UWE Student Conference

#uwestudentconf17

UWE Student Conference 2017

10 April 2017

Exhibition & Conference Centre

University of the West of England, Bristol

UWE Bristol | University of the West of England

Welcome to the UWE Student Conference

Dear Colleagues,

The Conference Steering Group, and all the individuals who have contributed to the development of the inaugural UWE Student Conference, extend a very warm welcome to you. We hope that you will experience a lively and stimulating conference.

Organised jointly by staff and students, the UWE Student Conference celebrates research/enquiry/evidence-based practice from undergraduate and postgraduate taught students across all years of study and all disciplines. We have a busy conference timetable but you can plan your afternoon by referring to the verbal paper and poster schedules over the early pages of this programme and the index of presenters at the rear. We have allowed plenty of opportunity to share knowledge and ideas about research across many disciplines. We hope you take full advantage of these opportunities and are enthused to be part of our inclusive community of academic practice.

Every student presenting their research/inquiry here today has risen to a great challenge. They have become 'true researchers', subjecting the knowledge and understanding they have acquired to public scrutiny. They have recognised that a significant impact on learning comes not only from within the classroom but from boundary-crossing, integrative and socially interactive experiences that bridge the classroom with life beyond it. In this public conference space, presenting their research to a diverse audience, our students are casting off the fixed identity of 'student' to become emerging research professionals.

A key priority for us at UWE, Bristol is to prepare our graduates to be ready and able to realise their full potential, well equipped to make a positive contribution to society and their chosen field of work or further study, and primed to play their part in developing a sustainable global society and knowledge economy (UWE Bristol Strategy 2020). We are mindful of Aristotle's thoughts about excellent practice:

"Excellence is never an accident. It is always the result of high intention, sincere effort, and intelligent execution; it represents the wise choice of many alternatives - choice, not chance, determines your destiny"

The excellence you will see here from our conference presenters is indeed no accident. It follows their conscious decision to be engaged, research-active and productive members of the university. All the presenters are taking a bold step today, shaping their future and determining their destiny in a competitive global environment by building knowledge, experience and capabilities that add great value to their taught degree studies.

Dr Jennifer Hill
Conference Convenor

UWE Student Conference Steering Group

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Sarah Mackie - Faculty of Business & Law
Terry Bennett - Faculty of Arts, Creative Industries & Education
Iraje Ahmed - Faculty of Health & Applied Sciences
MariCarmen Gil Ortega - Dean of Students Office

Keynote Presentation

Professor Helen Walkington

Oxford Brookes University

Biography

Helen Walkington is Professor at Oxford Brookes University where she teaches Geography, carries out research into higher education pedagogy and manages a university-wide student experience project called *Get Published!* She is a National Teaching Fellow (2009) and Principal Fellow of the Higher Education Academy (2012). In addition to her geographical research, Helen has written papers, chapters, books and guides relating to teaching and learning in education.

Helen has established numerous undergraduate research conferences and journals and has been a steering group member of the British Conference of Undergraduate Research (BCUR) since its inception in 2010. She is Editor-in-Chief of the undergraduate research journal *GEOverse*, Associate Editor of *Higher Education Pedagogies*, Editorial board member of the *Journal of Geography in Higher Education* and co-editor of the International desk for the US journal *Council on Undergraduate Research Quarterly*.

Get Published!

To kick off the conference Helen's keynote will explore the importance of, indeed responsibility for, communicating the findings of our research. It will cover the what, why, when, where and how of publication in the broadest sense. Helen will describe a range of formats for research dissemination, not just academic journal articles. Helen will also share with you some findings from her own research into the impacts of undergraduate research dissemination.

Be warned! Publication can become addictive.

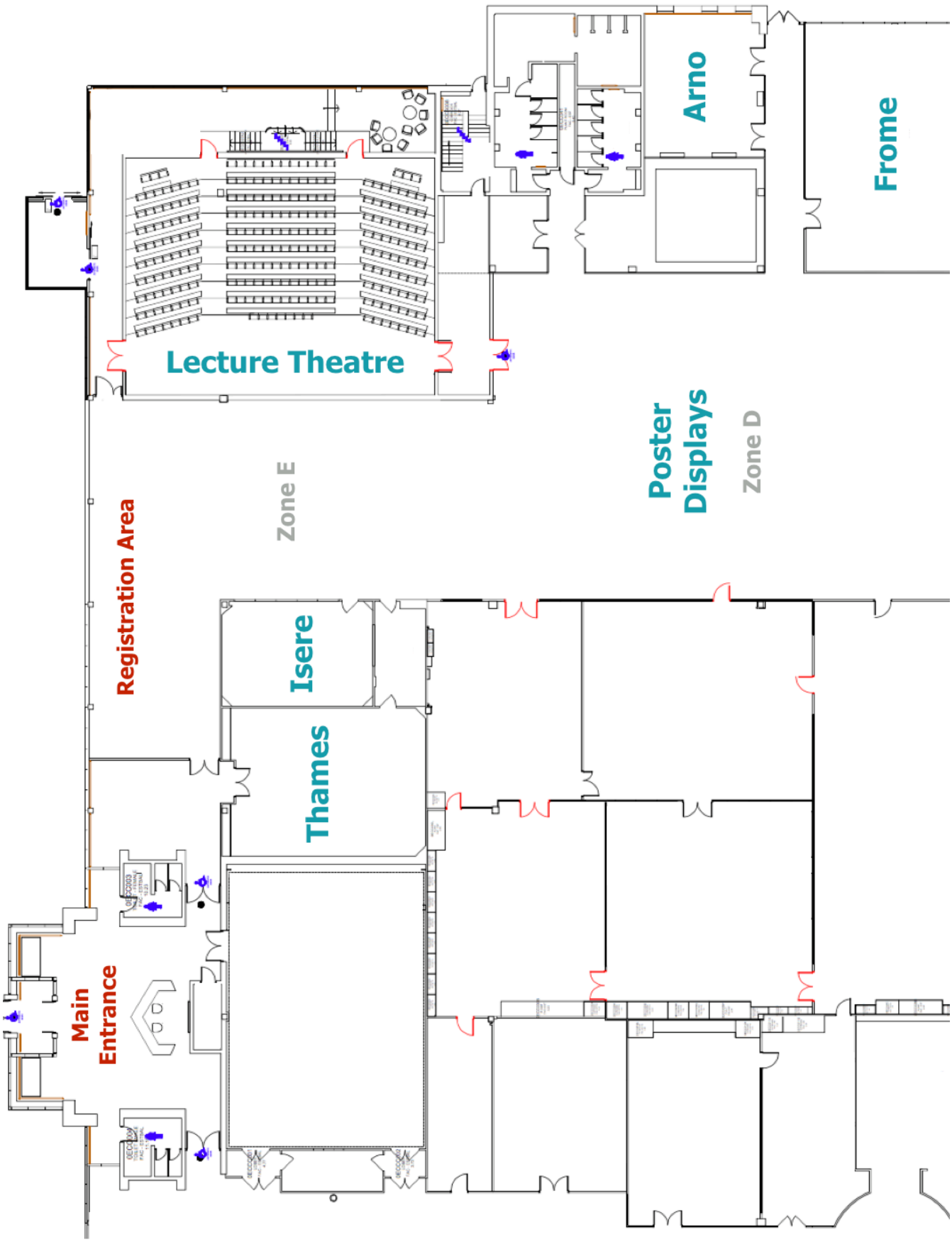
UWE Student Conference

Conference Programme

Time	Programme	Location
12:30 – 13:00	Conference Registration & Refreshments	ECC Zone E
13:00 – 13:50	Welcome (Jo Midgley, Pro-Vice Chancellor, UWE) Keynote (Professor Helen Walkington, Oxford Brookes University)	Lecture Theatre
14:00 – 15:00	**Paper Session A:** Stream 1 Stream 2 Stream 3 Stream 4 Stream 5	 Frome Isere Arno Thames Lecture Theatre
15:00 – 16:00	Formal Poster Discussions & Refreshments *	ECC Zone D
16:00 – 17:00	**Paper Session B:** Stream 6 Stream 7 Stream 8 Stream 9 Stream 10	 Frome Isere Arno Lecture Theatre Thames
17:00 – 17:30	Closing Plenary & Prize Giving (Professor Steve West, Vice Chancellor, UWE)	Lecture Theatre

* Posters will be displayed over the duration of the conference, but time is allocated for students to stand by their posters and answer questions (15:00-16:00)

Exhibition & Conference Centre Map



Programme – Verbal Paper Session A (14:00-15:00)

Stream	Author(s)	Title
Stream 1 (Frome)	Belinda George	Arbuscular mycorrhizal fungi colonisation in native European grass *Holcus lanatus* during a simulated drought
	Abbie Pearce, Lewis Gaertig & Chloé Davies	A fuzzy logic approach to assessing the potential for natural flood management in the Chew Valley
	Amy Case & Mycel Fontarum	Sounds Bristolian: A spatial representation of the Bristol accent
	Marcela Usmari Moraes, Jonathon Hull & Myra Conway	Distribution of hBCATm, the BCKD complex and GDH in the human brain and their role in neuro-metabolism
Stream 2 (Isere)	Emma-Clare Bennett	How do parents influence their bilingual children's language choices?
	Roberta Vasnic	Can historic buildings be truthful to a modern audience? A study of Carlo Scarpa's Castelvecchio-Verona
	Claire Onah	Investigating outpatient perception and usage of antibiotics in a northern Nigerian hospital
	Helen Foster	A narrative study into the experiences of 'out' gay teachers in UK secondary schools
Stream 3 (Arno)	Allen Yan	From Nigeria to England: Entrepreneurs without borders
	Adam Bennett	Accessible health resources for people with learning disabilities: Sugar Choice – an educational game for diabetics

	Geraldine Shoko	Using flexible working for gender equality
	James Weavers	British Home Office immigration policies regarding Jewish refugees to Britain: January 1933 to September 1939
Stream 4 (Thames)	Amer Hijazi	BIM implementation for the infrastructure industry
	Jade Furlong	The impact of disturbance on insect communities in North Somerset and the consequences this has for built environment planning
	Jakub Kaczmarek	An investigation into water quality on UWE Frenchay Campus
	Sam Williams	Tsunami modelling
Stream 5 (Lecture Theatre)	Alice Hirst & Elyshia Neal	An enquiry into the importance of social and emotional development in early childhood
	Conor Newcombe & Sherilyn Yorke	A machine's exploitation of human conditional response patterns for the rock-paper-scissors game
	Eileen Barron	Can low impact make a big impact? Exploring the influence of two Low Impact Developments in relation to adoption of sustainable attitudes and behaviours
	Ibrahim Kalloufi	Virtual Reality and technology in mental health therapies – the future of psychiatry?

Programme – Poster Discussions (15:00-16:00)

Poster	Author(s)	Title
1	Barkha Javed	A model-driven provenance informed framework to support analytics in the smart city policy-making process
2	Linda Williams	Can Sophie Take Care of Herself? An analysis of contemporary published responses to a work of art
3	Didem Kekilli, Chloe Frost, Mun Too & Laura Ramos Montanez	Pro Bono – Eastville Old Library Transfer
4	Keely Vanderlinden	Exploration into the limits and opportunities in integrating with the European Union: A case study of Slovakia, Slovenia, Lithuania and Latvia
5	Adam Neal	Investigation into Carbon Fibre Reinforced Plastic (CFRP) Drilling Methods
6	Amy Bulman	The integration of unmanned aerial vehicles into civil airspace
7	Annalise Thompson	Testing for equal variances in a statistical no man's land
8	Jakub Kaczmarek	Multi-Criteria Decision Making – Allotments in Bristol
9	Vanessa Allis	A comparison of analytical methods for two group pre-post design
10	Clare Chia	Increasing student engagement with UWEmobile

11	Harry West, Michael Horswell & Nevil Quinn	Assessing uncertainty as a result of LiDAR data error in sea level rise modelling
12	Deborah Smith	Intensive agriculture and water quality: The Komati River, Swaziland
13	Bethan Smith	An investigation into the effects of *Rhododendron ponticum* on the physical environment and species diversity at Tortworth Arboretum, Gloucester
14	Harry Finch & Myra Conway	Investigating the effect of acute and chronic ethanol exposure upon intracellular levels of branched-chain alpha-keto acid dehydrogenase
15	Jade Parnell & Emma Halliwell	Exploring the impact of YouTube vlogging as a new form of advertisement on body image: Does social comparison have an impact?
16	Jasmine Davis, Mai Shafei & Myra Conway	The impact of micronutrients and alcohol on autophagy
17	Mary-Jane Sweeting	How are occupational therapists addressing the needs of adults undergoing cancer treatments?
18	Sofia Vrettou & Helen Green	Detection of DNA on clothing using VMD
19	Safiya Hirsi, Hatra Yacub, Anisa Rafai, Faduma Farah, Celine Mumvadi & Jeff White	Our Journey so far … reflections of BME Paramedic Science students
20	Chloe Beard, Grace Okoro & Myra Conway	The impact of ethanol and zinc on mitophagy
21	Olatunde Akande	Antifungal efficacy of selected essential oils against *candida* sp.

22	Antonia Broad	Comparing the robustness of test statistics
23	Charlotte Collier, Francesca Lockie, Prachi Patel & Jonathon Hull	Investigation of the sensitivity of TK6 cells to etoposide upon nutrient restriction
24	Laura Bishop, Kiren Bains, Katerina Stankova & Rose Vincent	Examining the reliability of the Tower of London-Revised in self-reported healthy older adults
25	Joshua Steven & Elizabeth Anderson	Rapid *in-vitro* testing of sensitivity to chemotherapeutic agents Daunorubicin and Cytarabine in leukaemia patients
26	Fern Price & Tim Craig	A role of protein SUMOylation in Type-II Diabetes Mellitus?
27	Tanya Shahnawaz	The influence of oxytocin on osteoblast maturation
28	Adam Martin & Laura Ottley	Automation in entertainment
29	Adam Symonds, Matthew Roche, Mitchell Davies & Janusz Czapski	Timelight: A lighting system for museums
30	Alex Jones	A flexible system for producing spatial, object-based audio content in a plugin format
31	Teodora Muresan, Sintija Linuza, Kelly Copas & Theng Yen Chen	Earn my steps: Walk further and get rewarded for it
32	Ellie-Marie Tucker	Basins of Attraction for Iterative Methods
33	Amy-Lee Haynes	Modernity and decadence: The influence of Americanism on culture in Weimar Germany

34	Thomas Fisher	Improving human understanding of machine learning through interactive visualisation
35	John Barker	Vocational education: Degree Apprenticeships and social mobility
36	David Pratten	Your Shed: An interactive personalised tour of M-Shed

Programme – Verbal Paper Session B (16:00-17:00)

Stream	Author(s)	Title
Stream 6 (Frome)	Richard Pardoe & Alice White	Where in the Bristol AQMA would the "street canyon" effect make the planting of trees inappropriate?
	Jade Furlong, Mikolaj Biernacki & Ryan Cook	Agricultural drought: The 'unapeeling' future of potatoes
	Alexander Bridger, Calum Rattray & Sam Wismayer	South Bristol Community Walks: Mapping, evaluating and improving urban walks using GIS
	Olivia Reddy	Microbial Fuel Cells: Sanitation and power production from recycled materials
Stream 7 (Isere)	Nicolas Bisordi Huwel	Research and development of a hydrofoil and rigid sail for a small single-person sail boat
	Paula Bisordi Huwel, Ana Recio & Roberta Vasnic	Glastonbury Energy Challenge 2016
	Tay Aziz	BoxED: A UWE schools outreach and widening participation initiative
	Yuliana Darkbloom	Association between the presence of intrinsic and acquired genes in *Acinetobacter baumannii* isolates and susceptibility to certain antibiotics
Stream 8 (Arno)	Yunyan Zhou	Evaluating the Circular Economy in the global context: Using the New Plastics Economy as a case study
	Louise Hatherall & Kevin C. Honeychurch	The determination of licit and illicit drugs in wastewater by liquid chromatography mass spectrometry

	Loo Wei Shuen	Learning from failure and sensemaking in organisations
	Max Langhof, Lyndon Smith & Mark Hansen	Contactless 3D handprint recognition
Stream 9 (Lecture Theatre)	Daisy Hamm	'The F Word': Determining barriers to young women's self-identification as feminist
	Wendy Rhys-Price	War and climate change: Analysing the environmental effects of war in the Persian Gulf through environmental security
	Zi Juin Chen	The role of institutions in the human development of Southeast Asia
	Pamela Iyer	Inclusion: What are the experiences of black and minority ethnic (BME) students of occupational therapy?
Stream 10 (Thames)	Panagiotis Kyriazis, Elizabeth Anderson & Vyv Salisbury	Optimisation of a novel biosensor for anthracycline resistance and testing in a model of AM Leukaemia
	Ellen Riis-White	An exploration of the factors influencing job commitment of Generation Y
	Ioni Bellis	The language maintenance of Irish (Gaeilge)
	Thomas Gray	A survey exploring asexual people's experiences of kinks and fetishes

Verbal Paper Session A (14.00-15.00)

Stream 1:

Arbuscular mycorrhizal fungi colonisation in native European grass *Holcus lanatus* during a simulated drought

Belinda George: Geography & Environmental Management

Belinda has recently completed her Bachelor of Science degree in Geography and Environmental Management and is presenting her research on mycorrhiza conducted as part of the DRY (Drought Risk and You) Project. She has a strong interest in endophytic fungi and is keen to pursue future research in this area.

Abstract:
Arbuscular mycorrhizal fungi (AMF) are symbionts of over 80% of all plant families. AMF are advantageous as they improve performance of the host plant. Furthermore, extraradical hyphae are thought to enhance soil aggregation and carbon storage. The beneficial effects of AMF on plant performance and soil health make AMF an increasingly important component of both natural and agricultural ecosystems in a changing climate. It is well documented that AMF improves plant resistance to drought, but relatively little is known about the response of the fungi to water stress. The aim of the study was therefore to investigate the potential impact of a UK drought on levels of grass root colonisation by AMF.

This study compared levels of mycorrhizal root colonisation in native European grass *Holcus lanatus* in a UK field trial during simulated seasonal droughts. The study was conducted under the DRY Project (Drought Risk and You) mesocosm experimental field trial in which drought treatments have been applied using precipitation-control shelters. Field samples were taken from two treatment plots (50% rain reduction and control) at the beginning of the treatment and again after fourteen weeks (winter drought) and 38 weeks (nine month winter to summer drought). A total drought (0% precipitation) and control (average precipitation) were applied to poly-tunnel turf for 12-weeks and sampled at the beginning and end of the period. Levels of AMF colonisation in the roots of 120 sample plants were assessed microscopically and results from treatments were compared. No significant difference was identified between root colonisation during drought and control environments (at the 95% confidence level). This result suggests AMF is likely to play an increasingly important role in natural and agricultural ecosystem function under a drier UK climate.

A fuzzy logic approach to assessing the potential for natural flood management in the Chew Valley

Abbie Pearce, Lewis Gaertig & Chloé Davies: Geography & Environmental Management

Abbie, Lewis and Chloé are final year Geography students. Abbie's interests lie within GIS, and her dissertation considers climate change-induced drought. Lewis enjoys remote sensing, assessing land cover change and has an interest in renewable energy. Chloé enjoys cartography, as well as having an interest in coastal processes and management.

Abstract:
This project links with current research in the Centre for Floods and Community Resilience (CFCR), looking at the role of natural flood management plans. Natural flood management is becoming an increasingly popular method to store flood waters away from populated areas. This project aims to use Geographic Information Systems (GIS) to identify potential sites for natural flood management in the Chew Valley, Somerset. A Multi Criteria Fuzzy Logic analysis will be used to locate suitable sites and support decision making. Suitable sites will be located by combining a range of criteria, including slope, land cover, geology, soil suitability and distance from populated areas. The product of this research will be a series of online interactive Story Maps that will communicate the results for future public engagement activity with existing partnerships in the community.

Sounds Bristolian: A spatial representation of the Bristol accent

Amy Case & Mycel Fontarum: Geography & Environmental Management and The Bristol Centre for Linguistics

Abstract:
This interdisciplinary project is a joint collaboration between The Department of Geography and Environmental Management and The Bristol Centre for Linguistics. Up until now, progress in dialectology has been hindered by limitations of Geographic Information Systems' (GIS) knowledge and spatial analytical ability. GIS has the potential to expand our understanding of the spatial pattern of dialect change and the links to other factors such as social and cultural changes (Teerarojanarat & Tingsabadh, 2011). We will apply a GIS methodological approach. Based on data collected by The Bristol Centre for Linguistics, we will present a set of results that represent the relationship between the Bristolianess of a participant and their socio-economic context. We will present our findings using an interactive Story Map, which will serve as a pilot study to demonstrate the potential for further collaboration between The Department of Geography and Environmental Management and The Bristol Centre for Linguistics.

Distribution of hBCATm, the BCKD complex and GDH in the human brain and their role in neuro-metabolism

Marcela Usmari Moraes, Jonathon Hull & Myra Conway: Applied Sciences

Marcela Usmari Moraes is a final year BSc Biomedical Science student at UWE. Since 2014, she has been working with Professor Myra Conway and her team at the Centre for Research in Biosciences (CRIB). In 2015 she received a summer bursary from Alzheimer's Research UK, which was followed by a year placement with the Conway group. Her work focuses on understanding protein metabolism in neuronal cell models and how biochemical changes may influence the development of Alzheimer's disease. Marcela has participated in several conferences including the British Conference of Undergraduate Research and the Annual CRIBS Meeting.

Abstract:
Branched-chain amino acids (BCAAs) leucine, isoleucine and valine are fundamental for cellular processes from protein synthesis to substrates for cellular respiration. In humans, BCAA metabolism is mediated by the mitochondrial and cytosolic branched-chain aminotransferases (hBCATm and hBCATc, respectively), the branched-chain α-ketoacid dehydrogenase (BCKD) complex and glutamate dehydrogenase (GDH). Interactions between

these proteins have been shown to generate a supramolecular complex known as the BCAA metabolon. The incorporation of BCAA products into metabolic pathways such as the citric acid cycle has been well described throughout the body, but only recently have studies mapped the distribution of the hBCAT proteins and GDH in the human brain (Hull *et al.,* 2012; Spanaki *et al.,* 2014). We aimed to expand on these studies and validate previously observed distribution of hBCATm, GDH and the BCKD complex. Using double immunofluorescence, 13 brain tissue sections from healthy controls were stained with antibodies specific for hBCATm, GDH or BCKD and markers for astrocytes (glial fibrillary acidic protein – GFAP) or endothelial cells (Von Willenbrand factor - VWF). These were analysed using fluorescence microscopy. Our results showed that GDH was primarily localised to astrocytes with GFAP, with sporadic neuronal staining detected, and hBCATm, GDH and BCKD localised to endothelial cells with VWF. Additional studies will focus on the distribution of the BCKD complex in neuronal cells. These findings offer new insights into how these metabolic pathways operate under normal physiological conditions. Further investigations should focus on dysregulation of these pathways, which could contribute to metabolic imbalances that can lead to severe brain pathologies.

Hull, J., Hindy, M. El, Kehoe, P.G., Chalmers, K., Love, S. and Conway, M.E. (2012) Distribution of the branched chain aminotransferase proteins in the human brain and their role in glutamate regulation. Journal of Neurochemistry. 123 (6), pp. 997–1009. doi:10.1111/jnc.12044.

Spanaki, C., Kotzamani, D., Petraki, Z., Drakos, E. and Plaitakis, A. (2014) Heterogeneous cellular distribution of glutamate dehydrogenase in brain and in non-neural tissues. Neurochemical Research. 39 (3), pp. 500–515. doi:10.1007/s11064-013-1235-5.

Stream 2:

How do parents influence their bilingual children's language choices?

Emma-Clare Bennett: Education & Childhood

Emma-Clare Bennett is a final year English Language and Linguistics student, with particular interests in language and communication. She is presenting her project on the language choices of English-French bilinguals.

Abstract:
The purpose of this study is to analyse how parents influence their bilingual children's language choices. The analysis focuses on an English-French bilingual child's code-switching, that is the use of two or more languages in a sentence or conversation, and how his parents respond. Transcripts of a child aged two years five months and his parents were extracted from the CHILDES database. Code-switches were analysed using Poplack's (1980) categories and parental strategies were analysed using Lanza's (1992) and Ochs' (1988) categories. The results show that the child's code-switches were mainly switches of one to three words, used in arguments to emphasise, protest and attempt to end the argument. The child's mother generally accepted his code-switches, whereas his father was less tolerant. The child's father was most successful in encouraging the child to produce monolingual responses when using the Expressed Guess Strategy, whereby he reformulates the child's utterance into a yes/no question. The study concludes that parents can influence children's code-switches, although children may continue to code-switch if it allows them to achieve their conversational aims. This highlights that parents can influence their children's language, although the effect may be modest and other factors are also likely to be important.

Can historic buildings be truthful to a modern audience? A study of Carlo Scarpa's Castelvecchio-Verona

Roberta Vasnic: Architecture & The Built Environment

Roberta is a final year student studying BSc Architecture. She enjoys studying history of architecture, conservation and restoration, but she also likes learning about sustainability and materiality. She is presenting research from her undergraduate dissertation, focusing on preserving the authenticity of a historical site with particular interest in the work of the venetian architect Carlo Scarpa for Castelvecchio, Verona.

Abstract:
This research focuses on Carlo Scarpa's intervention on Castelvecchio and the conservation of authenticity and identity of the place. The architect's work is highly appreciated through his profound understanding of the regional culture and the strategy adopted in preserving, framing and presenting it to a modern public.

The results of this research contribute to the conventional conception of Scarpa's work as being a *"master of detail"* through his "*desire to redefine the building's past"*. The research provides an analytical examination of the architect's intervention in the arrangement of the exhibition and movement, and it strategically highlights the main features of historical layers. The research addresses the relationship between conservation of authenticity and modern experience. This relationship is described throughout the research as a collection of judgments and attitudes towards Scarpa's work completed with a series of personal interpretations of the place as a consequence of the site visit.

The research aims to justify and rationalise the concept of how a historical building can be truthful to a modern audience by exploring the architect's strategy in exhibiting the original construction through its honesty and generating an appreciation towards its cultural identity.

Investigating outpatient perception and usage of antibiotics in a northern Nigerian hospital

Claire Onah: Health & Social Sciences

Claire has just concluded her Masters degree in Public Health. She is particularly interested in the epidemiology of infectious diseases. She is presenting her Masters dissertation, which examined the use of antibiotics among outpatients in a northern Nigerian hospital. Claire is currently an academic PAL Leader.

Abstract:
- *Background*: Antibiotics are the most utilized drugs and easily the most misused drugs in Nigeria. Studies have identified the misuse of antibiotics to be the primary factor influencing antibiotic resistance. To reduce the misuse of antibiotics, it is important to educate people on their proper use, emphasizing the importance of exploring the public's knowledge and use of antibiotics.
- *Aim*: The aim of this study is to examine if knowledge of antibiotics has an impact on the attitude and behaviour of outpatients towards antibiotics.
- *Methods*: A cross-sectional study was carried out on a sample of 202 outpatients using paper questionnaires. Descriptive analysis was conducted to determine the association between socio-demographic features of patients and knowledge of antibiotics.

Spearman's correlation test was used to determine the association between knowledge of and attitudes towards antibiotics as well as usage of antibiotics.

- *Results*: There was no statistical significance between knowledge of antibiotics and socio-demographic features. 80.3% of outpatients had taken antibiotics in the last two years. 31% of outpatients said they did not complete their last dosage of antibiotics and the commonly cited reason was that they felt better. The association between being refused antibiotics and self-medicating was statistically significant (p=0.038). The most common condition the outpatients used antibiotics for was cough and catarrh (29.2%).
- *Conclusion*: The results of this study show that the knowledge of antibiotics among the outpatients is relatively poor. It also shows that there are misunderstandings about the proper use of antibiotics. Adequate education of the public on the use of antibiotics has become a necessity in order to clear misunderstandings on their use.

A narrative study into the experiences of 'out' gay teachers in UK secondary schools

Helen Foster: Education & Childhood

Helen Foster is currently studying for a PhD in Education at UWE. She was a Head of English in an inner-city London school and now works as Professional Tutor at Bristol University's Graduate School of Education. Her research interests are around the lived experiences of LGBT+ teachers in UK Secondary Schools.

Abstract:
This narrative inquiry explored the experiences of three 'out' gay teachers working in UK secondary schools. The teachers agreed to participate in the co-construction of the research and narrated their lived experiences and what enabled them to be 'out'.

The findings suggest that these teachers story their experiences in three ways; through the interplay of their professional and personal identity, against the backdrop of heteronormative contexts and in light of the pedagogical and personal benefits to being 'out'. The teachers highlight three enablers that supported them in being 'out'; 'being a good teacher', the presence of allies, and a supportive school climate. In exploring the impact of seniority, school climate, race, class and gender on these teachers, schools could learn how best to enable teachers to have a genuine choice to be 'out'.

Stream 3:

From Nigeria to England: Entrepreneurs without borders

Allen Yan: Bristol Business School

Allen Yan, hailing from the Far East, is currently pursuing a master's degree in entrepreneurship. He was inspired by the young leaders and entrepreneurs around the world. He is dedicating his time to inspire young students to speak up and make a difference including delivering remarks in the United Nations.

Abstract:
The research presented here is conducted as a part of my dissertation and my topic focuses on female entrepreneurs based in Nigeria and England. I aim to identify the determinants and indicators of women's empowerment. I wish to use my findings to not only encourage

and lead young entrepreneurs to use current resources and live up to their full potential, but to inspire people to innovate and fill in gaps in social enterprises.

I will begin my presentation with some success stories from Nigerian young women and my own experience from doing a project trying to improve student engagement by creating a student interactive platform to 'match' international students and home students. Then I will move to the specifics of my research, including how it can be undertaken across two continents, and examining the entrepreneur gender gap and the different challenges that entrepreneurs are facing in Nigeria and England, and presenting the methodologies and frameworks I use. I will seek to examine how to encourage youth to start social enterprise and finally explain how entrepreneurs change the world in many ways. I will conclude with an inspiring speech to encourage students to be an entrepreneur, to lead the world and make a difference.

Accessible health resources for people with learning disabilities: Sugar Choice – an educational game for diabetics

Adam Bennett: Nursing & Midwifery

Adam is a third year student studying Learning Disability Nursing. He is presenting work from his second year looking at the health of people with learning disabilities. Adam recently undertook a 3-month placement in Norway as part of the Erasmus Exchange Programme. He is a Student Ambassador and on the UWE Exchange Student Society committee.

Abstract:
Encouraging healthy eating is an important public health goal. Current advice is for people to greatly reduce their sugar intake. This is particularly important for people with type-2 diabetes, who could benefit greatly from eating a low-sugar diet. However, a lack of consistency around displaying nutritional information on food packaging can make choosing healthier alternatives difficult. Diabetes is a particularly relevant health issue for people with learning disabilities, and is 2-4 times more prevalent in this group. People with learning disabilities have difficulty understanding complex, new information and an impaired ability to cope independently. They may have a limited reading ability, so much of the information on healthy eating is inaccessible to them.

The NHS recently introduced an accessible information standard to ensure that all health information that it provides meets people's communication needs. Sugar Choice is a simple game-based interactive educational resource, which I designed, that helps people learn about the amount of sugar in different foods. I wanted to test the feasibility of using modern technology to increase the accessibility of information for this group and whether the game was a useful educational aid. The results from the initial focus groups were very positive: the game was well received, intelligible and supported people's learning.

People with learning disabilities suffer from serious long-standing health inequalities compared to the rest of the population. To help overcome this, it is vital that the NHS offers a personalised service based on an individual's needs and that health information is made fully accessible. This piece work is just one example of the new approach to accessibility that is needed if the NHS is to meet its goal of offering high-quality care to all.

Using flexible working for gender equality

Geraldine Shoko: Art & Design

Geraldine is a final year student studying BA Graphic Design. She enjoys learning how design can improve equality. Her research focuses on how the portrayal of gender affects the gender wage gap. Geraldine is a passionate traveller, having visited most countries in Asia and has a keen interest in cultures and heritage.

Abstract:
This research aims to examine how women in the UK are affected by the gender wage gap through doing an unequal share of unpaid work. Women are put in a position where they are unable to earn as much as men due to the systemic gender discrimination that they face from society, policies and companies. The connection between the way women's work is viewed and how it impacts women's wage is examined. The connection between gender inequality and how it impacts the economy is also explained.

The research uses the latest statistics from the UK Office of National Statistics, International Labour Organization, and Catalyst, an international organization that researches equality in the workplace. The research also takes into account the views of Michael Kimmel, a distinguished professor and sociologist specializing in gender studies, and Nina Powers, a cultural critic and social theorist.

The findings demonstrate flexible working as one method to solve the gender wage gap issue in the UK. The research suggests how flexible working can not only be used as a solution, but as a business strategy to benefit both employers and employees.

By recognizing what is preventing women from securing equal opportunities in the workplace, and educating people on the importance and benefits of inclusive work practices, this research opens the door to a more gender equal society. Gender equality does not only benefit society, but also the economy.

British Home Office immigration policies regarding Jewish refugees to Britain: January 1933 to September 1939

James Weavers: Arts & Cultural Industries

James is in his final year at UWE studying History. He is interested in social history, particularly that of 20th century Europe and the United States. He is presenting his Final Year Dissertation Research Project, exploring Jewish immigration to Britain between 1933 and 1939. James enjoys travelling and has spent the last couple of summers working in the Baltics.

Abstract:
This study examines the discrepancies between British Home Office immigration policy and how it was put into practice on a day-to-day basis. This is in regards to the Jewish refugees that sought asylum to Britain in the period between Hitler's appointment to German Chancellor in January 1933 and the outbreak of the Second World War in September 1939. The majority of the published historical research in this area over the last 40 years argues that Britain's claims to be a liberal and tolerant country are not true, and that Britain viewed these refugees not in a humanitarian light, but through economic self-interest. As such, more could have been done to assist those Jewish refugees fleeing Nazi persecution.

The research of previous historians has focused on Home Office high policy, its evolution throughout the interwar period and the determinants driving this evolution. Research has not been conducted into how these policies were implemented in practice.

Using unpublished archival material that has only been made available to the public in the last couple of years, and framed by further primary research and a wide range of supporting secondary sources, I was able to examine the discrepancies between Home Office high policy and how it was implemented. My research shows that these discrepancies, due to the discretion of individual officials implementing Home Office policy, enabled a large number of Jewish refugees to successfully find permeant refuge in Britain. This original research sheds new light on the subject and provides insight into an immigration system that was flexible and lenient in the context of the period. With Unicef stating recently that the world faces the largest refugee crisis since the Second World War, the correct interpretation of historical comparisons is essential.

Stream 4:

BIM implementation for the infrastructure industry

Amer Hijazi: Architecture & The Built Environment

My vision is to obtain a challenging position as a BIM manager in a dynamic environment where I can gain professional experience in a positive way. I am currently studying BIM design, construction and operation at UWE, Bristol. I finished my bachelor's degree in civil engineering with an excellent grade. I have an Effective Trainer (TOT) certificate from the Global Academy of Training & Consulting Society which has had a major impact on how I transfer my knowledge effectively.

Abstract:
After recognizing a gap in Building Information Modelling (BIM) for infrastructure in the UK and Gulf region, I worked on a project to establish start-up in BIM for infrastructure. This step helped me to transfer my role from employee to entrepreneur.

Since 2014, the start-up has delivered four land development projects, which were handled and designed for international companies 2K, HUESKER and MAC by using BIM processes and tools. The start-up also covered the BIM implementation process and training for three companies, one of them being HUESKER JORDAN -BRANCH. In 2015, the start-up team participated in the first BIM conference in Jordan and gave a paper about BIM implementation and challenges. Consequently, the start-up was awarded the honour certificate at the Seventh Creativity Conference (2016). In 2016, the start-up established the first live BIM online training for the UK and Jordan and these online courses now have students from the UK, USA, Jordan, KSA and Bahrain, with more than 30 online training courses around the world.

The start-up has submitted a proposal for a new professional course to the Architecture and Built Environment Department at UWE, Bristol, to gauge the appetite for expanding the MSc BIM to infrastructure. If successful, this will make UWE the first university in the UK to offer a BIM infrastructure course.

During the presentation I will share my entrepreneurial start-up ideas with other students and staff to encourage them to think out of the box and to explain how, as students, we can work to change the infrastructure industry.

The impact of disturbance on insect communities in North Somerset and the consequences this has for built environment planning

Jade Furlong: Geography & Environmental Management

Jade is a final year undergraduate student at UWE. Her academic interests are GIS and remote sensing, as well as ecology and conservation. When she is not busy studying for University, she enjoys running her website and volunteering at Bristol Zoo. She is presenting her Final Year Project, investigating the impact of disturbance on insect communities.

Abstract:
I investigated the effects that different land use practices have on insect and arthropod communities, focussing on differences between disturbed and non-disturbed land in North Somerset. I identified two different sites with similar characteristics but different land use practices (disturbed and non-disturbed) and placed three pitfall traps randomly within each site. The results show trends, with slightly more insects being found in the non-disturbed sites, with *Formicidae* (ants) being the only species to show the opposite preference. However, I found no significant differences between the disturbed site and the non-disturbed site. This suggests that, when planning new built developments, minor arrangements to mitigate damage to insect communities could be effective. This research should be repeated to verify the results in different areas across the UK.

An investigation into water quality on UWE Frenchay Campus

Jakub Kaczmarek: Geography & Environmental Management

Jakub Kaczmarek is a second-year BSc Geography student at UWE and an enthusiastic PAL Leader. Jakub is delivering a spoken presentation about water quality, researched as part of a level 2 module, and he is presenting a GIS poster. He is hoping to undertake an industrial placement next year to expand his existing skills.

Abstract:
This research investigates the variability of water quality across different water bodies on UWE Frenchay campus. Water bodies on campus are maintained by local site staff to keep them aesthetically pleasing but they are not used for human consumption. The literature highlights the importance of water bodies in urban areas for supporting naturally occurring hydrological cycles and biodiversity. Such water bodies can act as water retention features on campus as they are areas where water collects after rainfall events in the local area.

This research offers suggestions for the future management of ponds and lakes on Frenchay campus by taking measurements of dissolved oxygen levels (DO), salinity, conductivity and dissolved solids. Since some water bodies are managed and others are not, measurements have been compared between the two types to identify if there are any similarities and if management is influencing the water quality. In addition, parameters are tested against each other to check for relationships and to identify possible future goals for management.

The results were very interesting. Some water quality parameters did not vary over time or across water bodies, which could be due to time restrictions of the project. In terms of management, the result show that it might be more beneficial to leave the water bodies to self-regulate and reach a healthy, balanced state.

Tsunami modelling

Sam Williams: Engineering Design & Mathematics

Sam is a third year student reading BSc Mathematics. He enjoys Applied Mathematics, especially the study of fluids, and is going to present his Third Year Dissertation looking at Tsunami modelling. Sam is also a considering continuing his studies with a Masters degree.

Abstract:
The accurate modelling of Tsunamis has always been a critical task in the larger goal of successfully predicting when and where they will strike. While they cannot be prevented, research can allow for sufficient time to evacuate the residents of predicted Tsunami-strike locations. The aim of this project is to model a simplistic re-creation of a Tsunami. To construct this model and re-create the movement of a Tsunami wave, Shallow Water Equations will be used. To simplify the derivation of these equations certain assumptions will be used; i.e. that the depth of the water is shallow. By using several different numerical methods the wave equations can be derived. Ultimately, this will result in code that will be programmed into software called Maple. This software uses mathematical equations to create graphs and animations. In conclusion, Maple will be used to create an animation that will represent a reasonable approximation of the waves and their movement as a tsunami approaches the coast. Once the final model has been completed, this will support future research into the topic, where more time can be spent on techniques that can provide a more realistic model. This can lead to greater understanding of the problems currently faced in Tsunami prediction.

Stream 5:

An enquiry into the importance of social and emotional development in early childhood

Alice Hirst & Elyshia Neal: Education & Childhood

Alice is a diligent and dynamic final Year BA Hons Early childhood student. She has a keen interest in psychology and the importance of social collaboration among young children. Alice has completed the Vice Chancellor's Student Leadership Award and hopes to use these skills in a career in Educational Psychotherapy.

Elyshia is a conscientious and charismatic final year student, studying Early Childhood with a particular interest in neuropsychology and education. She has valuable experience working with children of all ages in various settings, primarily with children who have emotional, social and behavioural difficulties. Elyshia hopes to become a counselling psychologist.

Abstract:
Young children are growing up in an increasingly competitive world; the phrase 'school readiness' is one which is used even in the very early years. Downwards pressure calls for more employable young people, as the job market becomes increasingly competitive, due to factors such as rising population and recession. This presentation reports on a review of literature concerning the importance of young children's social and emotional development, with a focus on how children develop within their school environment, alongside exploring the part society may play in this. We review key factors in social and emotional development in relation to curriculum design and school readiness, critical periods in early childhood research relating to neuroscience and the importance of play and social collaboration with

peers. One of the key concerns driving this research is that the valuable time children have in their educational setting may be spent in an increasingly didactic manner. The literature suggests that a variety of activities benefit children's development and that play and social interaction make critical contributions to early development and learning, which if missed may set children at a disadvantage and lead to difficulties in later childhood, adolescence, and adulthood. This empirical enquiry highlights the importance of young children's social and emotional development and the clear benefits of paying attention to this as a focus within early childhood education and care.

A machine's exploitation of human conditional response patterns for the rock-paper-scissors game

Conor Newcombe & Sherilyn Yorke: Computer Science & Creative Technologies

Conor is a second year Computer Science BSc student. In his free time he particularly enjoys developing applications for Android devices. Today he is presenting his extra-curricular research investigating the exploitation of human conditional response patterns in rock-paper-scissors. Conor is also the Co-Founder and President of the UWE Dodgeball Society.

Abstract:
Past attempts to develop machines capable of demonstrating superiority over human opponents in Rock-Paper-Scissors (RPS) have adopted machine learning techniques, most using an Artificial Neural Network (ANN). However, this method comes with its disadvantages; notably the black box problem, leading to the difficulty of explaining the strategy an ANN may learn to use. The aim of this research will be to design, build and test the superiority of a finite state machine (exploit machine) implemented with a conditional response (CR) strategy designed to exploit the CR patterns humans display, as seen in the empirical evidence of previous studies. This research will produce two sets of results to which comparisons and conclusions can be drawn. The control set of results will derive from simulated RPS rounds between the exploit machine and a random RPS action generator. The test set will take results from RPS games played between the exploit machine and human participants. In order to collect the test data, the exploit machine will be imported into a mobile application. Results from the RPS rounds against human participants will be sent to a remote server for observation. It is anticipated that the exploit machine will demonstrate superiority over human test subjects through the implementation of a strategy, rather than the learning of one. The implication is that a machine does not need to learn a strategy in order to win against human opponents; rather it can be implemented with such strategy through our own understanding. This begs the philosophical question of whether this would be an achievement of humans or machines.

Can low impact make a big impact? Exploring the influence of two Low Impact Developments in relation to adoption of sustainable attitudes and behaviours

Eileen Barron: Architecture & The Built Environment

Eileen Barron has recently completed a Masters degree in Housing and will be presenting the research undertaken for her Masters dissertation which focuses on behavioural change relating to sustainability with specific reference to Low Impact Developments. Eileen currently works as Neighbourhood Officer for a housing association and also sings in a local jazz band.

Abstract:
Climate change is of growing global concern because of the disruptions it is having and is likely to have on the environment and society. To limit the impact of climate change the behaviour of businesses and individuals needs to become more sustainable. This research focuses on what influences individuals to adopt more sustainable behaviour. This was achieved through an extensive study of relevant literature on psychological tools used to influence individual behavioural change as well as empirical research. The latter was carried out through a case study of two Low Impact Developments, using semi-structured interviews with residents and visitors, and structured interviews with members of the public in local towns. Low Impact Developments are residential communities which have minimal impact on the environment, through design features of the build and the organisation of daily living. There was also an analysis of on-line digital presence for these Low Impact Developments. This research produced a number of key findings. Both Low Impact Developments actively share information, knowledge and skills about sustainable living and both have inspired modelling behaviour. Visits to the Low Impact Developments lead to changes of attitude relating to sustainability as well as behavioural changes. The main conclusion drawn from this research is that elements demonstrated by both Low Impact Developments can be used to promote sustainable living.

Virtual Reality and technology in mental health therapies – the future of psychiatry?

Ibrahim Kalloufi: Computer Science & Creative Technologies

Ibrahim is an MSc Information Technology student with a strong research interest in human-computer interaction and the application of computer technology for mental wellbeing. He is an accomplished software developer and combines his interest in IT and psychology to research novel topics.

Abstract:
The estimated cost of mental health issues in the UK is around £70-£100 billion, with 1 in every 4 people suffering from a mental illness each year (National Statistics, 2009). Many of these disorders do not require drug therapy, but as there are not always enough resources to offer counselling, medicines remain the first choice in treatment. The availability of technological advances combined with the lack of medical professionals and cost-related issues in traditional therapies has lead mental health professionals to turn to these new technologies, but the question is, are computerised therapies the future of psychiatry?

My aim is to compare the efficacy of traditional psychiatric treatments, such as talking therapies (counselling) and drug therapies, to the latest methods in psychiatry treatment, such as virtual reality therapy (VRT) and computerized CBT (CCBT), with a focus on the most common psychological abnormalities, such as phobias, anxiety and depression. I will conduct secondary research by reviewing relevant and up-to-date literature in the area and will contact some psychiatry practitioners who use these technologies in their treatments. I hypothesise that although these technologies should be used as alternatives for traditional therapies when necessary, they cannot match the benefits and efficacy levels of traditional therapies. This will demonstrate that computers cannot replace humans in mental health care and will highlight the main differences between these technology-based therapies and traditional therapies. The research will also demonstrate the limitations and the need for more research in the area, as these recent technologies have not existed for long enough to judge the long-term benefit based on evidence.

Poster Papers (Formal presentation 15:00-16:00)

A model-driven provenance informed framework to support analytics in the smart city policy-making process

Barkha Javed: Computer Science & Creative Technologies

Abstract:
The significance of provenance in various settings has emphasised its potential in the policy-making process for Smart Cities. At present, there exists no such system that can capture the provenance in a policy-making setting. This research, therefore, aims at capturing the provenance of the policy-making process to support policy analytics. However, this is not a straightforward approach and has a number of associated challenges of which the varying nature of polices, diverse stakeholder involvement, and the large number of cooperating departments are a few. This research aims at addressing the changing demands of policy-making processes and challenges associated with provenance management. Therefore, a focus of this work is to develop a generic provenance framework that will be suitable for various policies. In this respect, this study aims at using a Model-Driven Engineering (MDE) approach. In order to define the provenance framework for analytics, city councils' current processes are being studied in detail. Furthermore, case studies from the UK, Hungary, Turkey, and Portugal have been employed to uncover requirements and conceptualise the provenance framework. The proposed system will not only benefit city planners but will also assist citizens by providing them with better services.

Can Sophie Take Care of Herself? An analysis of contemporary published responses to a work of art

Linda Williams: Education & Childhood

Linda is in her final year at UWE studying for an MA in multidisciplinary printmaking at the Bower Ashton campus. She enjoys exploring the use of text in art and text as art. Her practice includes screen printing and making artists' books.

Abstract:
My aim for this research was to investigate responses to a work by the French artist Sophie Calle, *Take Care of Yourself*, first shown at the Venice Biennale in 2007. She had received an e-mail from a man breaking off their relationship. She wrote to 107 women about this letter, and presented a work of their individual replies framed on the wall, paired with photographs of the women. She also produced the whole work in book format. I analysed my own responses to the work, and I searched for contemporary newspaper reports and journal articles to see how the work was received and portrayed. I was interested in this work as a physical example of text as art. My studies also helped me to understand my own responses to it as a woman of a certain age. The writing was not her own and yet the work was her intellectual property through her ideas and collation. The work took on its own further identities through the readers and critics who made of it what they could from their own experience. Assumptions were made that she was a femme fatale; this initially annoyed me until I found out that she herself played along by providing a tiger skin as a prop. I present a poster designed as a newspaper to reflect both the reports and the importance of original research. Before reaching any conclusions it is important to be aware of our own biases and those of others. Even truth relies on interpretation and point of view.

Pro Bono – Eastville Old Library Transfer

Didem Kekilli, Chloe Frost, Mun Too & Laura Ramos Montanez: Bristol Law School

Abstract:
In September 2015, Bristol City Council announced its decision to close Eastville Library after controversial budget cuts. After determined protests, campaigns and petitions from the local community, the Council offered the opportunity to lease Eastville Library through a Community Asset Transfer which would enable groups and organisations to take over the Library. A lot of paperwork and an interview later, a local community interest group was selected to submit their business plan to the Council. This brings us to today. The UWE Social Enterprise Pro Bono team, made up of 4 students and supervised by two Senior Lecturers from the Law Department, are working for the community interest group to enable a smooth transfer of what is now The Old Library. We are planning to complete by the end of February and to ensure this deadline is met, the Pro Bono team have worked tenaciously making sure all necessary stages are carried out. This has included pre-contract enquiries and searches, negotiating the terms of the lease, preparing a lease report and looking ahead to prepare completion formalities. We are passionate about this project as it has a fantastic ethos: to build a more social, safe and empowered community, making positive changes and providing resources wanted and needed by the neighbourhood. The facility is currently open and has already been a huge success. The Library boasts a cosy café, play area, computers and lounge space, and it hosts activities and workshops, along with a community-run book swap and an edible and sensory garden. Most importantly, this project is run by the community, for the community.

Exploration into the limits and opportunities in integrating with the European Union: A case study of Slovakia, Slovenia, Lithuania and Latvia

Keely Vanderlinden: Bristol Business School

I grew up in Belgium in a multicultural environment, completing my secondary education at the European School of Brussels. Joining the Eurozone appeared to be the perfect answer to unite European countries in diversity and I wanted to discover if this was truly the case.

Abstract:
Lithuania, Latvia, Slovenia and Slovakia joined the European Union simultaneously in 2004, followed by staggered entry into the Eurozone between 2007 and 2015. During this period, each country experienced different levels of economic growth. This study aims to examine these patterns and the extent to which they can be attributed to joining the EU and the Eurozone. The analysis aims to review a range of indicators including GDP, imports, exports, unemployment rate and inflation rate. These indicators will be differentiated between, through analysing the structure of the economies in question.

The study anticipates finding principle factors such as unemployment rate, inflation and imports showing signs of convergence across the four countries, with levels of GDP staying constant and exports showing divergence, particularly in Slovenia since 2003. Growth theories will be used to explore why certain factors are showing convergence whilst others display divergence, but it is expected that no single factor such as integration into the EU can explain these trends. A better understanding will emerge by viewing the economic starting point, changes in the structure, obstacles encountered and relevant internal and external economic or political factors. As most of the integration took place during the

financial crisis, this research is made even more complex. Studies have been conducted on the integration of individual countries, but none comparatively examine the four Eurozone members in Eastern Europe. Through studying the past 20 years new insight will be gained into the economic performance of these countries and how the EU has contributed towards this.

Investigation into Carbon Fibre Reinforced Plastic (CFRP) drilling methods

Adam Neal: Engineering Design & Mathematics

Adam is a final (third) year student studying BEng Aerospace Engineering. He is presenting his Final Year Project research, undertaken here at UWE, examining the impact of drilling on Carbon Fibre Reinforced Plastic (CFRP) and how to get the best results.

Abstract:
The overall aim of this study is to establish the optimal drilling method for the smoothest holes when drilling into Carbon Fibre Reinforced Plastic (CFRP) as well as when drilling into aluminium. The results will be compared to a Finite Element Analysis (FEA) simulation of the drilling. A series of experiments will be conducted involving drilling into CFRP and aluminium individually and recording the outcomes. The same experiments will be simulated on a computer using FEA software for comparison. It is expected that the simulation findings will differ from the actual experiments. This is due to the fact that FEA simulations use a numerical method to calculate the results and numerical methods make assumptions which may not be replicated in reality. The effects of this can be reduced with more data points but this requires more computing power.

The integration of unmanned aerial vehicles into civil airspace

Amy Bulman: Computer Science & Creative Technologies

Amy is a final year student studying Information Technology. She is presenting research from her dissertation investigating the integration of unmanned aerial vehicles (drones) in civil airspace. She is a Student Ambassador and Student Representative at UWE. She also enjoys rowing, and is a member of the UWE Boat Club.

Abstract:
The much-publicised trials of Amazon's Prime Air delivery service in late 2016 brought the issue of unmanned aerial vehicle (UAV) usage in civil airspace to the attention of the general public. UAVs offer potential benefits to both the commercial and civil sector by reducing operating costs, increasing flexibility and eliminating risks compared to a manned aircraft. Commercial usage could include deliveries, security and advertising. In the civil sector UAVs could support search-and-rescue operations, infrastructure maintenance and disaster management. At present, UK regulation permits UAVs to operate in civil airspace with certain limitations, such as remaining within the operator's sight at all times. In some cases, the UK has permitted tests to take place beyond these limitations, as was the case for Amazon Prime Air.

This study investigates whether UAVs are ready for integration into civil airspace, by examining three key areas: the technological, regulatory and social requirements, and evaluating these against the current state of technology, regulatory framework and public

opinion. Technical requirements include an effective collision avoidance system and reliability of systems and operations. Furthermore, UAVs will need to be 'visible' to other airspace users and interoperate with the existing air traffic control system. Regulatory requirements include the need for certification standards to ensure acceptable quality of UAV systems, operations and operator qualifications. The social requirements include gaining widespread acceptance for UAV usage from the general public, by addressing issues such as privacy and liability concerns.

Testing for equal variances in a statistical no man's land

Annalise Thompson: Engineering Design & Mathematics

Annalise is a final year mathematics student at UWE and has a particular interest in statistics. She is presenting her final year project work exploring the robustness of a new statistical technique for testing the equality of variances in partially overlapping samples. Annalise enjoys singing, playing the flute and is an avid crocheter.

Abstract:
There are a number of well-established statistical tests which can be used to examine whether the variance of two independent samples is equal. There are also well-established tests for equality of variances in paired samples. However, not all data falls neatly into the category of independent samples or dependent and, in this instance, the data is known to some as being 'partially overlapping'.

There is no agreed method for comparing the variance of data for partially overlapping samples. This project aims to introduce new tests for assessing equality of variances when the data is partially overlapping.

This research will use simulations to test whether new partially-overlapping samples t-tests are better at determining whether variances are equal compared with well-established tests for equality of variances. It is expected that the partially overlapping samples t-tests will be better at determining whether or not variances are equal as they have been specifically designed for the case of partially overlapping data. The research further considers four variations of the partially overlapping test statistics, each of which draws on existing tests in its formulation. Should these tests perform as expected, they will provide a more powerful method for comparing variances than any of those which have been previously suggested and provide a test that can be used with confidence.

Multi-Criteria Decision Making – Allotments in Bristol

Jakub Kaczmarek: Geography & Environmental Management

Jakub Kaczmarek is a second-year BSc Geography student at UWE and an enthusiastic PAL Leader. Jakub is delivering a spoken presentation about water quality, researched as part of a level 2 module, and he is presenting a GIS poster. He is hoping to undertake an industrial placement next year to expand his existing skills.

Abstract:
This poster presents a multi-criteria decision project to identify areas suitable for the development of new allotments in Bristol. The criteria used were aspect, slope, soil type, land use, proximity to main roads, ward crime count, and flood risk. Each criterion was

scored on a scale of 1 to 10, with 10 being most favourable. Each criterion was weighted differently depending on how much influence it had on the result. Research outputs, created in a Geographical Information System, were plotted on a base map of the Bristol region obtained from DigiMap. Understanding of remote sensing was applied when producing the results.

After scoring each area based on the data dictionary score of each criterion, a summary map was produced outlining the most suitable areas. Additional supporting maps of each criterion are also presented on the poster as a guide to how the final map was established. Ongoing peer and lecturer feedback given throughout the project ensured a high standard of final result.

A comparison of analytical methods for two group pre-post design

Vanessa Allis: Engineering Design & Mathematics

Vanessa is a final year student studying BSc Mathematics at UWE. Vanessa has spent the past year on placement working in the statistics department at the Welsh Government. She has designed a poster presenting her work from her final year project in statistics. Vanessa is a Student Ambassador at UWE, enjoys travelling and has visited 16 countries.

Abstract:
A common design in empirical research is the two group pre-post design. The general structure of this design is random allocation of participants to one of two intervention groups (Group A and Group B, commonly "treatment" and "control") with measures on participants taken pre- and post-intervention. This design is frequently used in medical, bio-science, health, education, and psychology research programmes and it is a design that is commonly regarded as producing good quality research evidence. Despite this being a common design, there is no consensus on the most appropriate method for the analysis of the resulting data. Examples and computer simulations are used to compare ten different analytical methods for this design.

The different methods of analysing the data will be tested using an example to demonstrate that some seemingly different approaches are numerically and logically equivalent. The remaining distinct analytical techniques are compared for statistical validity and statistical power via simulation. The methodological aspects of the simulation design, the comparative findings, and broad recommendations are given.

Increasing student engagement with UWEmobile

Clare Chia: Computer Science & Creative Technologies

Clare is in her final year at UWE studying digital media. She particularly enjoys designing beautiful UI(User Interface) with well thought out UX (User Experience) and she is presenting her Final Year Project research. Clare has a passion in web development as she has been crafting websites for 3 years prior to joining UWE.

Abstract:
With globalisation happening over the last few decades, there is an increase in number of international students from around the world (Espinoza, 2015). The challenges to integrate this large number of international students into universities are evolving and

multidimensional (OECD, 2013). Using a qualitative research method by conducting semi-structured interviews with 10 international students in Bristol, the findings indicated that the students were not confident enough to create opportunities to speak to domestic students due to factors like language barriers, cultural proximity, and differences in social conventions. As a solution, the present paper explores how integration among international and domestic students can benefit from an asynchronous online discussion board on- and off- campus using the UWEmobile application.

Assessing uncertainty as a result of LiDAR data error in sea level rise modelling

Harry West, Michael Horswell & Nevil Quinn: Geography & Environmental Management

Harry is undertaking a Masters by Research (MRes) in the Department of Geography & Environmental Management. He specialises in the application of GIS (Geographic Information Systems) and spatial analysis to a range of geographical and environmental science research areas. At this conference Harry is presenting work undertaken over the past year looking at flood prediction uncertainty when modelling future sea level rise scenarios.

Abstract:
Climate change induced sea level rise (SLR) is one the key management issues facing the world's coastlines; under worst case scenarios sea level is estimated to rise by up to 1.5m. As such, there is a growing need to develop models to assess the likely impacts of SLR allowing for appropriate policy decisions to be made. One key data input into such models is elevation data in the form of Digital Elevation Models (DEMs). In basic simulations the use of DEMs allow for the delineation of coastal areas that lie below a given SLR projection. The accuracy of DEMs will therefore have an impact on the SLR assessments they are used in. All DEMs, including perceived high resolution datasets such as LiDAR, are subject to error in their vertical accuracy which constitutes uncertainty.

This project aimed to examine the influence this inherent error has on the flood extent and depth prediction for two SLR scenarios using the Exe Estuary, Devon as a study site. This was achieved through the use of Monte Carlo simulation and the generation of elevation iterations based on the UK Environment Agency's 1m LiDAR resolution data with a reported vertical accuracy of 0.10m. The results show that there is uncertainty present in the prediction of both flood extent and depth as a result of data error which is likely to have implications for coastal zone management. Following this, the elevation range where extent uncertainty occurred was identified and notable characteristics examined, revealing the effect of current coastal defences on uncertainty. This then opened the opportunity for the application of this zone of uncertainty through mathematical models to other estuaries. Prior to this, the models were tested against the predicted uncertainty for the Exe Estuary, which revealed some over-estimation of overall flood extent and uncertainty in areas where large coastal defences are present.

Intensive agriculture and water quality: The Komati River, Swaziland

Deborah Smith: Geography & Environmental Management

Deborah is in her final year at UWE reading BSc Geography and Environmental Management. She enjoys studying 'Managing Rivers and Coasts' and is presenting research from her undergraduate dissertation looking at how intensive sugarcane farming in Swaziland is impacting on the quality of water in the Komati River.

Abstract:
This research investigates the impacts of commercial scale sugarcane plantations on the water quality of the Komati River, Swaziland. The growth of irrigated sugarcane in a monoculture can cause a reduction in soil quality, increasing the need to apply fertilisers which can pollute nearby water sources. Remote sensing was used to establish a sampling frame, to map and quantify intensities of land use along the river, and to identify safe access points. A sampling point upstream of the Maguga Dam, where agricultural practices were low or non-existent, established a water quality control. Water samples were collected downstream of the dam where the land use of farming either side of the river became more intensive, the last sample being taken at Mananga Bridge before the river enters South Africa. Water was tested for the macronutrients of nitrate, phosphate, and potassium, which are the main fertilisers applied on the sugarcane plantations. Levels of nutrients in the water were measured using a Palintest photometer. Statistical analysis showed phosphate and nitrate levels increased in a downstream direction along with land intensity. Potassium levels indicated no clear trend. A research extension indicated that the use of reed beds could be used to reduce high nitrate levels in the water, reducing pollution levels.

An investigation into the effects of *Rhododendron ponticum* on the physical environment and species diversity at Tortworth Arboretum, Gloucester

Bethan Smith: Geography & Environmental Management

Bethan is a final year student reading BSc Geography. She enjoys being in nature and studying geology and ecology. She is presenting her Final Year Project research, undertaken at Tortworth Forest Centre where she volunteers regularly.

Abstract:
If you research *Rhododendron ponticum* you are likely to find comments including "killer of the countryside" and statements about how damaging the evergreen shrub is. With research on the economic costs of *Rhododendron ponticum* in the UK increasing, there is nevertheless an absence of detailed information as to why the shrub is dangerous. As such, this research focuses on the abiotic and biotic factors that are affected by the presence of *Rhododendron ponticum.* The research aimed to investigate the effects of *Rhododendron ponticum* on the physical environment and species diversity at Tortworth Arboretum, Gloucester, a site managed by Tortworth Forest Centre. The following questions were examined:

1. How does soil pH change along a transect away from the *Rhododendron* site?
2. How does soil nitrogen and phosphate change along a transect away from the *Rhododendron* site?
3. How does vegetation cover change along a transect away from the *Rhododendron* site?

4. Are there significant differences in the results between a site with no *Rhododendron* and a site where *Rhododendron* has been removed?

Measurements were taken every 0.5m along 5.5m transects at compass orientations of north, south, east and west for each site: two sites where *Rhododendron ponticum* had been recently removed and a site where it had not been known to be present. It is expected that sites with *Rhododendron* will have more acidic and nutrient-poor soils as the shrub thrives in these conditions. It is also expected that vegetation cover will be lower due to Rhododendron's shading properties. The results can be used to inform *Rhododendron* management at the site in future.

Investigating the effect of acute and chronic ethanol exposure upon intracellular levels of branched-chain alpha-keto acid dehydrogenase

Harry Finch & Myra Conway: Applied Sciences

Harry is studying biochemistry at the University of Manchester and is on an industrial placement year at UWE working with Professor Myra Conway's research team. He is particularly interested in cell metabolism and metabolic regulation and is presenting a poster on research undertaken in the first semester of his placement.

Abstract:
Autophagy is a cellular process which is responsible for mitochondrial turnover and organelle degradation within cells, maintaining cellular homeostasis. Organelles and cytoplasmic proteins are transported to lysosomes where they are degraded by lysosomal hydrolases. Autophagy is induced and upregulated in cells when they are under stressed conditions, such as starvation or accumulation of protein aggregates induced by reactive oxygen species (ROS) (Lee et al. 2012). Branched-chain alpha-keto acid dehydrogenase (BCKDH) is a mitochondrial enzyme which functions as part of a multi-enzyme complex. When cells are in a fed state, the BCKDH enzyme complex catalyses the second step in branched-chain amino acid catabolism (Koybayashi et al. 1999) and produces substrates for both the Krebs cycle and lipogenesis. However, the specific relationship between BCKDH and autophagy is unknown.

This study investigates how different micronutrients such as ethanol affect both autophagy and BCKDH levels within cells and how these changes compare to those induced by ROS. Comparisons were made between the BCKDH levels in cell cultures exposed to hydrogen peroxide, acute and chronic ethanol exposure and rapamycin (a positive control for autophagy). We also investigated the effect of known antioxidants N-acetyl cysteine and L-glutathione on BCKDH levels in cell cultures exposed to ethanol. If the antioxidants can reverse the effect that ethanol has upon metabolic energy systems then future studies should investigate if antioxidants can be used as treatments for disorders caused by ROS. Furthermore, dysregulation of autophagy is a known cause of neurodegeneration and it is important to identify different micronutrients that increase or decrease dysregulation occurring, to identify possible treatments.

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Exploring the impact of YouTube vlogging as a new form of advertisement on body image: Does social comparison have an impact?

Jade Parnell & Emma Halliwell: Health & Social Sciences

Jade completed her Master's in Health Psychology last year and has since taken up a role as research associate for the Centre for Appearance Research (CAR) at UWE. Her research interests focus primarily on the role of the media on people's appearance and body image. She is presenting a poster on her Master's research project, which examines the impact of YouTube vlogging on women's body image. The project was supervised by Dr Emma Halliwell.

Abstract:
This study aimed to investigate an alternative form of advertisement by evaluating the impact of YouTube sponsored vlogging advertisements on women's body image. Participants were randomly allocated to three conditions, a YouTube vlogger condition; involving an advertisement video featuring a video blogger (vlogger) being sponsored to advertise products; a traditional advertisement condition, involving television adverts with female models; and a control condition, featuring advertisements without human models. Outcome measures of body image, social comparisons, thin-ideal internalisation, media pressures and advertising effectiveness were analysed. Results found a significant negative effect on all aspects of body image, except attractiveness, after exposure to traditional media advertisements. By contrast, YouTube vlogging advertisements did not have a significant impact on body image. Social comparisons were found to significantly influence the effect of advertisement condition on body image, with exposure to traditional advertisements leading to significantly more social comparisons. Internalisation of the thin ideal and perceived media pressures did not have an effect. YouTube vlogging advertisements were found to be just as effective as traditional advertisements. Findings indicate that vlogs on YouTube as sponsored advertisements are just as effective as traditional advertisement, but in contrast to traditional advertisements, YouTube vlogging does not appear to have a significant negative effect on women's body image. Social comparison is assessed as a leading factor.

The impact of micronutrients and alcohol on autophagy

Jasmine Davis, Mai Shafei & Myra Conway: Applied Sciences

Jasmine is a final year student studying Biomedical Science and particularly enjoys biochemistry. The research she is presenting is from her undergraduate project titled "The Impact of Micronutrients on Autophagy". Jasmine is a student representative for her course and likes running and yoga.

Abstract:
Understanding the underlying biochemical processes of disease, such as breast cancer, is important for the development of new treatments. Autophagy is a cell survival mechanism whereby the degradation of organelles and long lived protein generate nutrients for pathways such as the TCA cycle. This pathway is regulated through the activity of the mammalian target of rapamycin (mTOR), which is controlled by nutrients such as amino acids, in particular the branched-chain amino acids (which are metabolised by branched-chain aminotransferase, BCAT). mTOR activity is increased under fed conditions resulting in autophagy inhibition.

Autophagy suppression can cause oxidative stress, genome instability and the activation of the DNA damage response, all of which contribute to the pathogenesis of breast cancer. However, the underlying mechanisms through which these pathways influence pathology remain unknown. Here, our aim was to evaluate the impact of starvation and nutrient rich conditions in breast cancer models (MDA-MB-231, triple negative; SKBR3, HER2 positive cell lines) by using autophagy and metabolic markers (LC3 and BCATm/ BCATc, respectively). In addition, a neuronal cell line (SHSY-5Y) was included for comparison of BCAT behaviour across cell lines.

Using confocal microscopy, a technique that allows visualisation of protein co-localisation within a cell via fluorescent labelling, analysis of cell lines demonstrated that in response to starvation metabolic proteins and autophagy are differentially expressed compared to control. Moreover, expression varied between cell lines, and based on these findings, this indicates a differential response in autophagy and metabolic proteins in different breast cancer subtypes. This research suggests that branched-chain amino acid metabolism may contribute to autophagy dysregulation in breast cancer models, but further work using western blot analysis will be required to validate these data. These findings provide insight into the role of BCAT and its biological interaction with autophagy, and thus its potential application as a novel biomarker of breast cancer.

How are occupational therapists addressing the needs of adults undergoing cancer treatments?

Mary-Jane Sweeting: Allied Health Professions

Mary-Jane is a final year BSc Occupational Therapy student. She is particularly interested in long-term condition management and public health, and is presenting research from her undergraduate dissertation exploring current occupational therapy practice with adults undergoing cancer treatments. Mary-Jane is treasurer for the Occupational Therapy Society and enjoys travelling.

Abstract:

- *Overall aim:* Occupational therapists work with people to identify how illness and treatments are impacting their ability to do the things they want and need to do (their "occupations"), and work with patients to overcome these difficulties via various interventions. Cancer and its treatment can have physical, psychosocial and economic effects on patients, both during active treatment and long-term. Rehabilitation, including occupational therapy, starting at the point of diagnosis has been identified as part of government strategy to deliver a 'world-class cancer service' in England. There is, however, a lack of literature describing occupational therapy practice in cancer rehabilitation, with the majority of literature focused on palliative care. With more people living with and beyond cancer than ever before, this is an area that requires further research.
- *Design and methods:* This study will take a qualitative approach, examining the practice experience of occupational therapists working with adults undergoing cancer treatment. Telephone interviews will be conducted to explore occupational needs identified with this client group, and interventions being used to address these. Thematic analysis will be conducted on the interview transcriptions. This study has received ethical approval.
- *Anticipated findings:* Findings are expected to include how occupational needs are identified, types of needs, and whether the therapists meet these needs. It is anticipated that therapists may identify needs that they are unable to meet and this may highlight gaps in service provision.

- *Expected conclusions and implications of research:* Conclusions will be drawn about the interventions occupational therapists are offering to adults undergoing cancer treatment and whether these are meeting their identified occupational needs. This data may be used to compare current practice with recommendations in NHS England's strategy for cancer services (Independent Cancer Taskforce, 2015).

Detection of DNA on clothing using VMD

Sofia Vrettou & Helen Green: Applied Sciences

Sofia is a full-time master's student studying Advanced Forensic Analysis at UWE. She enjoys research and lab work and she is presenting her final project which is about VMD processing and DNA contamination. A fun fact about Sofia is that she spends her summer sailing in the Greek islands.

Abstract:
Vacuum Metal Deposition is a highly sensitive technique for detecting latent finger-marks on smooth, non-porous surfaces. It consists of coating a substrate with a thin layer of metal. It takes place in a low atmospheric pressure when the metal is heated until it evaporates and deposits onto the surface to be coated. This surface must be cleaned prior to coating as the deposition process is very sensitive to surface contamination. A number of volunteers will be recruited for finger-mark deposition on different types of fabrics. The donors should be both male and female and range in age and in the ability to deposit finger-marks which will be ascertained using VMD processing of paper and plastic bags. The fabrics that will be used will differ in type. Finger-mark deposition will occur in a 48-hour period. Samples will be stored for a different number of days and then processed with VMD. Finger-marks can be collected using swabs moistened with water.

This project focuses on the contamination between VMD cycles. Using the appropriate method, the chamber will be swabbed between samples. The swabs will be then quantified using different kits and PCR parameters. Control samples will come from mouth swabs previously taken from the volunteers. A difference between DNA profiles would indicate contamination between the VMD cycles. Is there is any contamination between the VMD cycles, mixed profiles after the DNA analysis are expected? The whole project should last approximately 3 months, covering at least 200 hours of laboratory work.

Our Journey so far … reflections of BME Paramedic Science students

Safiya Hirsi, Hatra Yacub, Anisa Rafai, Faduma Farah, Celine Mumvadi & Jeff White: Allied Health Professions

Safi Hirsi is a 29 year old Paramedic student and mother of four. For nine years, Safi worked in a care home for elderly residents who suffer from dementia. From undertaking this role she gained a passion to help others. This passion led her to pursue study in Paramedic Science at UWE, a course she finds challenging, exciting and fulfilling.

Abstract:
This poster presentation will provide a broad insight into the complexities that students from a BME background experience in higher education. In addition, a complexity for health students is exposure to clinical practice, where again there are limited role models from a BME background, thus making mentoring and assessment a challenge. Based on the results

from student voice workshops undertaken by the Faculty of Health and Applied Sciences, this complexity makes it less likely that students from a BME background receive a good honours degree and face challenges such as racism and unconscious bias, both in academic and practice settings. Personal tutors for the BSc (Hons) Paramedic Science are cognisant of the challenges and are being supported to work with these students on their unique journey.

The impact of ethanol and zinc on mitophagy

Chloe Beard, Grace Okoro & Myra Conway: Applied Sciences

Chloe is a third-year Biomedical Science student. She is presenting research from her final year undergraduate project looking at the effects of ethanol and zinc on mitophagy, the selective degradation of mitochondria by autophagy - a recycling process which maintains cellular homeostasis through clearance of damaged proteins and organelles.

Abstract:
In Alzheimer's Disease (AD), accumulation of proteins and a chemical imbalance in the brain are thought to initiate several processes, ultimately resulting in synaptic and neuronal damage. Neuropathological features of AD include loss of neurones, intracellular neurofibrillary tangles (hyperphosphorylated tau protein) and extracellular senile plaques (amyloid-β deposits). Events governing these pathologies are not yet well understood, however many metabolic processes, including dysregulation of autophagy are thought to be involved. The autophagy-lysosome pathway is important in clearing misfolded proteins or damaged organelles, likely to precede formation of plaques or tangles. In aging neuronal cells, damaged organelles, like mitochondria, must be cleared by autophagy to maintain appropriate intracellular homeostasis – removal of damaged mitochondria is termed mitophagy. Both ethanol and zinc have been shown to induce autophagy in the brain and thus the hypothesis is that mitophagy may also be induced.

Here we show, through co-localisation of the BCATm protein, a mitochondrial metabolic protein, and autophagy marker, LC3, that both ethanol and zinc induce mitophagy in neuronal cells. Mitochondria both generate and are targeted by reactive oxygen species, with dysfunction prominent in age-dependent diseases. Thus, by showing that ethanol and zinc induce mitophagy, the door is opened to further investigations into whether these could have a role in the underlying pathology of AD. Due to their non-dividing nature, neurones are highly dependent on mitochondrial respiration, leaving them more likely to accumulate oxidative damage, stressing the importance of quality control of organelles, like mitochondria within the cell. The dysregulation of processes like mitophagy could therefore provide insight into events that precede the formation of plaques and tangles in AD, thus leading to new treatment methods.

Antifungal efficacy of selected essential oils against *candida* sp.

Olatunde Akande: Applied Sciences

Olatunde Akande is a third year student of biomedical science. He is a lover of human biology with an eagerness and commitment to work in a biological, health and/or research field with a focus on infectious diseases. His love for research and scientific breakthroughs motivated him to work diligently on his presented project.

Abstract:
Over the years, fungal microbes have been a prevalent cause of several local and systemic clinical infections due to their ability to colonize ecological niches of healthy individuals. *C. albicans*, a member of the *Candida* family, is the major causative agent of infections such as thrush, yeast infections and other human opportunistic infections (Oro *et al.*, 2015). With the growing issue of antimicrobial resistance, scientists have turned to essential oils as a natural means of treating various infections. Essential oils have shown some characteristics which have helped them to be efficient in the fight against microbial diseases. The aim of the experiment is to test the efficacy of three essential oils (clove oil, lavender oil and lemongrass oil) against *C. albicans*. Firstly, the growth kinetics of the *Candida* spp. was calculated in cfu/ml, a disk diffusion was carried out (via direct contact and volatility) and finally the MIC/MFC 0.5%v/v was undertaken to determine the antifungal resistance and susceptibility to the selected essential oils (Hammer *et al.*, 1999). Lemongrass proved to be the most effective essential oil with an MIC of 0.06% and MFC of 0.07% and an average diameter of 46mm on direct contact disk diffusion. However, clove oil proved to be the most volatile of the three selected essential oils with an average diameter of inhibition of 60mm. The experiment has helped to show the clinical importance of essential oils of natural derivative sources and how they can be implemented into clinical healthcare to treat patients with certain fungal infections such as athletes foot and candida vaginosis.

Comparing the robustness of test statistics

Antonia Broad: Engineering Design & Mathematics

I am currently in my final year at UWE studying mathematics. I enjoy mathematics, especially statistics. I shall be presenting my Final Year Project research, which I am currently undertaking. I am a student Ambassador at UWE and a member of the women's cricket society.

Abstract:
The main topic under investigation in this research is two group pre-post design with missing data. An example of this is taking subjects who are split into two different groups and are recorded at baseline and post-treatment. However, issues can occur when several participants drop out (or, in some cases, data is missing altogether). The usual response would be to remove those cases with any missing data and then work purely with complete cases. It is known, however, that this procedure can cause biased results.

The aim of this project was to develop a new statistic that can make use of all the available data and not remove any missing observations. To reach this aim a worked example was firstly completed to check the proposed test worked. After this, a simulation was designed and subsequently run. Following this, an analysis of the simulation output was completed. It was found that the proposed test appeared to work well when using data that included missing observations and when using data that did not include missing observations. The expected conclusion of this project is that the proposed test statistic will be able to be used within a study when missing data exists, rather than removing the missing observations.

Investigation of the sensitivity of TK6 cells to etoposide upon nutrient restriction

Charlotte Collier, Francesca Lockie, Prachi Patel & Jonathon Hull: Applied Sciences

Charlotte has just returned from her placement year at Virginia Commonwealth University and is now in her final year at UWE, reading for her degree in Biomedical Science. She is presenting research from her Final Year Project "Investigating the sensitivity of TK6 cells to etoposide upon nutrient restriction".

Abstract:

- *Introduction:* Exploring amino acids in the diet may be important for better treatments in patients with leukaemia. The branched-chain amino acids (BCAAs), leucine, isoleucine and valine are three of the nine essential amino acids required for protein synthesis. Their reversible transamination is catalysed by the human branched-chain aminotransferase (hBCAT) enzyme of which there are two isoforms; cytosolic (hBCATc) and mitochondrial (hBCATm). It has been previously observed that hBCATc is expressed by healthy leukocytes, whereas hBCATm is expressed by leukemic cells; therefore, this research investigated whether the restriction of BCAAs increased the sensitivity of leukemic cells to etoposide.
- *Methods:* The leukemic cell line TK6 was cultured in complete RPMI 1640 growth medium containing 10% foetal calf serum and 2mM L-glutamine. Cells were incubated at 37°C under 5% CO_2. Cells were treated in custom medium containing all amino acids, BCAA restricted medium, L-leucine and L-glutamine restricted, L-valine and L-aspartate restricted or L-isoleucine and L-valine restricted medium and exposed to various concentrations of etoposide so that final concentrations were 0, 0.1, 1.0, 5.0, 10.0 and 20.0μM respectively. Cell viability was assessed at 24 hours via Trypan Blue Dye Exclusion, Neutral Red (NR) and MTS assays.
- *Results and Discussion:* For the first time, this data indicated that upon nutrient restriction, even without exposure to etoposide, cell viability was significantly reduced when compared to the viability of cells cultured in medium containing all amino acids. This result was observed in both NR and MTS assays ($p<0.0001$). Increasing concentrations of etoposide were also seen to have a significant effect on cell viability in both NR and MTS ($p<0.0001$ and $p = 0.0138$, respectively). These findings could lead to a novel therapeutic approach combining dietary restriction of BCAAs with common chemotherapeutics such as etoposide.

Examining the reliability of the Tower of London-Revised in self-reported healthy older adults

Laura Bishop, Kiren Bains, Katerina Stankova & Rose Vincent: Health & Social Sciences

Laura is a second year psychology student with keen interests in neuropsychology and the psychology of robotics. Laura and her co-presenters have recently assisted on a research project establishing the best measures for predicting early cognitive change in atypical ageing. Some of this work will be presented today.

Abstract:

Each year people suffering from the early stages of dementia go undetected despite research showing premature decline in executive functioning to be a good indicator of the

disease (Mortamais et al, 2016). The Tower of London-Revised (TOL-R; Schnirman, Welsh & Retzlaff, 1998) is a measure of executive functioning with the potential to detect early cognitive change in normal and abnormal aging (Zook, Welsh and Ewing, 2006), therefore it is important to assess its psychometric properties.

This research examined the reliability of the TOL-R in self-reported healthy older adults. The TOL-R was individually administered to 54 healthy older adult participants (34 females, 20 males; *M* age = 68.86, *SD* = 4.37). Thirty problems requiring four to six moves to solve were individually administered. Reliability was assessed using split-half correlations (odd items and even items) and internal consistency was measured using the Cronbach's alpha coefficient. The split-half corrected correlation was high (r_t = .80, p < .01) as was the Cronbach's alpha (α = .80). An independent samples t-test examining gender differences found that there was not a significant difference in performance on the task between females (*M* = 20.41, *SD* = 5.08) and males (*M* = 22.60, *SD* = 4.22), $t(52) = -1.62$, $p>.05$. The findings here indicate that the TOL-R has high reliability in older adults providing support for the TOL-R as a reliable measure of executive functions within this population. The TOL-R may therefore be useful for detecting early cognitive decline and may be useful in assessing targeted interventions on cognition in older adults.

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Schnirman, G. M., Welsh, M. C., & Retzlaff, P. D. (1998). Development of the Tower of London-revised. *Assessment*, *5*(4), 355-360.

Zook, N., Welsh, M. C., & Ewing, V. (2006). Performance of healthy, older adults on the Tower of London Revised: Associations with verbal and nonverbal abilities. *Aging, Neuropsychology, and Cognition*. *13*(1), 1-19.

Rapid *in-vitro* testing of sensitivity to chemotherapeutic agents Daunorubicin and Cytarabine in leukaemia patients

Joshua Steven & Elizabeth Anderson: Applied Sciences

Josh is in his final year at UWE studying Biomedical Sciences. His main interest is microbiology and its medical applications. He is presenting his Final Year Project research, investigating the application of genetically modified bioluminescent bacteria in the treatment of cancer.

Abstract:
Acute myeloid leukaemia (AML) presents with an 80% remission rate but, of that, 50% will relapse and present with resistance to chemotherapy. Combined cytarabine (ara-C) and the anthracycline daunorubicin (DNR) is the mainstay of AML chemotherapy. Resistance to such chemotherapy impacts on patient response to treatment of AML. Furthermore, patients resistant to DNR acquire adverse side effects of cardiomyopathy and congestive heart failure. Anderson *et al.* (2014) pioneered the development of *Escherichia coli* (*E.coli* HA-1), a bioluminescent bacterial biosensor. HA-1 was constructed into an assay that determines patient sensitivity to ara-C, providing same working day results in a clinical setting. The ability to measure the sensitivity of both DNR and ara-c in patients by this novel assay could better tailor treatment regimens for AML patients. Cell lines representing novel AML models for anthracycline resistance (K562R) and sensitivity (K562) were used in this study. Using these models, the aim was to assess the response of the HA-1 assay when co-dosed with DNR and ara-C. This was achieved by a novel combined luminescent/fluorescent assay. K562 and K562R cells ($2x10^6$/mL) were co-dosed with *in vivo* relevant concentrations of ara-

C (25μM) and DNR (5μM) for 1 and 2 hours. Significant results exhibited inconsistent effects on the bioluminescent output of HA-1 at an intracellular concentration of DNR at approximately 1μM within K562. In conclusion, a new potential of monitoring DNR resistance demonstrated significant results. However, the separate assessment of DNR and ara-C sensitivity is required, affecting the amount of blood withdrawn from a patient with AML.

A role of protein SUMOylation in Type-II Diabetes Mellitus?

Fern Price & Tim Craig: Applied Sciences

Fern is a final year Biomedical Science student at UWE with a particular interest in biochemistry and pharmacology. She is completing her final research project, investigating a possible role of protein SUMOylation in Type-II Diabetes Mellitus, under the supervision of Dr Tim Craig.

Abstract:
Diabetes is a polygenic disorder where blood glucose levels are increased due to two main arising problems: (1) defective or lack of insulin secretion from beta (β) cells in the pancreas; and (2) insulin resistance in peripheral and hepatic tissue. Recent research has indicated that SUMOylation, a post-translational modification of proteins by small ubiquitin-like modifier (SUMO) peptides, influence cellular processes that are thought to play important roles in the secretion of insulin from pancreatic β-cells. A link has been identified between the SUMO-conjugating enzyme Ubc9 and high glucose expression in insulin-producing cells. Ubc9 regulates SUMOylation, however the exact role of SUMO modification and its function in the β-cells has not yet entirely been established.

The aim of this study is to gather evidence that SUMO modification in β-cells might be involved in insulin synthesis and secretion, investigating the effects of chronic glucose stimulation on the expression of endogenous Ubc9 and SUMO peptides; relating the findings to T2DM. Research suggests that muscle cells undergo similar SUMOylation mechanisms to β-cells, therefore the overall approach of this study is to perform chronic glucose stimulation on cultured INS1 insulin-secreting cells and L6 myocytes and to analyse using western blotting, detecting for changes in specific protein regulation. Initial analysis further indicates a link between high glucose stimulation and the general levels of cellular protein SUMOylation and Ubc9 expression. Statistical analysis was found to be insignificant in some cases, therefore repeats are required to further validate the data.

The influence of oxytocin on osteoblast maturation

Tanya Shahnawaz: Applied Sciences

Abstract:
The basis of this project is to investigate whether the posterior pituitary hormone oxytocin (OT) has an influence on osteoblast maturation. OT is known to be an anabolic bone hormone which has direct functions in bone mass regulation. Previously thought to exclusively regulate parturition and breastfeeding, the function of OT on osteoblast maturation is a new area of research. An existing model of maturation proves that lysophosphatidic acid (LPA) and D3 in combination influence osteoblast maturation. The project aims to apply oxytocin (100nM and 1000nM concentrations) to the existing LPA and D3 model to monitor osteoblast maturation. Conventional cell culture techniques and spectrophotometry were used to gather optical density data of total ALP activity. The human

osteosarcoma derived osteoblast cell line MG63 was used in this project. Findings indicated that although osteoblasts are receptive for oxytocin, the hormone does not have a significant effect on maturation. Furthermore, the findings point towards other research that could be carried out to explain the function of the OT receptor on osteoblasts, which could suggest a potential use of the hormone for the treatment of osteoporosis.

Automation in entertainment

Adam Martin & Laura Ottley: Engineering Design & Mathematics

Adam Martin and Laura Ottley are third year students in robotics and mechanical engineering respectively. Both have a passion for the theatre and are doing final year projects applying aspects of animatronics to the field. From discussion of these projects they realized the lack of automation of any kind in the theatre industry and worked to produce some concepts of this, which they are displaying at this event.

Abstract:
The entertainment industry is largely the same today as it was at its creation. It has been slow to pick up on the march of technology and this can be seen in the tools it uses to conduct its business, with most being manually operated with little to no computer interactions. We aim to demonstrate how automation could be brought into the entertainment industry, how its tools could be improved and made more effective with automation, and the way in which the fantastic could be brought to life.

Researching into areas applicable for automation, we have started making working examples to highlight the ways in which the tools of the industry could be made more effective. Through the use of common automation techniques, systems can be designed which can self-centre on actors, perceive and interact with actors, and even communicate with each other. This would allow for smaller smarter systems which are able to act in a modular fashion.

To achieve this we built interactive animatronic puppets and prototypes of other revolutionary systems, using techniques such as machine vision and sensory data, to show how broad a field and opportunity this is.

These projects prove that technology is advanced enough to start being incorporated into the entertainment industry. These projects may be prototypes, but with development reveal a great technological opportunity, so far untouched.

Timelight: A lighting system for museums

Adam Symonds, Matthew Roche, Mitchell Davies & Janusz Czapski: Computer Science & Creative Technologies

Abstract:
Project Timelight is a new interactive experience situated in a new exciting environment. Assisted by our interactive app to provide you with a personalised tour, you will be amazed at what you can discover. Visits to the M-Shed revealed how inaccessible the archive is and the restrictions that apply to it. As such, Project Timelight was developed. Project Timelight is used in the warehouse of the M-Shed (also known as L-Shed). It makes the space accessible to the public, allowing them to view up to 7000 artefacts in a safe manner. Visitors will be given a protected iPad running our M-Shed Information Guide. They can

mark artefacts of interest to email to themselves for review at a later date for the ultimate personalised tour.

The low light environment leads the way for visitors via LED lit pathways. As users explore the vast space, they will be able to interact with a series of buttons that light up artefacts behind acrylic safety sheeting. Our application then uses a QR scanner to read a barcode unique to each artefact where users can then see more information, images and videos of the item being used in context.

Many of the artefacts housed in the L-Shed tell stories of trade and business that has put Bristol on the map during the industrial revolution; including the trade of tobacco, slavery, alcohol and sugar. With the museum's growth standing at 3400% in 30 years, immerse yourself in Bristolian history across a vast timescale, and discover how you fit into the importance of the continuing story.

A flexible system for producing spatial, object-based audio content in a plugin format

Alex Jones: Computer Science & Creative Technologies

Alex is in his final year studying Audio Music Technology at UWE. His main interests lie in human computer interaction and applications of digital audio technology to creative and artistic projects. He is presenting work from his final year project, which looks at using object-based audio techniques for small-scale projects.

Abstract:
Object based audio is at the centre of a new emerging model for audio content creation and dissemination. It allows for an audio object to be associated with metadata that defines some of its characteristics. This can then be used for recreation at the playback stage to best suit the available system. This has special relevance for spatial audio as objects can be related to a position in a given space rather than designed to work only with a predefined speaker arrangement.

This project aims to use these techniques to create a piece of software for creating object-based, spatial audio content (it will take the form of a plugin so as to be able to interface with existing audio production tools). Whilst customizable surround sound systems have been created before, they have been available largely to a select group of producers; large institutions with a one-off installation room, artists with the ability to program their own system and cinema production, where the Dolby Atmos system has seen some success. Two techniques will be implemented: Vector Based Amplitude Panning (Pulkki, 1997) and Distance Based Amplitude Panning (Lossius et al, 2009). They provide two distinct, yet related, implementations of a position based panning system with well-defined methodologies, but with few direct comparisons in the literature. A small-scale study into attitudes toward spatial audio and a specific case study looking at real world use in a theatre production have been carried out in parallel with the implementation of a working prototype.

Lessons drawn from the studies will then be fed back in to the next design and implementation phase. There will then be a user test, with the same study group, to evaluate the success of the implementation and to make a comparison of the DBAP and VBAP methodologies in terms of the accuracy of the spatialisation effects they produce. The ultimate goals are to be able to outline some guidelines for designing spatial audio tools for

artists and musicians and to produce an open, flexible system that opens up the technology to a new group of users.

Lossius, T. and Baltazar, P. (2009) DBAP-Distance-Based Amplitude Panning. *International Computer Music Conference* [online]. (1), pp. 4–7. Available from: http://www.trondlossius.no/system/fileattachments/30/original/icmc2009-dbap-rev1.pdf.

Pulkki, V. (1997) Virtual Sound Source Positioning Using Vector Base Amplitude Panning. *J. Audio Eng. Soc* [online]. 45 (6), pp. 456–466. Available from: http://www.aes.org/e- lib/browse.cfm?elib=7853.

Earn my steps: Walk further and get rewarded for it

Teodora Muresan, Sintija Linuza, Kelly Copas & Theng Yen Chen: Computer Science & Creative Technologies

Teodora, Sintija, Yen, and Kelly are second year students studying BSc Digital Media. They enjoy working with technology and are presenting a group project they have worked on during their User Experience module.

Abstract:
Earn My Steps is a User Experience (UX) research project investigating transport choices of students and staff at UWE and designing a system to encourage people to choose a more sustainable option. The design brief was to meet the objectives of increasing physical activity and/or reducing unnecessary car trips. In the beginning, we established students' motivations for choosing to use certain modes of transport. Using qualitative research methods, we carried out user interviews and user observation, and we analysed resultant data using thematic analysis. As a result, we directed our focus towards walking as an alternative transport method to taking the bus. We found that a majority of students can walk but need motivation in order to do so. See our blog - https://stykuwe.wordpress.com/

We also found that UWE is encouraging students to walk to University and are offering promotions. Taking inspiration from FitBit, our idea is to have an app that tracks the amount of steps taken and calories burnt daily by the user to earn discounts for healthy goods sold on campus. Based on a reward system, it will help students save money, and will ultimately encourage walking as a sustainable mode of transport. The app would only be available for UWE staff and students and so they would need to log in using their UWE email address and password. The process of transferring our paper prototype into digital form started by searching online for design inspiration through looking at similar apps already available. We also looked at the different kinds of fonts, illustrations, and colours used in fitness apps. Consequently, we have now produced a digital interactive prototype using InVision software demonstrating our anticipations for the app.

Basins of Attraction for Iterative Methods

Ellie-Marie Tucker: Engineering Design & Mathematics

Ellie-Marie is in her final year at UWE, Bristol studying Mathematics. She enjoys pure Mathematics, especially complex number theory. She has created a poster on her final year research topic. She enjoys Formula One, and is passionate about the universe, for example the stars, planets and space.

Abstract:
The branch of Mathematics I am investigating is finding roots to given functions. For example, when does a function equal zero? A definition of a function is, given an input number which is then changed by a certain rule results in an output. My interest and research makes use of complex numbers. An inherent property of complex numbers is that they have a real and imaginary part. The average person will only ever do mathematics within the real number system, using the numbers on a number line. My research makes use of a well known mathematical method developed by Newton. Orignially, Newton's method is a tool for finding roots to real valued functions.

However, in my research, I am going to apply this method to complex functions also. Applying Newton's method to either real or complex functions leads to convergence to a root of the function or divergence away from the root. Newton's method is dependent upon an initial guess of the root. Changing the initial guess values within a given interval of numbers will produce different results; some will converge and some will not. Converging points are then coloured one colour and diverging points another. By colouring the points in this way, some colourful and structured patterns appear. My research will focus on developing some of these patterns and understanding why these intricate and striking patterns appear. My aim is to write a program that will create these structured patterns using the mathematical program Maple 2016. The understanding of why these patterns occur will come from the underlying mathematical theory and understanding the way functions behave.

Modernity and decadence: The influence of Americanism on culture in Weimar Germany

Amy-Lee Haynes: Arts & Cultural Industries

Amy is in her final year at UWE studying history. She particularly enjoys 20th Century Russian and German social history. Amy is presenting her dissertation thesis, focussing on the cultural impact of America during Weimar Republic, 1918-1933. She also enjoys blogging and eating sweet food.

Abstract:
The post-war culture of America had a significant impact on most of Europe but its impact on Germany was unique as it accompanied the loss of the First World War and the creation of a new republic. Although the influence of Americanism is accepted by many historians, who refer to the increase of American traits such as jazz, they fail to research the topic in any depth.

This project will examine how American styles influenced Weimar culture, focussing on entertainment and social behaviour, discussing how this is connected to a society defeated by war. Through the analysis of primary sources, including paintings, illustrations, films, literature and articles, it is evident that there was a range of opinions regarding the new styles. Greater freedoms embodied in the constitution allowed people to believe, create and behave however they desired. Such freedom allowed the population to distract themselves from the uncertainty of post-war society linking to the chaos created by increased street-violence. By contrast, some perceived the new ways as kulturpessimismus (cultural despair), a societal disease, leading to "cultural decay and moral bankruptcy". Such views are illustrated in paintings by Otto Dix, George Grosz, Max Beckmann and Christian Schad, showing decadence, sexuality and corruption, all of which were associated with the corrupt government that withdrew Germany from the war. The role of Americanism, though it has

been touched upon previously, has not been examined in great detail. Whilst one must not forget that Americanisation was a European phenomenon, its presence in Germany found unique expression and elicited varied opinions from the public. Its role as a symbol of cultural and social liberation will be examined against the view of it as a sign of corruption and decay to conclude that Americanism greatly influenced Weimar culture.

[1] Walter Laquer, *Weimar: A Cultural History 1918-1933,* (London: Weidenfeld and Nicolson Ltd. 1974); Detlev Peukert *Weimar Republic* (London: The Penguin Press 1991) 179; Matthew Stibbe, *Germany: Politics, Society and Culture 1914-1933,* (Harlow: Pearson Education Ltd. 2010) 139; Elizabeth Harvey, "Culture and Society in Weimar Germany: The Impact of Modernism and Mass Culture," in *"20th Century Germany: Politics, Culture and Society, 1918-1990,* ed. Mary Fulbrook (London: Hodder Headline Group 2001) 62

[2] Alice Gerstel, 'Jazz Band,' in *Weimar Republic Sourcebook,* eds. Kaes, Jay & Dimendberg 9 London: University of California Press, 1995) p. 554

[3] Laquer, *Weimar Culture,* 36

Improving human understanding of machine learning through interactive visualisation

Thomas Fisher: Computer Science & Creative Technologies

Tom is a final year student studying Computer Science, returning from a placement year at IBM. He has a strong interest in artificial intelligence and machine learning. He is presenting work from his Final Year Project, focussed on improving the understanding of machine learning through a novel web-app. He is currently looking to further his studies in the machine learning field.

Abstract:
Machine learning is becoming increasingly more prevalent in the modern world. Many applications now incorporate machine learning, from product recommendations on Amazon to facial recognition on Facebook. For many of us, a big question is 'how does machine learning actually work'? By visualizing machine learning processes, this can facilitate our understanding of how such complex processes function. In this research, I have designed and developed a novel visualization approach for understanding how machines perform image recognition tasks. In particular, the approach aims to dissect the machine learning process, to show how this is done, and how this draws a parallel with how humans perform the same tasks. In addition to understanding how machines perform such tasks, the visualization enables users to identify when, *and more importantly why*, the machine may perform erroneously (e.g. misclassification in an image recognition task), which can help to address learning improvement (e.g. is the error in the algorithm, or in the training data?). By developing visualization tools for machine learning tasks, the research aims to generate understanding of how machine learning algorithms work.

Vocational education: Degree Apprenticeships and social mobility

John Barker: Education & Childhood

John's academic and research interests include work-based and flexible learning. John has focused his research on academic and professional skills frameworks and how industry works in collaboration with education. He is looking to embark upon further research regarding international professional frameworks, incorporating work on Degree

Apprenticeships. He recently studied the MA Education programme and he is presenting research completed as part of the Transformational Dimensions in Lifelong Learning module.

Abstract:
The focus of this study was on exploring the personal and sector issues of social mobility in relation to vocational education and in particular the Degree Apprenticeships agenda. The research methods involved secondary desk-based research culminating in a comprehensive literature review and utilising person-centred critical reflection to gather a form of primary qualitative data.

The study concludes that vocational education and training (in particular through the prism of work based learning) is a valuable tool in widening participation in Higher Education. It also highlights that while Degree Apprenticeships will enhance access to Higher Education and, through work based learning benefit both the individual and the UK Skills System, it is also down to individual institutions (including UWE) to use Apprenticeships as a vehicle for social inclusion.

Your Shed: An interactive personalised tour of M-Shed

David Pratten: Computer Science & Creative Technologies

Abstract:
Our proposed project is to design an interactive personalised tour of M-Shed. After much research, analysis and prototyping we decided upon a tour using a web-app which works in conjunction with a QR code on a wrist band.

The tour involves using a QR wrist band that gives people a personalised experience of the M-Shed. When visitors enter the M-Shed they will be greeted with a box containing wrist bands with QR codes on. In the packet containing the wrist band will be instructions. Visitors will need to use their phones, but if they do not have a phone they can collect one from reception. On the web app, they will be given options. They can click on a preferred pre-made tour or choose a custom tour where they can choose the exhibits they like. The app will then display on screen the best route between all exhibits relevant to their selected choices. In addition, there will be QR codes on every exhibit where visitors can scan the code bringing up all the information that the museum has on that particular exhibit. The app will also have games and puzzles relating to each exhibit that is scanned.

After leaving the museum visitors will be able to access the app from their device, anywhere and at any time, and they will be able to access the information on the exhibits they visited.

Verbal Paper Session B (16.00-17.00)

Stream 6:

Where in the Bristol AQMA would the "street canyon" effect make the planting of trees inappropriate?

Richard Pardoe & Alice White: Geography & Environmental Management

Richard is a postgraduate student reading MSc Environmental Consultancy and is presenting his research from the Introduction to GIS module. His interests include flood risk management and air quality.

Abstract:
Contrary to perceived wisdom, recent research has shown that the presence of trees on city streets, rather than improve air quality, may reduce mixing and dispersion of pollutants, and exacerbate air quality problems. The extent of this problem will depend on the geometry of individual streets, with "street canyons" being produced where the streets are narrow relative to building height. As such, the aim of our research was to produce a tool that could be used to guide urban planting in Bristol. Supported by recent literature on the phenomenon, ArcMap was used to analyse the geometry (width and building height) of the streets in Bristol that fall within the air quality management zone (AQMA). This was used to highlight areas of Bristol that may be prone to the "street canyon effect". Nitrogen dioxide (NO^2) data were kindly provided by Bristol City Council for the AQMA and were used as a proxy for air pollution in general. An interpolation was carried out to produce an air quality map of Bristol. When combined with the "street canyon" model, high priority areas for urban planting were identified, as well as areas where the presence of trees could exacerbate air quality problems. The tool produced could be adapted and applied to any urban area and used to guide councils in their choice of location for urban planting.

Agricultural drought: The 'unapeeling' future of potatoes

Jade Furlong, Mikolaj Biernacki & Ryan Cook: Geography & Environmental Management

Jade is a final year undergraduate student at UWE. Her academic interests are GIS and remote sensing, as well as ecology and conservation. When she is not busy studying for University, she enjoys running her website and volunteering at Bristol Zoo. She is presenting an analytical story map focused around agricultural drought in the U.K.

Mikolaj is a third year BSc Geography student at UWE. His academic interests are GIS and remote sensing as well as climate change and environmental hazards. He is presenting his GIS project which explores the impacts of drought on agricultural crop yield in Fowey, South West England. Mikolaj enjoys travelling and urban landscape photography.

Ryan is a third year student studying BSc Geography at UWE. He is interested in remote sensing and GIS, as well as studying river and coastal environments. Ryan is presenting a project on agricultural drought and the impact this has on the future of farming.

Abstract:
Climate change is expected to exacerbate drought events globally. This will have significant impacts on many of Earth's functions, including ecosystem alterations and the potential failure of drought sensitive crops. In addition, the length and severity of droughts are expected to worsen, meaning it may be harder for plants to adapt to these conditions. This project will examine the impact of drought on potato yields in the South West of England. We will use digital data and spatial analysis to create practical maps with narrative text, images and multimedia content to tell the story of a potato farmer and the potential impact of climate change on crop harvests in the South West. This narrative will begin to unlock the potential implications of climate change for individual farmers and for local and regional economies.

South Bristol Community Walks: Mapping, evaluating and improving urban walks using GIS

Alexander Bridger, Calum Rattray & Sam Wismayer: Geography & Environmental Management

Abstract:
This is a spatial analysis research project in partnership with Greater Bedminster Community Partnership (GBCP). The aim is to create interactive visualisations of historical walks using GIS. The walking routes are located in Bedminster, South Bristol and they track points of historical interest. Some of the existing routes currently have relatively limited information available to the public. We will evaluate routes based on urban walkability parameters, such as slope gradient and path surface, using multi-criteria decision making analysis. Urban walkability will be evaluated using primary data collected using the ArcCollector app. The final product will be a series of easy to use, interactive, online maps that will encourage community interaction with the routes, effectively displaying points of interest and overall route walkability. This project will also identify the next steps needed in improving the routes by performing assessments on specific features such as how well signposted the route is, how street lighting coverage changes along the route and how the availability of certain public facilities changes along the route (bins, public toilets, transport links). Once these assessments are complete, we can propose alterations to specific routes to make them more attractive to the local community.

Microbial Fuel Cells: Sanitation and power production from recycled materials

Olivia Reddy: Geography & Environmental Management

Whilst studying her BSc (Hons) Environmental Science at UWE, Olivia came in contact with the team working on Microbial Fuel Cell technology within the Bristol Robotics Laboratory. Amazed by its social, economic and environmental potential, she is now undertaking her MRes in Bioenergy with the Bristol Bioenergy Centre at UWE.

Abstract:
Microbial fuel cell (MFC) technology is widely noted as a necessary emerging technology which has the ability to help reduce the impacts of two global problems simultaneously: water use/availability and electricity generation. Over the past 30 years, the development of MFCs has seen increasing interest with its sustainable nature providing a strong driving force in an unsustainable world. MFCs harness the natural metabolism of bacteria to generate

power. As these microorganisms are fed wastewater (or urine), they break down the organic content releasing electrons (collected as electricity) while at the same time treating (cleaning) the liquid. Although MFCs do not generate large amounts of power, their addition to existing infrastructure, such as wastewater plants, offers an overall energy reducing system. Previous studies have suggested that MFC technology is suited to off-grid communities in need of improved sanitation and electricity availability. However, there have not been significant attempts to make this technology accessible for these areas. The high cost of material components has remained a constraint on further development. This project focuses on integrating MFCs into these communities - focusing largely on informal settlements in South Africa. It centres on reducing the cost of production by exploring alternative materials to use as MFC components; specifically waste and recycled materials. It is anticipated that the findings will introduce the MFC community to a selection of novel and inexpensive materials which can be used as benchmark for future research.

Stream 7:

Research and development of a hydrofoil and rigid sail for a small single-person sail boat

Nicolas Bisordi Huwel: Engineering Design & Mathematics

Abstract:
The aim of this project is to develop a small hydrofoil, capable of lifting a single-person sailboat, and a rigid sail to provide enough speed to achieve hydrofoiling. This paper will present the main case study and validate the assumptions through data gathering and mathematical explanation. The paper will report information regarding the design process and early stages of investigation. This project was based on two initial case studies: the development and optimization of a hydrofoil and a rigid sail for competitive sailing. Although similar hydrofoils have been designed before, the objective is to reduce drag as much as possible and redesign it to fit into the sailboat design. A rigid sail for a small single-person sailboat has not been designed yet, therefore the objective is to design one that will provide power with the least amount of drag. The case study sailboat is "One-design" that allows sailors to race competitively.

Glastonbury Energy Challenge 2016

Paula Bisordi Huwel, Ana Recio & Roberta Vasnic: Architecture & The Built Environment

Paula is in her final year at UWE studying BEng (Hons) Architecture and Environmental Engineering. She is interested in efficient systems that can allow beneficial environments for people. Hence, she got involved with the research team studying the energy performance of Glastonbury Festival. She is presenting research developed for the festival over the past three years.

Abstract:
This research focuses on energy usage and management at Glastonbury Festival through the analysis of data and interviews. The research team was approached by Glastonbury staff three years ago to assess their energy performance and, hence, this study has had the opportunity to develop after progressive site visits. This year's project focused on two main areas: Arcadia and Silver Hayes. Arcadia is a very unique stage consisting of a giant spider,

pyrotechnics and laser beams. Silver Hayes has more conventional stages. The team analysed data collected for both stages during the festival, allowing comparisons to be made between the two areas. Last year, it was found that even though the generators were sized adequately for peak load at Arcadia, they were operating below 30% for most off-peak times. This year, staff attempted to change the set-up of the generators but connected the back stage to the stage generator resulting in a similar problem. However, even though the energy usage is still inefficient, this positive attitude towards change from the production team proved that the research could have an impact in the festival's future performance. The production management at Silver Hayes is not concerned about their energy consumption or how much energy is used for equipment testing.

The research showed that during the night, part of the equipment was left on and the generators were oversized. This demonstrates that there is potential to undertake further research and develop more encompassing energy efficient strategies for the festival.

BoxED: A UWE schools outreach and widening participation initiative

Tay Aziz: Applied Sciences

Tay is a postgraduate student on the MSc Science Communication programme. During her studies she has been working on the BoxED project with researchers from FET and HAS as Schools Outreach Leader. She will be presenting how the project has influenced her professional development and complemented her learning.

Abstract:
A team at the University of the West of England, Bristol, has developed a schools outreach and widening participation initiative called BoxED ('EDucation in a Box'). The initiative was piloted in the Faculties of Health and Applied Science (HAS) and Engineering and Technology (FET) and since its success, will be delivered university-wide for the first time in 2017. The ethos of BoxED is to develop school-based activities based on the university's research and teaching.

The aim of this presentation is to demonstrate how BoxED and the team has complemented my MSc in Science Communication to put my learning into practice and develop multiple skills during the course of my studies. I will showcase the positive impact this has had on my success and the opportunities that BoxED has provided me with. As well as having the opportunity to collaborate with academics to develop new boxes as part of my MSc, the scheme has also provided me with employment in the role of Schools Outreach Leader, working within FET to lead and deliver activities within schools, train student ambassadors and assist with the development of new activities. Additionally, these opportunities have developed a great many skills through organising school visits, liaising with internal and external staff and working as part of a team, ensuring my success upon graduation.

Association between the presence of intrinsic and acquired genes in *Acinetobacter baumannii* isolates and susceptibility to certain antibiotics

Yuliana Darkbloom: Applied Sciences

Yuliana is a final year Biomedical Science student at UWE. She is presenting research from her undergraduate dissertation looking at the presence of intrinsic and acquired genes in *Acinetobacter baumannii* isolates and susceptibility to certain antibiotics. Yuliana did a placement at Public Health England and has a particular interest in Microbiology.

Abstract:

- *Implications: Acinetobacter baumannii* is responsible for a variety of hospital-acquired infections and is becoming an increasing concern due to the organism's ability to survive and cause outbreaks of infection. Antimicrobial resistance to this organism limits the therapeutic options for patients. As a consequence, investigating the genes potentially responsible for mechanisms of resistance is significant in improving the monitoring of outbreaks and treatment for patients.
- *Aim:* To investigate the presence of intrinsic (^{bla}OXA-51) and acquired genes (^{bla}OXA-23 and *gyrA*) in five *A. baumannii* strains and their role in antimicrobial resistance. The *ompA* gene was also explored to determine the presence of the outer membrane protein OmpA and its involvement in resistance to help understand the virulence factors of *A. baumannii* leading to its pathogenicity.
- *Materials and Methods:* Antimicrobial susceptibility screening was previously performed on ATCC® BAA-1709™, ATCC® BAA-1710™, NCTC 12156 (ATCC 19606), ATCC 17978 and SM 37212 *A. baumannii* strains using the disk diffusion method. Standardisation by optical density (OD) measurements of overnight culture was evaluated and a Gram stain performed to ensure pure cultures. The GenElute™ Bacterial Genomic DNA Kit was utilised to carry out DNA extraction and then quantified using the Nanodrop One Spectrophotometer. PCR and gel electrophoresis were performed on 2% agarose gel and visualised following staining under UV illumination.
- *Results:* ^{bla}OXA-51, *gyrA* and *ompA* were present in all isolates investigated and the acquired ^{bla}OXA-23 gene was absent.
- *Conclusion:* Presence of ^{bla}OXA-51, *gyrA* and *ompA* genes in *Acinetobacter baumannii* isolates could be associated with resistance to ciprofloxacin, gentamicin, meropenem and piperacillin/tazobactam.

Adukwu, E.C., Bowles, M., Edwards-Jones, V. and Bone, H. (2016) Antimicrobial activity, cytotoxicity and chemical analysis of lemongrass essential oil (*Cymbopogon flexuosus*) and pure citral. *Applied Microbiology and Biotechnology. pp. 1-9.*

Coyne, S., Guigon, G., Courvalin, P., and Périchon, B. (2010) Screening and Quantification of the Expression of Antibiotic Resistance Genes in *Acinetobacter baumannii* with a Microarray. *Antimicrobial Agents and Chemotherapy*. 54 (1), pp. 333–340.

Stream 8:

Evaluating the Circular Economy in the global context: Using the New Plastics Economy as a case study

Yunyan Zhou: Bristol Business School

Yunyan Zhou is in her final year at UWE studying Business and Management. She particularly enjoys sustainability and economy and she is presenting her Final Year Business

Project evaluating the Circular Economy in the global context. Yunyan loves travelling and has visited over 35 cities in the past 4 years.

Abstract:
This research aims to highlight the scale and scope of the Circular Economy (CE) in the global context and to identify tensions underlying CE using the western New Plastics Economy campaign as a case study. The central questions addressed by the research are:

a) What is the history underpinning the concept of CE and how is it implemented in the context of China?
b) How is the plastic campaign under CE carried out in Western countries?
c) What are the tensions involved with CE in both China and Western countries?

This research adopted a case study approach, examining the New Plastics Economy (NPE). NPE is a campaign led by the Ellen MacArthur Foundation, and is one of the initiatives of CE in western countries. It is a three-year plan that builds momentum towards efficient plastics systems. Applying the principles under CE, NPE brings together key stakeholders to re-think and re-design the future of plastics. Evaluating data in two contexts (western countries and China) allows better acknowledgment of transferable ideas and critiques of CE. Secondary data will be reviewed, combining information from multiple databases. The data will be used to test the research questions, to better understand the social settings in both western countries and China, and to reveal how patterns of events and CE historical roots have unfolded over time. An interpretivist method will be adopted as it provides a framework to search rich data and compare findings.Potential findings of the research will be: a historical review of the concept of Circular Economy and the typical implementations in China and western countries; a thorough analysis of the New Plastics Economy campaign and a review of ideas that could be transferred to China; and identification of the limitations of and potential future for the Circular Economy.

The determination of licit and illicit drugs in wastewater by liquid chromatography mass spectrometry

Louise Hatherall & Kevin Honeychurch: Applied Sciences

Louise is a postgraduate student at UWE studying advanced forensic analysis. She has a particular interest in analytical chemistry and toxicology and is presenting research from her postgraduate project identifying a variety of drugs within wastewater samples. Louise enjoys dancing and has previously taught tap dance. One day she hopes to live in Norway.

Abstract:
- *Aims & Objectives:* Previous research has successfully estimated drugs usage within a population through trace analysis of drugs in wastewater. This project aims to determine commonly encountered licit and illicit drugs from wastewater samples by liquid chromatography mass spectrometry (LC/MS). The conditions required for successful extraction, separation and identification of the target drugs will be optimised. The developed method will be assessed for suitability to monitor drug use within prison populations. Therefore, the drugs selected for investigation will mimic those commonly encountered: caffeine, paracetamol, methamphetamine, cocaine and several synthetic cannabinoids. If the method is shown to be successful, further research will be undertaken into the effects of malicious sample contamination with reagents such as bleach.

- *Methods:* Wastewater samples will be obtained from Wessex Water. The sample storage conditions will be investigated to minimise sample degradation. Following filtration, the target drugs will be isolated and concentrated by solid phase extraction. LC/MS conditions will be optimised, to maximise separation and identification of the target drugs, and the performance characteristics of the method identified. Quantitative analysis will determine the concentration of each drug present. A set of samples will be fortified with known concentrations of the target analytes and the precision and accuracy of the method will be assessed.
- *Findings:* A method to identify and quantify drugs within wastewater samples using LC/MS will be developed. The drug concentrations measured will enable the back-calculation of consumption levels within the population. Concerns that prisoners may inhibit drug detection with chemical contaminants will be alleviated.
- *Conclusions:* A LC/MS method will be developed for the determination of drugs in wastewater. Its potential for the assessment of drug usage in prisons will evaluated.

Learning from failure and sensemaking in organisations

Loo Wei Shuen: Bristol Business School

Cindy was a student from HELP University, Malaysia, who transferred to complete the final year of her degree at UWE on a scholarship. She graduated with a First Class Honours Bachelor of Arts majoring in Business and Management. She is presenting research from her undergraduate dissertation looking at learning from failure and sense-making in organisations.

Abstract:
Drawing on a cross-sectional study of learning from failure and sensemaking in organisations, the aim of this research was to examine how failure is being communicated and constructed in differing organisations. Nowadays, many individuals know about failure, but they do not actually learn from failure. In other words, they do not look upon the lessons from failure as a practice. One case study was analysed in depth for this research: The Engineers Without Borders 2008 Failure Report. This study is unique in failure and sensemaking research and it provided the foundation for two particular contributions made by this research. Firstly, secondary research was undertaken, analysing three cases of failure in relation to the key themes discovered from literature on the topic of failure as a blame game, failure as pressure points and failure as effectuation. The researcher also examined how the three different volunteer staff constructed failure by identifying the conditions that trigger sensemaking about emotion, sensemaking about risk and sensemaking about uncertainty. The researcher then integrated the findings, creating a model of organisational failure and sensemaking processes. In short, the researcher drew upon the three different cases of failure to highlight the lessons that we can learn from the different failure experiences. Secondly, this study contributed to an understanding of the conditions that facilitate sensemaking about failure, which is how we share this learning in different aspects of failure. The researcher drew upon the three cases of failure to compare and contrast how the different volunteer staff have constructed failure differently.

Contactless 3D handprint recognition

Max Langhof, Lyndon Smith & Mark Hansen: Engineering Design & Mathematics

Max is an MSc Mechanical Engineering student from Germany who chose UWE because of its unique focus on simulation and machine vision. His presentation discusses key elements

from his MSc thesis. Aside from engineering challenges, he enjoys programming, badminton and playing clarinet.

Abstract:
Everybody knows finger prints from their forensic uses: Every finger print is unique, which means they can be used to reliably identify any individual. Recently, consumer phones have also started to incorporate finger print sensors as a means of verifying their user's identity in a convenient manner. Finger print recognition works by looking at the patterns formed by the ridges on the fingertips. But such ridges can also be found on people's palms, and the pattern of these palm ridges is similarly unique for each person. The presence of further distinguishing creases makes hand prints a highly reliable biometric that has gained a lot of attention in recent years.

Using a technique popularized by UWE's Centre for Machine Vision (Photometric Stereo), it is possible to capture three-dimensional impressions of the entire palm for use in authentication applications – without requiring the user to touch any surface. This opens up many possible usage scenarios, including instances where hygienic concerns are important, or where the skin is not in optimal condition. It is, however, not feasible to compare such hand prints directly, so the question becomes: How can the palm prints be transformed so they can be quickly compared with each other? The presentation will, aside from elaborating on the research motivation and progress/results, be focused on explaining the steps and techniques of the recognition process in an accessible way.

Stream 9:

'The F Word': Determining barriers to young women's self-identification as feminist

Daisy Hamm: Health & Social Sciences

Daisy is a third year student reading BA (Hons) Sociology. She is presenting research from her undergraduate dissertation, 'The F Word', examining barriers to young women's self-identification as feminist. Daisy is interested in feminism, human rights, and all things left wing. She enjoys cinnamon rolls, but not gender roles.

Abstract:
Feminist' is a symbolic, politicised and contentious term. It is an identity that is commonly misunderstood and maligned, which frequently results in young women seeking to distance themselves from it. It is not equality in itself that young women reject: it is the F word. According to the Fawcett Society's Sex Equality Report 2016, seventy four percent of British women support gender equality. Yet only nine percent identify as feminist (Fawcett Society, 2016). This research project investigates the causes of this striking dislocation between feminist ideology and feminist identity among young women, revealing key barriers to feminist self-identification. I define 'young women' as female identifying persons between the ages of eighteen and twenty-four.

I conducted qualitative semi-structured interviews with six women in this demographic, the results of which are assessed using thematic analysis. My research finds that feminist stereotyping, with particular emphasis on the persistent paradigm of the radical angry lesbian to pose a powerful barrier to young women's feminist self-identification (Dworkin, 1988). I also observe similar dissociative influences from the threat of public backlash. However, my research found that the dominant discourse of postfeminism was not as

significant a barrier as anticipated, illustrating that there is space outside of this popular ideology to foster young women's feminist consciousness. This research has important implications for the future of the feminist movement, as by determining barriers to self-identification I create a platform point for their elimination, with a view to supporting the political mobilisation of the next generation of women.

War and climate change: Analysing the environmental effects of war in the Persian Gulf through environmental security

Wendy Rhys-Price: Health & Social Sciences

Wendy is in her final year at UWE studying Politics and International Relations. She is a student ambassador and President for the Politics and International Relations Society. Wendy enjoys studying climate change and security studies and is presenting her final year dissertation on the impact of war on the environment.

Abstract:
Climate change is one of the great threats to a state in the 21st century because it is a threat multiplier. It will exacerbate any environmental, social, or economic issues which in turn could lead to violent conflict. However, war itself contributes to climate change, producing an array of greenhouse gases through military activity. By its very nature war is inherently destructive, polluting rivers, contaminating soil and demolishing landscapes. It is impossible to accurately carbon footprint war, but crude figures have been produced which suggest that the invasion of Iraq between 2003 and 2007 emitted between 150 to 600 million tonnes of CO_2. The burning of oil wells during the Gulf War in the early 1990s released 500 million tonnes of CO_2 which led to a 10 degree drop in localised temperatures. Saddam Hussein's actions of diverting the rivers of Tigris and Euphrates drained 90% of the region's marshes and impacted on the lives of local Shia Marsh Arabs.

The objectives of this paper are threefold. Firstly, by looking at the environment through the prism of security studies, it allows for the wider implications of war to be addressed. Secondly, it will analyse military activities within the Persian Gulf and assess the environmental impact. Thirdly, it will examine regional climate change and the Gulf War reparations. The research is expected to show how war impacts on states inside and outside of the warzone, how climate change will exacerbate these issues, and what the potential future security risks are from the aftermath of war.

The role of institutions in the human development of Southeast Asia

Zi Juin Chen: Bristol Business School

Zi Juin is a final year transfer student from Taylor's University, Malaysia. Having discovered a passion for developmental economics, her dissertation is a study on the role of institutions in Southeast Asia. An avid food lover and explorer, she spends her free time cooking, blogging and wandering the Bristol streets.

Abstract:
Lack of quality institutions has been described as the "root cause of economic problems" (Chang, 2003), whereas Acemoglu and Robinson (2008) found that institutions are the fundamental reason for cross-country differences in development and economic growth.

Given the institution's role in specifying and enforcing formal rules, it plays a central role in determining the path of development. Much literature has been produced to construct the relationship between institutions and economic growth, while towards human development academic progress is still scarce. This paper aims to study the interconnections of institutions and human development within the region of Southeast Asia. The paper begins by exploring the old and new institutional economic theories to decipher the relevant institutional forms and their functions. An Ordinary Least Squares (PLS) path model is developed to test the correlations of quality of institutions and the corresponding level of human development within countries. The World Governance Indicators (WGI) published by World Bank are used as institutional measures (independent variable), whereas the Human Development Index (HDI) is used as a proxy of development (dependent variable). The econometric analysis shows positive influence of institutions on HDI. Results indicate that Voice and Accountability, alongside Political Stability and Government Effectiveness within the WGI are the most accurate predictors of development performance in HDI. The existence of democracy, level of participation by citizens in selection of government, political stability and good governance facilitate the construction of social capital and improved standards of living.

Inclusion: What are the experiences of black and minority ethnic (BME) students of occupational therapy?

Pamela Iyer: Applied Sciences

Pamela is in her final year studying Occupational Therapy at UWE. She has a particular interest in discrimination and equality issues within healthcare, and in mental health and offending behaviour in children and adults. Pamela is a keen cook and enjoys contemporary literary fiction and camping with her children.

Abstract:

- *Aim:* Workforce and census data demonstrate that 4.5% of occupational therapists are black or minority ethnic, whereas the population as a whole comprises nearly 15% BME people. Greater representativeness in a healthcare workforce has been shown to improve patient engagement and patient outcomes. The research aims to study the experiences of undergraduate occupational therapy students and discover if factors relating to ethnicity play a part in recruitment of occupational therapists at pre-registration level.
- *Methods:* This qualitative research uses a series of semi-structured interviews, employing a phenomenological attitude and a social constructionist approach. The interviews are dialogic in some degree, allowing participants to speak at length on three areas: influences on and reasons for choosing occupational therapy, how they have experienced inclusion while at university and on placement (where applicable), and hopes for future careers.
- *Expected Findings:* It is anticipated themes will be identified that generate greater understanding of the motivation, experiences and aspiration of BME OT student participants. This can inform the Widening Participation agenda and inclusivity policy. It is anticipated that pedagogical approaches can be reflected upon in the light of the findings.
- *Expected Conclusions:* Conclusions and implications may include actions that can be taken by universities and the profession as a whole to encourage more BME students into occupational therapy and thus begin to redress the balance of NHS workforce representation.

Stream 10:

Optimisation of a novel biosensor for anthracycline resistance and testing in a model of AM Leukaemia

Panagiotis Kyriazis, Elizabeth Anderson & Vyv Salisbury: Applied Sciences

Panagiotis is in his final year reading BSc Biomedical Science. He particularly enjoys medical sciences with an interest in the heart and haematology. He is presenting his final year experimental research project investigating a novel biosensor in an AML model. He is self-motivated and always thinks positive.

Abstract:
Acute Myeloid Leukaemia (AML) intensive chemotherapy uses anthracyclines such as Daunorubicin (DNR) to induce remission in approximately 80% of patients, but 5-year survival remains frustratingly poor (28%) (Varatharajan *et al.*, 2012). DNR and analogues Dauxorubicin (DOX) and Idarubicin (IDA) show activity in AML, but cause cardiotoxicity via their metabolites (Minotti *et al.*, 2004). The exact mechanism of resistance is unclear, but it is postulated that conversion of DNR to Daunorubicinol (DNRol) by carbonyl reductase (CR1) affects efflux via p-glycoprotein (p-gp).

The aim of the study was to characterise the response of *Escherichia coli* (*E.coli*) HA-2, a bioluminescent bacterial biosensor for anthracycline resistance, using an anthracycline-sensitive AML cell line (K562). Optimisation focused on testing heat-inactivation (HI) of lysates and cyclosporin A inhibition (13 µg/mL) of bacterial p-gp to improve reproducibility and reduce the limit of detection. Optimisation of the biosensor for detection of DNR, DNRol and IDA resistance was performed across a clinically-relevant range (2-10 µM). Luminescence (490nm) and optical density (595nm) were assessed over 15 hours in a plate reader (Tecan). Biosensor HA-2 responded to DNR, DOX and IDA in a dose-dependent fashion, however DNR and IDA were toxic to the biosensor above 5µM. HI of lysates from K562 cells spiked with anthracycline, either pre- or post-treatment, and did not show any improvement in the response of biosensor HA-2 to higher doses (>5 µM) ($p>0.05$). P-gp inhibition lowered the limit of detection of the biosensor to 0.0625µM but increased toxicity at the higher doses tested. Further investigation of the biosensor HA-2 optimisation is required to be able to use it in patients with AML.

Minotti, G., Menna, P., Salvatorelli, E., Cairo, G. and Gianni, L. (2004) Anthracyclines: molecular advances and pharmacologic developments in antitumor activity and cardiotoxicity. Pharmacological Reviews [online]. 56 (2), pp. 185-229. [Accessed 01 October 2016].

Varatharajan, S., Abraham, A., Zhang, W., Shaji, R.V., Ahmed, R., Abraham, A., George, B., Srivastava, A., Chandy, M., Mathews, V. and Balasubramanian, P. (2012) Carbonyl reductase 1 expression influences daunorubicin metabolism in acute myeloid leukemia. European Journal of Clinical Pharmacology [online]. 68 (12), pp. 1577-1586. [Accessed 01 October 2016].

An exploration of the factors influencing job commitment of Generation Y

Ellen Riis-White: Bristol Business School

Ellen is a final year student reading BA Business and Management. She is presenting her Final Year Project research, undertaken whilst on placement with a global automotive organisation, focusing on Generation Y employees and factors influencing their job commitment. Ellen represented the UWE Students Union Executive Team as the Students'

elected Frenchay Campus Officer and is a member of the UWE Swimming and Water Polo Team.

Abstract:
This research aims to identify the key characteristics of Generation Y and the factors influencing their job commitment within the workplace. Generation Y (also known as Millennials, Dot.com, Echo Boomers) are born between 1981 and 2000 (Martin, 2005), and they will account for more than 50% of the global workforce by 2020 (Woodreed, 2016). This highlights the importance of understanding how this generation should be managed within an organisation. The research took place at Volkswagen Group and Volkswagen Financial Services during a student placement.

It was a quantitative survey designed to target employees within the Generation Y bracket (52% of the overall workforce). The survey was sent to 822 employees and achieved a 43% response rate. The findings identified Generation Y employees as job mobile, career ambitious and technologically savvy. The key issues of job commitment are underpinned by the generation's high expectations of organisations to provide them with career development opportunities, suitable work-life balance and competitive rewards and benefits. My derived research model explores the key theme of job commitment and it will provide my case study organisation with a clear understanding and analysis of Generation Y and how to retain them.

The language maintenance of Irish (Gaeilge)

Ioni Bellis: Arts & Cultural Industries

Ioni is in her final year at UWE studying English Language and Linguistics. She is presenting a paper submitted for one of her third year modules. Ioni is a PAL leader at UWE and a member of the trampolining society. Her personal hobbies include painting and writing poetry.

Abstract:
This study is an investigation into the language maintenance of the Irish language, and the level of social usage in light of the institutional teaching of Irish in the Irish national curriculum. The attitudes of speakers of different ages were considered and compared with regard to the teaching of Irish. The literature relating to this subject includes language maintenance reports and a range of journal articles which highlight the problematic nature of the efforts to maintain the language. The discussion primarily focussed on qualitative data from speakers of Irish. In an article from The Irish Times (2014), the issue of "culture versus practicality" was highlighted as one of the factors that limits motivation on the part of the learners, as well as one of the reasons for the diverse attitudes towards learning the language. It is an ongoing debate with a controversial history: it cannot be directly compared to other language maintenance efforts.

Through discussing a number of topics, including the participants' use, their families' use, their competence in Irish and their knowledge of the history of the Irish language, the attitude that ran through the participants' interviews was a general sense of despondency, highlighting the need for change or development of language maintenance efforts in Ireland. The participants discussed the potential for making Irish an optional subject in education, which could significantly damage the language maintenance efforts. The current approach creates a negative attitude towards Irish for some individuals but a nation-wide

basic level of Irish is required for further improvement, which must come from outside the educational system.

A survey exploring asexual people's experiences of kinks and fetishes

Thomas Gray: Health & Social Sciences

Thom is in his final year at UWE studying psychology. He is particularly interested in sexuality and identity and is presenting research from his undergraduate dissertation examining asexuals' experiences of kinks and fetishes. Thom is also a founding member of Pieces of Ace, an online resource for the asexual community.

Abstract:
Prior research has shown that asexuals may fantasise or participate in activities typically conceptualised by society as 'sexual' (Brotto et al., 2010; Sloan, 2015). These behaviours can be understood as potentially contradictory when conceptualising an asexual person as one who does not experience sexual attraction or desire. This study aimed to explore how people who identify as asexual experience kinks and fetishes to determine whether they are viewed as 'sexual' and how they may be incorporated into an asexual identity.

A qualitative survey was conducted online via Qualtrics survey software. The survey was open to all individuals who identified as asexual. Questions were designed to encourage in-depth and detailed responses, as required for qualitative data. The data was analysed using thematic analysis to determine themes across participants' responses. Following a pilot study with six participants recruited via the podcast Pieces of Ace (an asexual online resource), snowball recruitment methods were used to recruit 200 participants via social media sites and forums relating to asexuality.

The large number of participants that took part indicates the pertinence of this topic to asexual people. Initial analysis of responses indicates that many asexuals experience similar kinks and fetishes to their sexual counterparts, but many feel there is a distinct lack of acceptance or awareness of kinks and fetishes in the asexual community.

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