentation of what was deposited. The legislation ensured that all landfill sites post-1974 obtain licences to ensure documentation and regulation of waste deposited in the sites. This study is focused on closed landfill sites that operated and closed pre-1974 located across towns and cities in the UK. A conceptual model developed for the Moston Brook site in Manchester UK indicated the presence of some pollutant pathways linking the potential source of contamination with receptors – in this case humans, surface water, ground water, wildlife and vegetation. As a follow-up to the desk top study, this research will investigate the attitude and perception of residents to environmental risks from adjacent historic closed landfill sites. Primary data will be collected from nearby residents using a combination of well-crafted questionnaire and interviews with randomly selected residents, across demographic characteristics like age, gender, proximity to site, years of residence and educational qualifications. A comparative analysis of the result with the scientific data collected from the same site will also be carried out. This analysis will outline the basis for the resident’s attitude and perception of environmental risk from the sites and the outcome is expected to form the basis for a reliable model of community engagement by Local Authorities before embarking on urban regeneration projects, which may involve conversion of historic landfill sites to recreation parks.

Keywords

Closed landfill, pathway, perception, environmental risk, urban regeneration

Effect of Perforation Diameter on CO_2 Bubble Size Distribution and Heavy Oil Viscosity

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Abstract

This paper describes the results of laboratory work conducted to investigate the effect of casing perforation diameter on CO_2 bubble size distribution and the dynamic viscosity of heavy oil. Experimental techniques were developed to simulate the flow of CO_2 in heavy oil reservoir. The images obtained was captured using a high speed Canon camera with led lighting and was subsequently processed and analysed with Dantec dynamic studio software. The viscosity of the oil was measured at the end of each experimental run with the aid of Viscolite 700 viscometer.

Findings from the Fluid flow experiment showed a 28% reduction in the dynamic viscosity of the heavy oil when CO_2 was injected at a perforation diameter of 0.5mm and 2.2bar gauge pressure. However, at 3mm perforation diameter and injection pressure of 2.2bar, the value obtained was 5%. The results obtained from the Image Analysis at 0.5mm,2.2bar showed the number of CO_2 bubbles in the heavy oil solution to be 189,156, and 90 for average bubble sizes 2300µm, 4600µm, 6900µm respectively, while the values obtained at 3.0mm,2.2bar were 141,81, and 56 respectively.

Keywords

Immiscible, heavy oil, bubble size, viscosity, perforation diameter

Exploring Waste Tyre Problems and Sustainable Waste Management in Tunisian Context

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Abstract

In Tunisia, the accumulation of waste tyres in unmanaged open spaces, scrap yards, and other such areas is a major problem; there is also a severe lack of information regarding the amount of waste tyres generated and methods for safe disposal making it difficult to judge the scale and severity of the problem. Therefore, this work proceeds to explore this problem in the Tunisian context, focusing explicitly on the environmental and economic benefits of alternative management strategies. The investigation engaged with actors from both government and civil society to gauge their perception of the waste tyre problem and current management practices. The research approach also involved conducting secondary analysis alongside semi-structured interviews and observational study. The preliminary results of the research show that lack of an integrated policy, legislative and regulatory framework, as well as lack of knowledge among informal sectors, exacerbates the waste problem creating barriers for sustainable waste management.

Keywords

End of life tyre, waste policy, local policy, waste generation, waste disposal, waste management

Improving Energy Conservation in MANETs through the Use of a Modified Uwb Mac and Directional Antenna

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Abstract

In general, Ultra Wideband (UWB) Media Access Control (MAC) protocols are designed around the characteristics of omni-directional antennas and are not suitable to work with directional antenna systems. Therefore, to achieve the full benefit of spatial reuse and extended range of communications directional systems offer, the existing IEEE 802.15.3a MAC protocol needs to be redesigned. In this paper, we present a model which proposes a new algorithm, for optimising the existing IEEE 802.15.3a MAC protocol, in order to increase efficiency in terms of energy consumption in Mobile Ad-hoc Networks (MANETs). This research is targeted at the power model associated with the UWB Concept for Ad-hoc Networks (UCAN), by introducing new constraints that could potentially optimise the system. With the constraints in place the model modification will aid the optimisation of power consumption in the network when using directional antenna rather than the traditional omni-directional antenna systems.

Keywords

MANET, UWB, energy conservation, steerable directional antenna

The Influence of Ethnicity on Newspaper Coverage of the Plateau State Conflict (2010-2012). A Critical Discourse Analysis

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Abstract

This research explores the influence of ethnicity on newspaper coverage of the Plateau State conflict in north central Nigeria. It analyses how conflict journalists reported these violent episodes that have spanned nearly twenty years. Scholars have examined this phenomenon from economic, political, ethno-religious, conflict audiences' assessment to social perspectives, all aimed at understanding the causative factors, and ameliorating the conflict's problems. Despite these efforts, no study has been done on the influence of ethnicity on newspaper coverage of the conflict. This, therefore, is the gap in knowledge which this study attempts to close. The theoretical frameworks deployed for this enquiry are critical discourse analysis and news framing. Preliminary findings from both literature and interview data evidenced that conflict journalists, in constructing their news frames were influenced more by their ethnic affiliations, than by the ethics of their profession; journalists used inflammatory frames such as 'indigene/settler,' 'Berom militia,' 'Fulani mercenaries,' and 'unknown gunmen,' etc., to disparage the other; and British colonial policies in Nigeria (final amalgamation of 1914, Indirect Rule, Land and Native Ordinance Act of 1910) divided the people. These findings are key factors in the ethnic entrenchment currently evident in Plateau State, which have affected the media system.

Keywords

Ethnicity, conflict, newspaper, coverage, colonialism

Exploring the Phenomenon of Social Enterprise Places: a Place Branding Perspective

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Abstract

Social innovation is identified as the process of inventing, securing support for and implementing novel solutions to social needs and problems and social enterprises are therefore considered reliable sources for producing innovative solutions to create lasting social value. These innovative solutions are developed by passionate social enterprises which are strategically embedded across different communities. Hotspots of social enterprises are recognised by Social Enterprise UK as social enterprise places (SEPs). Economic, cultural and social changes are resulting in fierce competition among places including SEPs. As a result of increased public recognition SEPs can be branded and marketed as places of value and assessed by the worth of their place brand. Place branding has proven to be a popular practice and a central part of contemporary place management. Therefore, the development of promotional activities amongst SEP stakeholders to communicate narratives around the enterprising nature of SEP is worth exploring. However, few studies exist exploring how SEPs are branded and marketed via partnerships with social enterprises, a gap that this research aims to fulfil. The adopted methodology involves ethnographic observations and in-depth interviews with social enterprises and other related stakeholders in Salford, Plymouth and Alston Moore. Initial findings indicate little evidence of place branding within SEPs. Moreover, there is a significant lack of branding expertise to capitalise on the advantages of SEP branding.

Keywords

Social enterprises, places, social innovation, branding, place branding

Snap, Crackle and Pop: How Sound Effects Help, and Hinder, How We Hear Television Speech

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Abstract
Complaints about the intelligibility of television speech have become increasingly common, both for normal hearing and hard of hearing listeners alike. The debate these complaints have sparked have stretched from angry viewers on Twitter right up to the House of Lords. Despite this, the question of how to improve the clarity and accessibility of television speech remains unanswered.

A recent BBC whitepaper highlighted that the barrier to providing more accessible broadcast audio is not technology. The barrier they highlighted is the lack of understanding of what accessible broadcast audio needs to contain to be more accessible and meaningful for hard of hearing listeners. This work begins to address this deficit.

This presentation will outline the current investigation into how different broadcast sound elements, specifically sound effects, interact with speech intelligibility for normal and hard of hearing listeners. Current results from this work show that the inclusion of relevant sound effects can significantly improve intelligibility of speech in complicated listening environments for normal hearing listeners (increasing word recognition from 35.8% to 60.7%). For hard of hearing listeners this effect is not so clear-cut, with relevant sound effects only improving for intelligibility for half of listeners. How this knowledge, along with advances in object-based broadcasting, can be leveraged to deliver more accessible and personalisable broadcast content will also be outlined.

Keywords
Hard of hearing, intelligibility, broadcast

Identity and Stereotype: Retrospect and Prospects

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Abstract
Social media and big data impact the imagination of self and community more than ever. Debates about the ineffectiveness of identity politics have recently alternated with speculations on the role played by user-profiling algorithms in the fragmentation of the public into polarised filter bubbles (Pariser, 2011).

Is the Internet making us more open to diversity, or are we growing more entrenched into unimaginative identities?

A critique addressing both the content and circulation of those identities is needed, and the concept of **stereotype**, flattening diversity for the sake of informational efficiency, is an exceptionally relevant techno-cultural construct.

Originally used for typography, stereotype has become synonymous with prejudice, particularly in relation to colonialism (Pickering, 2001). However, the concept's technical root has resurfaced in information filtering algorithms, where stereotype-based rules are used as efficient user modelling tools (Kuflik, 2003).

From a user's perspective, the strategic use of self-stereotyping outlined in Self-Categorisation Theory (Turner, 1987) – in which self-stereotyping is part of all group phenomena, including collective action and social influence – finds renewed relevance in **tagging** - once a social stigma imposed on marginalised people (Tannenbaum, 1938), now a creative tool for the activation of a social identity on social media.

Historical-ideological, yet technological, stereotype bridges humanities and social sciences to embody the circulation of identities as living labels crunched by algorithms.

Through a review of the conceptual evolution of stereotype, I will highlight how Web 2.0 encourages a stereotypical imagination, discussing why tagging might leverage its stereotypical dynamics to promote diversity.

Keywords
Stereotype, identity, tagging, imagination, social media

Exploring the Pragmatics of Technology Adoption for Participatory Programming in (Southwest) Nigerian Broadcast Journalism

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Abstract

This study explores the extent to which Nigerian broadcast journalists' perceived attributes of technology shape their acceptance and use of new media technologies in the context of participatory programming. Drawing on extant theories of adoption and integrating recent concepts in journalistic role perceptions, the study examines how adoption factors relate with journalists' roles and suggests a cyclic relationship between the variables in a Nigerian context. A hybrid framework which caters for blurriness between important adoption factors such as their utilitarian, hedonic and communication values was used to assess how individual journalists' beliefs toward interactive and non-interactive technologies coalesce with critical aspects of journalistic influences and conditions to shape behavioural intention to use technology and how these may shape journalists' role conceptions. Findings show that a coalition of core technology adoption factors, such as hedonic, utilitarian and communication values explain about 30% of variance in broadcast journalists' adoption of technology for participatory programming. Other "contextual factors" such as organisational support and institutional policy control have greater influence on perceived roles such as populist mobiliser and civic, with age as a prime moderator irrespective of broadcast journalists' tier of broadcasting (i.e. stations ownership type). The resultant adoption factors contribute toward behavioural intention to adopt interactive but not non-interactive technologies. Structural equation modelling confirms a significant coefficient fit index of the model, an index to a peculiar relationship between technology adoption and journalistic role conceptions in a sub-Saharan country.

Keywords

Technology adoption, roles, participatory journalism, radio, Nigeria

The Financial Market and Mortgage Finance Market Interplay: Evidence from the Nigeria Economy

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Abstract
The presentation will critically investigate the relationship that exists among financial market, mortgage market and the role households play in interacting with the two markets to achieve their desire consumption bundles. Basically, households borrow more from the financial market to finance their current consumption of a property and pay back later as their circumstance changes and thus complete payment before their retirement. However, for this work efficiently, a fully-functioning financial markets is required. And an efficient mortgage finance market depends on a functioning financial market.

Currently, Nigeria needs about 17 - 20 million housing units to provide shelter for its population of more than 180 million citizens to meet the gap in housing deficit. This large housing deficit is partly due to under-development in the mortgage finance market. The situation is a significant concern because a considerable number of households are living in inadequate shelter or are practically homeless. Consequently, substandard properties are constructed and slums are prevalent. This endangers lives and properties through outcomes such as building collapses and high crime rates in such places and this important sector has been under-developed over the years.

The paper will critically investigate the various constraints affecting households from accessing the financial market for the required funds. In addition to this, prevalent challenges in the financial market will be discussed and the impact on the macro economy will be examined. In conclusion, the study will proffer solutions to the current housing crisis in the Nigeria Economy.

Keywords
Mortgage market, housing finance, financial market, Nigerian economy, consumption pattern

Bank Soundness: Case of G7 & Australia

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Abstract
The recent global financial crisis (GFC) showed that even banks from highly developed economies with long functioning banking systems and sophisticated markets have failed. Australian and Canadian banks, nevertheless, were singled out as the exemplars of bank soundness in comparison with their counterparts in Europe, the United States and the United Kingdom. In this study CAMELS (Capital, Asset, Management, Equity, Liquidity and Sensitivity) indicators were used to assess bank soundness in the pre, during and post crisis periods. The study considers 59 bank-level variables that cover 1,570 banks in the G7 & Australia during 2003 to 2013.

The results indicate that sensitivity, management and earnings play a significant role in return on equity of the banks. Banks also buffered up capital before and during crisis periods, whilst constant flow of liquidity was evident throughout the 11 year period.

Surprisingly, we could not find any evidence to suggest that the quality of assets is a significant indicator of bank soundness.

Keywords
Bank soundness, CAMELS, financial crisis

The Underpinning Motives and Outcomes of Pre-purchase Consumer Decision-making in the Wearable Sports Product Market

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Abstract

Wearable sports products are set to be the next big trend in portable technology for the next five to ten years. The current market includes 453 devices from 312 companies across a range of sectors; including fitness, medical, entertainment, industrial, gaming and lifestyle sectors with various types of garment such as glasses, watches, contact lenses, jewellery and clothes.

The study examines how does the marketing of wearable sports products motivate pre-purchase consumer decision-making and what outcomes affect consumer decision-making about wearable sports products. The aim of this study is to investigate an examination of the motives underpinning the marketing of wearable sports products and the outcomes of consumer decision making on pre-purchase phase. Mixed methods are used in this research. Quantitative and qualitative methods are applied through online questionnaires and in-depth interviews. The unique contribution of this study is to develop a hypothesised model for making initial and repeat purchases, while wearable technology is leading us to the new era.

Keywords

Wearable sports products, pre-purchase, consumer decision-making, marketing

An Analysis of the Effect of IFRS Adoption in Nigeria on the Quality of Published Financial Information

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Abstract

The main objective of the study is to examine the effects of the adoption of International Financial Reporting Standards (IFRS) on the quality of published financial statements in Nigeria. The study used data gathered from all 134 non-financial firms, of the total of 191 firms, quoted on the Nigerian Stock Exchange as at 2015. Content analysis was used to determine the level of compliance of the firms with IFRS. The study modified the Müller (2014) model to determine whether the adoption of IFRS has increased the value relevance of accounting information in the sampled firms. The Müller (2014) model is an econometric model which measures the degree of relation between the accounting information supplied in financial statement and the share price of firms. The model is used for pre-IFRS data (2007-2011) and the post-IFRS data (2012-2016) separately to ascertain whether there is a difference in the effect of accounting numbers on share prices of sampled firms. Researcher expects that accounting information should be more value relevant in the post-IFRS period (2012-2016) than in the pre-IFRS period. The regression models are applied in order to analyse the content analysis, also the adjusted R-square will be computed and used to measure incremental value relevance. At last, in order to measure the quality of financial information published under IFRS, researcher measures the level of earnings management using the modified Jones Model.

Keywords

IFRS, accounting information, value relevant, earnings management, accounting data

Loyalty Programs and Gambling: Exploring the 'Potential' Effects on Consumers

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Abstract
One of the most significant current discussions in marketing is customer engagement via loyalty programs. The gambling industry is no exception to these schemes and is now known for establishing, promoting and maintaining business-customer relationships through such arrangements.

Still, there is a need to address the gap in the literature through comprehensive and extensive research regarding loyalty programs and gambling. Thus, the objectives of this study are to: 1) examine the prevalence of loyalty programs usage among terrestrial gambling customers; 2) discover customer engagement processes of loyalty schemes within the industry; 3) determine individual and cumulative effects of loyalty programmes' dimensions among consumers; and 4) use research findings to propose a socially responsible customer relationship management framework. This study contributes to the current body of gambling literature, policy makers and management practice and, the lens of interpretivism used in this study adds to methodology.

To collect qualitative information, initial data was gathered through a snowballing method from two separate focus group discussions with a total number of 16 participants. This was due to a lack of members' list in the gambling sector. A further 11 in-depth interviews (selected by random sampling) have also been conducted for this study. Data obtained was analysed using thematic analysis to build theory. Initial findings seem to suggest loyalty programs positively influence consumers' attitudes and behaviours towards gambling. Others however seem to advocate that loyalty programmes can be used as a safeguarding measure to monitor individuals' gambling behaviours, money or time spent on gambling activities.

Keywords
Loyalty programs, Customer Relationship Management, gambling, consumer behaviour

The Importance of the Environmental Scanning in the Negotiation Decision-Making under Perceived Environmental Uncertainty

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Abstract
A review of the literature reveals several shortcomings that have limited researchers’ understanding of how the environmental scanning influences negotiation decision-making. Most prior studies on environmental scanning focus on its role in organisation performance and strategic planning generally (Agbim et al., 2014; Aldehayyat, 2015). As such, these studies overlook an important point that a more functional classification of information is on the basis of decisions types, hence, it follows that organisations should place varying degrees of emphasis on internal and external environmental scanning efforts (Davis et al., 2008). In addition, they overlook the impact of classification of business environment context (complex, dynamic and uncertainty) on environmental scanning practices and decision-making processes. Although about three decades ago, Daft et al. (1988) had mentioned that studies treated the business environment as a single entity by using a single score of environmental uncertainty, the majority of current studies have still not adopted a sector approach in a study of the organisation's environment and they only almost more exclusive focus on the external environment more than the internal environment as some research noted (Garg et al., 2003; Seng Yap et al., 2013). Therefore, several studies findings called for a new approach to environmental scanning, through developing current frameworks (Chaharbaghi et al., 2005; Helen Walker et al., 2014). In achieving the aim of this research and the need to develop the performance of Libyan business sector, the National Oil Corporation (NOC) of Libya was chosen as case study to conduct this research by using mixed methodology (sequential explanatory design). Findings will be used to develop a conceptual framework intended to strengthen environmental scanning practices within negotiation decision-making process under perceived environmental uncertainty.

Keywords
Business Environmental Scanning (BES), Business Negotiation (BN), environmental uncertainty, National Oil Corporation of Libya (NOC of Libya)

An Exploration of High and Low Skilled Black and Ethnic Minority Migrant Workers in the UK Food Industry

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Abstract
The aim of this research is to add to the body of literature around the treatment and experiences of migrant workers in the UK. Extant work tends to focus on the plight of EU migrant workers yet statistics show that BME workers from outside the EU are a significant group (Reinzo, 2016). It is anticipated that Brexit restrictions on the free movement of EU migrants might create skills gaps that need to be filled by migrant BME workers.

Key research questions lie around diversity management of this group at the organisational level, union strategy for organising BME and the level of support this group enjoy from trade unions.

The highest proportion of this group are currently found in the food industry (Reinzo, 2016) which will provide the context for the study.

The research design with involve a three pronged participant approach involving semi-structured interviews with BME migrant workers, HR managers and trade unions.

Keywords
BME, food industry, HR, trade unions

Exploring High Performance Work Systems in the Libyan Telecommunications Sector

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Abstract
This study aims to explore high performance work systems (HPWS), these practices are designed to increase employee commitment and motivation, and thereby enhance organisational performance. The study will be conducted in the Libyan telecommunications context by answering questions about the nature and content of HPWS, why organisations adopt HPWS, and what is the impact of HPWS on employees' attitude and organisational performance.

The study will adopt a qualitative approach as a research methodology; data will be obtained from two main companies in the sector by conducting semi-structured interviews to explore both employers and employees perspectives about HPWS, and how they affect organisational performance.

Existing literature about HPWS shows that most previous studies were conducted in developed countries and in manufacturing sector in particular. The present study aims to contribute to knowledge by studying the HPWS in the setting of a developing country where specific socio-economic and cultural factors may limit attempts to increase organisational commitment, and in under-researched sector.

Keywords
HPWS, Libyan, organisational performance, telecommunications, employees

Creating Responsible Textile Businesses: Highlighting the Sustainable Value of the Workforce

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Abstract
Globally, there are approximately 60-75 million people employed in the textile and clothing sector (ILO, 2016). For this business sector, sustainable development means implementing policies and activities that meet the needs of the firm and its stakeholders while improving, protecting and sustaining the human and natural resources that will be needed in the future. Employees are primary stakeholders who directly contribute to the success of a company. Therefore, businesses who want to be socially responsible and gain a competitive advantage must also consider how they can maintain a sustainable workforce with a high quality of work life (QWL). International standards like ISO and GRI (global reporting initiatives) are helping business move towards sustainability, but knowledge related to sustainable development and QWL is still very limited, especially in an emerging economy context. A major global player in the global textile sector is Pakistan. Thus, the aim of this study is to explore QWL in the context of the textile sector of Pakistan and examine how international standards can help businesses achieve their sustainable development goals. Using a qualitative research methodology via interviews with the managers of textile businesses, the data revealed that there is a lack of knowledge, resources and policy implementation related to QWL and that institutional support from government and international standards' bodies is limited. Research recommendations are provided which will not only fill the gap related to sustainability and QWL, but will also help to provide practical implications for business firms who are striving to be socially responsible.

Keywords
Sustainable development, QWL

Tensions in Understanding Employability and Skills for Students within Tertiary Business and Management Education

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Abstract
Educational reform, economic and political factors, along with labour market changes have contributed to a rapidly changing landscape of Higher Education, whereby there is a risk that there is narrowing of focus towards outcomes. Consequently, there is mechanistic tick-box approach to 'skills acquisition', rather than consideration of inputs to the utilisation of skills and development, which impact upon social arrangements and economic structures on people's opportunity to flourish at work, and in life (Wilson et al., 2013; Bryson 2015). Findings also suggest that in several cases education is being reduced to skills needed to get a job resulting in the subordination of knowledge (Wheelahan, 2015:751).

However, although there is significant literature examining both the attainment of soft skills and employability skills, the tension that may be created between the HE provisions of employability skills over soft skills are not well known.

The purpose of this study is to examine the concern that with increasing emphasis upon employability, there is a shift in focus away from the development of soft skills for students within Higher Education Institutions (HEI). Therefore in the light of this complex picture, this study will explore this tension by examining how skills are perceived within the field. To achieve this, the study will collect empirical data of students' perspectives of their development of skills and the current employability focus within business and management education.

Placing the student at the centre of this study, phenomenographic research methods will be applied to the variation in students' conceptions of employability and skills. This study will offer deep insights into students' thinking about their employability and how these concepts map out to the provisions made by Higher Education Institutions.

Keywords
Employability skills, student employability, higher education system

The Optimum Cell Range Expansion in Heterogeneous Networks

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Abstract
Heterogeneous Networks (HetNets) are one of the most effective solutions to enhance the network performance of mobile systems, by deploying small cells within the coverage of the Macro cells. The goals of deploying HetNets are to offload data from the possibly congested Macro cells toward the small cells and to achieve enhancements for outdoor/indoor coverage. Moreover, such networks increase the network throughput of cell-edge users and provide low power consumption by reducing the path between the transmitter and the receiver.

One of the main challenges of HetNets is the transmit power disparity among cells of different classes, where cells are classified according to their transmit power, antenna height, and backhaul connectivity to the other cells. Conventionally, cell selection in LTE systems is done by User Equipment (UE) based on the maximum received power of reference signals (RSRP) from several cells. However, Max. RSRP-based technique is not efficient as a result of different power characteristics in heterogeneous networks.

Cell Range Expansion (CRE) is one of the recent solutions to solve the problem of load imbalance, where a small cell RSRP is biased by a Cell Specific Offset (CSO) to overcome the situation of less users offloaded from Macro cells toward the small cells and to achieve the cell splitting gain required by deploying these small cells in the original networks. The optimum range of the CRE value is concluded to achieve optimum performance and better users offloading towards these small cells using the system-level simulation with the most congested scenarios.

Keywords
LTE, HetNets, CRE

Complexity Asymptotics: Motion in Biological Fluid

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Abstract

We are developing a new method called complexity asymptotics to efficiently solve complex problems such as the non-linear Navier-Stokes flow with a free surface and exterior domain. The method linearises the far-field which is represented by a boundary integral distribution of Green's functions giving a far-field asymptotic. The near-field non-linear complex behaviour is modelled by a radial basis function domain distribution of these Green's functions. The idea is that this distribution is negligible in regions where the non-linearities in the flow are negligible and so amenable to mesh adaptation and efficient solution. We start with investigating a test problem using Laplace equation for a two-dimensional flow past a circular cylinder and applying it to a micro swimmer in viscous fluid.

Keywords

Asymptotics, Navier-Stokes flow, micro swimmer

Enhanced Gas Recovery by CO_2 Injection and Sequestration: Rock Grain Diameter Measurement using SEM for Rock Dispersivity Determination

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Abstract

Natural gas continues to gain widespread usage as a source of cleaner and efficient fossil fuel, and greenhouse gas emission is attracting environmental consequences. The need for a viable method to enhance and curtail these phenomena, respectively, is paramount. The technique of injecting CO_2 for Enhanced Gas Recovery (EGR) is deemed one of the efficient methods for simultaneously storing CO_2 emissions and improving additional natural gas recovery from depleted gas fields, provided that the gas mixing, underground, can be minimised. This can be achieved through better understanding of the displacement mechanisms, and the factors that affect them, thereby providing vital information for further studies, aimed at a wider field scale application, hence establishing the economic viability of the process. Using *SEM* technique in conjunction with *Image-J*, core analysis was carried out to determine the mean rock grain diameters of three different types of sandstone rock samples. Different magnifications of slices of the samples were obtained. Mean grain diameter measurements of 165.70 µm, 94.66 µm, and 57.15 µm were obtained for Buff, Grey Berea, and Bandera Grey respectively. Previous studies used estimation technique alone in determining this parameter. This study, however, employed experimental approach for precise measurements. The importance of grain diameter determination for EGR is to provide a concise input parameter, as the characteristic length scale of mixing, for dispersivity and Peclet number determination, hence identifying the displacement mechanism during EGR process. A better measure of the mixing that takes place during EGR will be ascertained using the measured parameter as against the generic correlation used for consolidated porous media.

Keywords

CO_2 emission, enhanced gas recovery, CO_2 injection, dispersivity, length scale of mixing, Peclet number

New Detectors for Live-monitoring of Radionuclides in Wildlife

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Abstract
In 2007, the International Commission on Radiological Protection (ICRP) introduced recommendations for the need to adequately demonstrate the protection of the environment. Current methods for wildlife assessment often involve a combination of conservative modelling and destructive measurement techniques. As many species needing assessment are protected, there is growing interest in non-lethal monitoring techniques such as live-monitoring. While live-monitoring has previously been used, it has typically focused on only a small number of radionuclides and predominantly domesticated/semi-domesticated animals.

This project aims to develop new detector technology for live-monitoring radionuclide activity concentrations in terrestrial wildlife. The primary use of such a device is targeted towards compliance monitoring for facilities that have radioactive emissions, i.e. it would provide a rapid and non-destructive method of confirming that regulated radionuclide releases are not resulting in exposures above benchmark values. This presentation details the specifications of a prototype device that has been designed to meet these requirements.

Development of a detection system involves a balance between portability, size of the target animals, radiological performance, and effects of background radiation. The detector has been developed to measure both gamma and beta-emitting radionuclides. Detection materials and their optimal geometry were determined by modelling estimated Cs-137 and Sr-90 emissions from a range of organisms. Shielding specifications were determined from expected background radiation levels in high contamination areas.

Keywords
Device development, environmental monitoring, radioactivity

Assessment of Multi-model Approach for Runoff Simulation in Shared River Basins

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Abstract

Human interventions such as reservoirs and dams building, irrigation and drainage systems, land use and land cover changes in addition to climate variability have been considered as the main causes for the decline in surface runoff, in particular in arid and semi-arid regions. To identify the impacts of such factors on a streamflow, a large number of methodologies have been proposed. The rainfall-runoff model simulation is generally considered as an extensively spread technique. However, such simulation often involves many sources of uncertainty such as model parameters and data and model structural errors. Therefore, to enhance the simulation accuracy, the simple average (SAM) multi-model approach that depends on the results of three of the most widely used models, which are Hydrologiska Byrans Vattenbalansavdelning (HBV), Génie Rural a Daily 4 parameters (GR4J) and Medbasin has been successfully applied in this research. The simulation outcomes reveal that there are big differences in the performance of the considered hydrological models. Simply averaging a single model simulation would product consensus multi-model simulations that are superior to any single simulation which proved that the SAM method is a relevant tool to extract the strengths from different models whereas avoiding the weaknesses. Additionally, the multi-model simulation accuracy is associated with that of a single model. If a single model simulation accuracy is poor in matching measurements, eliminating that model from simulation does impact very much the accuracy of multi-model simulations. However, excluding the best performing model from consideration does negatively impact the accuracy of the multi-model simulation.

Keywords

Climate variability, anthropogenic interventions, rainfall-runoff simulation, multi-model approach, single model performance, simulation accuracy

‘That’s Entertainment’ *Interactive Session*

The Touchscreen Tablet as a Classroom Musical Instrument

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Abstract

A practical and meaningful music education is rightly recognised as an important part of children’s social, personal and cognitive development. However, in schools across the country, funding for the arts has plummeted while pressures for the attainment of literacy and numeracy standards have risen. Government policies to make musical opportunities accessible to all are consequently falling short. Touchscreen tablets, on the other hand, are increasingly prevalent in the classroom, being relatively affordable and useful for a broad range of subjects. With 75% of 5-15 year olds now using tablets at home and owning personal devices from an increasingly younger age (OFCOM, 2016), schools have a priority to harness these technologies for classroom learning. So far, little attention has been paid to how tablets might benefit music education, and research is needed to assess how teachers may use these resources to deliver the music curriculum. With the capacity for many tactile modes of interaction and an inexhaustible range of music apps, tablets may soon join recorders and glockenspiels as a new instrument of the primary music classroom. This interactive presentation will explore the potential of the tablet as an educational musical instrument, with attendees invited to take part in an ensemble iPad performance.

Keywords

Education, music, performance, technology

Exploring Live and Recorded Media through Collaborative Composition

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Abstract
Throughout its history, jazz has defined itself as a musical art form that communicates to its audience primarily through live performance with recordings taking a supplementary role. In discussing audience preferences for the live medium, similar comparisons have been made towards stage theatre in the work of Philip Auslander. However, the binary oppositions held between live/recorded media in jazz and improvised music have been significantly challenged more recently. For instance, guitarist Bill Frisell's use of the loop machine, Swiss drum n' bass drummer Jojo Mayer's imitation of digital processing and saxophonist Tommy Smith's solo surround sound work all demonstrate performances that challenge the purist idea of 'liveness'. The laptop/jazz ensemble will demonstrate how through a devised compositional process live and recorded material can be integrated into one performance through encouraging a 'call and response' dialogue between both live instruments and two laptops.

In addition, my research portfolio includes a series of solo guitar studies exploring the use of unorthodox alternate guitar tunings, drawing influence from artists such as Stanley Jordan, Pat Metheny and Frank Gambale who have each explored their own applications of these. The laptop/jazz ensemble will also explore through-composed musical forms in addition to working from a series of graphical scores inspired by the work of Jason Freeman, Scott Hewitt, Karlheinz Stockhausen, Morton Feldman, John Zorn and Anthony Braxton.

Keywords
Jazz, improvisation, live, recorded, composition

Re/Writing the Past (Screening)

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Abstract
In this screening, I will show several filmed sections of my latest play "The Burnley Buggers' Ball" to explore how the process of writing and producing a play restored a piece of forgotten history to a community, and started to re-write the history of the event itself. "The Burnley Buggers' Ball" is a play that I wrote for LGBT History Month 2017. It is about a meeting held in Burnley Central Library in July 1971 entitled "Homosexual & Civil Liberties". The play was staged at the site of the original events throughout February.

My PhD is a practice as research investigation into writing stage plays from archive material. The theme is sexual and emotional intimacy between men, a topic which has often been ignored, coded or even deliberately removed from archives. For it, I am researching and writing two full-length historical plays, documenting my process and comparing it with other history plays containing same sex male behaviour and relationships. "The Burnley Buggers' Ball" was effectively a one act dry run at exploring many of the problems and paradoxes of playwriting from archive.

In writing "The Burnley Buggers' Ball", I worked from conventional historical document based accounts of the event. However, in interviewing one of the extant speakers from the meeting, I uncovered a new account at odds with the published historiography. The new information was also contentious and pushed against the conventions of civil rights hero-making. The screened sections with my commentary illustrate the dramatization of the new material.

Keywords
Writing, playwriting, archive, history, LGBTQ

‘Starter for 10’ *Education & Learning*

To Identify Barriers to Successful Acculturation for Chinese Mandarin Students taking Undergraduate Studies in UK Business Schools

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Abstract
The research concentrates on Chinese Mandarin students aged from 18 to 22 years old taking undergraduate studies in UK business schools, with the objectives to explore barriers to their acculturation and academic adaptation, and the effective ways of interaction for better relationship management between Chinese students and their British lecturers. The intention is to provide implications for management authorities and academic bodies to refine intercultural pedagogies, and to offer personal guidance and assistance to potential and current Chinese students for better outcomes of their UK studies.

Semi-structured interviews to collect data and inductive analysis shall be conducted, with the research subject of academic staff and Chinese Mandarin students before, during and after their undergraduate studies within British universities at different ranking levels.

Keywords
Barriers, acculturation, Chinese Mandarin students, undergraduate studies, business schools

Written Out: the Effects of the Rise of Online Television on the Employment of Women Writers for Subscription Video on Demand (S.V.O.D) Scripted Fictional Series in the English Language

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Abstract
Over the past decade, women accounted for fewer than 30% of fictional series television writers in the US and the UK. The advent of SVoD (subscription video on demand) 'television' such as original series produced by Netflix and Amazon Studios offer a new production model in which fictional scripted series television become more flexible in length, content and production process. Commissioners claim to be seeking the appearance of new voices, with series such as Transparent, Orange is the New Black and Unbreakable Kimmy Schmidt bucking trends, addressing contentious subjects and showcasing variety in writers' voices. Still, despite this renaissance, women television writers remain far outnumbered by male counterparts. Until now, no research has been conducted into the effects of the SVoD original content production market on the employment of women writers for scripted series. This research, therefore, monitors the employment patterns for writing staff of scripted series made specifically for SVoD providers using data coding from series writing credits, and primary interviews with production executives and women writers about gendered hiring practices, career barriers and the professional experience of women writers for scripted series SVoD television. This paper will focus on gender disparity in writing for scripted series television, and the ratio of women to men in series writing credits for made-for-SVoD scripted series to date. Case studies of series including Orange is the New Black and Jessica Jones will be used to illustrate the changing face of series writing credits.

Keywords
Women, television, SVoD, writers, gender

Campus Planning that Matters: Reflecting Student-Satisfactory Outdoor Physical Environment in the University of Salford

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Abstract

Questionably, the development of informal campus open spaces, natural and built, improves overall student satisfaction with universities. Successful development could also promote positive learning ability and attitude preparing students for university challenges and beyond. This study explores dynamics of the use of campus outdoor spaces at the University of Salford (UOS) campus that reveal aspects of possible development towards optimum outdoor design qualities that is necessary to facilitate the learning experiences of different students within the campus and the desired student-faculty interaction. The main aim is to maximise the value of the campus outdoor physical environment by examining and prioritising the impacts and links of the (physical/ecological and aesthetic/visual) design intentions on the student (behavioural/functional) reactions. Using campus planning and environments literature, the potentials for dominant outdoor student experiences are addressed exploring suggestive ideas and experimental results (Eberhard & Patoine, 2004). This is supported by highlighting some significant campus masterplan developments with particular focus on interactive outdoor campus environment that allow and enhance different satisfactory student activities at different times. Finally, drawing attention to the effectiveness of enhancing student experience/participation/satisfaction in providing integrated, reliable methods for challenging questions that face urban university campus planners.

Keywords

Campus masterplan, informal learning spaces, satisfactory design qualities, outdoor space impacts, student experience

Branding Universities: an Exploration of Internal Branding in the Higher Education Context

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Abstract
Increasing competition in the Higher Education market and diminishing government funding have driven universities toward the need to define and develop their brands. However, brand management in Higher Education is a complex concept due to the complex nature of the Institutions themselves, representing a challenge that goes beyond the traditional branding activities (Kapferer, 2001). The development of a strong university brand requires commitment of employees and alignment of their values to the institutional ones (Whisman, 2009; Hemsley-Brown and Goonawardana, 2007). Internal branding is important for organisations to promote the brand to employees with the aim of developing a correspondence between internal and external brand messages and thereby facilitating the transformation of brand promises into reality. But existing research in the context of Higher Education is limited, and has identified some difficulties as well as resistance in the application of internal branding strategies (Naidoo et al., 2014; Chapleo, 2007), outlining the need of understanding what factors inspire or hinder the development of brand support in employees. This study explores the topic of internal branding in Higher Education, relating it to concepts of training and development activities, internal communications and transformational leadership.

Keywords
Branding, higher education, brand support, internal branding

Using Research-informed Teaching experience (RiTe) to Support Learning and Practice in Undergraduate Radiography Education

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Abstract
The Research-informed Teaching experience (RiTe) was developed and integrated within the BSc (Hons) Diagnostic Radiography programme in 2009. RiTe uses a combination of research, simulation and inquiry led learning to support the application of theoretical knowledge, research skill development and clinical practice of year 1 and year 2 students. This is an important area of pedagogical research as students often experience difficulties in relating taught theory to clinical practice (theory-practice gap) plus there is a requirement by Allied Health Professions (AHP) to embed research at pre-registration level.

Research has explored the perceptions of students, academic staff and clinical placement educators with regard to RiTe. A number of key points and considerations when developing Research-informed Teaching activities have been identified. These include:

1. Encourage collaborative learning in small groups with peers. This helps to increases interest amongst students and promotes critical thinking and problem solving.
2. Being constructively aligned and learning outcome based. Students are able to demonstrate skills or learning and ensures learning appropriate to student's level of study.
3. Involving practitioner and academic staff in development. This helps to raise awareness of (and brings) research into teaching as well as facilitating the translation of RiT into practice environment (students can put taught theory into practice). Also ensures constructive alignment (Jefferies simulation framework).
4. Links with student's area of practice. This helps to ensure that it is seen to have value and relevance to career aspirations. Could also address issues with theory-practice gap.

Keywords
Research-informed Teaching, simulation, theory-practice gap, collaborative learning, constructive alignment

Calibration Methods for Magneto-Inertial Measurement Units (MIMUs) for Use in Upper-limb Motion during FES Rehabilitation

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Abstract
Functional electrical stimulation (FES) is the use of electrical pulses to produce contraction of muscles in such a way as to support performance of functional tasks. FES can be used to facilitate practice of upper-limb activities post stroke, thereby encouraging neuroplasticity. The Salford team have produced an upper limb FES system, based on a flexible finite state controller. The controller represents a given activity as a sequence of movement phases, each of which is associated with stimulation to one or more muscles at user-defined levels. Transitions between phases are governed by user-defined rules, which use inputs from body-worn MIMUs. However, in order to estimate more clinically useful joint angles from sensors mounted on adjoining segments, an anatomical calibration method is required. It remains unclear which of the published calibration methods is most appropriate for use in this application. A detailed literature review of existing methods used in upper-limb applications was carried out and a comparison made in terms of speed, simplicity and robustness. The methods were classified as follows: anatomical alignment of sensors which involves rigorous positioning of the sensor on a human segment; static measurements involve positioning the arm in a known posture and using the gravity vector; dynamic measurements involve moving a joint in a defined way and using the angular velocity vector. As these different methods involve various types and degrees of movement by the subject, not all of them will be suitable for use in people who have had a stroke.

Keywords
Functional electrical stimulation, calibration methods, joint angles, magnetic-inertial measurement unit sensors, upper-limb

Development and Validation of a Paediatric Pelvic Phantom for Digital Radiography Dose Optimisation

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Abstract

PURPOSE: Develop and validate a dose / image quality pelvis phantom for a 5-year-old child.

METHODS: Tissue equivalent materials representing paediatric bone (plaster) and soft tissue (PMMA) were identified. PMMA slabs were machined to match the anatomy of a 5-year old child. Cavities were created within the PMMA for plaster infusion. Phantom validation comprised: CT densities (Hounsfield Units (HU)) were compared between a CT scan from a 5-year old male and the phantom; phantom was X-rayed using a digital radiography system with a variety of exposure factors (e.g. 50-101kVp, 1-20mAs). Signal to noise ratio (SNR) was calculated from Region of Interests (ROIs) placed on the images. SNR values were compared between the phantom and a commercially available anthropomorphic phantom. Mean, standard deviation and correlation coefficients were calculated for SNR values for the phantom and the commercially available anthropomorphic phantom.

RESULTS: From the CT data, the percentage difference between cortical bone and soft tissue and their equivalent tissue substitutes in the phantom were 88.38% and 86.07% respectively. For SNR values (mAs response) there was a strong positive correlation between the two phantoms ($r>0.95$ for all kVps). For kVp, there was a strong positive correlation (1-8mAs ($r>0.85$)), this decreased as mAs increased ($r=-0.21$ (20 mAs)).

CONCLUSIONS: My 5-year old pelvis phantom demonstrated a valid response to mAs. Response to kVp was similar up to 8 mAs ($r=0.85$) but was inconsistent for higher exposures. Considering the combination of CT data and X-ray data, for typical paediatric exposure factors, my plaster/PMMA phantom appears valid.

Keywords

Paediatric, dose optimisation, tissue substitutes

Modelling a New Hydraulic Prosthetic Ankle

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Abstract
In an anatomically intact gait, the tendons crossing the ankle joint store and release strain energy during the stance phase of walking, and provide forward propulsion at push-off. Prosthetic feet currently on the market, both conventional ones and those referred to as "energy storage and return" (ESR) feet, fail to replicate the energy recycling behaviour of an intact ankle. This is because they can only return stored strain energy up to the point where they have returned to the neutral ankle-angle and, therefore, cannot produce a plantarflexion moment while plantarflexing beyond neutral. Hence they cannot provide the required energy at push-off. This results in a higher metabolic cost of walking and slower walking speeds for amputees.

To solve this problem, a new prosthetic ankle is being designed with the following objectives: a) store the mainly negative work done during load acceptance and stance prior to push-off; b) release the stored energy during push-off; c) adapt to different walking slopes by controlling the energy flow to suit the slope; d) allow energy transfer between joints. The novelty lies in the use of miniature hydraulics capable of efficiently providing energy storage and return in a controlled and timed manner. As a first step, this involves the mathematical modelling in Matlab of a system where the prosthetic ankle joint drives two cams, which in turn drive two hydraulic rams. One hydraulic ram captures the negative work done from foot flat to maximum dorsiflexion and the other ram returns energy to power push-off.

Keywords
Prosthetic feet, energy storage and return, gait cycle, hydraulic ankle, cam design

Investigating Alterations in Autophagy in Alzheimer's Disease Using Post-mortem Human Brain Tissue

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Abstract

Alzheimer's disease (AD) is the main cause of dementia, affecting 500,000 people in the UK. It is pathologically characterised by the accumulation of abnormally phosphorylated tau protein within neurofibrillary tangles and plaques containing amyloid-β (Aβ) (1). Autophagy is a normal intracellular mechanism that functions to degrade damaged cellular proteins. Studies have shown that there is an association between the dysfunction of the two main autophagy pathways-macroautophagy (MA) and chaperone-mediated autophagy (CMA) - and AD (2). However, it is unclear how the autophagic pathway activity changes during disease progression and how this relates to the accumulation of abnormal protein deposits in the brain.

This study aims to explore alterations in the different autophagy pathway linked proteins with AD progression. The relationship between autophagy related proteins and AD related proteins (tau and Aβ) was investigated through immunohistochemistry on 45 cases from the hippocampus/temporal cortex and the frontal cortex.

MA and CMA were investigated via the assessment of cellular distribution of LC3 (MA) and LAMP2A and Hsp70 (CMA) in relation to tau and Aβ.The results showed that the hippocampal region CA1 had increased tau/ Aβ deposition and decreased autophagy markers LAMP2A/LC3, while region CA4 had decreased tau and Ab and increased autophagy markers LAMP2A/LC3. The level of these autophagy markers were found to decline overall with increasing Braak stage. These results suggest an impairment of both CMA and MA with AD progression. Results will be validated through the use of double labelling immunofluorescence studies to explore findings at the individual neuron level. Identifying which autophagy pathways are defective at particular disease stages offers potential for the development of novel therapeutic strategies.

Keywords

Alzheimer's disease, autophagy, immunohistochemistry, LAMP2A, LC3

A Comparison of the Performance of Digital Radiography Systems and Chest Imaging Protocols for Paediatrics in Hospitals across the Northwest of England

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Abstract

Purpose:
To evaluate image quality and radiation dose which are used in routine x-ray imaging protocols for paediatric chest radiography in the NW of England.

Methods and materials:
The CDRAD phantom was used to acquire radiographic images across five age groups in six hospitals and 15 x-ray machines using their existing chest radiography protocols. Image quality was represented by an inverse image quality figure (IQFinv) and signal to noise ratios (SNR). Dosimetry was represented by entrance surface dose (ESD).

Results:
For neonates, IQFinv ranged from 1.3 to 4.5, SNR 18 to 80 and ESD from 8.6 to 52.6µGy. For a 1-year old IQFinv ranged from 0.9 to 4.9, SNR 20 to 84 and ESD from 5.4 to 82.8µGy. For 5-year olds, IQFinv ranged from 1.0 to 1.7, SNR from 13.3 to 57.8 and ESD from 11.0 to 125.57µGy. For 10-year olds, IQFinv ranged from 0.86 to 2.35, SNR from 14 to 61 and ESD from 14.7 to 145.8µGy.

Conclusion:
Between the hospitals and there was variation in image quality and radiation dose. These results are likely to reflect the different types of x-ray imaging equipment and acquisition parameters used between the different hospitals and rooms.

Keywords

Image quality, radiation dose, dose optimisation, paediatric chest radiography, CDRAD phantom

Poster Presentations

The Importance of the Environmental Scanning in the Negotiation Decision-Making under Perceived Environmental Uncertainty

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Abstract

As the business environment has become increasingly complex, a demand for business environmental scanning (BES) to assist organisations plan strategies. Hence, the empirical evaluation showed that the discovered event changes in the business environment could support decision-makers by providing information relevant the opportunities and threats in their business environment, which enables them to make sound decisions. However, despite information having a major role in the negotiation process and its outcomes, environmental scanning practices are rarely connected with business negotiation decision-making in research, hence, several studies recommended the need for future research to examine specific dimensions of factors in business environment that affect business negotiations. In addition, many of these studies findings called for a new approach to environmental scanning.

Therefore, this study aims to analyse approaches and practices of environmental scanning and decision-making under perceived environmental uncertainty to benefit from the findings of previous studies in an attempt to contribute to filling the knowledge gap in the area of business negotiation. In addition, the researcher decided to choose the NOC of Libya as a case study of the research, because, although the importance of petroleum to both national and global economies worldwide, the literature review indicated a lack of relevant studies on strategic management in national oil companies (NOCs). Moreover, oil producing countries are still facing the challenge of negotiating with international oil companies (IOCs) which have extensive experience in negotiation field and what increases the complexity of the negotiation is the level of uncertainty resulting from faulty or incomplete information during the negotiations stages. In light of these difficulties, many NOCs are especially prone to operational inefficiencies and governance problems. This is so prevalent that it has become known in the literature as “the resource curse”. It is producing poor management and governance problems such as corruption, political influence and ineffective decision-making.

Keywords

Business Environmental Scanning (BES), Business Negotiation (BN), environmental uncertainty, National Oil Corporation of Libya (NOC of Libya)

Investigating the Effects of Socket Design on Myoelectric Prosthesis Task Performance

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Abstract
Myoelectric prostheses are controlled by electromyographic (EMG) signals generated by muscles within the residual limb. These signals are acquired by differential electrodes housed within the walls of the prosthetic socket. Despite recent improvements in prosthetic hand design, many myoelectric prosthesis users still experience frustration with unreliable prosthesis performance during daily living activities, which may contribute to the low levels of use/high levels of device rejection. There is evidence that the fit of the socket over the residual limb affects the security of the electrode-skin contact, especially when loads are applied to the socket, and thereby significantly impacts on the reliability with which the EMG signals are transduced. Despite this, to the authors' knowledge, no studies have explored the relationship between socket design and myoelectric prosthesis performance.

This study will compare the reliability of three clinically-available socket designs against an 'ideal' no-socket condition for which the electrodes are secured directly to the skin. Variability in response time of prosthetic hand movement obtained for a series of reaction-time tests will inform on reliability. To explore effects of socket design on unwanted movement, we will ask participants to perform a series of upper limb tasks and record the number of times the prosthesis responds unintentionally (as a result of motion artefacts, 'false signals' that can result in unplanned movement of the prosthetic hand). The motion of the prosthetic hand will be recorded using a goniometer recording hand aperture. The assessment of a total of 6 individuals is planned by the end of 2017.

Keywords
Prosthetics, myoelectric control, EMG

Care Leavers' Experiences of Higher Education

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Abstract

Young people leaving care often face an accelerated and compressed transition to adulthood. Care leavers are also over-represented on all measures of social disadvantage and exclusion, as well as being disproportionately underrepresented in social and cultural capital enhancing activities such as engaging in Higher Education. The presumed transmission of social and cultural capital from families and support networks, in the form of values and practices, poses an interesting question considering young people leaving care can often lack strong familial bonds, positive relationships, and stable support networks. Some young people who have left care show high levels of resilience which can contribute to the successful transition to adulthood, as well as be more likely to experience positive long-term outcomes. Therefore, at present, developing a resilience framework in studying the process of leaving care is now recognised as warranting particular attention. This project uses a theoretical framework which integrates social and cultural capital and resilience in order to examine the experiences of care leavers accessing and engaging in Higher Education. The policy context is also considered. With the recent implementation of 'Staying Put', which extends support for care leavers to remain in foster care until the age of 21, the trend in policy seems to be advancing in a positive way. However, with wider structural and economic reform comes pressure on Local Authorities to fund services. How this will affect care leavers and future service provision is unknown.

Keywords

Care leavers, higher education, resilience, cultural capital, social capital

The Impact of Censorship on Investigative Journalism in Saudi Arabia

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Abstract
The purpose of this study was to investigate the effects of censorship on investigative journalism in Saudi Arabia. The study explored censorship affecting the practice of investigative journalism in Saudi Arabia from the perspectives of journalists. The focus of this study was the censorship as practised by the government, society, newspaper, and self-censorship. The study examined the views of Saudi journalists working in all Saudi newspapers and identified their reasons for the selection or rejection of stories.

The data for the study were generated through survey questionnaires applied to Saudi journalists regarding gatekeeping and its application to different settings in Saudi newspapers. The study revealed that self-censorship followed by government censorship respectively impacted the practice of investigative journalism the most. The study was conducted to 30% of all Saudi journalists chosen from all Saudi newspapers.

The data analysis of the questionnaires revealed that because of the influence of censorship, journalists avoided selecting stories related to: government and political system, culture and society, advertising and editorial policies. Regarding gatekeeping, the findings of this investigation suggested that governments, particularly in the developing countries, place much emphasis on gatekeeping, as political and governmental issues are controlled environments to gatekeepers. This is because gatekeeping is considered a government control medium. The researcher concluded that there were factors—including cultural, political, and organisational—that impact the selection and processing of investigative reports in Saudi Arabia.

Keywords
Investigative journalism, censorship and Saudi Arabia

The Structural Behaviour of Horizontally Curved Pre-stressed Box Girder Bridges

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Abstract
Bridges are important and efficient structures which are comprised of a number of materials and substructures, namely the deck, abutment and foundation and possibly additional intermediate supports. In recent times the horizontally curved box girder bridge has become more desirable in modern motorway systems and large cities. Even though numerous amounts of research has been in progress to analyse and understand the behaviour of all types of box-girder bridges, the results from these different research projects are unevaluated and dispersed.

Therefore, a better understanding of on the structural behaviour of straight and curved box-girder bridges is needed. In this study, a three dimensional straight and horizontally curved pre-stressed box section has been analysed with shell elements using the finite element analysis program ANSYS to examine the structural behaviour and load carrying capacity. The box girder under static gravity, pre-stress and gravity + pre-stress has been analysed. Various configurations of applied UDL and traffic loading have then also been studied. The model has derived from previously published work and expanded to study the effects of curvature under different loads applied (UDLs). The study concludes that the FEA using shell elements is able to predict the behaviour of box girders with adequate accuracy through the comparisons made between stress results from analytical hand calculations and published work, both for the straight and curved box girder bridges.

The theoretical and analytical investigation has then been expanded further to carry out parametric studies with a more accurate representation of pre-stress and analysed as a three dimensional model using the ANSYS. The aim of the parametric study is to investigate the effect of curvature, loading conditions, pre-stressing, moving loads, and vehicle positioning.

Keywords
Box-girder, curved bridges, gravity, pre-stressed, traffic loads

A Case Study to Explore Current Mentorship Programme Influences on Intern Nursing Students' (Mentees') Knowledge, Skills and Attitudes in MOH Training Hospitals in Saudi Arabia

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Abstract

In Saudi Arabia, a shortage of Saudi nurses has reached a critical point in nursing workforce planning; there is a need to fill nursing positions in order to cover this shortage and meet patients' needs. Part of the problem is that many intern-nursing students (mentees) are placed in demanding roles without sufficient training or adequate preparation. Many mentees in the early stages of developing their skills consider clinical practice to be a challenge for their capabilities. The purpose of this study is to explore the influence of current mentorship programmes on the knowledge, skills, and attitudes of the mentees.

A qualitative case study design was chosen as a research strategy for this study in order to gather realistic information about the influence of current mentorship programmes on intern students in two MOH hospitals in KSA, and to understand this from different perspectives. Data Collection: From multiple sources was gathered and analysed as follows. Evidence was collected via official, formal and informal written documents, and semi-structured interviews were conducted with the principal stakeholders, mentors and the student mentees.

Observation sessions also took place in which informal conversations between the study participants and the researcher were recorded to identify first-hand how the mentees reflect on what they have learned during the mentorship programmes. Observation sessions also took place in which informal conversations between the study participants and the researcher were recorded to identify first-hand how the mentees reflect on what they have learned during the mentorship programmes. Analysis: Thematic analysis was used to analyse data from the documents, the semi-structured interviews and the participant observation sessions. Analysis of the results is currently in progress.

Keywords

Mentorship programmes, mentor, mentee, internship student, clinical setting

Digital Watermarking for Confirming Trust in Digital Medical Workflows

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Abstract
Many health organisations have invested significantly in Picture Archiving and Communication Systems, which are aimed to simplify data security. However, it is common in medical image workflows for images and records to be abstracted from these systems for a wide range of sensible practices, such as external second opinion, sending to another healthcare provider, patient data request, etc. Therefore, guaranteeing integrity and authenticity of these images has become crucial.

During use, medical images can be intentionally, or unintentionally, tampered with. This has potentially serious implications for diagnosis and treatment planning with a considerable risk of life affecting outcomes. Intentional modifications may also change the data for deceitful goals like obtaining false health insurance claims; hide a medical case for personal benefit, etc. Healthcare applications rules prevent any distortion in the watermarking operation. So, reversible watermarking has been developed which can recover the original image. An alternative approach is by avoid inserting the watermark into Region of Interest of the image which uses in diagnosis.

Digital watermarking has been recognised as a robust approach for ensuring data authenticity and integrity in the medical environments. Integrity refers to the ability to demonstrate that the information has not been changed without authorisation. Authenticity denotes the capacity to identify that the data is derived from the correct source and belongs to the right patient.

This research concentrates on ensuring trust in digital medical workflows by enabling high authenticity and integrity control within medical images and studies the current watermarking techniques appropriate for medical systems.

Keywords
Digital watermarking, medical imaging, integrity, authentication PACS

Investigation of the Expression of Toll-like Receptor Genes and Other Immuno-relevant Genes in Animals in relation to Infection with Parasites

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Abstract
Toxoplasmosis, is a serious disease caused by Apicomplexan protozoa, and a bacterial infection TB, which infects all warm-blooded animals including humans. As a response the host mounts a defence system to the infection, there are two of them that are involved (innate, adaptive immune system) the innate immune system is the first one to be involved. It is comprised of 13 Toll-like Receptor Genes (TLRs) which recognise infections.

In this study 39 brain and heart tissue samples from mice were collected within 2 km of Malham Tarn in Yorkshire, then DNA/ RNA has been extracted by phenol chloroform.
The aims of the study are to investigate whether these mice (*Apodemus sylvaticus*) are susceptible or resistant to Toxoplasma and if there are differences between organs. There is a necessity to develop protocols for the rapid sequencing of large stretches of (TLR), containing (DNA) and measuring (RNA) expression levels that are adapted to working from samples stored on (FTA) cards or as DNA/RNA.

Furthermore, a similar approach will be applied to samples of TB to investigate the role of the innate immune system and TLRs which are involved during the infection. Ten samples will be provided from Libyans infected with TB, using 1cc of vein blood spotted on FTA cards.

There is a necessity to classifying 13 TLRS, expressed during the infection that might be linked to the resist or susceptible of those diseases, to develop protocols for rapid screening and sequencing, by using molecular tools such as PCRs, to measuring RNA excretion, sequencing and epigenetics.

Keywords
TLRs: Toll-Like Receptors, PAMPs: Pathogen Associated Molecular Patterns, DNA: Deoxyribonucleic Acid, RNA: Ribonucleic Acid, FTA: Flinders Technology Associates

A Method to Improve Stability Ride of High-Speed Train

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Abstract
Railway is one of the most important means of transportation. With increased railway vehicle speed, the vehicle's dynamic performance is negatively affected. The suspension of the vehicle has to be modified in order to compensate for the deteriorated dynamic behaviour and minimise the vertical acceleration transmitted to passengers to provide ride comfort. Vehicle Primary Suspensions is divided into passive, active and semi-active systems.

However, improvement possibilities by means of passive suspension technology will eventually reach its limit. Therefore, active suspension technology in railway vehicles is considered as an alternative solution to this issue, since it offers better improvement of the vehicle's dynamic performance compared to the conventional passive solution. Primary suspension is the term used to designate those suspension components connecting the axle and wheel assemblies of a vehicle to the frame of the vehicle. This is in contrast to the suspension components connecting the frame and body of the vehicle, or those components located directly at the vehicle's seat, commonly called the secondary suspension. In semi-active suspension system, the conventional spring element is retained, but the damper is replaced with a controllable damper. Magnetorheological (MR) damper is a kind of semi-active device.

Performance of semi-active suspension model with the use of MR damper will provide better ride stabilities. This is because there is a magnetorheological fluid inside the shock absorber system, which reacts with the magnetic field. The viscosity of the fluid increases, in the presence of a magnetic field, thus increasing the damping of the shock absorber.

Keywords
Semi-active system, active system, MR dampers, primary suspension, passive system

Investigation into *Toxoplasma gondii* Infection in relation to Neurodegenerative Disease

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Abstract

Toxoplasma gondii is considered a crucial pathogen in all warm-blooded animals and humans, with approximately one third of the human population anticipated to be infected. It is, therefore, plausible to examine whether a chronic *T. gondii* infection is responsible for age-related diseases that affect brain function. *T. gondii* is capable of infecting the central nervous system (CNS), by bypassing the highly-selectable blood-brain barrier using cells of the immune system as sentinels. The effects of *T. gondii* on brain cells are immediate. Microarray gene profiling of human foreskin fibroblasts showed that infection with *T. gondii* caused a pro-inflammatory cytokine increase, cytoskeletal rearrangements and protection from apoptosis within 1-2 hours after exposure to the parasite. Alzheimer's disease (AD) is a devastating neurodegenerative disorder affecting about 26 million worldwide and the effect of *T. gondii* on this multifactorial disease is under debate. Armed with the above crucial knowledge regarding Toxoplasma and AD, the aim of this study is to (i) investigate parasite distribution in animal and human brain tissues using immunohistochemistry, (ii) and PCR (iii) investigate parasite DNA amounts in naturally infected brain tissue samples using techniques like Real Time PCR and (iv) investigate parasite infection in relation to host genetic markers. To conclude, this study will explore the relationship between Toxoplasma infection and Alzheimer's disease.

Keywords

Toxoplasma gondii, neurodegenerative, brain, immunohistochemistry, PCR

Investigation into *Toxoplasma gondii* Infection in relation to Brain Diseases in Animals and Humans

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Abstract

Toxoplasma gondii (*T. gondii*) is the most common zoonotic parasite infecting a wide range of warm-blooded animals, including humans, that causes the disease toxoplasmosis. The infection of *T. gondii* cause significant host diseases in the brain because this parasite is able to cross the blood–brain barrier (BBB) and persist in the central nervous system (CNS). This can cause direct structural and neurological damage due to the invasion, growth and exit of the parasite. In the brain, *T. gondii* infection can present as a cyst in deferent brain regions such as the amygdala, cerebellum, hippocampus and other cortical regions which can lead to specific behavioural changes in the host. Many studies have suggested that *T. gondii* infection may be a risk factor for the development of some neuropsychiatric disorders such as Schizophrenia, Parkinson disease, and Alzheimer disease. This project will investigate the relationship between toxoplasmosis and Alzheimer disease AD. A recent study shows that there is no relationship between *T.gondii* infection and Alzheimer disease that is based on serological methods. However, in this project PCR and immunohistochemistry techniques will be used to investigate *T. gondii* distribution in animal and human brain tissues. Also, parasitic infection in relation to host genetic markers such as Toll-like receptors will be investigated.

Keywords

Parasites, Alzheimer disease (AD), *Toxoplasma gondii* (*T. gondii*), Deoxyribonucleic acid (DNA), immunohistochemistry (IHC), Toll-like receptors(TLRs)

Prospective Study of the Associations Between Immune Biomarkers and Clinical Outcome in Patients with Major Trauma

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Abstract

Major trauma currently accounts for 10% of deaths globally. The immune response to trauma is postulated to follow a 'two hit' course involving a complex interplay between cascades of pro and anti-inflammatory responses, which eventually dictate clinical outcome in patients. The desired outcome, is the resultant balance between the two opposing arms of the immune response, permitting neither the tissue damage due to over-activity of the pro-inflammatory response, nor immunopariesis and susceptibility to nosocomial infections as a result of over-activity of the counter-regulatory inflammatory response. The ability to detect early markers of immune imbalance would enable the identification and stratification of the cohort of patients likely to have poor clinical outcomes (sepsis, mortality, and ICU stay) for targeted and individualised clinical interventions. Methods: A prospective observational study (200 patients) at the Manchester Royal Infirmary is currently recruiting patients admitted with severe poly-trauma requiring urgent surgery or admission to ICU). Serial blood samples at Day 1, 3 and 5 are processed for peripheral blood mononuclear cell isolation. Expression of surface markers and the transcription factors (FoxP3) are analysed by flow-cytometry.

Preliminary data analysis was aimed at validating the methods used to detect markers of the suppressive immune response, namely CD25Bright, CD127-, and FoxP3+ in order to ascertain similar trends. Percentage changes for marker level between Day 1 and Day 5 samples were used to make the comparison. A significant correlation was seen in the trends between CD25Bright and CD127- with R2 values 0.9838. The correlation between FoxP3+ and the 2 surface markers (CD25Bright and CD127-) were less marked, probably because the FoxP3+ lineage was directly deuced from CD4+ parent lines, and hence contain other Treg populations. On completion of data collection, the immune biomarker data will be analysed in relation to patient demographics and outcome measures.

Keywords

Trauma/severe injury, sepsis, cytokines, Treg cell, MODS

The Impact of Fiscal Policy in Alleviating Unemployment in Emerging Market: the Case of Ghana

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Abstract
Unemployment in majority of instances serves as an indicator of the economic welfare (health) of a country. Over the last decade the unemployment rate in Ghana has declined significantly to single digits, however, the true nature of unemployment is being shielded by the rapid growth of the private informal sector.

The general approach of this research is to make use of micro level data to investigate and gain deeper insight of the labour market - the true nature of unemployment in Ghana, in addition to the contributory factors. It will also explore the issue of informal employment and underemployment within the Ghanaian economy. Having achieved that, the research seeks to then analyse the effectiveness of fiscal policy in tackling both the unemployment and underemployment challenges in the country.

The research has so far carried out time series and cross-sectional descriptive data analysis of the datasets regarding the socio economic differences associated with unemployment and private informal sector employment.

Keywords
Unemployment, underemployment, labour market, linkages, fiscal policy

Validation of Shell Fish Isolates (Marine Polysaccharides, MPs) for Development as a Novel Anti-tumour Therapy for Children: MP Action on Lymphocytes

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Abstract

Leukaemia is cancer of white blood cells (WBCs) mainly affecting children. Defective WBCs become prominent in the blood and cannot provide immune protection. Although chemotherapy treatments are effective they have negative side effects which are magnified in children. Ongoing research at KidsCan identified anti-tumour properties in novel marine polysaccharides (MP). Their effect on 'normal' lymphocytes is unknown; addressing this would potentially allow the development of MPs for clinical use.

This study aims to assess lymphocyte responses to MPs over time to further probe their 'kinder' therapeutic potential.

MPs were isolated from sources A and B. Peripheral blood mononuclear cells (PBMCs) were isolated from whole blood. MP isolates were tested at various time points and doses on both control cancer cell lines K562, MOLT-4 and U698 and PBMCs via MTT and FACs apoptosis assays. PBMCs were either naïve or activated representing a range of normal immune activation states.

The MTT assays identified up to 90% inhibition of cancer cell growth, and little effect on the viability of healthy lymphocytes (PBMCs), post treatment with either isolate. The apoptosis assays demonstrate the apoptotic effect exerted by isolates A and B on the cancer cell lines and indicated minimal effect on the healthy lymphocytes.

These findings suggest MPs have the potential for development into a therapeutic anti-cancer treatment, justifying further research into characterising their active components and structures. Further research into the compound effects on specific T-cell families including T-regulatory cells (which play a key role in cancer progression) will also be carried out.

Keywords

Marine polysaccharide, leukaemia, PBMCs, apoptosis, lymphocytes

Communicating Energy Vulnerability: an Exploration of Energy Advice within and beyond Institutional Settings

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Abstract
Centred on further developing effective communication and engagement strategies with those living in or at risk of fuel poverty, this research aims to explore understandings of energy vulnerability as communicated within the social process of energy advice. Adopting a qualitative mixed-methods approach, three distinct 'energy advice contexts' will be explored: (1) a formal energy advice organisation, (2) 'mundane' settings, and (3) energy advice activity online.

Recent years have seen a significant growth in the number of individuals seeking advice and information regarding domestic energy-related issues, such as energy debts, cold homes, poor housing conditions, and energy supplier complaints. And, with an estimated 2.3 million households in England living in fuel poverty, energy advice is regarded as one of the critical components in overall efforts to alleviate the social problem and its impacts.

Predominantly adopting an evaluative lens, measuring inputs and outputs to assess the effectiveness of a given intervention, existing research has been said to offer only a limited understanding - one that overlooks interpretative, perceptual and experiential processes, as well as an individual's prior knowledge and the social, historical and cultural contexts in which advice takes place. Furthermore, the extant literature has principally focused on formalised channels of energy advice, such as that delivered by energy suppliers or third sector organisations. Comparatively, there has been limited attention on interactions with informal social actors, such as relatives or neighbours – a potentially critical, yet largely unknown role that has only recently begun to emerge from the wider literature.

Keywords
Energy advice, energy vulnerability, fuel poverty, qualitative mixed-methods

Cognitive Behavioural Social Competence Interventions for Adolescents and Adults with Autism Spectrum Disorder without an Intellectual Disability: a Systematic PRISMA Review

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Abstract

Cognitive behavioural social competence interventions are gaining in popularity for individuals with Autism Spectrum Disorder (ASD). Impairments in social cognition and social function develop in early childhood but they can often remain prevalent in adolescence and early adulthood (Barnhill, 2007; Klin et al., 2006). Recent findings indicate that in adolescence and adulthood many individuals with ASD, including those with an IQ within the normal range, are significantly disadvantaged in terms of social relationships, physical health, mental health, vocational or occupational success and quality of life (Howlin & Moss 2012; Miller, Vernon, Wu, & Russo, 2014). There is a limited amount of evidence to support the use of social competence interventions and the few studies to address their efficacy often encounter mixed results. The present review identified 11 studies that comprised of 333 participants. Across all participants, 42 were adults and 291 were adolescents. There were six forms of assessment utilised to measure the social competencies of participants. Across the 11 included studies in this review, six (54.5%) reported positive outcome data, four (36.3%) reported mixed outcome data and one (9.2%) reported negative outcome data. While it does seem that cognitive behavioural interventions can be effective in improving social competencies for some adolescents and adults with ASD, further research is urgently needed before any strong support for the efficacy of this particular type of intervention for individuals with ASD can be made.

Keywords

Autism, intervention, treatment, skills, social competence

Alterations in Autophagy in Alzheimer's Disease using Post-mortem Brain Tissue

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Abstract

Alzheimer's disease (AD) is pathologically characterised by the accumulation of abnormal proteins and the formation of neurofibrillary tangles and senile plaques. Autophagy is a normal intracellular mechanism that functions to degrade damaged cellular proteins. Recent studies have shown a link between macroautophagy dysfunction and AD. However, it is unclear how the different autophagic pathway activity (such as macroautophagy and chaperone mediate autophagy) changes during disease progression and how this relates to the accumulation of abnormal protein deposits.

This study aimed to explore autophagy alterations in AD and investigate the relationship between autophagy related proteins and AD related protein deposits such as tau and beta amyloid proteins) with disease progression. Immunohistochemical analysis of formalin-fixed sections of human brain tissue obtained from the Manchester Brain Bank was performed. 45 cases (15 Braak stage 0-II, 15 Braak stage III-IV, 15 Braak stage V-VI) from the hippocampus and the frontal cortex were assessed for markers of macroautophagy (LC3, Beclin-1), chaperone mediated autophagy (LAMP2A, Hsp70), beta-amyloid (Aβ) and hyperphosphorylated tau protein (AT8).

LAMP2A and LC3 immunoreactivity were found to be increased in areas of the hippocampus which only demonstrate tau pathology in late stage AD, such as DG and CA4. Immunoreactivity was also lower in CA1 and CA2 which are earlier sites of tau deposition. These preliminary findings suggest impaired chaperone mediated autophagy in neurones harbouring hyperphosphorylated tau. Double labelling immunofluorescence studies are being conducted in order to verify these findings.

Keywords

Alzheimer's disease, autophagy, immunohistochemistry, LAMP2A, LC3

Potential of Algal-based Ponds in Treatment of Textile Dyes Containing Wastewater

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Abstract

The industrial revolution and population growth have increased the demand for textile materials, which has consequently increased the number of textile industries and their effluents, to be one of the major causes of global environmental pollution challenges due to the presence of dyes. These dyes have unacceptable appearance and produce toxic intermediates after their breakdown. Biological treatment alternatives such as pond systems are likely to be sustainable and cost-effective. Pond experiment conducted using 24 plastic containers, six for each dye as artificial ponds. The setup consists of two treatment groups, the first group containing algae (algae ponds, four replicate) and the second group without algae (control ponds, two replicated). The aim is to assess the potential of algae ponds for the treatment of wastewater contaminated with dyes at a concentration of 5 mg/l in long term study under laboratory conditions. The objectives were to assess (i) the main outflow water quality parameters such as pH, suspended solids (SS), and total dissolved solids (TDS); (ii) the colour removal of four azo dyes (iii) the chemical oxygen demand (COD) removal efficiency. Results indicate that the outflow values are within the standard limits for discharge the treated effluents to the aquatic environment. Algae ponds are able to remove around 53 % of the dye BR46 followed by 14 % of the dye RB198. However, the removal efficiency of the dyes AB113 and DO46 was similar and very low. The ponds system showed low COD removal efficiency.

Keywords

Artificial ponds, sustainable, textile effluents, water quality parameters

Wandering Gravel-bed Rivers: Paleo-glacial Effects on the Stability of the Wooler Water, Northumberland

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Abstract

The progression of small Unmanned Aerial Vehicle (sUAV) technology, associated surveying and data processing methods have improved spatial and temporal resolution of image capture to rival terrestrial lidar methods for much larger scales. This technology has become increasingly popular for fluvial-geomorphological surveys, where centimetre scale precision enables studies to focus from reach-scale, channel morphology to meso-scale sediment changes on exposed gravel bars. Methods adopted in this research are used to monitor the Wooler Water, Northumberland; an active gravel-bed river experiencing dynamic channel modifications at high flow events. Wooler Water flows from the Cheviot Hills and through the Milfield basin; an area with geology defined by the Pleistocene glacial processes. Here, high resolution (0.01m) imagery is used to monitor the sediment flux of gravel bars within each reach, by identifying stones common to each survey patch that have not been transported by intervening high flow events. Digital terrain models of difference (DOD's) are used to assess the flood response in terms of erosion and deposition within each sediment patch. This methodology is used to investigate the hypothesis that upstream the river has eroded into coarser glacial deposits too large to be transported by modern flood discharges, and is instead eroding material from the banks during high flows. Initial results show deposition (m2) to be dominant for both reaches, yet the volume of erosion upstream is an order of magnitude greater than the downstream site. Further analysis will threshold the results for uncertainty in surveying and data processing techniques.

Keywords

Sediment, flood-response, stability, UAV

Hydromorphological Evolution of a Restored River; a Case Study from the Lake District

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Abstract

River restoration has undergone a shift in approach from structural interventions controlling unwanted erosion to river naturalisation and the "re-meandering" of channels back to an historic planform. This change comes from the acknowledgement of rivers as dynamic systems that can do much of the restoration work themselves, through restoring erosional and depositional processes and allowing connection with the floodplain. Allowing a river to function in line with its natural processes is expected to increase the chances for long-term success of a restoration project. Swindale Beck is an example of such an approach to restoration, often now coined as natural flood management. A new active meandering channel was constructed, replacing the original canalised channel, which had previously been straightened, to increase flow efficiency and utilisation of the now reconnected floodplain. The new channel is designed to allow the river to function in line with current natural fluvial processes and reconnect with its hay meadow floodplain.

Through emerging small Unmanned Aerial Vehicles (sUAV) topographical and photogrammetrical data at the centimetre scale can be rapidly acquired yielding a dataset that can characterise habitat, assess changes in sedimentation and volumetrically calculate sediment flux within the restored reach. Initial evidence from UAV surveying of Swindale Beck shows rapid early success; erosion and deposition at the site show fluvial processes acting in line with levels expected of an active meandering system. Additionally an assessment of macroinvertebrate communities will provide an indication of river health; allowing the hydromorphological evolution following the restoration to be studied and quantified.

Keywords

Natural flood management, UAV, habitat, floodplains

Proactive Control of Cresting in Homogeneous Oil Reservoirs - an Experimental Study

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Abstract
Cresting in horizontal wells is a well-known reservoir problem usually described as the insurgence of effluent(s) (unwanted water and/or gas) through the perforation of the well, which is produced together with oil. Cresting is majorly affected by pressure drop, resulting in uneconomic oil production rates and large volumes of oil could be left behind due to premature shut-in of the well.

This study experimentally investigates the use of electromagnetic valve in proactively controlling production of water during cresting from homogeneous thick- and thin-oil rim reservoirs, based on the principle of capillarity (reservoir wettability) and effluents (water and gas) breakthrough time. A time, half the approximated initial effluents breakthrough time, was pre-set for the electromagnetic valve to close. The valve closed almost immediately at the set-time thereby shutting oil production temporarily, causing the water and gas height levels to recede by gravity and capillarity. The efficiency of this technique was compared with an uncontrolled simulation case, in terms of cumulative oil produced and water produced at the same overall production time.

Using the cresting control procedure, higher percentages in oil produced and water reduction were observed in the cases controlled proactively. An increment of 3.56% in oil produced and decrement in cumulative water produced of 9.96% were observed for the thick-oil rim reservoir while little increment in oil produced of 0.7% and lower water reduction of 1.03% were observed in the thin-oil rim reservoir. Hence, the effectiveness of the cresting control procedure depends on the oil-column height in the reservoir.

Keywords
Homogeneity, capillarity, cresting, breakthrough time, electromagnetism

Investigation of Novel Glucocorticoid Receptor Agonists

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Abstract

Glucocorticoids (GCs) play important functions in physiology and medicine and are commonly prescribed anti-inflammatory and immunosuppressive drugs. GCs are used in treatment of childhood acute lymphocytic leukaemia (ALL), however resistance to therapy and side effects highlight the need for further research. GCs exert their function through binding to intracellular protein glucocorticoid receptor (GR). It is believed that the desired anti-inflammatory properties of GCs are due to the GR's mediated trans-repression function, and that genes positively regulated by GR may mediate unwanted GCs effects. Thus, this study aimed to investigate new compounds that would potentially dissociate transcriptional activation and repression and minimise the side effects and GC resistance, towards improving childhood leukemia therapy.

The recently developed selective GR modulator (SeGRM) Compound A (CPDA) and synthetic GC dexamethasone (DEX) were used together with two "single ring" organic compounds; Tyramine (T) and Tyramine hydrochloride (THCl) to assess their cytotoxic and anti-inflammatory effects. Molecular modelling has indicated that these compounds contact several residues similar to classical GCs. Dex, CpdA, T and THCl all show cytotoxic effect on GC sensitive and GC resistant ALL CEM-C7-14 and CEM-C1-15 cell lines and DT40 (chicken leukemia cells). ALL cells proliferation was mostly inhibited by high doses and long incubation time. Compounds exerted selective and differential effects on cell cycle progression, apoptosis and caspase-8 enzyme activation.

Cell type specific, anti-inflammatory action of studied compounds was measured by ROS, Nitrite and cytokine production analysis. Evaluation of secretory cytokines IL-6 and IL-2 by ELISA has shown a cell specific regulation of these biomarkers of inflammation.
These data provided evidence of novel compounds capability to inhibit leukemia cells proliferation. Furthermore, compounds treatment has altered selected GR target genes expression in a drug and cell specific manner. Thereby, these compounds show promising characteristics for drug development aiming to potentially be used in treatment of leukemia and inflammatory conditions.

Keywords

Glucocorticoids, compound A, leukemia, ROS, inflammation

The Temporal and Spatial Dynamics of Tick Borne Disease in Cumbria

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Abstract

B. burgdorferi sensu lato and *B. miyamotoi* are known to be present in the UK. *B. burgdorferi s.l.* is the causative agent of Lyme borreliosis. *B. miyamotoi* is an emerging pathogen, recently detected in the UK for the first time, but yet to be associated with human disease. *Ixodes ricinus* is the principal vector of both of these spirochetes in the UK.

This project aims to quantify the environmental threat of *B. burgdorferi s.l*. and *B. miyamotoi* and determine the drivers of this threat by long-term monitoring of *I. ricinus* populations in southern Cumbria. Questing *I. ricinus* ticks have been collected every 4 weeks since June 2013 and tested for the presence of *B. burgdorferi s.l*. and *B. miyamotoi* using molecular methods. Results to date have demonstrated the expected seasonal variation in tick density but consistent differences between the density of ticks at each site. The prevalence of *B. burgdorferi s.l.* at each site has fluctuated markedly and there have been consistent differences between infection prevalence at each site. Four *B. burgdorferi s.l.* genospecies have been detected across the sites although the relative contribution that each genospecies makes to the borrelial community at each site has varied markedly. *B. miyamotoi* has been consistently detected in the study area.

B. burgdorferi s.l. infection prevalence in ticks varies spatially and temporally thus reliance on single cross-sectional surveys to estimate local Lyme borreliosis risk could be misleading. More work is needed to understand the ecological determinants of the observed variation.

Keywords

Vector, disease, ecology

Deformed Wing Virus and its Implication in Overwintering Losses of Honey Bees

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Abstract
European honey bee (*Apis mellifera*) populations have experienced high overwinter mortalities in temperate regions since the global spread of parasitic mite *Varroa destructor*. *V. destructor* is an effective vector of several honey bee pathogens, of which Deformed Wing Virus (DWV) is evidenced to be a main factor behind colony losses. Three master variants of DWV are formally identified (variant type A, B and C) however little evidence exists to suggest which variants impact honey bee health. The type A variant is considered lethal, type B is evidenced to enhance colony survivorship and little is known about type C. Our research concentrates upon all three DWV variants and their implication in honey bee colony losses.

Honey bee samples were collected from all over the UK during spring and late summer/early autumn 2016. These samples were obtained from *Varroa* treated and untreated colonies. Using reverse transcriptase quantitative PCR (RT-qPCR) the DWV viral load of each variant has been calculated and changes in the prevalence of DWV variants and loads have been witnessed throughout the UK.

Keywords
Honey bees, *Varroa destructor*, deformed wing virus, RT-qPCR

Community Perceptions of the Socio-Cultural Factors that Influence Maternal Mortality and their Strategies for its Reduction in South East Nigeria

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Abstract

Maternal mortality is a global health issue with developing countries, such as Nigeria having an unacceptably high occurrence and levels of maternal death especially in the poor and rural communities. The WHO stated that approximately three hundred and eighty (380) women die every day and 99% of these deaths occur in developing countries such as Nigeria (WHO, 2016). Although evidence abounds on the medical causes of maternal death in Nigeria, the sociocultural influences on maternal death have not been sufficiently explored. This research is an investigation of the socio-cultural factors that influence maternal mortality in a South-eastern Nigerian community, and what members of this community perceive to be the best approaches to improve maternal health to help reduce maternal mortality. The study used qualitative methodology, which included focus group discussions and in-depth one-on-one interviews as the methods of data collection. The sample consisted of 39 participants included were traditional birth attendants, midwives, women, doctors, and opinion leaders. Findings suggest that, the participants perceive that cultural beliefs and religious activities about childbirth as an obligation which every woman must obey, spiritual powers (Ogbanje), and the position of women in the society influence the outcomes of pregnancy and increase the potential for maternal mortality. Thus, an understanding of the impact of cultural dynamics and their influence on maternal health is needed for effective public health intervention to improve maternal health in Nigeria. This is because culture plays a vital role in the health of the individual, the family and the community.

Keywords

Maternal mortality, pregnancy, culture, belief system, maternal death, childbirth

Effective Communications with Foreign Public Abroad

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Abstract
In view of literature, Libya is a developing country which has all possibilities that may drive it to think seriously about enjoying a great status in the international community, such as strategic location, tourist attractions, virgin and fertile environment for investments, great sources of the most demanded natural resources 'oil and gas'. However, all these advantages need first to be ideally and globally utilised to grant Libya a valuable status not only in other countries' governments' agendas but also in their people's hearts and minds.

Consequently, the crucial role of communications with foreign public can widely assist Libya to enhance its image and reputation abroad through presenting positive components of the state in other countries via dialoguing, negotiating and interacting with general foreign public, leaders and decision-makers, and journalists and media all over the world.

In fact, the current study considers communication as an essence of the convergence of public relations and public diplomacy. Thus, effective communication with foreign public and ensure benefit from employ its outcomes to create a favourable image and reputation of Libya is the central focus of this study.

Accordingly, the study attempts to investigate communication efforts to rebrand Libya in other countries, in particular, the study examines communication efforts made by Libyan government and nongovernment institutions in the hosting countries with an intention of utilising these efforts in giving a boost to Libya's nation brand assists to reshape positively foreign public's minds and win their hearts towards Libya and its people.

Keywords
Public relations, public diplomacy, communication, foreign public, nation brand

Gene Expression of DNA Repair Proteins in Colon Cancer Tissue

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Abstract

Cancer is a disease that arises from the disruption of cellular and genetic functions, either intrinsically or extrinsically. DNA repair genes play a critical role in maintaining the integrity of the genome and the dysregulation of the key DNA damage repair genes has been implicated in the development, progression and chemotherapeutic resistance of different cancers.

Colorectal cancer (CRC) or colorectal adenocarcinoma is one of the most common malignant neoplasms and a leading cause of cancer-related deaths worldwide. This work will compare the level of gene expression of the DNA repair genes *NEIL1*, *NEIL2*, *NEIL3*, *ERCC1*, *MLH1*, *OGG1*, and *NTHL1* with the housekeeping gene *GAPDH* in colon tumour tissue and matched normal colon tissue. Various molecular biology tools and techniques were employed in this research, including RNA extraction and purification, complementary DNA (cDNA) synthesis and qRT-PCR analysis. Gene expression levels were determined using the comparative Ct method. For the twelve tumour tissues investigated, there is a reproducible and characteristic pattern of expression of the genes, with trends of expression observed between the Neil group of genes; *Neil3* and *Ercc1*, and between *Neil3*, *Ercc1* and *Mlh1*. The results showed that across the tumour tissues, the over-expression of one of the Neil genes marks the suppression of the others. Similarly, the results further demonstrated that there is a special relationship between *Neil3* and *Ercc1*, with both genes antagonistic to each other. The expression patterns of these genes are indicators of the level of genetic instability and could serve as biomarkers for cancer diagnosis.

Keywords

DNA repair genes, gene expression, colorectal cancer

The Ecology of Tick Borne Diseases of Livestock in Cumbria

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Abstract

Changes to farm production subsidies have had a significant impact on livestock farming in the British uplands, provoking the maintenance of far less stock. The resulting decrease in grazing pressure potentially alters upland ecology in many ways, one of which is a shifting of the 'infectious disease landscape'; in which pathogens with transmission cycles favoured by a changing upland ecology will become of greater veterinary importance. Tick-borne pathogens are not only a case in point, but their threat is now augmented by increasing tick abundance, changing climate, and the extraordinary nationwide increase in the abundance of deer (that serve as a key host species).

The project explored the three tick-borne diseases (TBD's) that pose the greatest threat to livestock in the UK uplands: (i) red water fever (ii) louping ill and (iii) tick-borne fever. All three are transmitted by the catholic-feeding tick *Ixodes ricinus*, and have established wildlife reservoirs. Many of these diseases go unreported, but anecdotal evidence suggests that they remain a well-recognised threat to livestock.

Research was concentrated on common grazing land in Cumbria, where we investigated the idea that risk is a product of environmental hazard and exposure rate.

This was achieved by taking a holistic view of common grazing land: assessing environmental hazard, determining tick distribution, quantifying exposure rates, identifying the ecological drivers behind the questing tick population, assessing tick and TBD burden for sheep and understanding if exposure rates are shaped by individual sheep movement on the Moor. Results will hopefully inform control strategies.

Keywords

Ticks, livestock, disease, distribution, control

Extreme Pressure: Use of the Diamond Anvils Cell to Achieve Pressures Present at the Centres of Planets and Moons

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Abstract
The diamond anvil cell (DAC) is a device used to study materials under extreme pressures and temperatures, such as those found deep within planets. Extreme physical conditions create exotic phases and materials that are not found in ambient conditions. Today, pressures in excess of 500 gigapascals (GPa) can be reproduced, which equates to 5 million times atmospheric pressure.

We have carried out experiments using DAC on strontium chromate ($SrCrO_4$) up to 50 GPa, lanthanum vanadate ($LaVO_4$) to 13 GPa and fluid methane (CH_4) up to 165 GPa. Pressures ranging from a few thousand to over one and a half million standard atmospheric pressures were reproduced. Several high temperature experiments were carried out on fluid methane and Samarium-doped yttrium aluminium garnet (Sm:YAG) up to 397K and 600K respectively. High pressure/temperature in a DAC can also be used to start reactions and synthesise new materials. Hydrogen can be made to react with pristine graphene to form hydrogenated graphene, a two-dimensional polymer of carbon and hydrogen.

Keywords
Raman, optical absorption, diamond anvil cell, phase transitions

Interleukin-6 and Interleukin-10 Concentration as Predictors of Patient Outcome, following Traumatic Injury, through a Comparison with Clinical Data

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Abstract

Trauma is one of the main causes of death worldwide, accounting for 4.8 million deaths per year worldwide. This death rate has led to trauma being classed as the top cause of death for males, aged between fifteen and twenty-nine. In addition to these deaths, directly caused by trauma, additional deaths result from the complications that arise in the days and weeks following the initial traumatic insult. These complications develop due to an imbalance between the pro-inflammatory and anti-inflammatory response to traumatic injury. This imbalance results in one response becoming dominant and complications including multi-organ failure and immunosuppression occurring. Immunosuppression through a dominant anti-inflammatory response has been shown to allow the development of sepsis in the days following trauma. As a result, the ability to monitor the pro- and anti-inflammatory response through the measurement of interleukin-6 and interleukin-10, may allow an early prediction of patient outcome and the likelihood of developing complications.

The concentration of interleukin-6 and interleukin-10 of 35 adult trauma patients were analysed over a five-day period following traumatic injury, using cytometric bead arrays. The concentrations for these patients were then compared to their clinical data, such as SOFA score. This comparison will determine if interleukin-6 or interleukin-10 offers a potential biological marker for the early detection of complications following trauma.

Initial results show that both interleukin-6 and interleukin-10 correlate with patient SOFA scores. This indicates that the balance between interleukin-6 and interleukin-10 has potential predictive value for the early detection of complications following trauma.

Keywords

Trauma, inflammation, cytokines, clinical, sepsis

Anti-microbial Activity of Polyunsaturated Fatty Acids related to Chronic Wound Infections

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Abstract

Wound infections present major health problems worldwide. They involve polymicrobial biofilms with enhanced tolerance to antibiotics and often multidrug-resistant organisms. To overcome the limited therapeutic options, polyunsaturated fatty acid (PUFA) compounds including Eicosapentaenoic acid (EPA) and Docosahexaenoic acid (DHA) offer both immunomodulatory and antimicrobial properties that could enhance wound healing. The aims of this study were to evaluate the Minimum Inhibitory Concertation (MIC) and Minimum Bactericidal Concertation (MBC) of PUFA compounds against different bacteria that are involved in wound infection. The MIC of both EPA and DHA for *Staphylococcus aureus* and *Enterococcus faecalis* were 156 μg ml_1 and for PA14 and *Escherichia coli* was 39 μg ml-1respectively. Both PUFAs showed the highest bactericidal effect on *S. aureus* (MBC = 1.25 μg ml -1). EPA and DHA killed *E. faecalis* at slightly different concentrations (MBC 1.25 and >0.625μg ml-1 respectively). Both PUFA compounds were most efficient at killing *P. aeruginosa* (MBC 0.625μg ml-1). The activity was further characterised by measuring the effect of sub-inhibitory concentrations of PUFAs (50 μg ml-1 and 100 μg ml-1) on growth of a clinical wound isolate of *S. aureus* (SA3). Growth was considerably slower for the first 6 hours but recovered after 12 hours. RNA was extracted after 0, 6, 12 and 24 h exposure in triplicate and c DNA was synthesised for use in RT-PCR studies study is expected to indicate that sub-inhibitory PUFAs affect expression of important aspects of *S. aureus* signalling and growth.

Keywords

Wounds, biofilm, Polyunsaturated Fatty Acid (PUFA), Minimum Inhibitory Concertation (MIC), gene regulation

Investigating Ca^{2+} Channel Blockers as Antimalarials

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Abstract

Calcium, calcium channels along with calmodulin (CaM) play important roles in human RBCs and within *Plasmodium falciparum* parasites. Studies have shown that calcium levels are higher in infected RBCs than non-infected ones and interfering with calcium signalling can lead to degeneration and eventually parasite death. Likewise several antimalarial drugs are reported to have anti-CaM activity. This supports results of a repositioning study carried out at the University of Salford were 700 patent expired drugs were screened against the multidrug resistant K1 *P. falciparum* strain. The results showed several calcium channel blockers and CaM inhibitors to have antimalarial activity.

The work presented here covers the synthesis and investigation of the antimalarial efficacy of a calcium channel blocker and CaM inhibitor fendiline and numerous of its synthetic analogues. The initial results from the *in vitro* phenotypic screens on the multidrug resistant K1 *P. falciparum* strain, HepG2 cytotoxicity assay, hERG safety test, and stage specificity analysis were promising and thus supported further studies. Other work presented here includes CalcuSyn based combination studies of fendiline with current anti-malarial drugs and other calcium channel blockers. Additionally ongoing optimisation using fluorescent dyes is being carried out to detect fluctuations of calcium levels within *P. falciparum* infected RBCs using flow cytometry.

Keywords

P. falciparum, malaria, calcium channel blockers

Second-phase Lead Optimisation of Emetine Dihydrochloride for Repositioning as an Antimalarial Drug

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Abstract

The emergence and spread of drug resistance has prompted further initiatives to develop new antimalarial drugs to aid the control of malaria. Even with the sustained commitments of scientists and pharmaceutical companies, several challenges persist. It is crucial that the drug development timeline is expedited and a wider repertoire of candidates identified to ensure drug resistance is combated efficiently. One of the strategies to discover new drugs is to reposition or repurpose existing drugs. The singular advantage of adopting a repositioning strategy which screens patent-expired drug libraries is that the compounds screened are already known to be bioactive and safe for use in humans. This significantly reduces the time and cost involved in drug development. Repositioning strategies are aptly placed to yield not only novel potent mono-therapy options, but also synergistic partners for combination therapy to prolong the shelf life of the current frontline antimalarial drugs.

The Malaria research group at the University of Salford has already screened 700 current drugs, yielding ~ 50 potential leads exhibiting strong-moderate antimalarial potency. Preliminary screens have identified the anti-amoebic drug emetine dihydrochloride as a potent antimalarial option. This study focuses on the second-phase optimisation of this compound to define its killing and cytotoxicity profiles. HepG2 cytotoxicity data profiles in relation to single and combinatorial use will be presented. The impact of the work and its potential contribution to a disease that continues to cause 1-2 million fatalities annually cannot be over-emphasised.

Keywords

Antimalarial drug discovery, drug repositioning, Emetine dihydrochloride, cytotoxicity and combination therapy

Activity of Recombinant Human NEIL3 at the Replication Fork

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Abstract

The DNA glycosylase NEIL3 is one of a family of proteins that release oxidised bases from DNA, thereby initiating base excision repair. NEIL3 is normally expressed only in rapidly dividing cells such as those in the developing neonatal brain, however, NEIL3 is also highly expressed in cells from metastatic tumours. The biochemical characterisation of NEIL3 has been hampered by the difficulty of expressing enzymatically active recombinant NEIL3 in *Escherichia coli*. One reason for this is that the sequence of amino acids at the N-terminus of hNEIL3 prevents the removal of the N-terminal methionine by the *E. coli* methionine amino peptidase. As N-terminal methionine processing is essential for DNA glycosylase activity, a novel bicistronic expression vector (pET-Duet2) has been developed. This vector combines an engineered version of the *E. coli* amino peptidase, EcoMapY168A, to improve N-terminal processing and a short leader sequence (ORF6) to improve translation efficiency, in front of the coding sequence of human NEIL3 (hNEIL3). In addition to full length hNEIL3, two truncations of the cDNA have been made, each coding for the N-terminal Fpg/Nei and H2tH domains but lacking at least one of four additional motifs at C-terminal end of hNEIL3. Here we show the expression and purification of active full length human NEIL3 and two truncated proteins, hNEIL3 (843 and 1044), from *E. coli*. Recombinant hNEIL3 expression was confirmed by SDS-PAGE and western blotting. Enzyme assays were performed indicating that the recombinant hNEIL3 proteins are active on a variety of DNA substrates, including those with oxidised bases at different positions in a model DNA replication fork. These studies will help to define the biochemical function of this unique protein in both normal and malignant human cells.

Keywords

Cancer, DNA glycosylase, DNA replication, oxidative DNA damage

The Effects of TBQ on Cardiac Intracellular ATP Levels; Role of Oxidative Phosphorylation and Oxidative Stress

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Abstract

In our recent study, 2,5-Di-(tert-butyl)-1,4-benzohydroquinone (TBQ) inhibited the sarcoplasmic reticulum Ca^{2}+ ATPase (SERCA) in rat ventricular myocytes. Though supporting TBQ's use a research tool to study SERCA inhibition, many additional effects were observed including production of an ATP dependent potassium current. The present study aims to determine the underlying mechanisms.

Rat and sheep ventricular myocytes were isolated by enzymatic digestion. Intracellular ATP levels were measured using a ViaLight Plus Cell Proliferation Kit (Lonza). Mitochondrial oxygen consumption and levels of hydrogen peroxide were measured using an Oxygraph-2k high resolution respirometer (Oroboros Instruments).

In rat and sheep ventricular myocytes TBQ produced a concentration dependent decrease of intracellular ATP where 100 µM TBQ decreased ATP levels to approximately 60 % of control. Removal of glucose from the experimental solutions had no effect on the magnitude of effect. In rat homogenates, TBQ produced a concentration dependent decrease of mitochondrial oxygen uptake, with 100 µM TBQ decreasing rate to 85 % of control. TBQ increased levels of hydrogen peroxide, however catalase, did not attenuate TBQ's effect on mitochondrial oxygen uptake.

The current findings suggest TBQ decreases intracellular ATP, a phenomenon which may account for many of the additional effects observed previously. The reduction in ATP appears to be associated with an effect on oxidative phosphorylation rather than glycolysis. While TBQ is associated with an increase in hydrogen peroxide, which *may* increase oxidative stress, the experiments carried out with catalase suggest that this does not contribute to TBQ's effect on mitochondrial function.

Keywords

TBQ, ventricular myocytes, SERCA, ATP, calcium

Exploring the Influence of Adipokines on Neuronal Function in Alzheimer's Disease

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Abstract
Alzheimer's disease (AD) is one of the most common cause of dementia and effects around 500,000 people in the UK alone. Neuropathological findings of β-amyloid plaques and intraneuronal neurofibrillary tangles are found in the AD brain. Obesity has various deleterious effects on health, studies shows that obesity increases the risk for AD in humans and diet-induced obesity modulates AD pathology in transgenic mice, however, the mechanism involved in the phenomenon is still unclear.

Recent studies have shown that adipose tissue secreted adipokines can actively influence AD pathology. Among wide range of adipokines leptin and adiponectin are most influential on AD pathology, with the majority of research focusing on leptin.

Adiponectin has been shown to have several protective functions in peripheral tissues including anti-inflammatory and anti-oxidative effects however the role of adiponectin in the CNS is largely unknown. Adiponectin transport to the brain decreases with age in comparison to circulating peripheral adiponectin and so it could be hypothesised that decreases in adiponectin may underlie some age related cognitive changes such as memory loss in the elderly population. Additionally, it is unclear if adiponectin levels are pathologically decreased in neurodegenerative diseases such as AD.

This study aims to investigate if adiponectin can be neuroprotective to neuronal cells grown under pro-inflammatory conditions in culture. The role of adiponectin in peripheral fibroblasts cells obtained from AD patients and control subjects will also be explored in relation to other pathological changes associated with AD.

Keywords
AD, dementia, adiponectin

Situational Action Theory: a New Theoretical Framework to Explain Youth Delinquency in Saudi Arabia

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Abstract
Adolescence is a critical part in the growth and development of the human being, when individuals frame many of their goals and values. The role of different factors in the causation of crime is being increasingly investigated and researched worldwide. Recently, there has been a growing body of literature around testing Situational Action Theory, not only because of its importance in explaining delinquent behaviour, but also in outlining the interaction between the individual and the environmental factors leading to crime. In Saudi Arabia, there is a considerable lack of studies explaining adolescent delinquency, and most of the existing studies have been conducted without a theoretical framework. The current study aims to investigate causes that lead Saudi youths to engage in delinquent behaviour. Using Situational Action Theory, this study explores the effect of individual and environmental characteristics on adolescents' delinquency and their perceptions of opportunities for crime. In addition, it explores the interaction between those individuals and the environmental features that would explain Saudi youth delinquency.

Keywords
Criminology, crime, adolescent, Saudi Arabia, Situational Action Theory

Interrogation of 'Interference' in the Right to Freedom of Opinion and Expression (RFOE) through a Close Reading of June Jordan

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Abstract
The Right to Freedom of Opinion and Expression (RFOE) is a right which was declared without a definition in the Universal Declaration of Human Rights (UDHR). Deciphered in 1948 from the human right principle, it was interpreted and developed in 1958 into a treaty article. It is important that the interpretation of the RFOE reflects the vision of the people who adopted the principle as a basis for a new world order and committed their resources to its development. This dissertation interrogates the RFOE and creates an opportunity for an open and productive debate about the role of 'interference' in the RFOE. The objective set was to use Jordan's writings to develop a lens for the interrogation of 'interference' in RFOE. The dissertation applied the critical discourse analysis to ascertain how the inherent power relations in the RFOE impacts on the stakeholders. The interrogation revealed that: 'interference', not only functions inside the RFOE as a content but also outside it as a force that determines its interpretation; the allusion to 'without interference' and 'regardless of frontiers' in the RFOE represent expectations which were upset by the discourse variation encountered in the International convention on Civil and Political Rights (ICCPR); the power relation observed in the ICCPR was implicitly regressive; the advancement in digital technology has opened up the virtual space as an unintended horizon for HR; the use of 'rights' in the ICCPR instead of 'right' declared misleads as the pursuit of 'rights' derails the pursuit of the 'right' declared in the UDHR as the RFOE, and finally, the universality of human rights transcends its limitation to this world because humans interact beyond this world.

Keywords
Human rights, Universal Declaration, interference, right to freedom of opinion and expression, June Jordan

Effects of Contamination Level under Saltmarsh (*Elytrigia repens*) and Reed Bed (*Phragmites australis*) on Carbon Sequestration in The Upper Mersey Estuary, UK

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Abstract
Assessing stabilisation of soil organic matter (SOM) with heavy metal is one factor that will invariably provide an answer to whether heavy metal mobilisation affects the storage of soil organic matter. Thus, transformations of SOM such as decomposition and mineralisation will bring about changes in functional group chemistry, such as the relative increase in aromatic to aliphatic groups during decomposition. The effects of contamination level under different land use type on carbon sequestration were investigated in The Upper Mersey estuary, North West England. Represented soil samples were collected from experimentally designed plots with three land use (Grazing saltmarsh GSM, Un-grazing saltmarsh GSM-N and Reed bed).

Conventional methods were used in the determination of pH, Eh, EC and bulk density while soil organic matter content was determined by loss on ignition method. Total heavy metal concentration was determined by ICP-OES after microwave digestion of a soil sample with HNO_3, HF and H_2O_2. Soil organic matter characterisation was determined using Thermo Scientific Nicolet iS10 FT-IR Spectrometer and NMR Spectrometer. Statistical analysis was by IBM SPSS 20 version. Result indicated that, soil pH was slightly alkaline. Redox potential Eh values were negative due to fluctuation of water table. Electrical conductivity shows different level of salinity. Bulk density shows high values in the area grazed by cattle. Different level of concentration of heavy metal affects functional group and transformation of organic matter. High soil organic carbon was also observed in grazing saltmarsh compared to un-grazing and reed bed treatments. This will have implication on carbon storage/turnover.

Keywords
Contamination level, saltmarsh, reed bed, carbon sequestration, Mersey Estuary

Mining Stream Data for Better Business Intelligence Using GBAD

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Abstract
The contemporary encroachments in different hardware and software resources have facilitated the influx of varied magnitude of data in diverse domain. The volume, velocity, and variety of accessible data have escalated at an astonishing rate over the past two decades. This implies there are vast amounts of stockpiled data and more is being generated constantly, the speed at which data is used, updated, and overturned in favour of newer data continues to accelerate. Data stream is a continuous, evolving set of data with unbounded length that constantly arrives at a system to be processed. Data stream mining techniques from research have been envisaged to offer the assurance of discovering new patterns and anomalies in high speed streams of data. Apropos to diverse emerging incipient domains, however, the influx of data and the need for it to be processed on a ceaseless basis, without the benefit of several passes over a persistent data image is a trending challenge in the area stream data mining. Recent research addresses the problem of data-stream mining to deal with applications that require processing huge amounts of data such as sensor data analysis and financial applications.

This research proposes an ensemble of support vector machine and GBAD (Graph based anomaly detection). Three separate algorithms GBAD-MDL, GBAD-P and GBAD-MPS employed to find the best substructure in a graph. There are basically two steps in GBAD's processing: (1) it discovers the normative substructure (or substructures) in a graph, and then (2) it applies user-specified anomaly detection algorithms based upon those normative patterns.

Keywords
Data streams, single-pass algorithms, GBAD (Graph Based Anomaly Detection), GBAD-MDL, GBAD-P, GBAD-MPS

Repair of Toxic DNA Replication Stalling Lesions by Human NEIL3

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Abstract

NEIL3 is the least characterised member of the Fpg/Nei family of DNA repair proteins. These DNA glycosylases initiate repair of oxidative DNA damage through the base excision repair pathway and have recently been shown to resolve DNA inter-strand crosslinks (ICLs) arising from both endogenous and exogenous agents. For example, human NEIL1 activity on psoralen generated mono-adducts and triplex DNA ICLs has been previously described and recently NEIL3 was shown to repair psoralen generated mono-adducts and apurinic / apyrimidinic DNA ICLs. Previous attempts to express and purify catalytically active human NEIL3 (hNEIL3) in Escherichia coli were only partially successful, but here we present the in vitro activity of purified truncated and full length hNEIL3 proteins on single-stranded psoralen mono-adducts, triplex and quadruplex ICL DNA substrates, DNA structures that are known to be highly toxic replication stalling lesions. With the hNEIL3 catalytic knockout mutation K81A, elimination of activity on triplex DNA ICLs was confirmed. Furthermore, for the first time it is shown that NEIL1/3 possess activity on quadruplex DNA ICLs. This provides a new insight into the repair and replication process at the site of DNA ICLs that are usually resolved by structure specific Fanconi anemia proteins that generate single- and double-strand breaks, initiating the DNA damage response (DDR) pathway. Here, it is suggested that NEIL1/3 play an important role in DNA replication in highly proliferating cells, including cancer cells, by repairing ICLs without creating DNA strand breaks, thus facilitating the continuation of DNA replication without the initiation of DDR.

Keywords

Cancer, DNA glycosylases, inter-strand crosslinks, triplex, quadruplex

Speech-To-Screen: Spatial Separation of Dialogue from Noise towards Improved Speech Intelligibility for the Small Screen

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Abstract

Small-screen devices, such as mobile phones and tablets, are increasingly being used to view video content. If the user is in a café or on a train, the speech intelligibility of any video dialogue may be compromised by the masking effect of the surrounding environmental noise. Can speech intelligibility for the small screen be improved by spatially separating the video dialogue from the 'noise' and virtually placing the dialogue at the screen?

A listening experiment was conducted under controlled conditions with 20 normal-hearing, native British-English speakers under the age of 35. Audio and video of 16 speakers and 320 sentences were selected from the GRID corpus (http://spandh.dcs.shef.ac.uk/gridcorpus/) as the stimuli. Audio playback was via headphones. Head tracking was utilised to maintain the correct virtual positioning of the parts of the sound that needed to be externalised from the head. Small-screen video playback was presented on a monitor 1m in front of the participants. The effects on speech intelligibility were tested for eight conditions in combination, including speech-shaped noise (SSN) versus speech-modulated noise (SMN) as the auditory masking conditions, audio-only versus audio with video playback, and four spatial conditions: all audio placed in the headphones (INT), target dialogue placed in the headphones and masking noise at the screen (SN), target dialogue placed at the screen and masking noise in the headphones (NS), and all audio placed at the screen (EXT). Pilot results indicate that speech intelligibility is improved in some conditions. The reasons for that improvement are now being explored.

Keywords

Speech intelligibility, audio, video, screen

Characterisation of Sandfly (*Phlebotomus argentipes*) Microbiota Linked to Leishmania Infection Status across Bihar District, India

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Abstract
Visceral Leishmaniasis (VL), or kala-azar, is a Neglected Tropical Disease that predominantly affects impoverished communities and causes more global fatalities than any parasitic disease except malaria. VL in the Indian subcontinent is caused by the protozoan parasite Leishmania donovani and is transmitted by female *Phlebotomus argentipes* sandflies. 72% of VL cases occur in Bihar State in India.

Despite vector microbiota representing an interesting potential target for transmission disruption, the microbiota of *Ph. argentipes* has only been partially characterised. A recent paper describing the midgut microbiota of the New World VL vector *Lutzomyia longipalpis* suggested a role for the microbiome of sand flies in restricting parasite development, and vector microbiomes have been shown to significantly impact disease transmission in other kinetoplastid systems.

Seven hundred *Ph. argentipes* sand flies have been collected from six sites in Bihar and assayed for VL infection status. We will present Illumina sequencing (V1-V3 16S rRNA) results for 192x *Ph. argentipes* microbiomes, linked to VL infection status and geographical distribution. These data will be used to support the Indian Visceral Leishmaniasis Elimination Programme, and shed light on the mechanisms by which VL is transmitted in India.

Keywords
Neglected Tropical Disease, insect vector, microbiome, leishmanial, sandfly

Fast Tracking Antimalarial Drug Discovery through Molecular Modelling and Repositioning: Lead Optimisation of Synthetic Emetine Analogues SALF01/02

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Abstract

Malaria is a life threatening infectious disease characterised by febrile illness and caused by a protozoan belonging to the genus *Plasmodium*. There were 214 million malaria cases globally in 2015 and an estimated 438,000 deaths. With resistance reported in all categories of anti-malarial drugs, the need for new class of affordable anti-malarial is an urgent priority. The Malaria research group at University of Salford identified the anti-amoebic drug Emetine dihydrochloride as a potent antimalarial option with IC50 of 47 nM against the K1 strain (Matthews *et al*., 2013). Recent studies by Wong et al. reported the target binding site of emetine on 40s ribosomal protein.

Two synthetic analogues of emetine SALF1 and SALF2 are modelled on the 40S small subunit of 80S Ribosome, predicting the polarity of the binding pocket and employing in-silico methods for *de novo* drug design to identify compounds capable of retaining the anti-malarial potency but with reduced toxic side-effects. Lead optimisation of SALF1 and SALF2 was done to identify parasite reduction rate and stage specificity.

In-silico virtual screening only requires computer resources to filter through large libraries of compounds and provides an inexpensive alternative to experimental high throughput screening. The project includes virtual screening of FDA approved library of drugs against the ribosomal binding site of emetine to fast-track drug discovery. The results have identified synergies between SALF1 and two FDA approved drugs. The proposed anti-malarial combination therapies for synthetic analogues of emetine would potentially reduce the side-effects whilst maintaining the efficacy of the treatment.

Keywords

Molecular modelling, ligand-receptor docking, virtual screening, drug discovery, malaria combination therapy

Exploring Autophagy in Frontotemporal Dementia

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Abstract

Frontotemporal Dementia (FTD) is the second most common type of early-onset dementia with a mean age of onset 56 years old. Clinically, FTD presents with impairments in language and changes in behaviour whilst memory is generally unaffected. The brains of people with FTD often present with abnormal protein aggregation and cells loss in the frontal and temporal lobes. These protein aggregates are normally composed of abnormal TDP-43, MAP-Tau or FUS protein and relate to genetic mutations. The most common genetic mutations in FTD are in C9orf72, GRN and MAPT.

Recent studies have shown that C9orf72 and GRN mutations are associated with changes autophagy, a group of cellular waste disposal processes. The three main types of autophagy are Macroautophagy (MA), Chaperone-mediated autophagy (CMA) and microautophagy. Autophagy has previously been found to be impaired in other neurodegenerative diseases such as Alzheimer's disease (AD), however the nature of changes in autophagy pathways in FTD is yet to be studied.

A preliminary investigation has been performed using sections of formalin-fixed paraffin embedded human brain tissue from the Manchester Brain Bank. The cohort is comprised of 8 control cases with no disease, 7 with AD, 7 with C9orf72 expansions, 7 with GRN mutations and 7 with MAPT mutations. Immunohistochemistry was conducted using markers of MA and CMA; anti-BCL-1 (MA), anti-LC3 (MA), anti-LAMP2a (CMA) and anti-HSP70 (CMA). Sections were scored using semi-quantitative scales of 0-3 considering both staining intensity and number of cells stained.

Findings from this preliminary investigation shall be described and discussed.

Keywords

Dementia, neurodegeneration, histology, autophagy

Radiological Environmental Assessment Approaches and Models: How Applicable are they to Sub Saharan Africa?

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Abstract

Many models have been developed for demonstrating and ensuring protection of both humans and wildlife from the effects of ionising radiation. In such models, parameters to quantify the transfer of radionuclide to wildlife or human foodstuffs are required. However, international transfer databases are primarily based on data from Europe and North America.

In sub Saharan Africa (SSA), a number of nuclear development and expansion programmes are planned and hence potential radionuclide releases to the environment must be assessed. However, there are agricultural production systems, food products and wildlife species in SSA, for which there are few or no data. This poster presentation will focus on establishing a sub Saharan Africa database.

We have developed a sub Saharan Africa database (SSAD) of transfer parameters by carrying out a systematic review of the literature for both (wildlife and human foodstuffs) considering, terrestrial, marine and freshwater ecosystems. The analysis and results of the Sub Saharan Africa Data (SSAD) compare with the International Atomic Energy Agency (IAEA) values and will be presented in the poster presentation.

Keywords

Radiological approaches, radionuclides, human foodstuffs, wildlife, transfer parameters

REST as an Alternative to SOAP for Cloud Management

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Abstract
In the last few years, considerable attention has been paid for using REST as an alternative technology in cloud computing. This is apparent in the shift from SOAP to REST in developing cloud applications APIs [1]. However, there is still a tendency in most of the cloud management solutions to use SOAP protocol in the management process. This has attracted the attention to the need for considering REST as a web service technology for transmitting the data required in the management process between the cloud providers and the clients' sides. Due to the lightweight and ease of use characteristics of REST technology, exploiting REST reduces the overhead caused by using SOAP technology in managing the SLA platforms.

This study introduces REST as a way of managing the data transfer in cloud computing, and evaluates the overhead caused by using REST technology in comparison to SOAP protocol. The results revealed a reduction in the overhead caused by using REST protocol.

Keywords
Cloud computing, SOAP, REST, Cloud management

Contamination of Soil and Capsicum Annuum Irrigated with Recycled Domestic Wastewater Treated by Vertical Flow Wetlands

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Abstract

Due to water scarcity in many arid countries, there is considerable interest in recycling wastewater streams such as treated urban wastewater for irrigation in the agricultural sector. The aim of this study is to assess the contamination of soil and the example crop of Chilli (Capsicum annuum) irrigated by domestic wastewaters treated by different wetland types between September 2013 and September 2014. The objectives were to assess (a) the impact of different treated wastewaters as a function of the wetland type, (b) the volume of treated wastewater available for irrigation, (c) the impact of the environmental conditions, and (d) the impact of different growth media. Ortho-phosphate-phosphorus, ammonia-nitrogen, potassium and manganese concentrations in the irrigation water considerably exceeded the thresholds. High contamination levels by total coliforms, Salmonella spp. and Streptococcus spp. were detected. No mineral contamination was observed in the soils due to irrigation with treated wastewater. Results showed that slight to moderate zinc contamination was detected in some vegetables based on common standards for vegetables. Potassium accumulation in the yield had the highest values followed by zinc. In contrast, the lowest mineral accumulation of the yield was observed for iron. No bacterial contamination was detected for fruits harvested from plants irrigated by wetland outflow water. However, findings indicate that vegetable pots receiving wastewater treated with wetlands can be considered as safe compared to those receiving only preliminary treated wastewater. The project contributes to ecological sanitation understanding by closing the loop in the food and water chain.

Keywords

Reed beds, heavy metals, nutrients, pre-treated wastewater reuse, microbial contamination

An Account of Silence in Diagnostic Radiography: the Cultural Quilt

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Abstract
Scholarly studies have resulted in literature that lists numerous different forms and motives for silence. The intention of this study was to produce an account of the silences that present in both general and accident and emergency radiography (X-Ray); commonly referred to as plain imaging. Because silence is multi-faceted and ambiguous, methods of collage and follow-up conversations were used to produce an extensive account. Plain imaging staff were invited to collage workshops and twelve participants volunteered to attend. The workshop participants chose images that represented silence in clinical practice and produced collage pieces. Participants then attended an individual follow-up conversation to discuss their collage. Stitched together, the methods produce a cultural quilt: representing an account of silence and silent practices.

Early thematic analysis indicates that silence strategies are used to facilitate the smooth everyday running of the X-ray department: silence is used to reflect and enact empathy for patients and colleagues; to facilitate staff and patient wellbeing; to keep patient waiting times to a minimum. On the part of staff, silence also reduces the threat of litigation; promotes harmonious teamwork; decreases emotional anxiety and diminishes the demands of emotional labour. The result is an increase in knowledge of silence and silencing strategies in relation to radiography. The study concludes that silence is both help and hindrance to services in a clinical setting. This knowledge should be used to inform future health service development and possibilities for change in the culture of practice.

Keywords
Diagnostic radiography, X-ray, culture, silence, silencing

Inter-varietal Variation in Lead Uptake by Rice in Nigeria; Implication to Public Health

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Abstract
Lead is a cumulative toxicant that affects multiple body systems. Children are most vulnerable because they absorb 4-5 times as much lead as adults from a given source.

Research shows that rice has the potential to accumulate high levels of lead. Rice is a staple food across the world and amongst people in the Nigerian state of Zamfara, an area that is known to be heavily polluted with lead from mining activities which also grow rice significantly. Studies shows that appropriate varietal selection could be used to minimise transfer of lead into rice which could be used to minimise the exposure of the affected population anywhere in the world.

The result from four rice farms examined by in-situ field assessment using handheld X-ray fluorescence (XRF) spectrometer shows that the rice farms are densely contaminated with lead. The soil-lead concentration was up to 8,222mg/kg (n= 773). From the laboratory analysis of the sampled soil, the pH(H_20) and pH(KCl) range were between 5.64 – 7.92 and 4.46 – 7.13 respectively. Soil organic matter content ranged from 0.69 to 14.44 with a mean value of 13.20 using Walkley-Black method. Available average phosphorus (using Olsen's test) was 0.05mg/kg, ranged from 0.02mg/kg-0.1mg/kg. Cation-Exchange-Capacity calculated from summation of exchangeable bases (Ca, Mg, K, and Na) and the exchangeable acidity varied from 1.61cmol$^+$/kg to 3.4cmol$^+$/kg. Results of lead and other heavy metals in rice collected from the four farms along with the correlation between the soil characteristics and lead value in the rice samples will be presented at the conference.

Keywords
Lead uptake, rice, inter-varietal variation, food, public health

Drone Ecology: Studying Wildlife using Unmanned Aerial Vehicles (UAVs)

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Abstract
For wildlife biologists, refinement of aerial surveys and census methods could provide myriad opportunities for *in situ* behavioural observations, spatial ecology research and habitat occupancy data collection. For conservationists in particular, further developments in aerial observations are vital for population monitoring and inventories of wildlife across expansive or inaccessible habitats.

In recent years, advancements and availability of autonomous systems to civilians, has led researchers to begin replacing manned aircraft with UAVs in research. This paradigm shift is being driven by declining drone costs (especially in developing countries), superior utility of electro-optical sensors, and most importantly: the comparatively high aircraft-related field biologist fatalities. Furthermore, UAVs can replicate transects with high resolution photo mosaics for robust scientific analysis.

Despite their advantages, the benefits of drone and aerial survey methods in comparison to classic ecology techniques, remains a source of contention. Reviewers have suggested legislation confounds their effectiveness in many countries, and advocate the development of "drone ecology" specific protocols. This project aims to examine the validity of this contention, and where necessary explore and develop alternative drone ecology methods.

Keywords
UAV, wildlife monitoring, survey techniques, drone ecology

3 Minute Thesis™

The Study of Optical Properties of Metamaterials

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Abstract

Light is a kind of electromagnetic radiation. What we observe with the eye is light. Its colours can be seen in the rainbow. When light is incident on matter, interaction may occur; for example refraction, reflection, energy loss and polarisation. A new kind of material (known as metamaterial) has been developed to tune the propagation of light. The surface of a metamaterial is different from that of a normal material in that metal and dielectric are laid down periodically. The effect on incident light is a function of the shape and configuration of the metal and dielectric. Novel effects may be produced by metamaterials, such as negative refraction and the absorption of specific frequencies. The fundamental reason for the observed behaviour is that the periodic size of the metamaterial is similar to the wavelength to the light. Moreover, the electric dipoles produced are localised in matter. It is of great interest to investigate the interaction between light and metamaterials. In my research, a set of Stokes Parameters is used to characterise the properties of the light. It can describe a light accurately. Thus, any variation that occurs when the light beam interacts with the metamaterial sample can be monitored by observing changes in the Stokes parameters. The technique can yield useful information. In addition, a theoretical approach is required to interpret the experimental results. It is hoped that a combination of experimental and concomitant theoretical work will help in the design of new metamaterials.

Keywords

Metametarial, optical properties

Social Media, Big Data and Stereotypical Imagination

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Abstract
From the way we think of our profession to our political opinions, cultural identity is growing in importance. We try to find a job that is consistent with a certain "brand" we have in mind and we craft our social media persona accordingly, from the pictures we post to the information we share.

While we might not identify with our nationality or social class, we often strive to "market" ourselves according to mainstream stereotypes like "hipsters", "nerds", or "digital nomads". Even though we might not embrace those labels, they have entered our imagination. These figures do not only provide a sort of fuzzy cultural identity, they have become very useful to tap into certain professional circles.

However, not all techno-cultural identity templates enjoy the same level of productivity or social acceptance. "Gangsta" and "terrorist" stereotypes also spread through YouTube, Twitter and Instagram feeds, sometimes intertwining with actual illegal networks. Cultural data is also integrated with increasing predictive policing and facial recognition algorithms which effectively "tag" individuals and neighbourhoods as dangerous. These complex assemblages of data give way to the darker side of stereotypical imagination.

How do we take back control in our relationship with these networks and these stereotypes? New templates like the Black Nerd or the Entreprecariat, for example, show a utopian potential. My research will focus on interviewing artists and cultural producers in order to understand the tactics they use to imagine and promote more emancipatory and socially productive identities.

Keywords
Stereotype, identity, tagging, imagination, social media

A Generalizable Methodology for Stability Assessment of Walking Aid Users

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Abstract
Walking aids (WAs) aim to improve stability and are used by up to 50% of older Europeans. Paradoxically, their use has been linked to a 2-3-fold increase in the risk of falling. The reasons of this association are presently unknown; at this time WA use remains poorly understood as clinicians have no objective assessment method to help identify how stable a person is with a particular WA. This gap in the knowledge base justifies further research into what constitutes stable/safe use of WAs.

My research aims to develop a novel methodology to assess stability of WA users. My approach is unique in that it considers user and WA as a single multi-legged system. Specifically, I developed two Smart WA Systems (SWAS), a rollator and a Zimmer frame, that inform on how stable users are. Each SWAS includes force sensors, force-sensing insoles, 3D cameras, and custom-written software that uses the data to calculate the "Stability Margin", which indicates how close the multi-legged system is to "tipping-over" and, hence, fall.

The SWAS allow for investigation of stability in relation to key factors such as usage patterns, activity type, and environment. For example, initial results show that stability is reduced during performance of complex tasks such as turning or stepping up/down as compared to straight line walking.

Longer term, my research may help prevent falls through informed WA prescription and user training. Hence, my work is aligned with one key priority for the devolved Greater Manchester Health and Social Care organisation.

Keywords
Stability margin, rollator, real-world monitoring, walking aids, biomechanics

Accessible Broadcast Audio Customisation

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Abstract
The 'cocktail party problem' refers to the challenge of finding speech intelligible in noisy or complex listening environments. However such scenarios are not limited to the cocktail party. Not only do they constitute most social situations but they are common in broadcast material; a correspondent reporting amid a bustling crowd or a commentator competing against cheering fans.

This problem is even more profound for the 11 million UK individuals who have some degree of hearing loss. Whilst the technology exists to help mitigate this problem for Hard of Hearing viewers, what remains undetermined is an understanding of the requirements this group has for television sound to be intelligible and accessible.

This PhD is begins to address this. First, by investigating how different broadcast elements, like sound effects, affect dialogue intelligibility. Initial work on this has shown whilst these additional elements consistently benefit normal hearing listeners, their benefit to Hard of Hearing listeners is much more varied. Secondly, this PhD work aims to integrate this new knowledge into broadcast customisation methods, using next generation broadcasting techniques.

Keywords
Hard of hearing, intelligibility, broadcast

The Reality of Myoelectric Prostheses – Understanding the Impacts of EMG Skill, Unpredictability and Delays on User Performance

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Abstract
For a person with limb absence, a myoelectric prosthesis (a.k.a. "bionic hand") aims to restore a level of cosmesis and functionality. These devices use signals that are naturally generated by muscles contracting to allow the user to open and close the hand. Unfortunately, despite large amounts of research and development, translation into clinically more useful devices has been slow. My PhD aims to help us better understand the human and engineering factors which may affect user functionality and everyday use of the prosthesis. The results may help us to focus future research, design and clinical practice on the most critical factors and hence speed up translation into better prostheses.

In this brief presentation, I will introduce three factors known to impact control of a myoelectric prosthesis. These include:

- user skill in controlling the muscle signal
- unpredictability of the device response
- electromechanical delay in the device response

I will also touch upon the outcome measures used to assess both clinical functionality (speed, movement variability and reliance on visual feedback), and everyday prosthesis use.

I have faced many challenges in my PhD developing an experimental setup that assesses each of these factors outside of the lab using the participant's own clinically prescribed prosthesis. This study aims to be the largest experimental study of prosthesis users in the UK. It is the first to look at the relative impact of control factors, and it is the first to assess real-world prosthesis use using activity monitors.

Keywords
Upper limb absence, myoelectric prostheses, clinical functionality, real-world use, control factors

Lifestyle Self-management Experience of South Asians after a Heart Attack

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Abstract

Background - Coronary heart disease is the biggest killer in the country (Townsend et al., 2012). South Asians carry the burden of increased incidence and prevalence and have poorer outcomes after a MI than the general UK population (Scarborough et al., 2010). Reviews have shown lifestyle modification including physical activity, healthy diet and smoking cessation, alters the course of heart disease and reduces recurrences crystallising its significance as a cost-effective public health strategy to reduce the rising burden of this disease (De Gucht et al., 2013). There are lacunae of knowledge as to what constitutes to guarantee a therapeutic lifestyle modification for better health outcomes in the South Asian community.

Aim: One way to conceptualise the necessary knowledge and their reflective application for effective lifestyle change was to explore self-management experience of South Asians after a heart attack.

Method: Novel of its kind, this study used a grounded theory approach to elucidate how South Asians navigate these lifestyle changes. Two phase interviews at 2 weeks and 16 weeks of discharge, were conducted with 14 participants who were newly diagnosed with heart attack- from 2015 till July 2016.

Results: Theoretical categories were developed through constant comparison and theoretical sampling– patronage of the family, affinity towards one's group and conforming to the religious and health beliefs.

Discussion: A harmony model to deal with diagnosis of heart attack and subsequent lifestyle changes is proposed. The model homes in a family centred approach, with an appreciation of the cardiac patient's religious beliefs and cultural priorities, in self-management programmes.

Conclusion: Migrant South Asians across the globe have increased propensity of this disease. To alleviate the burden, there is a need for ethno-sensitivity rather than an ethnocentricity in the delivery of services. This calls for a move from cultural competence to cultural intelligence.

Keywords

Self-management, South Asians, heart attack, grounded theory, culture

Benefits of BIM Use to Improve Information Flow; Making the Design Process More Leaner

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Abstract

Many of the construction problems associated with in the design process are due to a lack of effective information flow management through implementation of innovative and technological processes. As technology is maturing the amount of information and data generated and shared during the construction design process has been rapidly increasing. Despite the increased amount of available information within the design process, most of the shared information not only does not add any value to the project but also generates waste. Ineffective information sharing and flow is the major contribution factor of waste. Also, major design problems are related to information management that are due to a lack of appropriate information exchange and effective information flow. Therefore, effective information flow management is crucial to a project success. This can be achieved through application of new innovative and technological approaches such as Lean and Building Information Modelling (BIM). It is believed that BIM and Lean approaches would better facilitate opportunities for information exchange and flow within the design process. Therefore, this paper aims to develop an understanding of the benefits of BIM and Lean approaches to enhance information flow management. The underlying research is conceptual by nature, and is underpinned by literature review to explore how the information flow in the design process could be improved by the application of BIM/Lean approaches.

Keywords

Building Information Modelling (BIM), lean construction, information flow management

Using Netnography to Explore How Nigerian Weddings are Performed within Global Consumer Culture

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Abstract
Using an acculturation lens, this study aims to explore how Nigerians partake in global consumer culture with reference to their performance of the ubiquitous 'white wedding' ritual, known for its materialistic spectacle. Netnography, online ethnography, was used for data collection focusing on Nigeria's largest online blog, supplemented with in-depth interviews. Whilst rigidly adhering to the normal script of a white wedding, colour theme selection, i.e. what colour to be used and where, was the primary means Nigerians used to differentiate their weddings. In addition, there appears to be reluctance at expressing ethnic identity in favour of more globalised consumption symbols. Opposed to the notion of globalisation hardening cultural boundaries, Nigerians are actively seeking new expressions of global consumer culture.

Keywords
Nigeria, consumer culture, globalisation, weddings

An Exploration of Female Academics' Perceived Organisational Support after Return from Maternity Leave

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Abstract
Literature highlights challenges female academics face in progressing in their career, including financial hardship, prejudice and pressure to publish or perish. The decision to have children however is considered the most predominant challenge for a woman's academic career – specifically with issues associated with returning to work after childbirth negatively impacting upon women themselves, their organisation and the economy. This study adopts narrative inquiry to explore female academics experiences of returning to work after childbirth through in-depth interviews, particularly focusing on their perceptions of organisational support (POS) in three main areas; HR practices, colleague support and supervisory support.

Keywords
HR, academia, childbirth, female academics

Tacit Knowledge Integration within the Traditional Construction Procurement System

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Abstract

Knowledge management is a broad concept that has been investigated in many disciplines. Tacit knowledge management is more important in construction industry where common issues exist between the design and construction phase. However, most knowledge is embedded in the minds of professions and based on experiences they achieved from project. Due to the temporary nature of construction projects, people who work on these projects tend to disperse after completion of the project. This means the knowledge and experiences they achieved through project will be wasted, if it is not captured and shared structurally across project. The rationale that led to this study came as a result of increasing interest in the need for tacit knowledge integration, in terms of capturing, sharing and transferring knowledge, especially within construction project undertaken through the traditional procurement system, because this system is based on the separation of the design and construction phase. The aim of this research is to develop a framework on how to integrate tacit knowledge in terms of capturing, sharing and transferring, within a construction project undertaken through the traditional procurement system. This is done through conducting document survey, expert survey and case studies in the UK construction industry. Research findings highlighted three main challenges for integrating tacit knowledge within the traditional construction project which are Organisational Culture, Contractual Boundaries and Knowledge management system (strategies and policies). The Critical Success Factors (CSFs) for tackling these challenges and required techniques for structurally implementing the process of tacit knowledge integration are identified.

Keywords

Tacit knowledge, knowledge integration, construction industry, traditional procurement system