

**WELCOME**  
**TO THE 4<sup>TH</sup> EDITION OF**



Student-led Interdisciplinary  
Research Conference

**The University of Nottingham &  
University of Nottingham Students' Union  
Inter-disciplinary Research Conference for  
Postgraduate Students**



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# Conference schedule

## **8.45 – Registration**

**9:30 – Welcome** – Yolanda King

Main Theatre

**9:40 – Keynote speaker** – Professor Shearer West

Main Theatre

## **10:25 – Presentation Session 1**

Conference Rooms – please see Presentation Schedule

## **11:25 – Morning Refreshments**

## **11:40 – Presentation Session 2**

Conference rooms – please see Presentation Schedule

## **12:45 – Lunch – Poster Sessions and Guest Stalls**

Banqueting Suite & Atrium

**13:20 – 3 Minute Thesis** – the Graduate School

Main Theatre

**14:20 – Keynote Speaker** – Professor Richard Grundy

Main Theatre

## **15:00 - Afternoon Refreshments**

## **15:20 – Presentation Session 3**

Conference rooms – please see Presentation Schedule

## **16:20 – Poster Session and Guest stalls**

Banqueting Suite & Atrium

**17:00 – Awards and Closing Remarks** – Yolanda King

Main Theatre

# Presentation Schedule

	Room 1	Room 2	Room 3	Room 4
<p>Session 1</p> <p>10:25 -11:25</p>	<p><b><u>Health &amp; Wellbeing 1</u></b></p> <p>T. Crawley I. Arora S.M.R.Q. Naim</p>	<p><b><u>Culture &amp; Communication 1</u></b></p> <p>K. Murray N. Shivji Y. Wang</p>	<p><b><u>Emerging Fields</u></b></p> <p>V. Poniscjakova M. Strickland</p>	<p><b><u>Sustainable Societies 1</u></b></p> <p>G. Ruffini D. Großegger H.A.H. Al – Sami</p>
<p>Session 2</p> <p>11:40-12:40</p>	<p><b><u>Health &amp; Wellbeing 2</u></b></p> <p>K.A. Kaczmarek L. Duke P. Godolphin</p>	<p><b><u>Culture &amp; Communication 2</u></b></p> <p>K. Severn E.V. Bon L. Larouche</p>	<p><b><u>Business &amp; Management</u></b></p> <p>N. Abdelghany N. Lehmann E.C.V. Santos</p>	<p><b><u>Sustainable Societies 2</u></b></p> <p>E. Mitchell A.C. Dediu P. Vedi</p>
<p>Session 3</p> <p>15:20-16:20</p>	<p><b><u>Health &amp; Wellbeing 3</u></b></p> <p>S. Roper I. Jallow L. Sutherland</p>	<p><b><u>Digital Futures &amp; Transformative Technologies</u></b></p> <p>K. Lancaster F. Agbesanwa M.S. Mashuk</p>	<p><b><u>Arts</u></b></p> <p>D. Osborne I. Karaoulani L. Mounfield</p>	<p><b><u>Defining and Defending Humanity</u></b></p> <p>M.S. Farhan U. Chatterji M. Mohammadi</p>

# Keynote Speakers

**Professor Shearer West is the seventh Vice-Chancellor and President of the University of Nottingham, taking up office on 2 October 2017.**

Professor West is a Professor of Art History and has held a number of significant leadership roles in universities and higher education. She obtained her BA degree in Art History and English at the College of William and Mary in Virginia, and her PhD in Art History at St. Andrews.

Following her PhD, Professor West worked as an editor for the Grove Dictionary of Art before taking up her first academic post at the University of Leicester. In 1996, she moved to the University of Birmingham as Head of the History of Art Department, then Head of the School of Historical Studies, and Acting Head of the College of Arts and Law. She was awarded a personal chair in 2000.

In 2008 Professor West was appointed Director of Research at the Arts and Humanities Research Council where she also chaired the Research Directors Group for Research Councils UK. She was appointed Head of the Humanities Division at Oxford in 2011, where she oversaw the launch of the Oxford Research Centre in the Humanities (TORCH) and the Ertegun Graduate Scholarship Programme in the Humanities. She was appointed Provost and Deputy Vice-Chancellor at the University of Sheffield in 2015.

**Professor Richard Grundy, Director of Children's Brain Tumour Research Centre (CBTRC)**

It is clear that improvement in our ability to cure children with brain tumours and reduce the considerable morbidity will only come through a better understanding of the underlying biology of these varied and presently difficult to treat tumours. The principal aim of my research is based on this philosophy. Our research programme includes the use of DNA and RNA microarray technologies to identify biological correlates of tumour behaviour; to elucidate the underlying molecular alterations of each tumour type and to validate novel targets for the development of new drug therapies. In addition to my research activities at the Children's Brain Tumour Research centre, I also have an active interest in the development and conduct of clinical trials in CNS tumours and am a long standing member of the Children's Cancer Leukaemia Group CNS division. I am Chief investigator of the International Society of Paediatric Oncology Ependymoma study and heavily involved in discussions over the next Ependymoma trial. I am also Chair of the Biology Committee of the UK Paediatric Brain Tumour Consortium and am a Co-Investigator on a number of Children's Cancer Leukaemia, Group Clinical and Biological studies.

# Oral presentations

## Arts

### **D. Osborne - "Should I stay or should I go?" Mobility and settlement in Neolithic and Bronze Age Britain**

To study the mobility of people in the landscape is to focus on a fundamental part of human life and society. Mobility brings many social activities into view, including material exchange, trade networks, migration, cultural influence, and marital and kinship links (Sørensen, 2015). Sørensen argues that the challenge to archaeology is to recover, from 'fossilised residues that are entirely stationary and static', the traces of mobility in the past.

My research explores whether a reduction in mobility of people and animals can be detected between the Neolithic and the Bronze Age. This is important because it would support the idea of a transition from Neolithic agriculture and pastoralism practised in the context of a mobile way of life, to a more sedentary lifestyle by the Middle–Late Bronze Age, suggested by the development of extensive field systems. Using Lincolnshire and the Fens in eastern England as a study area, stable isotope analysis of excavated bones and teeth will be used as a proxy for mobility. Analytical results combined with those from other studies, such as the Beaker People Project, will allow a synthesis and comparison between the study area and other areas of Britain.

### **L. Mounfield - Photography and the Ubiquitous Amateur**

Social media and digital technology have enabled almost anyone to take photographs and store them in a personalised archive. But if photography is now all-pervasive, what does it mean to be an amateur photographer in the twenty-first century? Using the example of Vivian Maier, the notion of the amateur will be considered in the historical context of the mid-20th century, in order to examine the shift in the meaning of the term that has occurred since then, and to highlight the centrality of amateurism to the history of photography. The recent acceptance of the discourse of 'outsider art' coincides with a marked increase in public interest in work produced outside the mainstream of institutional art practice, and with the appearance of postmodernist ideas in popular culture and the mass media. Whilst the complexities of Outsider Art have been amply discussed by art historians, amateur artists and their artistic domain have been overlooked. Literature that has continued to promulgate 'outsider art' as a catch all for the marginalised phenomena that exists outside the dominant historiography has as such, paradoxically, reinforced the boundaries of art photography. Therefore, my aim will be to re-evaluate the use of the terms 'amateur', 'hobbyist' and 'naïve' and understand the structure and boundaries that exist between them.

### **I. Karaoulani – Self and Unemployment; Personal and Social Self**

The self-concept used in this presentation is a heuristic device to help in understanding encompassing processes in Personal and Social Self during unemployment in Greece. The process included interviewing forty-eight unemployed for their dominant feelings and types of things that have made them upset in their society. The process used in qualitative research is described and the main findings suggest that unemployment by itself eventually alters the sense of self-efficacy, restricts the kind of person people are and starts the unemployed viewing themselves as a different person regarding their employment hopes.

### **N. Abdelghany- Foreign Direct Investment and Governance: Evidence from Africa**

This paper examines the effect of a composite governance index on the foreign direct investment "FDI" net inflows in Africa using a panel of 51 countries over 5 years using fixed and random effects model. The empirical evidence reveals that governance has a positive effect on FDI. The study also shows that real GDP, Human Development Index and market size have significant effect on FDI.

### **N. Lehman- The Muslim Woman Entrepreneur: An Intersectional Analysis**

This presentation focuses on Muslim women entrepreneurs as intersectional subjects and questions how different social categories of difference, such as gender, race, ethnicity and religion come to shape their experiences of entrepreneurship. Muslim women entrepreneurs are a minority within a minority with employment rates and economic activity being particularly low for Muslim women in general, self-employment becomes an option full of contradictions. Entrepreneurship, often enacted through self-employment, requires the mobilisation of resources in order to generate some value and achieve socio-economic returns. Though the general discourse may suggest entrepreneurship to be an easy option, based on meritocracy, only waiting to be realised by the 'right' individual, research actually indicates how entrepreneurship need to be understood as a social activity situated within a specific context. Consequently, those in more privileged position are significantly advantaged in their pursuance of entrepreneurship and intersectionality allows to critically investigate such social positioning in the creation of inequality for entrepreneurship. Previous research indeed indicates how Muslim women face distinct constraints based on their intersection of gender, race, ethnicity and religion. For those choosing to adopt the headscarf, such visibility means an increased vulnerability to islamophobia as well as gendered religious stereotypes and stigma. The diversity within the Muslim community also means that being a Muslim is shaped by ethnic and racial backgrounds, which influence practices and understandings of Islam. This study therefore critically investigates through the framework of intersectionality how religion contributes to Muslim women's experiences of entrepreneurship in the creation of opportunity and inequality.

### **E.C.V. Santos- Exploring Cultural Differences in Attitudes towards Wearable Technology to monitor Health and Wellbeing**

The growth of the ageing population worldwide raises concerns on human health and well-being. In this context, ubiquitous technologies have the potential to support health monitoring activities. Our study explores how age and nationality affect the design of these technologies, contributing to a better understanding of the effects of cultural differences on its adoption. We conducted a cross-cultural study with twenty-six participants from Brazil and England investigating the acceptance of a near-future wearable device. We found an unconditional willingness to wear the device in the Brazilian group. Although, the English participants associated the use of the device with a case of health condition. Our findings showed a higher level of concern about data privacy in the English group, particularly in the middle-aged category compared to the Brazilian participants.

### **K. Murray- Reading between the Lines**

This research seeks to explore the first hand, lived experiences of 6 and 7 year olds learning to read within the UK primary system. From a phenomenological perspective, using unstructured interviews, this paper explores the experiences of the children, in their own words - how they experience learning to read, how they feel about certain facets of the process in the classroom and at home. Phonics teaching is laden with ability practices and by the very nature of the structure of the programme can create early ability setting or grouping. Against a background of standards discourse and assessments practices, the silent partner of policy drives the precious and emotional journey of learning to read, or, as we really should be phrasing it, learning to become a reader. This paper seeks to explore how the policy concerning how phonics should be taught has been interpreted by schools and what effect this has upon developing readers - their self of self and their identity as developing readers.

### **N. Shivji- Exploring the Pubertal Experience in the transition towards Adult Identity among the Young Males in Pakistan: A Qualitative Study**

Objective: Adolescents' experience of the transition through puberty can have long-term impacts on their overall health in adulthood. In comparison to the puberty experience of young females, the experience of young males has been largely unreported in Pakistan. Thus, the aim of this presentation is exploring the pubertal experience in the transition towards adult identity among the young males in Pakistan.

Method: This study employed a generic qualitative approach and conducted one-to-one interviews with 22 young males from a private university and a scout group. All interviews were transcribed verbatim and data analysed thematically.

Results: The participants described the diverse puberty experiences, which were challenged by the normative expectations of Pakistanis' culture upon developing their maturing identity as an adult. The challenges were around gaining the power and recognition as an adult and building sexual orientation upon developing their maturing identity as an adult man. The gender imposed masculine identity was also seen in the form of Pakistanis' stereotyped roles and responsibilities that were culturally enforced on participants.

Conclusion: The development of adult identity among young men in Pakistan suggest the involvement of cultural tensions and tribulations. This study therefore, provide an understanding of cultural issues arising during puberty that may affect the development of a vibrant adult identity as suggested by the narratives in the sample of young males in Pakistan. Developing appropriate health promotion programs around puberty would, therefore, provide a platform to communicate issues arising during puberty and assist in developing a vibrant adult identity.



## **Y. Wang- Privileged Kids Never Fail: The social reproduction mechanism of the middle class through educational systems**

The mechanism of how children from working class fail to break the circle and repeat their parents' life has been well-researched in the field of education. However, how exactly the offspring of middle class families, despite certain early signs indicating a downward mobility tendency, eventually return to a well-off adult life has not been sufficiently explored in relation to the educational system. Adopting a life history approach, this study compares the life experiences of Luo and Yu—two young people who were both the 'deviants' in their early school years yet currently have a markedly different future prospect due in large part to their family backgrounds—to explore the reproductive mechanism of the middle class through the educational system. Several tentative conclusions are drawn. Firstly, offspring of middle class origin enjoy a chance to become 'late bloomers' because they are free from the restrictions of 'critical period' established within the educational institutions, whereas those from working class are deeply fettered by it. Secondly, blessed with a prescriptive success-oriented identity/status, for children from middle class background the experiences/censure of failure usually implies, and therefore mentally reinforces, a 'bound-to-happen' high-achieving future life, whereas for working-class offspring failures take on the meaning of a doomed destiny. Thirdly, unlike those of working-class origin who have to shoulder heavy burdens, children from middle-class families not only enjoy a much lighter burden, but also that their burdens are all about/for themselves, which means all the resources/energy consumed eventually contribute to nothing but their own development.

### **K. Severn- Statistical Analysis of 19<sup>th</sup> Century Authors**

Statistical analysis of a text corpora can be difficult as standard statistical results cannot easily be applied. We will consider text corpora as networks where nodes are thought of as words with edges present between collocating words, these networks will be represented by a type of matrix called the graph Laplacian matrix. Using this representation we can answer questions such as how do texts vary with time and what distinguishes the writing style of different authors. We apply our methods to analyse a large set of 19th-century novels by different authors. We show Charles Dickens has a distinct writing style compared with other authors. As well we find the significance of gendered pronouns in explaining the variability between novels.

### **E.V. Bon- Coding Evidence and Emotion in the EU Referendum**

This paper presents an examination of the posts of prominent UK political actors and civil society actors published on Facebook during the EU referendum campaigns (February - June, 2016), considering the use and presence of types of evidence and emotions. Since early academic reflections on the process and proposed implications have only recently been published, much remains to be said and explained for understanding the vote, as well as the wide-spread observation that the campaign was largely devoid of fact.

The Facebook posts of politicians and civil society actors are compared to assess whether the actors communicated information and news differently. These posts are specifically analysed for the presence and absence of evidence and emotion, to answer the research question: To what extent do evidence and emotion feature in the news and information posted during the EU referendum campaign by UK government and civil society actors, on Facebook?

First, pragma-dialectics is used to roughly reconstruct the positions of the parties and actors. Thereafter, a manual quantitative content analysis is performed, with indicators inspired by pragma-dialectics, framing research and studies of the rhetoric used in populist discourse. Initial results from the manual content analysis will be presented and analytic issues discussed.

### **L. Larouche- Canada's Black Sheep is Blue, an American Shade of Blue: The United States influence over Quebec's revolutionary rhetoric and Canadian culture**

This research seeks to elucidate the question of "post-nationalism" in Canada. PM Justin Trudeau's extraordinary comment that there is no mainstream Canada requires a close analysis as to how a country can undermine its identity and history. This research draws upon works from George Grant, Margaret Atwood, and Northrop Frye, but departs from the English-Canadian focus, which understates the preponderance of Québec nationalism in Canadian political discourse. Therefore, this paper centres on the Québec sovereigntist movement, which maintains a hostile relationship with Canada, but historically with English settlers. This research shows that Québec sovereigntist's rhetoric, ideology, and national myth are similar to that of the United States, which successfully gained its independence from the English empire. This research concludes that multiculturalism serves as Canada's last resort at a time when American exceptionalism and Québec nationalism present themselves as more virtuous than traditional Canadian nationalism, rooted in a now deemed problematic colonial past.

### **K. Lancaster- Non-Consensual Personified Sexbots: An intrinsic wrong**

We are on the brink of a robotic revolution: it is now possible to create sexbots which closely resemble real people – sexbots which talk, move, and are permanently ready for sex. Given that sexbots can be created for as little as £4,000, this is not merely science fiction, but our immediate (and disturbing) future. In 2016, Ricky Ma created a Scarlett Johansson sexbot (without her consent) which is almost indistinguishable from the movie star herself. In this presentation, I argue that creating a sexbot which represents a real human subject without their consent is an intrinsic wrong, irrespective of any instrumental harms which may or may not ensue. Thus, even if the human subject suffers no negative consequences, it is still wrong to create a sexbot representing another person without their consent. I argue that whilst creating ‘generic sexbots’ (sexbots which don’t represent anyone) is permissible and non-objectifying, creating ‘personified sexbots’ (sexbots representing a particular person) amounts to sexual objectification (Nussbaum 1995). I maintain that objectification can be permissible when it is consensual, but that it is intrinsically wrong when it is non-consensual. The morally transformative issue is the consent from the human subject, and without such consent, I argue that creating a personified sexbot is wrong.

### **F. Agbesanwa- A case study of Stakeholder Experiences and views of a new Electronic Monitored Dosage System (MDS) within an assisted-living site**

Background: Monitored Dosage Systems (MDS) have been widely utilised to support medicines adherence in patients. Biodose Connect™ is a novel eMDS providing prompts and remote monitoring; it is also able to hold both liquid and solid oral dosage forms. The purpose of this study was to explore the views and experiences of stakeholders within a site piloting this novel eMDS.

Methods: Ten semi-structured interviews were conducted prior to eMDS implementation and four semi-structured interviews were then completed post-implementation. Interviews were conducted with the site manager, team leaders, assistants and the community pharmacist. This site provided care-at-home services including medication support for service users of varying needs. Data were audio-recorded, transcribed verbatim and thematically analysed.

Results: Stakeholders were optimistic about eMDS implementation, and its potential to transform management of medication. Expected outcomes for service users included increased independence, confidence and safety. Implementation process issues at the start of the pilot around eMDS set up meant that devices were not used efficiently, therefore reducing the effectiveness of the device prompting and alerts. Furthermore, the eMDS seemed to make the administration of medicines by care staff easier, perhaps reflecting the simplicity of the device, and the ease of identifying and removing doses from it. Service users’ experiences with the device varied.

Conclusion: Stakeholders at site remain optimistic about the benefits of the eMDS with particular users and the beneficial impact on the current delivery of care services. Planned future work includes further follow up interviews, observations and review of the eMDS adherence data.

## **M.S. Mashuk- A Smartphone Based Indoor Positioning System for Occupancy Detection**

At present there is significant research interest in simulating building environment with artificial agents and predicting energy usage and other building performance related factors that helps to promote understanding of more sustainable buildings. To understand these energy demands it is important to understand how the building spaces are being used by individuals i.e. the occupancy pattern of individuals. There are lots of other sensors and methodology being used to understand building occupancy such as PIR sensors, logging information of Wi-Fi AP's or ambient sensors such as light or CO2 composition. Indoor positioning can also play an important role in understanding building occupancy pattern. Due to the growing interest and progress being made in this field it is only a matter of time before we start to see extensive application of indoor positioning in our daily lives.

This research proposes an indoor positioning system that makes use of the smart phone and its built-in integrated sensors; Wi-Fi, Bluetooth, accelerometer and gyroscope. Since smart phones are easy to carry; participants can carry on with their usual daily work without any distraction but at the same time provide a reliable pedestrian positioning solution for detecting occupancy. The positioning system uses the traditional Wi-Fi and Bluetooth fingerprinting together with pedestrian dead reckoning to develop a cheap but effective multi-floor indoor positioning solution.

The paper discusses the novel application of indoor positioning technology to solve a real world problem of understanding building occupancy. It discusses the positioning methodology adopted when trying to use existing positioning algorithm and fusing multiple sensor data. It also describes the novel approach taken to identify step like motion in absence of a foot mounted inertial system. Finally the paper discusses results from limited scale trials showing trajectory of motion throughout the Nottingham Geospatial Building covering multiple floors.

### **V. Poniscjakova- Jewish Political Violence and Terrorism: Counter-Culture and Political Developments in the Jewish Counter-Culture Communities in Israel**

The state of Israel is experiencing ongoing religious and political division and acts of terror. With this presentation I will discuss research conducted as part of my PhD project. The goal of this project is to shed light on the mechanism and circumstances underlying and motivating these acts, to better understand past terrorist acts and gain insight into what may happen in the future.

First, I will briefly present the counter-culture theory, as drafted by Pedazur and Perliger (2009). They argue that counter-culture communities live in separation and with minimal interaction with the mainstream culture, which they oppose and that these groups, when presented with a crisis that their leaders frame as catastrophic, are likely to perpetrate violence.

Next, I will present the main findings and the contributions of my research. Firstly, I provide a thorough characterisation of counter-culture, and identify differences between the two major counter-culture communities in Israel, and how these differences translate into violence.

Thereafter I will address the major themes that emerged from my data. This includes findings regarding the right-left divide in Israel, the relationship between counter-culture communities and the state and the way these views translate into positions of counter-culture communities on the two biggest political issues of modern-day Israel, settlements building and the two-state solution.

### **M. Strickland- Conservation of a pH-sensitive structure in the C-terminal of Spider Silk Extends across the entire Silk Gene Family**

Spiders produce multiple silks with different physical properties that allow them to occupy a diverse range of ecological niches, including the underwater environment. Despite this functional diversity, past molecular analyses show a high degree of amino acid sequence similarity between C-terminal regions of silk genes that appear to be independent of the physical properties of the resulting silks; instead, this domain is crucial to the formation of silk fibres.

Here we present an analysis of the C-terminal domain of all known types of spider silk and include silk sequences from the spider *Argyroneta aquatica*, which spins the majority of its silk underwater. Our work indicates that spiders have retained a highly conserved mechanism of silk assembly, despite the extraordinary diversification of species, silk types and applications of silk over 350 million years. Sequence analysis of the silk C-terminal domain across the entire gene family shows the conservation of two uncommon amino acids that are implicated in the formation of a salt bridge, a functional bond essential to protein assembly. This conservation extends to the novel sequences isolated from *A. aquatica*.

This finding is relevant to research regarding the artificial synthesis of spider silk, suggesting that synthesis of all silk types will be possible using a single process.

### **T. Crawley- What is the Bad-Difference View of Disability?**

A common view is that it is prudentially bad for a person to be disabled. Recently, this view has been criticised, sparking a debate about the connection between disability and well-being. Put simply, supporters of the bad-difference view of disability (BDV) (e.g. (Harris, 2001; McMahan, 2005; Singer, 2005)) believe that disability makes one worse off. Supporters of the mere-difference view of disability (MDV) (e.g. (Amundson, 2005; Barnes, 2009, 2016)) think that it doesn't. Which view one endorses depends (inter alia) on how one understands disability, well-being and the two opposing views. Extensive discussion exists clarifying the natures of disability and well-being. Much less discussion exists on the nature of the opposing views. This paper explicates the nature of the commonly-held BDV, arguing that its best interpretation is probabilistic and comparative: that a person is (other things equal and minus the effect of disablism) likely to be worse off with a disability than they would have been without. Two implications of this are discussed: i) that those – such as Barnes (2009, 2016) – who argue against the stronger interpretation of the BDV that disability always or automatically makes a person worse off are attacking straw men; and ii) that supporters of the opposing views may often be arguing across one another.

### **I. Arora- Attention, Arousal and Information Processing in Autism Spectrum Disorder**

Paying attention to the world and being able to direct attention toward the right sources of information, are complex but very important abilities that develop very early during life, and are likely to be impaired in individuals with Autism Spectrum Disorder (ASD). Recent evidence has established that children with ASD might find it difficult to maintain alertness to attend to novel stimuli, and that they might find it challenging to disengage their attention from something they are focused on (Sacrey et al, 2014; Landry and Parker, 2013). Such difficulties with shifting attention dynamically to process information optimally can have cascading effects on cognitive and social development (Keehn, Muller and Townsend, 2013). However, research findings in this area are highly variable, which might be due to the task context, the nature of stimuli used or even existence of sub-profiles of attention in ASD.

In this presentation, I will talk about my research in the neural, physiological and cognitive mechanisms underpinning attention, alertness and information processing in Autism Spectrum Disorder. I will present preliminary findings from my PhD study in the area.

## **S.M.R.Q. Naim- Let's Kill it by Not Killing it**

*Pseudomonas aeruginosa* is an opportunistic pathogen that is a major cause of hospital-acquired infections in immunocompromised patients such as those with burns, AIDS, cancer and cystic fibrosis. *P. aeruginosa* uses quorum sensing (QS), a widespread bacterial intercellular communication system based on the production of signal molecules, the extracellular concentration of which is related to the population density of the producing bacterial strain. In many different bacteria QS systems controls diverse phenotypes including the production of virulence determinants, biofilm formation, toxins etc. Blocking the QS system has been proposed as a novel way of combating *P. aeruginosa* infection, as preventing the production of virulence determinants is hoped to lessen the severity of infection and provide time for the host immune system to clear the infection itself. One of the signal molecule in the QS of *P. aeruginosa* is 2-alkyl-4-quinolones (AQs). One of the major *P. aeruginosa* AQ signal molecules is 2-heptyl-3-hydroxy-4(1H)-quinolone (PQS). AQs regulate the production of virulence factors such as LecA lectin, pyocyanin, rhamnolipids and biofilm formation, and PQS is an iron chelator and an immune modulator. The crystal structure of PqsR and the AQ ligand binding domain (LBD) in this protein is identified. This has enabled the path to synthesise a number of antagonists for this regulator which dock very well into the LBD of PqsR and hence can inhibit QS-mediated virulence in this *P. aeruginosa*. We are currently optimising these inhibitors with a view to identify hits which can be developed further for therapeutic use.

### **K.A. Kaczmarek- The Role of PRMT1 in Gene Expression of airway smooth muscle cells in Asthma**

Rationale: Abnormalities in histone arginine methylation (HRme) are thought to increase inflammation in asthma, by elevating the secretion of inflammatory mediators from airway smooth muscle (ASM) cells. PRMT1 is one of the enzymes which catalyse HRme and inhibiting it represents a strategy to reduce inflammation in asthmatic airways.

Objectives: To investigate the role of PRMT1-catalysed HRme in inflammatory gene expression and establish its potential as a target for development of new asthma treatments.

Methods: Studies were performed in cultured human ASM cells and 4-hydroxytamoxifen (OHT)-inducible PRMT1fl/- ER-Cre mouse embryonic fibroblasts (MEFs). The activity of PRMT1 at the promoters of inflammatory mediators, as well as the impact of inhibiting PRMT1 on the inflammation in asthmatic airways, were investigated. TNF-  $\alpha$  stimulation was used to simulate the conditions in asthmatic airways.

Results: PRMT1 associated with the promoters of four different inflammatory mediators chosen in the study, namely eotaxin, IL-6, IP-10 and CXCL8; the association moderately increased following TNF-  $\alpha$  stimulation. HRme mark catalysed by PRMT1 at these promoters also occurred under basal conditions and increased notably upon stimulation with TNF-  $\alpha$ . Inhibition of PRMT1 significantly reduced TNF- $\alpha$  induced secretion of inflammatory mediators from ASM cells, and decreased the TNF- $\alpha$  induced levels of PRMT1-catalysed HRme at the CXCL8 promoter. OHT-induced PRMT1 knockdown significantly reduced TNF- $\alpha$  induced secretion of CXCL1/KC, a murine inflammatory mediator, from MEFs.

Conclusions: PRMT1 may have an important role in regulating chemokine production in asthma, and is a promising target for future investigations in asthma.

### **L. Hare Duke - Towards a conceptual framework of social connectedness in the context of mental health**

Background - Loneliness is comparable to established risk factors such as smoking and obesity in predicting a variety of health problems including heart disease, stroke and risk of early mortality. One of the highest risk groups for loneliness is adults with mental health problems. Interventions to tackle loneliness have shown mixed results and new interventions have been called for. The theoretical foundations for new interventions are unclear because outcomes such as 'social connectedness' are ambiguous and have not been adequately conceptualised. Aim - To develop a conceptual framework of social connectedness. Method - A systematic review was conducted focussing on measures of social connectedness used amongst samples of adults with mental health problems. Study characteristics, psychometric properties and constructs operationalised were extracted. Narrative synthesis was conducted on pooled items from identified measures. Results - 28 papers met inclusion criteria, employing 22 unique measures. The majority of studies were conducted in English-speaking countries. Measurement properties of identified instruments were predominantly unknown, or of poor quality. Analysis indicated that social connectedness has five dimensions: Closeness, Identity and common bond, Valued relationships, Involvement and Cared for and accepted (the CIVIC conceptual framework). Conclusions - A five dimension framework of social connectedness was identified. This provides the theoretical foundation for both new measures of connectedness and new interventions to reduce loneliness by increasing perceptions of social connectedness.



## **P. Godolphin- Is Longer Always Better? Different methods of Contact Data in order to receive unpublished Data for a Systematic Review**

**Background and Aims:** Systematic reviews often rely on the acquisition of data in order to carry out sufficient analysis. But such data sharing may never happen. We carried out a randomised trial investigating two approaches for contacting authors identified in a systematic review attempting to acquire central adjudication data from stroke trials, with the aim of seeing which method elicits the most complete response.

**Methods:** A primary and secondary research active author were selected as contacts for each stroke trial. Authors were randomised to either a short email with a protocol attached, or a longer email which contained detailed information. A maximum of two emails were sent to each author to obtain a response. The primary outcome was whether a response was received.

**Results:** 88 trials were identified in the systematic review, and of these, 76 authors were randomised (36 to Short [trials=45], 40 to Long [trials=43]). There were 69 responses, with 19 non-responders. There was no evidence of a difference in response rate between trial arms (Short vs Long, O.R 1.10, 95% C.I: [0.36, 3.33]). In total, 27% of authors responded within a day and 22% of authors never responded. More authors responded positively to the first email if allocated to the Short group (44% vs 20%). However, the eventual outcome was similar for both groups (agree to collaborate: 31% vs 25%).

**Conclusion:** Email length did not have an impact on the number of responses received when acquiring data for a systematic review involving stroke trials, or the time taken to receive these responses.

### **S. Roper- Establishment of a 3D spheroid-based model of Medulloblastoma that Recapitulates Tumour Growth, Drug Response and Migration**

Medulloblastoma is the most common malignant brain tumour, accounting for 15-20% of all childhood brain tumours. Traditional two-dimensional (2D) cell culture fails to recapitulate the multi-dimensional growth and complex microenvironment observed in patient tumours and hence is limited in its ability to predict therapeutic response. There is therefore an urgent need to develop a three-dimensional (3D) in vitro culture technique that can be used to understand underlying tumour biology and evaluate potential therapeutic agents. Here, we optimised seeding densities and a universal culture medium for a highly reproducible 3D spheroid-based assay in a panel of medulloblastoma cell lines representing three molecular subgroups (DAOY, ONS76, UW228-3 [SHH]; HD-MB03 [Group 3]; CHLA-01-MED, CHLA-01R-MED [Group 4]). Medulloblastoma cell lines formed spheroids of different morphologies, reflecting their clinical and molecular characteristics. Culture as 3D spheroids increased resistance to Vincristine treatment relative to 2D (CellTiter-Glo;  $p \leq 0.0001$ ). Automated imaging analysis (Celigo® cytometer) confirmed this difference in therapeutic response and identified a subpopulation of live, therapy-resistant cells within the 3D spheroid after treatment. Immunohistochemistry staining of a spheroid array demonstrated expression of key markers of proliferation (Ki67) and stemness (SOX2). Medulloblastoma 3D spheroids displayed different patterns of migration across a Collagen IV or basement membrane extract (Cultrex® BME) matrix. This migration could be inhibited by targeting WIP1 (CCT007093), a metastasis-related marker. We have established a clinically-relevant, optimised 3D spheroid model of medulloblastoma that allows direct comparison across molecular subgroups and is a significant improvement over traditional 2D models.

### **I. Jallow- Prevalence and Factors Associated with Exposure to Second-Hand Smoke (SHS) among Young People: A Cross-sectional study for The Gambia**

Annually 600,000 deaths are attributed to exposure of non-smokers to second-hand smoke (SHS). These include 165,000 among children, about 60% of which occur in Africa and South-East Asia. Given the increasing prevalence of smoking in many low income countries, preventing exposure to SHS is an urgent public health priority, particularly in sub-Saharan Africa. The objective of this study is to obtain a reliable and nationally representative estimate of the prevalence of exposure to SHS, and to identify the major risk factors among young people in The Gambia. We used two-stage cluster random sampling to select students in secondary schools throughout The Gambia, and we collected data on demographic characteristics and detailed indicators of exposure to SHS. Of the 10,392 eligible students, 10,289 (99%; 55% girls and 44% boys, age 12-20 years) participated. The proportion of students reporting any exposure to SHS was 97.0%, (enclosed public places 59.2%, outdoor public places 61.4%, school 21.3% and home 38.2%), with 96.4% reporting some exposure outside the home. Exposure to SHS in the home was more common in girls and among older students. Parental education, living with parents and being sent to purchase cigarettes were associated with exposure to SHS both within and outside the home. More than 50% of students supported public smoking ban and 35% of students were unaware of the harmful effects of exposure to SHS. Exposure to SHS is highly prevalent among students and occurs mostly outside of the home. Interventions to reduce SHS exposure in students are urgently needed.

## **L. Sutherland- Personalising Asthma Management**

Asthma is an inflammatory disease of the airways that affects over 300 million people worldwide. Inflammatory cell infiltration, excess mucus production and narrowing of the airways results in shortness of breath, chest tightness and wheeze. Currently, steroids, which are anti-inflammatory, are the cornerstone of asthma management. However, some patients are not responsive to steroids and long-term use can lead to detrimental side effects. Asthma is a variable disease characterized by periods of relative stability and periods of increased symptoms and decreased lung function, which are known as exacerbations. Even with steroids patients with severe disease continue to experience daily symptoms, have an increased risk of exacerbation and death. As such an alternative method of treatment is required for these patients. Mepolizumab, a newly available biologic therapy, has previously been shown to reduce exacerbations while allowing for a reduction in the daily dose of steroids in patients with inflammation characterized by the presence of specific inflammatory cells; eosinophils. Currently, treatment success is determined after one year of monthly injections, which are time-consuming for patients and extremely costly for healthcare services. The primary aim of this study is to identify inflammatory and clinical features that can distinguish between patients who will and will not benefit from mepolizumab prior to one year. So far the results have shown that although the patients are similar clinically, their inflammatory profiles vary significantly which may be useful in the early identification of responders and non-responders.

### **U. Chatterji- Defining Humanity- A Feminist's Rant**

In India occupied Kashmir, where gunshots are the daily alarm clock for civilians, rapes are a routine. Yet the brutal rape of an 8-year-old girl shook our sense of humanity. While lawyers and political leaders rallied to defend the rapists, Theresa May, from the United Kingdom, decided to strike Syria. And Syria continues to deteriorate with many more tragedies. Yet, are we moving any nearer to the resolution of these global conflicts? Instead, are we not just learning to either ignore or escalate the conflicts to the best of the interests of the most powerful nations of the world?

My presentation shall explore the premises of the meaning of war and differentiate the same from that of random acts of hostilities. While understanding the psychology behind such conflicts, the presentation shall define a feminist perspective towards war and highlight how, war itself is the manifestation of masculine strength as envisaged by popular imagination and global politics. However, International law is increasingly nurturing enhanced clarity over the absolute prohibition on the use of force by States. But legality often gets eclipsed by politics and the power play of States. Under the circumstances, how does the International Criminal Court and the International Court of Justice, alongside the United Nations and other international organisations defend humanity? In the present context of the contemporary world, which Human Right forms the foundation of humanity? What is humanity?

My presentation shall discuss these questions from a legal and political perspective with a feminist and philosophical background.

### **M. Mohammadi- Thermal Mass as Heat- battery**

The Hockerton Housing Project (HHP) is a sustainable development, designed to be the first residential zero energy building (ZEB) in the UK. These houses are thermally heavy, earth covered and have passive solar heating, without a space heating system, relying on the thermal storage property of the fabric to help stabilise the internal temperature and store heat. The passive nature of the houses reduces energy consumption. Thermal mass in the form of thick concrete construction can, apart from providing a lower U-value, also increase the time lag for outdoor heat to penetrate the walls. Being a dense material its thermal capacitance is also high and can act as a buffer for internal environment. This research analyses four years of daily temperature recordings of the floor and indoor air of one of the HHP house- to determine the heat flow through the building fabric, both diurnally and seasonally. The aim is to evaluate the performance of thermal mass as a thermal regulator. By acting as a heat storage/sink, it can help in creating a habitable indoor space.

## **M.S. Farhan- The Challenge to Humanity: situation in Developing Countries with specific reference to India**

Human rights can be guarded and their protection extended to all when the State has the aim and will of doing so in an unbiased and just manner. This is the starting point of providing the necessary safeguard to the rights of an individual.

The threat to such rights is manifold when the institutions which are under the obligation of providing such protection and have the power and authority to do so themselves have scant regard to the idea of human dignity. These kind of situations are often found in developing and under-developed country.

The Modern Age concept does not get easily submersed where traditional and cultural practices are more prevalent. Instances where the Constitution of a country cannot be respected and where the Judiciary, more so the criminal justice system, is helpless are more common where the hardliners and fundamental groupings having political leanings take hold of power. That is what India is witnessing, where instances of Mob lynching's, rape, murder, encounters etc. are increasing by the day.

A relatively safe, peaceful and diverse country, India today is facing a unique socio-political challenge at the centre of which lies the idea of respecting human rights. Rational ideologies are being trampled upon and those who question the ruling dispensation are being persecuted and face dire consequences.

The aspect of human rights has to be looked at in a more evolved manner now. Human rights are being tossed away, but those who do that do in the name of human rights themselves. So where lies the debate now? Could it be 'Humanity' first and rights later?

### **G. Ruffini- Insight in the Importance of the water body geometry on Landslide-tsunami propagation**

Subaerial landslide-tsunamis (impulse waves) are generated by masses impacting into a water body. This type of waves has resulted in catastrophes in the recent past such as in the Vajont disaster in 1963 where a wave overtopped a dam and caused approximately 2000 casualties. The effect of the water body geometry on landslide-tsunamis is mainly investigated in very simple geometries namely in wave flumes (2D) and in rectangular wave basins (3D). These two extreme geometries easily result in an order of magnitude differences in tsunami height.

This study investigates these aspects with computer simulations by considering several idealised and real water body geometries. Two different computer models for the wave generation and propagation are used. For the wave generation DualSPHysics based on the Smoothed Particle Hydrodynamics is used. For the wave propagation the less time consuming model SWASH is, employed, which is on the Non-Linear Shallow Water Equations.

The presented results will include the comparison of SWASH simulations for different idealised water body geometries and tsunami types. The simulations in 2D and 3D geometries show a difference in wave height of 7 at a distance of thirty-five times the water depth from the wave source. Furthermore, a parameter is found to link results in different geometries efficiently. The simulations are also successfully compared to predictions based on the diffraction theory of linear regular waves entering a 3D domain through a breakwater gap.

### **D. Großegger- Effect of Water on macro crack self-heating in Asphalt**

Approximately 90% of the European road network consists of asphalt roads. These roads are exposed to various weather conditions, abrasion and mechanical loading, which limits the lifetime of the roads by inducing cracks and substance loss. Though roads have a longer lifetime expectancy than laboratory results suggest. This is partly due to the ability of asphalt to recover lost functionalities over time, known as self-healing. The self-healing of asphalt is mainly attributed to the component bitumen and is affected by bitumen properties, asphalt mixture design and other external factors.

This study investigated the effect of water on the healing of a macro crack in asphalt mastic beams. Healing was defined as the ratio between fracture strength after healing to strength for initially breaking the beam. Beams broken were prepared and healed under three conditions:

1. Prepared in water and healed in water
2. Prepared in water and healed in air
3. Prepared in air and healed in air

Healing under the first condition showed similar degree of healing for 5 °C to 20 °C. At 60 °C and partly at 40 °C stripping occurred, reducing the degree of healing. During the second condition, the degree of healing was constant above 40 °C and declined for temperatures below 20 °C. Beams healed under the third condition showed a nearly constant degree of healing. Comparing the conditions revealed that for the second and third, increasing temperature increased the degree of healing. For the first condition temperature had less influence.

## **H.A.H. Al- Sami- Develop a new time-dependent model based on the framework of the new ANICASM yield surface**

Soil, in reality, has several features such as structuration/destructuration, anisotropy and strain-rate dependency, which results in several problems being encountered during construction and design in geotechnical processes. Certain key aspects such as rate-dependence and creep have been researched since the early twentieth century but only in recent times, have these aspects been incorporated into comprehensive models. In this paper, a new version of CASM family Called (EVPANICASM-S) model has been presented. The reference model of this version taken as the new ANICASM-S model accounting for both fabric anisotropy as well as the sensitive behaviour of clays by including the effects of destructuration. According to Perzyna (1963, 1966), an overstress theory can be used to include the effects of soil viscosity. Accordingly, several new parameters have also been included in this model and discussed for taking into account various soil features. It must be noted that for compression, strain, as well as stress, is assumed positive and every stress components is also an effective stress. The performance of this model where compared with the predictions of preceding soft soil constitutive models with/ or without time dependency to predict soil behaviour.

### **E. Mitchell- An Extreme Value Analysis of Top Performing UK Winter Wheat Producers**

Using the responses to a UK-based survey, we present the first application of extreme value theory in an agricultural setting to complement the previous studies conducted from a classical central perspective in this field. The Farm Business Survey collects a substantial amount of information annually from farms across England and Wales with the purpose of providing farmers with an overview of farming performances through reports produced by the Department for Environment, Food and Rural Affairs (DEFRA). Winter wheat is the most widely grown crop in the UK due to its optimal growing conditions; therefore, we focus on winter wheat production from 2006 to 2015 and extract a subset of variables from this data set, among which the obtained yield and net margin, and apply a number of established extreme value analysis methods. We conclude by discussing the implications of my results regarding top UK winter wheat producers, and especially how their financial results compare to these of top earners in the UK.

### **A.C. Dediu- Agent Based Simulation for Office Space Allocation Programme**

Agent Based Modelling (ABM) can be applied in a variety of scenarios to simulate the behaviour of stock market, supply chains, predicting the spread of epidemics or even understanding the factors that may be responsible for the fall of ancient civilisations. It is possible to implement a real world environment with its features, then forecast and explore future scenarios, experiment with possible alternative decisions, set different values for decision variables and analyse the effects of these changes, all using a simulation system.

Office Space Allocation (OSA) is a problem concerned with the planning and distribution of the available physical space (rooms) to a set of entities (people), considering a set of constraints and requirements such as spatial needs, proximity preferences, occupancy cost and effectiveness of the allocation.

So far OSA was solved using heuristic algorithms for optimization. This work will present an ABM solution for OSA which will be compared with the existing approaches in terms of efficiency and diversity in the solutions created. This approach is using the simulation principles to solve the combinatorial optimization problem. The key elements of the simulation are the agents' strategies of moving from one room to another in search for a better location. The whole process is guided by the agents' judgement or when to move from the current location and where to move (which room to consider next). At the end of the simulation, the agents should be in the best possible position that they could find during the search process.



## **P. Vedi- The Organisational Emotional Work of Junior Doctors**

The purpose of this paper is to demonstrate how the institutional logics perspective can introduce theoretical clarity into the discussion of emotional labour within the new workplace. The paper focuses upon the nature of emotional labour as being increasingly shaped by multiple, often conflicting, institutional logics. The paper seeks to connect the literatures on emotional labour and institutional logics in order to show that there remains a crucial gap in our current understanding of the means by which emotional labour is performed. This paper argues that there is the need for a clearer, more logical and theoretically developed typology to facilitate the analysis of emotional labour. This typology will contribute to our understanding of the various types of emotional labour performed during workplace interactions with service-users, colleagues and others.

Following Hochschild's (1983) seminal contribution, emotional labour refers to the management of human feeling during social interaction within the labour process, as shaped by the dictates of capitalism. Her contribution introduced the concept and inspired an outpouring of research on the topic of emotional labour in both sociological/psychological disciplines. Whilst Hochschild's analysis of emotional labour has motivated a significant amount of research, the emotional labour concept has been much less helpful in guiding the theoretical integration of the findings generated by these empirical analyses. In light of this, this paper presents a multi-faceted perspective by connecting different levels of analysis (i.e. national, societal, and organisational) and by introducing a theoretical framework seeking to connect literatures on institutional logics and organisational emotion work.

## Poster presentations – Titles

Fatma Poyraz Ciddi	A Mixed Method Study Examining the Perspectives of Early Years Practitioners, Parents and Children on the Role of Field Trips in Early Years Education
Caroline Meredith	Career stories of men becoming primary school teaching assistants
Carla Reeson	Defining the Homeless Citizen: The Homelessness Reduction Act 2017
Ipek Saralar	Foundations of Designing Technology-based Lessons to Support Middle School Students' Maths Learning
Caroline Anderson	Supporting Students to Construct Balanced Arguments from Multiple Online Documents
Fan Chen	Experimental and numerical modelling of tsunamis caused by ice calving
Emma Doran	T1 and T2* measurements in the liver and kidneys at 3 and 7 Tesla
Ahmad AlShdaifat	Reconstructing Late Pleistocene to Early Holocene palaeoclimate of southern Jordan using sedimentary archives
Aitor Tejo Otero	The Implementation of Different Protocols for the Study and Analysis of Human Jump by Using Inertial Sensors
Michael Toss	Tumour Infiltrating Lymphocytes (TILs) is an independent prognostic factor in Breast Ductal Carcinoma in Situ (DCIS)
Samantha Harrison	Using fNIRS as a prognostic tool to predict outcomes after paediatric cochlear implantation.
Artur Kocon	Proteomic profiling of Glioblastoma brain tumour
Shahideh Safavi	Oxygen-Enhanced Magnetic Resonance Lung Imaging in Paediatric Patients with Ataxia Telangiectasia
Aqila Taqi	Patterns of opioid prescribing in UK Primary Care Patients with Knee Osteoarthritis: A Population-Based Study
Mary Talatu Angani	The development of novel diagnostics for Eimeria infections in poultry
Sue Lynn Mah	Learned Predictiveness and Blocking
Joshua Khoo	Does the size of prediction errors predict better memory performance?
Alastair Munro	Long-Term Spatiotemporal Changes in Endemic Threshold Populations in England & Wales – A Multi-Disease Study
Ashraf-ul-bari Nobel	Supplier Remedies in Public Procurement in Bangladesh: Can we use the models of UNCITRAL, EU, WTO and APEC to improve the system?
Berrin Altin Soran	Kurdish Diasporic women and nationalism: An ethnographic research about London based Kurdish Organisations
Hayaa Alhuthali	Anti-proliferative activity of the novel anticancer agent Jerantinine B in acute myeloid leukaemia
Sarah Breed	The omitted: A qualitative exploration of men's perspective of abortion and their perceived roles
Martina Sykorova	Project Protocol: Enablers and barriers to a successful wound care pathway implementation in the community



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