

Vitae Midlands Hub 2011 PhD Poster Competition

Vitae Midlands Hub would like to thank all the participants, judges, spectators and particularly the staff at Nottingham Trent University for making the regional poster competition such an enjoyable and worthwhile event

Welcome to the 6th annual regional poster competition for PhD researchers in the Midlands. The Midlands Hub supports universities and supervisors in the Midlands to develop the personal and professional skills of researchers in the region. As part of our programme of activity for researchers, the Midlands Hub is pleased to welcome you to the 6th annual regional final poster competition.

Regardless of the area of research, post graduate researchers need to be able to communicate their findings with other people during and after their PhD. This might be through peer reviewed articles, at meetings or in grant proposals. This poster competition will refine these skills.

As the Vitae Researcher Development Framework states, researchers also need to be able to critically evaluate their own work and that of others. Therefore we will be asking entrants to give feedback on each other's posters.

Vitae is passionate about valuing and developing those who are directly contributing to research and knowledge. Vitae is the first national organisation to champion the professional and career development of both doctoral researchers and research staff in higher education institutions and research institutes. Vitae will play a major role in the drive for high-level skills and innovation and in the UK's goal to produce world class researchers. Vitae works with people committed to developing the potential of researchers, including national and international organisations, government, funders of research, universities and other employers of researchers, and researchers themselves.

Vitae's vision is for the UK to be world-class in supporting the professional development of researchers and researcher careers.

- Championing the development and implementation of effective policy
- Enhancing higher education provision through sharing practice and resources
- Providing access to development opportunities and resources
- Building an evidence base to support the researcher development agenda

PROGRAMME

- 09.45 – 10.15 **Arrival**
Registration and collection of welcome pack in the main foyer on level 1 of the Arkwright wing. Refreshments available in the Old Library.
- 10.15 – 10.30 **Student Briefing** **Judges Briefing**
(Old Museum) (Old Chemistry Theatre)
- 10.30 – 10.45 **Collective Welcome to the 2010 Midlands Hub Poster Competition:**
(Old Museum)
- 10.50 – 12:05 **Poster judging:** Please stay in the Old Museum **RED (odd numbered students)**
- Researcher activity on “Networking for the Reluctant” (see below) Facilitated by Caron King Research Associate at CAPITAL:** Please make your way downstairs to the Old Chemistry Theatre in the courtyard **BLUE (even numbered students)**
- Please note all students have been given the opportunity to sign up to this session in advance. If you have not signed up beforehand and are a **BLUE** (even numbered) student, then please contact a ‘Helper’ to see if there are spare places.
- If you have not signed up beforehand, and do not wish to attend this workshop, then you have free time to explore the city.
- Please do not complete your peer judging until lunchtime or 14:20 (to avoid overcrowding in the poster exhibition area)
- 12:05 – 13:05 **Lunch back in the dining hall (Old library) for students and judges**
- Please note that approximately 150 people will be having lunch in the same area, so there may be some queuing. If you are a student, please consider using lunchtime as an opportunity to complete your Peer Judging sheet, and then return to the dining hall when queues have lessened.
- 13:05 – 14:20 **Poster judging:** Please stay in the Old Museum **BLUE**
- Researcher activity on “Networking for the Reluctant” (see below) Facilitated by Caron King, Research Associate at CAPITAL:** Please make your way downstairs to the Old Chemistry Theatre in the courtyard **RED**
- NB – All students have been given the opportunity to sign up to this session in advance. If you have not signed up beforehand and are a **RED** (odd numbered) student, then please contact a ‘Helper’ to see if there are spare places.

If you have not signed up beforehand, and do not wish to attend this workshop, then you have free time to explore the city.

Please do not complete your peer judging until 14:20 (to avoid overcrowding in the poster exhibition area)

- 14.20 – 15.00 **Peer Judging:**
Please make your way back to the poster exhibition area (Old Museum) to complete your peer review sheet (unless you have already done so during lunchtime)
- 15.00 – 15.30 **Refreshments:**
Please make your way back to the dining hall (Old Library) where you will rejoin all fellow competitors
- 15:30 – 16.15 **Results and Prizes:**
Please make your way back upstairs to the poster exhibition area (Old Museum), which is accessed via the dining hall (Old Library) The prizes will be presented by Professor Neil T Gorman, Vice-Chancellor of Nottingham Trent University
- 16.15 – 16:30 **Collection of Posters**
- 16:30 **Close of annual Midlands Hub Poster Competition.**
- Please note if you have parked in Talbot Street multistorey then **please pay for this at the Conference Centre reception on departure (otherwise you will not secure the special £7.50 delegate rate)**. Tickets then need to be passed to the Talbot Street multistorey office for a token out of the car park.

Networking for the Reluctant:

Networking is one of those terms that can put fear or dread into even the most confident of us. Networking is critical however for managing your research career. This introductory session will show you:

- the positive benefits of networking
- a simple 5½ step process that will make networking simple and easy for us all to implement
- how to answer the question 'so what exactly do you do' with impact and confidence

It will allow us to test the skills and techniques of networking in a safe and friendly environment – with the added advantage that at the end of the session we will have both put our skills into practice and increased our network.

If you have them, please bring your business or contact cards – and if you don't then please bring a pad of sticky notes and a pen!

Feedback

We'd like to know what you thought about the poster competition, so please take the time to complete the feedback forms in your packs (printed on yellow paper) and return them to the registration desk when you leave.

Peer judging 'Best Poster' award

All participants and spectators will have the opportunity to judge the posters in the competition. Please use the purple judging sheet and return this to the registration desk by 15:00 at the latest. Participants are not permitted to nominate their own poster.

Prizes

The prize structure for 2011 is as follows:

First Prize:	£500
Second Prize:	£250
Third Prize:	£150
Researcher Choice Prize:	£150
Best Poster Summary for Non-Specialist Audience Prize:	£100
4 Runner up prizes:	£50

2011 University entrants

Aston University	3
University of Birmingham	5
Coventry University	3
De Montfort University	5
Keele University	4
University of Leicester	10
Loughborough University	5
University of Northampton	3
Nottingham Trent University	9
University of Nottingham	10
Open University	7
University of Warwick	8
Wolverhampton University	5

Forthcoming Vitae events (www.vitae.ac.uk/events)

Rules of entry and judging criteria for the Midlands Hub regional poster competition final

Rules of entry

- All posters must be A1 size (59.4 x 84.1cm)
- Posters can be either portrait or landscape
- A4 size versions of the poster may be used as handouts. No other handouts may be used.
- No additional material may be used or added to the poster (e.g., laptop demonstration, speaker in poster, anything stuck on the poster, flaps or lifts on poster).
- Name, title of poster and the name of the University must be clearly presented on the poster (for the regional competition).

General Instructions to judges

Each researcher will be judged on their poster and their presentation of their research using the judging criteria below. The poster should be in layman's terms, that is, clear enough to be understood by a member of the general public. The judges will be clearly identifiable and will introduce themselves as necessary.

Each researcher will present **one A1 poster**. Researchers are also permitted to distribute A4 replica copies of their poster. **No other additional handouts or 'props' will be permitted**. Each researcher will be expected to answer questions from the audience and judges about their research and their poster.

Prior to the competition each researcher has been asked to submit a written summary of 150 words which outlines the research referred to in their poster to a non-specialist audience. This will be judged separately and a prize will be awarded to the best summary at the poster competition regional final.

A Judge Number

Poster Number

B Mark your score with an . If you change your score, fill in the box to ignore.

The Researcher...		5	4	3	2	1	0
12	...made me enthusiastic about their research						
13	...welcomed me appropriately to their poster area and asked me if I had any previous knowledge of their research area						
14	...ensured I understood their explanations; checking my understanding of the research						
15	...referred to the poster throughout their presentation						
16	...’s presentation expanded on the information already provided on the poster						
17	... provided explanations of any graphs/diagrams/pictures shown on the poster						
18	... explained how this research relates to the real world						
19	... listened carefully to my questions and answered them fully						
20	At the end of the presentation I felt confident I could give a brief summary of the research to another judge at the competition						

The Poster		5	4	3	2	1	0
1	Did the poster have the student’s name displayed?						
2	Did the poster have the student’s project title/or poster title displayed?						
3	Did the poster have the student’s university displayed?						
4	Were pictures or graphics clearly explained (on the poster)?						
5	Was it clear why the pictures or graphics were included?						
6	Did the poster display visual flair (good use of colour/contrast/font)?						
7	Could you read the poster from 1 meter away?						
8	Did the poster use an appropriate balance of text and graphics/diagrams?						
9	Was it easy to understand the order in which the text on the poster should be read?						
10	Did the poster explain the research in layman terms? (could the poster be understood by a non-specialist)						
11	Did the poster outline either the aim or purpose of the research?						

C **Count** the number crosses in each column (including the top three questions, and count, not the total) then **Add** these values together in the boxes in your Counts for C and tick to confirm it equals 20

<input type="text"/>					
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Poster No	Entrant's Summary
1	<p>Stella Karageorgi, De Montfort University</p> <p>The Search For Forgotten Symbols: <i>The Application Of The Ancient Cypriot Art To Contemporary Art</i></p> <p>My research deals with the study of ancient art and its application to contemporary art. Throughout history many artists have turned to the ancient past and sought to explore how the use of symbols and images of antiquity could be applied to their artistic practice. My research, as a fine practitioner as well, seeks to re-evaluate these former artistic attempts and continue the enquiry focusing specifically on the study of the Archaic art of Cyprus (8-5th c. BC).</p> <p>The methodology of this investigation includes firstly a review of the current relevant literature and the work of other artists who have also used prehistoric art as a source of inspiration; secondly an archaeological review of the ancient art of Cyprus and a study of the artefacts at the British and Cyprus Museum and finally the creation of experimental art pieces which test its application to modern art, in a creative way.</p> <p>Word Count: 150</p>
2	<p>Xiaozhou Zhou, University of Warwick</p> <p>Behind Classroom Codeswitching: Culture, Curriculum and Identity in a Chinese University English Department</p> <p>This mixed methods study aims to investigate teachers' first and second language use in English language classrooms in Chinese universities. Teachers' use of English is worth examining because it is normally students' only exposure to English and thus crucial to their learning processes. Classroom observation, interview and stimulated recall were used to collect data. Analysis of lesson recordings identified a predominance of extended explanations in Chinese about Chinese literature, culture and philosophy etc., which were not part of the syllabus. The interviews confirmed that teachers' language choice was significantly affected by their cultural and disciplinary identities as well as their views regarding the national curriculum. The results suggest that that awareness should be raised of target language use in English classes in China. In addition, universities should be granted the rights to establish their own curricula or be given more freedom to address their specific requirements within the national curriculum.</p> <p>Word Count: 150</p>
3	<p>Taofeeq Ibn-Mohammed, De Montfort University</p> <p>Save Our Planet... ..Through Optimal Sequencing of Building Retrofit Options</p> <p>My research seeks to use the Queens Building to study and demonstrate optimal ways of achieving significant greenhouse gas (GHG) emissions reduction in non-domestic buildings.</p> <p>Achieving such a goal requires thorough assessment of intervention options available for</p>

	<p>reducing GHG emissions, ranging across renewable energy technologies, energy efficiency measures and behavioural changes, in terms of their economics and emissions savings. A further aspect to be considered is the embodied emissions (emissions from extraction through to waste disposal) associated with each option. In practice, due to financial costs, project timelines and other constraints, their implementation is unlikely to be achieved at the same time. This leads to the need for a novel and robust decision-making methodology with which optimal choices can be made regarding the ranking and sequencing of many retrofit intervention options.</p> <p>My research therefore aims to produce a cost-effective retrofit pathway that will incrementally reduce GHG emissions in non-domestic buildings.</p> <p>Word Count: 150</p>
4	<p>Toyin Ogboye , University of Warwick</p> <p>Determinants of Blood Pressure in Children and Adolescents in Nigeria – pilot study</p> <p>Countries worldwide (including Nigeria) are experiencing a decline in communicable diseases, and an increase in chronic non-communicable diseases (such as hypertensive-related diseases). Hypertension or High blood pressure (BP) has been reported amongst young people worldwide, including Nigeria. There is presently little or no information on the factors which determine the distribution of BP in children and adolescents in Nigeria. A cross-sectional pilot survey including 30 randomly selected students aged 11-18 years in a secondary school in Lagos, Nigeria, was carried out to i). determine the association between socioeconomic characteristics, pubertal-status, anthropometric measures and BP in children and adolescents; ii). ensure appropriate planning of study practicalities prior to the main study. Blood pressure was found to be associated with waist circumference and pubertal-status. The pilot has shown that a larger scale main study is feasible. It also highlights the need for investigation of factors associated with BP in children and adolescents.</p> <p>Word Count: 150</p>
5	<p>Rachel Keeling, De Montfort University</p> <p>A Microscopic Approach to a Big Problem... ...Analysing Counterfeit Drugs</p> <p>Counterfeit drugs are a major global problem, it is estimated that 1% of all medicines in the developed world and as much as 33% in the developing world are counterfeit. The highest proportions of counterfeit drugs come from India and Pakistan and often contain insufficient amounts of the active ingredient. Counterfeiters are finding ever more sophisticated ways to bypass existing screening tests. Therefore the aim of this project is to develop a novel method to identify counterfeit drugs using Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectroscopy (EDX).</p> <p>Using samples of the anti hypertension drug Atenolol, significant differences in topography and composition were observed between a legitimate sample from the UK and a suspected counterfeit sample from India.</p>

	<p>Future work will entail the development and validation of the current method and the use of other detectors on the SEM.</p> <p>Word Count: 140</p>
6	<p>Jason Jones, The University of Warwick</p> <p>3D Photocopying</p> <p>Pressing a button on your computer which automatically creates a physical product has been the fascination of science-fiction for decades. 3D printing is a recent phenomenon in manufacturing technologies making that dream a reality. Objects are made by “printing” a series of miniature mosaics which are stacked and laminated together into practically any shape. The process is akin to automating the assembly of millions of microscopic LEGO® bricks. Modern photocopying is a proven method for digitally placing highly complex patterns (or mosaics) of fine particles onto paper. However, due to limitations in photocopying physics it has never been successfully upscaled for 3D printing.[1-3] The current research has identified the underlying problems, applied for a patent on a new method to enable <i>3D photocopying</i> and built bespoke hardware for further trials.[4] Leveraging the strengths of photocopying for 3D assembly promises to deliver a cost-effective and efficient 3D replication technology.</p> <ol style="list-style-type: none"> 1. Cormier, D., J. Taylor, and H. West, <i>An Investigation of Selective Coloring with 3-D Laser Printing</i>. Journal of Manufacturing Processes, 2002. 4(2): p. 148-152. 2. Kumar, A.V. and A. Dutta, <i>Investigation of an electrophotography based rapid prototyping technology</i>. Rapid Prototyping Journal, 2003. 9(2): p. 95-103. 3. Kumar Das, A., <i>An Investigation on the Printing of Metal and Polymer Powders Using Electrophotographic Solid Freeform Fabrication</i>, in <i>Department of Mechanical and Aerospace Engineering 2004</i>, University of Florida: Gainesville, Florida. p. 177. 4. Jones, J., et al., <i>Additive Manufacturing by Electrophotography: Challenges and Successes</i>, in <i>NIP26: International Conference on Digital Printing Technologies and Digital Fabrication 2010</i>: Austin, Texas. p. p. 549-553. <p>Word Count: 148</p>
7	<p>Nasia Therapontos, De Montfort University</p> <p>Sound-Based Music And The National Curriculum Of Cyprus</p> <p>Music education in schools has been limited to the use of notes and traditional instruments. What about the music of sounds? Any sound can be used as a music material. Sound-based music as defined by Landy (2007) “is the art form in which the sound and not the musical note is the basic unit”.</p> <p>Sound-based music has been facing accessibility issues, mainly because of its consideration from the traditional musicians as “elite” university music. Is it in fact accessible to a wider public? The hypothesis of this project is if sound-based music was being approached in schools from an idea and practice perspective from an early age,</p>

	<p>then it would be more accessible to a wider public!</p> <p>The opportunity for research was revealed during the “Reformation programme” of the Cypriot Government, which affected the music curriculum. The research introduced to students between 9-14 years old and their music teachers, lesson plans that used sound-based music concepts and techniques. Observations, questionnaire and interviews were conducted during the lesson plans evaluating their responses towards this music, in order to identify this music’s educational benefits.</p> <p>Word Count: 182</p>
8	<p>Jonathan Durham , University of Warwick</p> <p>Early Modern French Women’s Theatre</p> <p>My research examines why French women playwrights from the 17th and 18th centuries have been neglected from the canon (what is considered to be ‘good literature’) both then and in modern criticism. Theatre of the period is dominated by the French equivalents of Shakespeare: Molière, Racine, and Corneille. Female authors are ignored, despite being innovating in their aesthetic (artist’s conception of what is beautiful), and pioneering for women’s theatre (first to have plays published, performed by professional actors). At the time, women playwrights faced offensive comments from male contemporaries, and any ‘good plays’ would be attributed to male authors. This has been mirrored in modern criticism: Olympe de Gouges, for example, is described as “an eccentric old lady who possessed an uncanny ability for writing unsuccessful plays on apparently foolproof subjects”.¹ Exclusion from the canon is therefore artificial, if not shocking in the 21st century, and needs to be addressed.</p> <p>¹ Marvin Carlson, <i>The Theatre of the French Revolution</i> (Ithaca, New York: Cornell University Press, 1966), p. 55.</p> <p>Word Count: 150</p>
9	<p>Michael Oates, De Montfort University</p> <p>Making It With Less: Modelling Energy Flows In Factory Buildings And Equipment</p> <p>Concerns over energy cost, security and climate change highlight the need to conserve energy on a global scale. Industry consumes one third of global energy, and accounts for nearly 40% of the global CO₂ emissions annually (IEA, 2011).</p> <p>The poster discusses a methodology for combining the modelling of energy use in industrial production, with the energy flows relating to the factory building. A novel approach, as these two areas are usually considered separately by their designers.</p> <p>The poster identifies inputs and outputs of material and energy flows of industrial processes using a graphical format similar to a Sankey diagram. The work forms basis for future research in the form of simulation modelling to assist industrial energy managers to assess the energy used at both facility and systems level. The end goal is to provide a tool that will aid in managing industrial energy in a more sustainable manner.</p>

¹ Marvin Carlson, *The Theatre of the French Revolution* (Ithaca, New York: Cornell University Press, 1966), p. 55.

	<p>Word Count: 148</p>
10	<p>David Lees, University of Warwick</p> <p>The Ideology of the Vichy Regime 1940-1944: A Curious History of Compromise and Adaptation</p> <p>With the Nazis in Paris in July 1940, the Vichy regime, under the guidance of Maréchal Philippe Pétain, set about changing every aspect of the French nation, breaking with the traditions of the Republic that had been part of French life for seventy years. My thesis argues, however, that this ‘clean break’ with the Republic was non-existent—that instead, the regime retained references to Republican culture in order to increase its popularity. Much like the Coalition government, popular symbols (like the NHS today) were absorbed into Vichy ideology and were not, in fact, abandoned. My project looks in particular at the role of the <i>tricolore</i> and the <i>Marseillaise</i> in acting as unifying symbols for the regime. Through analysing original newsreel footage of this still-sensitive period of French history, my thesis makes the case for a re-examination of the received view of the Vichy regime as distinct from its Republican predecessor.</p> <p>Word Count: 150</p>
11	<p>Aditya Bhat, University of Wolverhampton</p> <p>Making Good Bacteria Happy!</p> <p>‘Friendly bacteria’ in food are well accepted in today’s world for their health benefits, which have been scientifically proven. However, studies have shown that viability of these bacteria gets affected after ingestion due to heavy acidic conditions of the stomach. We propose that poly-γ-glutamic acid (γ-PGA), a biodegradable and edible biopolymer, can protect the bacteria if it is administered with probiotic food. This is because γ-PGA has the unique property of staying stable in the stomach while disintegrating in the intestine. Our research confirmed that friendly bacteria that were administered with a coating of γ-PGA survived in simulated gastric juice (pH 2) for a period of four hours, whereas cells without a γ-PGA coating died within two hours. The γ-PGA prepared in our lab can not only be used to protect friendly bacteria in the stomach but could also be used to administer drugs that disintegrate in the gastro-intestinal tract.</p> <p>Word Count: 150</p>
12	<p>Emma Eyre, University of Warwick</p> <p>Do Primary School Children Meet the Current Physical Activity Guidelines for Health?</p> <p>Ethnicity is a major risk factor for cardiovascular disease and type 2 diabetes during adult life. Early markers of disease risk are increasingly recognised in childhood and are</p>

	<p>related to the current epidemic of childhood obesity. South Asian children are at greatest risk. Physical activity is a potentially modifiable determinant of cardiovascular risk and national guidelines state that children should engage in 60 minutes of moderate to vigorous activity daily. This study has assessed compliance with these guidelines in a multiethnic cohort (n=211) of 9-year-old children using activity monitors. Only 55% of all children complied with guidelines. There were striking ethnic differences with 73% of White children and only 35% of South Asian children meeting targets. Gender differences were also found. Further work needs to address the causes of low levels of activity if the future health and well-being of this vulnerable group of children is to be protected.</p> <p>Word Count: 149</p>
13	<p>Aurelian Mbzibain, University of Wolverhampton</p> <p>Renewable Energy Enterprises: A Viable Business Proposition for the Farm Sector in the West Midlands?</p> <p>A questionnaire survey of 393 farmers in the West Midlands was conducted to evaluate the level of deployment of RE enterprises on UK farms, assess motivations and the contribution to farm business performance and to identify predictors for farmer investment behaviour. The poster demonstrates the level of adoption of RE in the farm sector and the types of enterprises accessible to them. Intention to invest in RE enterprises is predicted by the interaction between regulatory and social norms, cognitive factors and individual factors including self efficacy and opportunity perceptions. Investment decisions are driven by farm based objectives rather than by attempts to meet environmental objectives. While the farm sector is closely linked to biomass related enterprises, results suggest that farmers in the West Midlands are more likely to invest in solar and wind related enterprises. What emerge are the implications of this for development of policy initiatives.</p> <p>Word Count: 147</p>
14	<p>Wan Arnidawati Wan Abdullah , University of Warwick</p> <p>How Far have they Come? Learning Difficulties and Integrated Employment in Malaysia</p> <p>With emerging disability policy and practice in Malaysia promoting full participation among disabled people, integrated employment has been recently introduced among persons with learning difficulties. Integrated employment, which emphasises a real job in the general labour market with a regular salary, is a shift from sheltered workshops, which alienates this group from others. This study observes this transition by exploring the recipients' experience in order to understand the reality of this change in their personal and social lives. Three main focuses highlighted are capability recognition, financial independence and social inclusion. Most Malaysians might truthfully believe that the scheme has greatly improved the lives of this group. However, the experiences described show that they believe their capabilities are still being doubted. They also face difficulties in developing interpersonal relationships in the workplace and the degree of</p>

	<p>independence which is often assumed to result from having a job.</p> <p>Word Count: 146</p>
15	<p>Danen Appasamy , University of Wolverhampton</p> <p>Physical and Geo-chemical Characterisation of Dredged Canal Sediments (UK) & their Potential Remediation using Zeolites</p> <p>Canal sediments have to be dredged for navaigability purposes and they are often contaminated due to their past industrial use. The sediments cannot be disposed in normal landfills and thus have to be cleaned first. This research investigates the use of zeolites as a remediation tool. Before this can be achieved successfully, the sediments have to be characterised so that the remediation strategy is tailored to the sediment's specific chemistry. This has been achieved using various analytical methods and the results are presented in this poster. The data from the various analytical methods were collated giving an overview of the processes undergoing in the sediments after dredging. Once, each of the potentially harmful elements (PHEs) was mapped out, it was easier to design a remediation strategy using zeolites. Zeolites were used because of their known efficiency to absorb PHEs and due to their other benefits such as cost and recycling potential.</p> <p>Word count 151</p>
16	<p>Joao Fialho , University of Warwick</p>
17	<p>Natalia Konstantinova, University of Wolverhampton</p> <p>Interactive Information Access using Wikipedia</p> <p>As a result of the rapid growth of the Internet, people now need advanced technologies to help them find the information they need. The field of natural language processing addresses this issue by developing services such as information retrieval and question answering, which facilitate information access.</p> <p>Sometimes users do not know precisely what they are looking for, and they need to define their information needs interactively as offered by an interactive question answering (IQA) system.</p> <p>Our research aims at facilitating the process of formulating user needs and providing easy ways of searching for information. We are developing an IQA system for the domain of mobile phones. The system is expected to guide users through the information-seeking process by suggesting features they can use to find a specific phone model in the quickest and most natural way.</p> <p>Word Count: 136</p>

<p>18</p>	<p>Pravin Vekria, Aston University</p> <p>Oximetry – A New Way Forward in the Diagnosis of Eye Disease</p> <p>A disturbance in the supply of oxygen is believed to be responsible for the development several eye diseases which may impair vision. This includes some of the most common eye diseases such as glaucoma and diabetic retinopathy.</p> <p>Currently, many eye diseases are detected when damage has already occurred. In light of the fact that there are effective treatments for eye disease, it all the more important that we develop methods of detecting eye diseases in the earliest possible stage of their development. A novel imaging technique, retinal oximetry, is being investigated for its role in diagnosing eye disease and monitoring their treatments. Uniquely, this easily operated camera enables the measurement of the amount of oxygen that is delivered to the retina. This research aims to investigate the role of retinal oximetry in improving the diagnosis of diabetic retinopathy, a common sight-threatening complication of diabetes.</p> <p>Word count: 144</p>
<p>19</p>	<p>Yvonne Skalban, University of Wolverhampton</p> <p>Automatic Question Generation from Documentary Videos</p> <p>Natural Language Processing (NLP) is a research area exploiting the benefits of computer science, linguistics, artificial intelligence and mathematics to bridge the language gap between machines and humans; it utilises the processing power of computers and the linguistic expertise of humans to efficiently perform language tasks. Rather than replacing humans, however, machines assist by performing laborious and time-consuming tasks.</p> <p>Question generation, a sub-discipline of NLP and focus of the research presented here, is concerned with the automatic generation of questions from texts. Such questions are useful in many contexts, particularly in educational environments, as they provide a form of quick assessment to teachers and students and can help save time and resources. We propose a system which automatically generates questions from documentary videos; these can, for example, be used by teachers to test students' comprehension of a video shown in class. Initial experiments with a prototype system show promising results.</p> <p>Word Count: 150</p>
<p>20</p>	<p>Amy Bennion, Aston University</p> <p>Living with Macular Degeneration: Cathleen's Story</p> <p>Age-related Macular Degeneration (AMD) is the leading cause of blindness in the United Kingdom. With a rising number of older people the number of cases of AMD is increasing. Cathleen is a participant in a project investigating the impact of AMD on quality-of-life. Cathleen is taking part in three face-to-face interviews which ask about the impact of AMD on her day-to-day life. Interpretative Phenomenological Analysis (IPA) (a qualitative approach which tries to understand how participants make sense of their experience) is being used to analyse the interviews. Cathleen's first interview revealed four themes: Interaction with the health service, determination to retain vision vs.</p>

	<p>inevitable vision loss, living with difficulties caused by AMD, and the experience of health and ageing. A greater understanding of individual experience has the potential to improve services and inform the development of rehabilitation support for patients.</p> <p>Word count: 140</p>
21	<p>Michael Kelly, Keele University</p> <p>Lateral Variations and Linkages in Thrust Geometries: The Cantabrian Thrust Belt, Northern Spain and the Moine Thrust Zone, NW Scotland</p> <p>Lateral changes in thrust fault geometry occur in all fold-and-thrust belts across so called transverse zones, many of which are thought related to pre-existing basement faults, lithological (sedimentary) changes and multiple thrust (compressional fault) development. Causative structures for lateral changes in thrust belts are often concealed and not fully studied. However, their development is crucial for better understanding of fluid migration pathways and mountain building processes.</p> <p>Detailed three-dimensional geometries (how thrust units / thrusts link together and relate to one another), topology (what these linkages mean in terms of lateral changes) and kinematics (evolution) of selected thrust systems are studied to fully analyse their evolution, as well as, the cause and effect of lateral changes in thrust belts.</p> <p>Two key areas have been targeted. The Caledonide Moine Thrust Zone, NW Scotland, around the Loch Maree Fault / Achnashellach region, and the Variscan / Pyrenean (Alpine) Cantabrian Thrust Belt, Northern Spain.</p> <p>Word Count: 150</p>
22	<p>Lauren Mutton, Aston University</p> <p>Looking at the Brain's Responses to Sound</p> <p>When a sound enters the ear, a signal is sent along a pathway of nerves to neurons in the brain. These neurons are stimulated, causing electrical and magnetic activity throughout the auditory cortex. People with certain brain disorders, such as epilepsy, display specific patterns of activity in response to a sound stimulus. Neuroimaging techniques have created views of patterns of activity and an image of the brain. Combining these different techniques can accurately show where in the brain activity is taking place, and can identify if the activity is abnormal. This has led to a deeper understanding of the brain and clinical diagnoses of disorders. Some disorders are not yet understood so it is beneficial to gain as much information as possible on brain responses, including the activations within the auditory cortex in response to sounds.</p> <p>Word count: 136</p>
23	<p>Samantha L. Wilson, Keele University</p> <p>Understanding Cell Behaviour in the Cornea of the Eye Using an Experimental Model</p> <p>The aim of this study is to make a corneal stromal layer model that mimics a healthy</p>

cornea by growing corneal cells in collagen-containing gels^{1,2}. However, the cells which we grow in this layer (fibroblasts) are different to what would be found in normal healthy cornea (keratocytes). Chemical cues, supplied by different medias, can encourage fibroblasts to turn into keratocytes³ whilst in the gels.

A non-destructive spherical indentation technique examined the mechanical properties of collagen hydrogel specimens under different medias. Gel contraction caused by the cells was measured by optical coherence tomography. Quantitative PCR (qPCR) was conducted to cross-validate the observed physical properties.

The contraction and mechanical results indicated a change occurring at a cellular level. qPCR data supported this by showing that when cultured in keratocyte media, markers specific to keratocytes are expressed more. These results are beneficial for developing a corneal graft that can aid corneal disease treatment.

Word Count: 150

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2 Ahearne, M., Wilson, S.L., Liu, K.K., et al. 2010, "Influence of Cell and Collagen Concentration on the Cell-Matrix Mechanical Relationship in a Corneal Stroma Wound Healing Model", *Experimental Eye Research*, **91**, (5), pp. 584-591

3 Musselmann, K., Alexandrou, B., Kane, B. & Hassell, J.R. 2005, "Maintenance of the keratocyte phenotype during cell proliferation stimulated by insulin", *Journal of Biological Chemistry*, **280**, (38), pp. 32634-32639.

24 Imran Bashir, Open University

Traffic Noise Reduction using Surface Treatments, Trees and Vegetation

Growing demand on transportation and road network has resulted in increased levels of annoyance from road traffic noise. This poster presents work on utilising ground surfaces near the road for noise mitigation purposes. Ground effect results from the interference between sound travelling directly from a point source to a receiver and that reflected coherently from the ground. Typically if the ground is hard and smooth then at grazing incidence the first destructive interference occurs at too high a frequency to be useful in noise control. However, the effective acoustic impedance of a rough hard surface is finite and destructive interference can occur at much lower frequencies over a hard rough surface than if the surface is smooth. If the roughness is spaced periodically then the phenomenon of diffraction assisted ground effect occurs. This passive method of noise reduction can be more cost-effective and visually less intrusive than, for example, erecting noise barriers.

Word Count: 152

25 Hannah Moore, Keele University

Insect Investigators: Fingerprint Hydrocarbon Profiles to Estimate the Time Since

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	<p>Death</p> <p>When solving cases that involve unknown causes of death, establishing the time since death or post-mortem interval (PMI) is very important. It has become increasingly important in the last decade and Forensic Entomology is being used more frequently to determine the PMI when a medical pathologist is unable to do so. However, this area is coming under scrutiny because determining a reliable PMI can be problematic even for the most experienced of Forensic Entomologists and more scientifically supported research is needed to compliment current methods used in the field. Research in social insects has shown that hydrocarbons found on the cuticle of insects are species specific. This has also been proven in studies of flies and could be a promising tool for establishing the PMI in Forensic Entomology.</p> <p>Word count: 128</p>
26	<p>Rose Johnson, Open University</p> <p>Learn as you Play: How can real-time feedback enhance learning the violin?</p> <p>My research looks at how technology can give feedback to novice musicians to help them learn and to encourage them to practice. In particular I am looking at real-time feedback which means that the learner receives feedback as they play. This presents both challenges and opportunities: challenges, because the student only has a limited amount of attention to give to understanding and responding to the feedback; opportunities, because the feedback can be understood in the context of the students own actions and how they are playing at the time.</p> <p>I use a method of building and evaluating prototypes to investigate different ways to give real-time feedback, with a strong emphasis on evaluating the prototypes in real-life situations. Currently I am looking to compare vibrotactile feedback which is felt as vibrations on the body with visual feedback in the form of twinkling lights around the music.</p> <p>Word Count: 145</p>
27	<p>Kristopher Wisniewski, Keele University</p> <p>Pesticides: Something Worth Buzzing About</p> <p>Bees have become an important vector in world agriculture and are depended on for pollination of crops. However honeybee numbers have been in decline over recent years and this is considered to be due to factors such as disease, climate change and pesticide exposure.</p> <p>Treatment of pests, such as the <i>Varroa destructor</i> with pesticides can have a negative effect on a colony's health. The majority of these pesticides (acaricides) are fat soluble and very stable; consequently they are detectable in comb wax for over 5 years. Comb wax is therefore a good indicator of a colony's exposure to pesticides. This project aims to detect and quantify the levels of pesticide residues in wax using various chromatographic techniques. This poster will present a summary of the current and future work conducted at Keele University.</p>

	Word Count: 133
28	<p>Sebastien Mitea, Open University</p> <p>Plasma Physics inside Microscopic Diamond Devices</p> <p>I am investigating the ignition and stability of sub-millimetre plasma, or “microplasma”, between electrodes made in diamond instead of the usual metal or semiconductor materials. Because the microplasma is contained inside a cavity the size of a human air, it is impossible to place a probe to study it. Therefore I analyse the emitted light in order to gain an insight into the physical/chemical processes. I am also interested in understanding how diamond, a superlative and fascinating material, helps or hinders the operation of the microplasma.</p> <p>Word Count: 86</p>
29	<p>Angela Clifford, Loughborough University</p> <p>Does improves Quality of Life explain the link between Physical Activity and Memory?</p> <p>Taking part in regular physical activity has been shown to improve memory in middle- to older- age; however, it is unclear how this occurs. This study questioned a large group of women from Indonesia about lifestyle factors, such as how often they played sport, and also tested their memory. The women were then asked to rate their quality of life (which includes factors such as mood and physical health), and this was used to see if playing sport improved quality of life which then affected memory. Although those who played sport had higher memory scores than those who did not, quality of life did not appear to be the link between the two factors. It was concluded that physical activity may thus affect memory through more direct physiological pathways. If these pathways are found, it may have implications for the treatment of memory disorders such as Alzheimer's disease.</p> <p>Word Count: 141</p>
30	<p>Edward Sucksmith, Open University</p> <p>Empathy and Emotion Recognition in People with Autism and their Parents</p> <p>Objectives: To assess whether (i) adults with ASC and (ii) first-degree relatives (parents) of a child with ASC show difficulties on a self-report measure of empathy (the EQ) and a performance measure of emotion recognition compared to a control group with no psychiatric diagnoses.</p> <p>Methods: 338 adults with ASC, 317 parents of a child with ASC and 193 controls participated in this study. Groups were matched on non-verbal IQ.</p> <p>Results: A series of Group* Sex analysis of covariances (ANCOVA) with non-verbal IQ</p>

	<p>as a covariate revealed a significant main effect of experimental group and sex on EQ and emotion recognition scores.</p> <p>Conclusions: Social and communication difficulties characteristic for individuals with ASC are reflected in significant impairments on a self-rated measure of empathy and in performance on a basic emotion recognition test. The first-degree relatives of individuals with ASC exhibited more subtle deficits on these tests, which are indicative of the Broader Autism Phenotype. These results suggest that some of the underlying components of empathy are heritable.</p> <p>Word Count: 166</p>
31	<p>Georgina Fox, Loughborough University</p> <p>Environmental Animation</p> <p>Environmental Animation is a research study demonstrating the potential of Animation to educate home owners on their energy usage and energy efficiency. The aim of the research is to optimize animation to display real-time energy usage. Animation provides the possibilities to revitalise energy management by using a creative visual to explain and demonstrate complicated facts and figures. In turn, the current endeavour for home owners to become energy efficient should transform into a fun, entertaining, and far more comprehensible activity. Animation is a widely recognised form of media, proven enormously successful in the world of advertising. Numerous UK electricity companies have opted to use animation in their TV adverts. Animation can not only offer a unique element of humour into any project, it also has excellent powers of persuasion; which should prove vital in encouraging home owners to embrace the necessity to become more energy efficient.</p> <p>Word Count: 146</p>
32	<p>Daniel Barthaud, Open University</p> <p>Microplasma Satellite Thrusters</p> <p>The aim of this project is to investigate microplasmas for their use in potential thrusters for spacecraft. There has recently been an increasing interest in producing smaller, lower cost satellites which require maneuvering thrusters to produce μ-m Newton levels of thrust.</p> <p>Some previous methods for producing these low levels of thrust included cold gas thrusters which expel gas from pressurised systems at high velocities. It is possible to use a micro discharge device within a nozzle to heat this gas to over 1000K. By increasing the temperature of the gas we are increasing the rate at which it expands which also increases the thrust level per gram of propellant used (specific impulse). This helps to improve satellite service lifetimes since only a limited volume of propellant can be launched with a satellite.</p> <p>Word Count: 132</p>

33	<p>Kathleen Haigh, Loughborough University</p> <p>Production of Biodiesel without Harming the Environment</p> <p>The aim of my research is to investigate more efficient ways to manufacture biodiesel from used cooking oil. One way to improve efficiency is to use a solid catalyst in place of a liquid because it means the product and catalyst can be easily separated. Used cooking oil has been selected as the raw material because it is relatively cheap and reduces the amount of waste going to landfill. The disadvantage of used cooking oil is that it contains impurities due to cooking and this includes free fatty acids which are a decomposition product of the oil. These free fatty acids can be converted to biodiesel by means of an esterification reaction. This work has compared two types of solid catalysts, ion-exchange resin catalyst and an immobilised enzyme, for the esterification reaction. The results the reaction rate is faster using an enzyme catalyst using a much lower methanol concentration.</p> <p>Word Count: 149</p>
34	<p>Yu Wang, Open University</p> <p>Humour in British Academic Lectures and Chinese Students' Perceptions of it</p> <p>My research explores humour in British academic lectures and how Chinese students perceive it. This interest derived from my experience as an international student in Britain, when I observed people laughing in lectures without my knowing why. This experience alienated me from my peers. Previous research has indicated that humour is problematic in intercultural teaching and learning, but humour in British academic contexts has been rarely investigated.</p> <p>Thirteen hours of university lectures were recorded. The lecturers and some Chinese students were interviewed, who commented on selected humour instances in the recordings. Additionally, a considerable number of humour instances were identified in the British Academic Spoken English (BASE) corpus, and analysed for patterns of humour in lectures.</p> <p>Preliminary findings show that my Chinese participants could recognise humour through paralinguistic cues, such as laughter, without fully understanding its meaning. Moreover, many of them had problems understanding unmarked humour, such as irony.</p> <p>Word Count: 149</p>
35	<p>Joni Cook, Loughborough University</p> <p>A Sticky Situation? The Responses of a Carnivorous Plant Species to Nitrogen Pollution in UK Wetlands.</p> <p>Wetlands sequester a huge proportion of the global carbon stock, thus preventing the exacerbation of global warming (Gorham, 1991). Carbon storage is only possible where mosses thrive and therefore peat accumulates. Nitrogen deposition lifts the primary limitation of wetland vegetation, leading to the dominance of fast-growing plants and the</p>

suppression of poorer competitors such as mosses (Berendse *et al.*, 2001; Gunnarsson *et al.*, 2008). These changes may alter the net wetland function from that of a carbon sink to a carbon source, releasing greenhouse gases into the atmosphere (Heijmans *et al.*, 2001). Carnivorous plants have evolved the ability to capture and digest insects, providing an additional nutrient source within their nutrient-deficient wetland environment (Ellison & Gotelli, 2001). Their sensitivity to small soil nitrogen fluctuations may make carnivorous plants ideal biological indicators of nitrogen pollution (Chiang *et al.*, 2000). Exploring the influence of nitrogen deposition on the spatial distribution and physiology of the round-leaved sundew will enable recommendations to be made regarding the plant's suitability as a biological indicator of nitrogen pollution.

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Word count: 149

36

Sunitha Pangala, Open University

Tropical Trees Emit Methane

Tropical wet forests play an important role in carbon cycle. Prolonged flooding and heavy rainfall favours both carbon accumulation and methane production - a powerful greenhouse gas. In this ecosystem, although large quantities of methane are produced by the soil microorganisms, very little methane is released to the atmosphere. However, recent satellite based investigation highlighted that more methane is released from these forests but it is not calculated when soil surface measurements were made for the last 30 years. We hypothesised that trees that dominate these forests act as a conduit and release soil produced methane to the atmosphere. In our pilot study we measured

	<p>methane emissions from 46 trees in tropical peat swamp forests of Indonesia and proved that not only trees act as conduit and facilitate methane transport from the soil to the atmosphere but also trees release more methane than the soil surface</p> <p>Word Count: 146</p>
37	<p>Alex Lyness, Loughborough University</p> <p>The Optimisation of a Needle-Free Drug Delivery Device</p> <p>The Glide Solid Dose Injector (SDI) is a spring loaded medical device capable of delivering drugs in an implant form through the skin to the adipose tissue. The technology is needle-free eliminating needle-stick injuries, contamination issues and needle phobia. The novel SDI technology can be used to deliver vaccines to the third world as a cost effective alternative to the traditional needle and syringe. Previous needle-free technologies have failed to achieve wide market acceptance due to difficulties in overcoming the issues associated with skin variation across a population. To optimise the Glide SDI design, more has to be learnt about skin's fundamental mechanical properties and the penetration mechanism [1]. This has led to the design of an electro-mechanical test rig capable of measuring the forces during skin penetration. Early results have been used to identify several optimal design parameters, quantify skin variation and develop a repeatable synthetic test bed.</p> <p>[1] Shergold, O.A. and N.A. Fleck, <i>Experimental Investigation Into the Deep Penetration of Soft Solids by Sharp and Blunt Punches, With Application to the Piercing of Skin</i>. Journal of Biomechanical Engineering, 2005. 127(5): p. 838-848.</p> <p>Word Count: 149</p>
38	<p>Megan Coombs, University of Birmingham</p> <p>Does a Potential Augmentative Biological Control Agent have the Necessary Cold Hardiness to Survive</p> <p>Increased awareness of the deleterious effects of chemical pesticides has heightened public demand for pesticide-free and organically grown produce. Biological control is an increasingly important component of pest control in commercially grown crops, however there is an inherent risk that use of an exotic organism could harm the ecosystem. As such, all potential biological control agents are subject to thorough investigation in order to prevent the introduction of a species that has the capacity to become invasive.</p> <p>In order to assess the suitability of a predatory mite, <i>Phytoseiulus macropilis</i>, as a potential augmentative biological control agent of glasshouse red spider mite, <i>Tetranychus urticae</i>, survival of a typical UK winter should be investigated. If <i>P. macropilis</i> does not have the necessary cold hardiness to survive and reproduce, there is a lower probability of local establishment of any escapees from the glasshouse environment.</p> <p>Word Count: 141</p>

39	<p>Terri Holloway, University of Nottingham</p> <p>Would You Reduce Your Meat Intake to Prolong Your Life?</p> <p>It is the position of several nutrition-based organizations, such as the American Dietetic Association, that vegetarian and vegan diets are healthful and may prevent certain diseases when well-planned.¹ Also, meat and dairy production is responsible for 3-13 times more greenhouse gas emissions than vegetables and pulses.² Thus, vegetarianism offers great potential for personal health and environmental sustainability.</p> <p>In the present study, three-hundred university students completed a 24-hour recall of food and drinks and a questionnaire related to attitudes towards vegetarianism. A group of 100 volunteers then attended an intervention designed to reduce meat consumption. Results reported that vegetarian students had lower levels in caloric intake, total fat and calcium with a greater intake of carbohydrates and iron. The enjoyment of meat and family/friend influences had the greatest impact on preventing a transition to the vegetarian diet. Further analysis is ongoing.</p> <p>Word Count: 140</p> <p>References American Dietetic Association. Position of the American Dietetic Association: Vegetarian Diets. <i>Journal of the American Dietetic Association</i>. 2009; 109,7:1266-1281.</p>
40	<p>Sabrina Grant, University of Birmingham</p> <p>Do you Monitor your Own Blood Pressure at Home? – A UK Primary Care Postal Survey</p> <p>Background: Self-monitoring of blood pressure (BP) for patients with hypertension has been shown to more accurately estimate true underlying blood pressure.</p> <p>Objectives: To determine the prevalence of self-monitoring of BP in UK primary care hypertensive patients.</p> <p>Methods: Short survey sent to 1815 adult patients with hypertension (18+) registered within four general practices in the West Midlands</p> <p>Results: 955/1815 questionnaires were analyzable (53% response rate). Self-monitoring of BP was reported by 293/ 955 (31%) respondents. Over 60% (184/293) monitored at least once a month, mostly using automated devices (247/293, 84.3%). Those monitoring BP were younger (OR = 1.46, 95% CI 2.46 to 11.39) more likely to be of non-white ethnic origin (OR = 1.81, 95% CI 1.27 to 2.59) and in employment (OR = 1.95, 95% CI 1.45 to 2.63).</p> <p>Conclusions: Self-monitoring of blood pressure could potentially be practiced by one in three people with hypertension in the UK.</p>

	Word Count: 152
41	<p>Eleanor Grimes , University of Nottingham</p> <p>A New Way To View Cancer</p> <p>The aim of this research is to design and produce a new drug that will locate in cancer cells that are resistant to current cancer treatments and can be seen using a magnetic resonance scanner (MRI). Treatment resistant cancer cells are formed as the cancer grows very rapidly and the blood supply can't keep up. This produces an area of living tissue low in oxygen (hypoxic) which is resistant to current cancer treatments. Current methods used to view these 'hypoxic' cancer cells requires the use of positron emission tomography (PET), a technique that involves the patient being injected with a radioactive element produced in a nuclear reaction. Unlike PET, MRI has no known side effects and is widely available in most hospitals. Overall these new drugs should provide doctors with a new method to predict a patient's response to cancer therapy, which can only improve the treatment a patient receives.</p> <p>Word Count: 150</p>
42	<p>Janet Sullivan, University of Birmingham</p> <p>Paying the Price for Industrialisation: Pollution in a Black Country Town during the Nineteenth Century</p> <p>The Black Country consisted of a group of small towns sited on the thick South Staffordshire coal seam. Although historically recognised as a cradle of the industrial revolution and economically of great significance in the nineteenth century, if mentioned at all by historians, it is usually as a grim contrast to the larger city of Birmingham. Even the name had a negative connotation. The effects of pollution were visible and attracted the attention of eyewitnesses writing at the time who described both the area and its people as 'savage'. How did pollution manifest itself in the area? How did it affect the towns and the lives of the people? How pollution was viewed by the local people, the industrialists and the government and was there any attempt to deal with it?</p> <p>Word Count: 131</p>
43	<p>Ahmed Mohamed Khair , University of Nottingham</p> <p>Economic Recession and Student Depression</p> <p>Introduction: Economic recessions have a negative impact on mental health especially depression. These appear in affluent countries as well as lower-income countries. Aim: We wanted to explore the depression situation among UK university students and its socio-economic determinants. Methods: 923 undergraduate students attending six Universities in 2009-2010 were surveyed. Results: Overall, 59% screened positive for depression, with 20% had moderate to severe depression, not just mild symptoms as 11% reported suicidal thoughts. Depressed</p>

	<p>students were less likely to be medicals, with high parental education and affluent families. Conclusion: UK students reported high rates of depression with less socially advantaged students having greater risk. Causes might be; stresses of young adulthood and economic pressures of being a student, exaggerated by the recent economic crises. Similar findings were observed in a sample of Egyptian students. Application: Universities should consider confidential mental disorders screening. This would help students' access appropriate help and support.</p> <p>Word Count: 150</p>
44	<p>Saengduean Yotanyamaneewong, University of Birmingham</p> <p>Teacher Motivation in Special Education in Thailand</p> <p>Teaching children with special educational needs (SEN) has been known to be a very stressful occupation which can lead to the phenomenon of 'burnout'. When teachers experience high burnout, it negatively affects both teachers and children. However, not every teacher is going to experience burnout; some teachers may experience difficulties teaching children with SEN whereas others might not. Therefore, the aim of paper was to explore the motivational orientation among this particular group of SEN Thai teachers and what influences their motivation. Sixteen teachers of children with SEN with low level of burn out participated in the interview-based qualitative study. The findings suggest that self-actualisation needs were the motivations that influenced Thai teachers to working with children with SEN. The next motivations fall under esteem needs, following with safety need, physical needs, and belonging needs.</p> <p>Word Count: 135</p>
45	<p>Phillipa Marsh, University of Nottingham</p> <p>Home is Where the Heart is or How Efficient the System is? What we can learn from existing homeowners for how we might live in the future</p> <p>Housing is a core contributor to the UK energy concerns, with almost a third of carbon emission coming directly from homes. An assortment of housing alternatives have been developed to solve this problem, but increasingly incorporate advanced technologies that many would be unfamiliar with. This project considers the impact this may have to how we live, discovering that our social relationship with housing is as important as making them efficient. Research examines current considerations from residential industries alongside the homeowners currently living in efficient houses. Findings suggest that homeowners value efficient solutions but still craved homely comforts that are traditionally part of our established home relationship. Without these, efficient technologies can be rejected whereas those with homely links are likely to be accepted into daily life. Thus it is not simply incorporating efficient technologies, but how we use and value our homes alongside the technologies to evolve for the future.</p> <p>Word Count: 150</p>
46	<p>Amrit Singh Chandan, University of Birmingham</p>

	<p>Novel Method of Visualising the Hydrogen System</p> <p>Research into hydrogen fuel cell (HFC) technologies has been on-going since they were first discovered by Sir William Grove in 1842. There are many research groups researching into different aspects of the Hydrogen Economy & System (HES). In an attempt to help make research efforts more efficient, minimizing overlap between research projects and allowing groups to better understand how their work relates to the whole HES, the route map concept was conceived and thus the Hydrogen Route Map (HRM) was developed. On average 3.5 million people use the London Underground every day. The underground map concept had been specially developed by Harry Beck in 1931 and has been continually improved upon since to be user friendly and easy to read. This concept was tested by a questionnaire and interviews. Preliminary questionnaire results showed that 73% of people questioned believed that the HRM is easy to understand. Future work will involve creating highly detailed sector maps which will include UK and international research groups associated with the HES.</p> <p>Word Count: 167</p>
47	<p>Jiin Woei Lee , University of Nottingham</p> <p>Prolonging the Life of Human Joint Implants</p> <p>Every year, human joint implants, otherwise termed orthopaedic implants, restore mobility and quality of life to millions of individuals. However, with time, the body may reject the implant with deterioration of natural bone cells and producing allergic reactions. Although it is recognised that controlling the properties of the material surface is needed to make the implant acceptable within the body, little is known about how that is done.</p> <p>At Nottingham University, Titanium (Ti) implants that are coated with hydroxyapatite (HA) are being used to understand how the properties could be controlled. HA is a synthetic material that resembles the structure of natural bone. As the research is at its preliminary stage, representatives in the form of discs are being used rather than real implants.</p> <p>Advanced technologies are being used to fabricate and analyse modified HA-coated Ti, such as the Scanning Electron Microscope which is able to provide high resolution images while simultaneously providing chemical mapping of the biomaterial.</p> <p>Word Count: 158</p>
48	<p>Obioma Azuonwu, Coventry University</p> <p>Effect of Ultrasound on Pathogens in Potable Water</p> <p>The importance of potable water as a natural resource is vital for human health. Enterococcus faecalis and Salmonella typhimurium are commonly linked to waterborne disease epidemics and so were chosen for this research. 200 ml bacterial suspensions were calibrated to an optical density to 0.17 at λ 440nm and subjected to sonication using a 20 kHz probe (18 W/cm³). Samples were taken at 0, 2, 5, 15 and 30 minutes, serially diluted and enumerated using viable plate count techniques. Results reveal Enterococcus faecalis (G+ve bacteria with a tough peptidoglycan cell wall) demonstrated a “declumping” effect following two minutes sonication</p>

	<p>which is typical for G+ bacterial species. Salmonella typhimurium demonstrated a reduction in bacterial cell numbers with increasing sonication times; due to the nature of G-ve bacterial cell walls which are more susceptible to damage induced by sonication.</p> <p>Word Count – 137</p>
49	<p>Bogdan G. Popescu , University of Nottingham</p> <p>The Press in Chains: Censorship in Non-Democratic Regimes</p> <p>The research focuses on press censorship in non-democratic regimes to convince decision makers that different autocracies can engage in varying levels of censorship and repression. Using a statistical analysis and controlling for factors such as the presence of opposition and the size of parliament, I find that press is censored most in non-democratic countries with a large parliament size and few opposition seats. When it comes to military regimes, there is evidence to suggest that in countries where much of the labour force is involved in the military, there is less press freedom. At the same time, a high economic development and a small population have a positive impact, creating less economic stress and not forcing the government to repress with the aim of remaining in control. From this research, there are differences between non-democratic regimes with respect to media freedom and consequently, with respect to human rights.</p> <p>Word Count: 148</p>
50	<p>Katerina Frankova, Coventry University</p> <p>Regenerating Urban Public Spaces: Towards More Effective Public Consultations</p> <p>This research evaluates a number of different approaches to community engagement which involve the public in the transformation of urban public spaces.</p> <p>A number of research methods were adapted in order to suit the context of an area under redevelopment. As part of 'walking discussions', adapted after Jones et al (2008), groups of participants were taken through the areas concerned and explored whether walking through the actual environment influences the participants' potential to comment and suggest improvements. Initial findings suggest that such methods tend to generate more positive findings and realistic suggestions for improvement than methods carried out in neutral environments (e.g. focus groups).</p> <p>Overall, the research aims to explore the effectiveness of alternative methods of community engagement in regeneration contexts and thus aims to contribute to a more successful process of improving public spaces.</p> <p>References: Jones, P., Bunce, G., Evans, J., Gibbs, H., and Ricketts, J. (2008) 'Research Design: Exploring Space and Place With Walking Interviews', Journal of Research Practice, 4 (2), Article D2</p> <p>Word Count - 135</p>
51	<p>Gabriel Choong Yew Hong , University of Nottingham</p> <p>Carbon Nanotubes: Conducting the Future of Plastics</p> <p>Plastics were once universal insulators. By adding carbon nanotubes (CNTs), plastics become electrically conductive without forfeiting formability or weight.</p>

	<p>Researchers in the University of Nottingham are examining the effect of the presence of CNTs on processing and properties of plastics. They aim to develop predictive models of the plastic-CNT properties resulting from given processing conditions.</p> <p>The project began when Nanocyl S.A. mixed CNTs with polycarbonate, a high-performance plastic. According to Andy Lew, Nanocyl principal senior scientist, "Polycarbonate has long been used in components for electronics and data storage. Adding CNTs makes it anti-static while maintaining the desirable properties of polycarbonate".</p> <p>Preliminary work has shown that current industrial processing methods may require modifications to manufacture the nanocomposite. Presently, conductive plastics are used as anti-static packaging to protect electronics from damage. Conductive nanocomposite plastics are positioned to be the centre of future developments for lighter, smaller and more multi-functional consumer electronics.</p> <p>Word Count: 149</p>
52	<p>Lynda Diane Irving, Coventry University</p> <p>The Use of Legislation to Regulate Age Discrimination in the Workplace in England and Wales</p> <p>In 2006 the UK introduced legislation to prohibit age discrimination in the workplace in order to promote the employment of older workers and to reduce injustice to those suffering unjustified differential treatment. The underlying objective of the legislation was to reduce the burden imposed on the State by the growing number of economically inactive senior citizens, a problem which has become increasingly significant.</p> <p>My study examines the operation of the Age Regulations using a mixed methodology of an interpretative qualitative approach to legal research combined with a quantitative analysis of all 4001 Employment Tribunal Judgments made under the Regulations.</p> <p>The results show the legislation is used more by those suffering dismissal from employment rather than in recruitment. Judgment Reports show very low success rates and compensation awards for claimants, inconsistent interpretation of the Regulations, the importance of legal representation, a north - south divide in success rates and a 'gender award gap'.</p> <p>Word Count 150</p>
53	<p>Cathy Ashwin , University of Nottingham</p> <p>Why do Women Smoke after Birth?</p> <p>Many women struggle to stop smoking during pregnancy, only to relapse soon after birth. Only by understanding the complex relationship women have with smoking are we, as health professionals going to develop ways of helping women to remain smokefree. 30% of women who smoke at the start of pregnancy give up, motivated by the health of the unborn baby, but begin again soon after birth (NICE, 2010). This study is looking into the reasons why some women start smoking again. Preliminary findings suggest that women who are more mentally prepared for this life changing transformation of becoming a mother and consider the long term health benefits of remaining a non- smoker are less likely to resume smoking.</p> <p>It is hoped the results of this study will assist in developing ways of helping women cope with the challenges of motherhood without turning to their long time 'friend' – the cigarette!</p> <p>Word Count: 148</p>

54	<p>Claire Fullarton, University of Leicester</p> <p>A Sustainable, Rechargeable Battery for Electric Vehicles and Hybrid Electric Vehicles</p> <p>This research focuses on the design, production and properties of a new type of sustainable, rechargeable battery for electric vehicles (EVs) and hybrid EVs.</p> <p>Most vehicles on the roads are petrol or diesel powered, which have issues concerning high environmental impact (CO₂ emissions).</p> <p>EVs commercially available utilise lead acid, nickel-metal hydride or lithium ion batteries, but these have reached their practical limits in terms of energy (usage time) and power. The major concern is with safety, short circuiting can cause decomposition of battery solvent and gas evolution, potentially resulting in packs setting on fire.</p> <p>The aim of the research is to construct and test a prototype battery. Electrically conducting plastics and metal electrodes are to be used in conjunction with novel, inexpensive, environmentally compatible solvents called Deep Eutectic Solvents (DES). These are air and moisture stable ^[1,2], have been successfully used for metal deposition^[3], thus are ideal for battery applications.</p> <p>[1] Abbott, AP. and McKenzie, KC. (2006) Application of ionic liquids to the electrodeposition of metals, <u>Phys. Chem. Chem. Phys.</u>, 8, 4265-4279.</p> <p>[2] Abbott, AP. Barron, JC. Ryder, KS. Wilson, D. (2007) Eutectic-based ionic liquids with metal-containing anions and cations, <u>Chem. Eur. J.</u>, 13, 6495-6501.</p> <p>[3] Smith, EL. Fullarton, C. Harris, RC. Saleem, S. Abbott, AP. Ryder, KS. Metal finishing with ionic liquids: scale-up and pilot plants from IONMET consortium (2010) <u>Trans. Met. Fin.</u>, 88, 66, 285-293.</p> <p>Word Count: 150</p>
55	<p>Manoj Embrandiri, University of Nottingham</p> <p>UNMC's Electric Vehicle (EV)</p> <p>As major automobile manufacturers around the world pour millions of dollars into the research and development of electric vehicles, Manoj a PhD candidate at UNMC's faculty of Engineering has developed one of his own. He calls it the "e-Kancil".</p> <p>On a shoestring research budget and still very much in its early prototype stages, the 1997 compact Perodua Kancil cum - electric has a top speed of 50km/h and a range of about 50 km per charge. Intense research is on-going to be able to improve its performance in terms of better range and longer battery lifetime, through the use of supercapacitors along with batteries. Supercapacitors – also called– ultracapacitors are more powerful cousins of the basic capacitor. With activated carbon at their core to act as a sponge for electrons, supercapacitors can absorb power – or send a charge – far faster</p>

	<p>than batteries making them excellent for accelerating a car or regaining braking energy. They are also far more durable.</p> <p>Manoj hopes to make significant progress in his EV research by using supercapacitors. This means that Electric Vehicles will be able to charge up much faster, go further and ultimately be more reliable than it is perceived to be. He is also working on an intelligent system for electric vehicles which will be able to predict an impending acceleration or deceleration thus making power delivery to the electric motor much faster and efficient. These are still early days.</p> <p>Word Count: 236</p>
56	<p>Gary Nolan, University of Leicester</p> <p>‘Glassings’ and Stabbings – Bottles as Weapons – The Engineering Story</p> <p>Stabbing is the most common method of committing homicide in the UK. Injuries and assaults related to alcohol consumption are also a growing concern in many countries. In such cases the use of impulsive weapons such as a glass bottle is not uncommon. Following such incidents the forensic pathologist is often faced with the difficult task of offering an approximation of the degree of force involved. This project aims to address this complex issue. Although the dangers associated with the use of broken bottles as weapons is apparent, there is a paucity of information in this area in the current literature. The results of this study provide the first quantitative data of the force required for penetration with broken glass bottles. The results show that glass fractures to provide surfaces with both sharp and blunt facets and that the prediction of a bottles stabbing potential is a complex problem.</p> <p>Word Count: 149</p>
57	<p>Stuart Smith, University of Nottingham</p> <p>Rooting out Childhood Brain Cancer</p> <p>Brain cancer is now the leading cause of cancer related death in childhood, with the numbers of cases rising every year, with many survivors suffering brain damage. It may be possible to ‘starve’ the cancer of the nutrients it needs to grow by targeting its blood supply. Blood vessel development is a key research topic in the Children’s Brain Tumour Research Centre in the University of Nottingham. Our current project has identified the particular subtype of blood vessel that seems most critical for tumours. To study this further we have adapted a NASA designed culture machine to grow ‘mini-tumours’ allowing us to home in on the network of genes that control the growth of new blood vessels. As well as giving us tools to predict which children will do well or badly, this research involves the testing of new drugs, allowing their rapid transfer into use in patients.</p> <p>Word Count: 148</p>
58	<p>Hussein N. Rubaiy, University of Leicester</p>

Dissecting Mechanisms of Information Transfer within a Cardiac Potassium Channel

Ion channels are pore-forming proteins, which are located on the surface of all living cells. They are involved in vital processes, such as heart rhythm and nerve impulse conduction. This study focused on ATP-sensitive potassium (K_{ATP}) channels that have important functions in tissue protection and are a major drug target for Type 2 diabetes. This study characterized three novel points of interaction between the pore-forming protein and a second regulatory protein component. A combination of directed mutations and electrophysiological recording was then used to show that these contacts are important for the transmission of regulatory information relating to cellular energy status and drug binding to the channel pore. Detailed understanding of the structure-function relationships in this channel may contribute to the design of novel and more effective drugs to change the activity of this channel for the treatment of diabetes and cardiovascular diseases e.g. high blood pressure and heart attack.

Aguilar-Bryan L. et. al. (1995) Cloning of the beta cell high-affinity sulfonylurea receptor: a regulator of insulin secretion. Science, 268, 423-426

Ashcroft FM (1988) Adenosine 5'-triphosphate-sensitive potassium channels. Neuroscience, 11, 97-118.

Word Count: 150

59 Gareth Warrington, University Northampton

Words and Pictures; examining the inter-relationship between writing and images

This project examines the relationship between writing and images; an artistic partnership developed over many centuries, from decorative illustrations in books to modern photo-novels and image-embedded-fictions; many modern-fiction writers now experiment with words and pictures to heighten and redevelop storytelling. It can be argued that both art-forms are inter-connected; for example, photography is *writing-with-light*. Much existing criticism examines the relationship mainly from *either* discipline; my project however will consider literary-theory in conjunction with image-based theory in the analysis of the different writers who combine writing with images, exploring questions like: How do the writers use the images? Is the combination a useful tool for storytelling? Do the art-forms *devalue* each other by being used together? The project will also consider images as social documents; this could be regarded as a response to an increasing modern interest for using writing alongside images as we document and archive contemporary life.

Word Count: 148

60 Kwanruetai Boonyasana, University of Leicester

Electricity Co-operation and Decarbonisation

Since 1990, growth in world net electricity generation has outpaced growth in total world electricity consumption, and this surplus is expected to account for one third of electricity generation by 2035. This suggests that international trade in electricity could prove beneficial by increasing efficiency of electricity markets and decreasing levels of Carbon Dioxide (CO₂) emissions. The study examines whether international co-operation regarding electricity import and export can reduce CO₂ emission levels. Analysis of 130 countries' yearly data from 1971-2007 shows that electricity co-operation is highly significant in decreasing CO₂ emissions. At the continent level, Africa has the highest decrease per unit from electricity import and export, with the lowest decrease being for the Middle East. This study indicates that electricity co-operation between countries can have a positive impact on efficient management of decarbonisation of energy supply and be instrumental for governments in the fight against global warming.

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Word Count: 147

61 Hilary Erenler , University of Northampton

Country-house Gardens: The Bees' Knees for Pollinating Insects?

The global decline in bees, butterflies and hoverflies affects us all. Put simply, much of our food would be unavailable if the services provided by pollinating insects were to cease¹. Urban gardens attract a range of pollinators² but little is known about the variety of these insects in large, country estates surrounded by agricultural land.

Seventeen properties in and around Northamptonshire are revealing just how important country gardens can be; in 2010 I recorded more than 10000 insects from 201 species. The research shows a significant part of this pollinator richness can be explained by the diversity of native and non-native plants. Investigating further factors such as nesting sites is a priority for 2011.

The overwhelming conclusion is that large, country-house gardens are vital havens for beneficial insects. In addition to recognising their *cultural* heritage, it is timely to emphasise the contribution these properties make to our *natural* heritage.

¹ Klein, A.M. *et al* (2007) Importance of pollinators in changing landscapes for world crops *Proceedings of the Royal Society 'B'* 274(1608) pp. 303-313

² Smith, R.M. *et al* (2006) Urban domestic gardens (VI): Environmental correlates of

	<p>invertebrate species richness <i>Biodiversity and Conservation</i> 15(8) pp. 2415-2438</p> <p>Word count: 149</p>
62	<p>Nathan James Dickinson, University of Leicester</p> <p>The Chemical Content of Hot White Dwarf Observations.</p> <p>Stars like the Sun will one day run out of fuel, ending their lives cooling as white dwarfs. White dwarfs have a phenomenal density; <i>one teaspoon of 'white dwarf material' would have a mass of around five tonnes!</i> Though these stars should be composed of either hydrogen and/or helium, many of them show traces of heavier chemicals (Marsh et al., 1997). In white dwarfs cooler than 25,000 degrees, these chemicals appear to come from the star 'hoovering up' the shredded remains of planets (Farihi et al., 2010). Therefore, these stars show us what might <i>ultimately happen to the Earth and our solar system</i> (Melis et al., 2011). In hotter stars other physical effects cause these chemicals to be present (Chayer et al. 1995), but there is more material than expected (Chayer et al., 1995; Barstow et al., 2003). Here, we show that these chemicals don't appear to come from shredded planets, but most likely reside in clouds near the star, showing the <i>massive effect hot white dwarfs have on their environments.</i></p> <p>Barstow M.A., Good S.A., Holberg J.B., Hubeny I., Bannister N.P., Bruhweiler F.C., Burleigh M.R., Napiwotzki R., Heavy-element abundance patterns in hot DA white dwarfs. <u>Monthly Notices of the Royal Astronomical Society</u>, 341, 870-890.</p> <p>Chayer P., Vennes S., Pradhan A.K., Thejll P., Beauchamp A., Fontaine G., Wesemael F., Radiative Levitation in Hot White Dwarfs: Equilibrium Theory. <u>Astrophysical Journal Supplement</u>, 99, 189-221.</p> <p>Farihi J., Barstow M.A., Redfield S., Dufour P., Hambly N.C. (2010) Rocky planetesimals as the origin of metals in DZ stars. <u>Monthly Notices of the Royal Astronomical Society</u>, 404, 2123-2135.</p> <p>Marsh M.C. et al., (1997) An EUV-selected sample of DA white dwarfs from the ROSAT All-Sky Survey –II. EUV and soft X-ray properties. <u>Monthly Notices of the Royal Astronomical Society</u>, 287, 705-721.</p> <p>Melis C., Farihi J., Dufour P., Zuckerman B., Burgasser A.J., Bergeron P., Bochanski J., Simcoe R., Accretion of a Terrestrial-like Minor Planet by a White Dwarf. <u>The Astrophysical Journal</u>, 732, 90.</p> <p>Word Count: 146</p>
63	<p>Kennedy Mdaki , University of Northampton</p> <p>Mitochondria: Dangerous but Important Monsters Inside the Living Cell</p> <p>Aging and age related diseases (Alzheimer's disease, cancers, diabetes mellitus, etc) have been linked with disruption of biological energy systems in living cells (Brand <i>et al.</i>, 2010). Our research focuses on understanding this system at the level of mitochondria (the powerhouses or 'batteries' of the cell). By burning the food we eat, mitochondria provide energy needed to sustain life. Smoke is usually an undesirable waste product of</p>

powerhouses. The equivalent of smoke in mitochondria are free radicals, which have been proposed to be initiators of the development and progression of various age-related diseases, but also to control lifespan (Harman, 1972; Wallace, 2005). Our laboratory investigated the effect of aluminium on mitochondria. Aluminium is the most abundant metal in the earth's crust, and accumulates inside mitochondria. Humans are exposed to aluminium via diet, antiperspirants, cooking utensils, etc. We found, for the first time, that aluminium can function as a double agent by either regulating or disrupting mitochondrial function.

Word count: 149

References

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Mookerjee, S.A., Divakaruni, A.S., Jastroch, M., Brand, M.D. (2010) Mechanisms of Ageing and Development. *Mechanisms of Ageing and Development* 131 (2010) 463–472.

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64 Rakesh Patel , University of Leicester

Virtual Patients May Make Hospitals Safer for 'Real' Patients

The incidence of safety breaches due to problem-solving or decision-making errors made by junior doctors in hospitals remains constant (Baker et al. 2004, Stewart et al. 2009), despite medical schools providing early patient contact, robust assessments and critical incident training for students. Although the UK public accepts hospitals are educational institutions, they do not expect graduating doctors to pose additional safety threats.

This Leicester University based project developed a virtual patient (VP) technology, which offers a solution for this tension. VPs specifically develop clinical reasoning, the process which underpins problem-solving and decision-making (Cook, Erwin & Triola 2010). Preliminary evaluations show students find VPs useful because they provide an immersive environment where they can learn from mistakes, without fear of reprisal or causing harm.

VPs situate the challenges facing health professionals within a blended environment that allows repeated practice, and these findings suggest VP technologies should help improve real world performance and reduce clinical errors. Further longitudinal research is planned to establish this link.

Baker, R.G, Norton, P.G, Flintoft, V, Blais, R, Brown, A, Cox, J, Etchells, E, Ghali, W.A, Hebert, P, Majumdar, S.R. O'Beirne, M, Palacios-Derflingher, L, Reid, R.J, Sheps, S. and Tamblyn, R. (2004) The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *Canadian Medical Association Journal*, 170, (11), 1678-1686.

Cook, D.A, Erwin, P.J, and Triola, M.M (2010) Computerized virtual patients in health professions education: a systematic review and meta-analysis. *Academic Medicine*, 85, (10),1589-1602.

Stewart, J, Findlay, G, Smith, N, Kelly, N, and Mason, M. (2009) *Adding Insult to Injury*, National Confidential Enquiry into Patient Outcome and Death: London.

Word Count: 150

65 Daniel Shin, Nottingham Trent University

Can Human-powered Products Reduce Energy Consumption?

The scope of this research is to investigate how a practice based approach of designing new interactivity in human-powered products - as a means of de-routinizing the current habitual energy consumption through new interactions, can derive and promote sustainable energy consumption in everyday life. The research attempts to create a persuasive argument that there are other notions to consider in wider design contexts for greater benefits beyond a current norm – the over reliance on technology from traditional power sources.

The research will follow an experimental and practice-based research methodology. One key objective is to produce artefacts arising from human-powered product concepts. These concepts could be considered as base materials which inform knowledge to produce new innovations, new practices, scenarios, behaviours and Innovative products that promote and increase sustainable energy use.

Word Count: 130

66 Sadat Ali Edroos, University of Leicester

Squeeze an Arm, Protect the Heart – Improving Outcomes After Heart Attack

Heart attacks are the major cause of premature death in England, and a focus of research at the University of Leicester. Scientists there are investigating a new technique called conditioning that promises to protect heart muscle from life-threatening damage, simply by squeezing an arm.

Temporarily stopping the blood supply to a muscle makes it resistant to further damage. However protection from one muscle may be transferred elsewhere through the blood stream. Briefly squeezing an arm can shield the heart, reducing the extent of damage after a heart attack.

“It’s not clear whether other illnesses patients have, such as diabetes or a high cholesterol, have an effect on achieving protection,” says Dr Sadat Edroos of Glenfield Hospital, who has developed a model of conditioning. Early results highlight previously

unknown gender differences. "We hope to shed light on this safe and effective therapy," he continues, "helping it to benefit patients."

Ovize, M., Baxter G.F. *et al.* (2010) Postconditioning and protection from reperfusion injury: where do we stand? Cardiovascular Research, 87, 406-423.

Hausenloy, D.J. and Yellon, D.M. (2009) Preconditioning and postconditioning: Underlying mechanisms and clinical application. Atherosclerosis, 204, 334-341.

Word Count: 148

67 Angelica B. Ortiz de Gortari, Nottingham Trent University

Exploring Game Transfer Phenomena in Young People

Forty-two Swedish frequent videogame players aged between 15 to 21 years were interviewed to better understand the psychological engagement mechanism behind videogames and videogame effects on players. The study investigated how experiences in the videogame influenced players' fantasies, thoughts, and behaviours. This is what the authors have termed as 'Game Transfer Phenomena' (Ortiz de Gortari, Aronsson, & Griffiths, 2011). GTP occur when videogame elements are associated with real life elements triggering subsequent thoughts, sensations and/or behaviour among videogame players. Players' experiences were analyzed and then categorized, as either automatic or intentional. Different types of GTP were reported, but in different ways and intensities. Players used videogames for interacting with others as a form of amusement, imitating videogame content, and daydreaming about videogames. Furthermore, the findings suggest that intense videogame playing can cause automatic thoughts, altered perception of reality and involuntary behaviour.

Reference:

Ortiz de Gortari, A. B., Aronsson, K., & Griffiths, M. D. (in-press). Game Transfer Phenomena in Video Game Playing: A qualitative interview study. *International Journal of Cyber Behavior, Psychology and Learning*.

Word Count: 141

68 Sarah Owen , University of Leicester

Sugarloaf Mountains: The Perfect Recipe for Rainforest Preservation?

Sugarloaf mountains are commonly associated with the spectacular landscape of Rio de Janeiro with isolated, steep sided, dome shaped landforms rising dramatically above the vibrant city. Indeed, sugarloaf mountains are particularly abundant across the whole east coast of Brazil where they preserve fragments of the highly biodiverse, but largely unknown, *mata atlantica* rain forest across their distinctive steep slopes and isolated

	<p>summits. With the <i>mata atlantica</i> already reduced to less than 7% of its original distribution due to deforestation, and many of its plants and animals endangered, understanding how the topography of the sugarloaf landscape contributes to the natural survival of these forgotten forests is exceptionally important to inform future conservation efforts across Brazil. Using a combination of satellite images and geological and ecological field work in Pancas, eastern Brazil, this research aims to establish how sugarloaf landscapes form and their environmental significance in preserving precious rain forest fragments.</p> <p>Word Count: 148</p>
69	<p>Anthony Ntaki, Nottingham Trent University</p> <p>Assistive Outdoor Autonomous Navigation System for a Mobility Scooter that uses Hexagonal Grids.</p> <p>This work aims to develop an algorithm that enables semi-autonomous navigation of a mobility scooter in an urban environment. To achieve this, the following steps are taken. The first step involves dividing a GPS map of the area to be navigated into uniform hexagon grids (cells). This research uses hexagon grids because they offer more options for movement and better approximations of environmental obstacles. Each of these cells is then assigned a Navigation Value which is a number that indicates that particular cell's suitability to navigation. This value is calculated by summing up all the environmental features that are detected within a cell. The navigation system then guides the mobility scooter through the environment by allowing it to only occupy adjacent cells with the best Navigation Values.</p> <p>The aim is to have a system that is not only autonomous but also has the ability to learn and recall a previously navigated route.</p> <p>Word Count: 152</p>
70	<p>Thomas Tagoe , University of Leicester</p> <p>Ipods: As Dangerous as Jet Engines?</p> <p>Prolonged exposure to loud sound can lead to a range of increasingly prevalent conditions such as deafness, hard of hearing and tinnitus. My work focuses on tinnitus, a rather distressing condition where individuals constantly hear sounds that do not exist in the outside world. We do not fully understand this condition, but many have identified that information sent and received by many brain regions is affected during tinnitus. One region which could be the source of this breakdown in communication starts sending too much information after prolonged exposure to loud sound. Prior to this, I have found that the same region also changes how it receives information. There is a delay between this evidence and when tinnitus finally sets in. Therefore, it is important to raise awareness that the sounds we hear today could in the future take away the silence many tinnitus sufferers wish for.</p>

Kaltenbach JA, Zacharek MA, Zhang J, Frederick S. (2004) Activity in the dorsal cochlear nucleus of hamsters previously tested for tinnitus following intense tone exposure. Neuroscience letters, 355:121-5.

Roberts LE, Eggermont JJ, Caspary DM, Shore SE, Melcher JR, Kaltenbach JA. (2010) Ringing ears: the neuroscience of tinnitus. Journal of Neuroscience, 30, 14972-9.

Zhang, J.S., and Kaltenbach, J.A. (1998). Increases in spontaneous activity in the dorsal cochlear nucleus of the rat following exposure to high-intensity sound. Neuroscience letters, 250, 197-200.

Word Count: 146

71 Rhiannon Ellen Slade, Nottingham Trent University

The Causality and Performativity of Scars

What new understandings of the Intercorporality of human flesh can be gained through the aesthetical and dialogical study of scarring?

An artistic exploration into the performativity of conversations about human flesh - establishing connections between the moment of a scar's creation and the recollection of its story. The causality (affect and effect) of the unexpected and accidental scarification is critically reflected and analysed.

This practice based research explores the role of the artist as a 'context' rather than 'content' provider through a dialogical methodology. (Kester 2004). Aligning with the theorisation of self as subject it is grounded within a historical contextualisation of Live Art. Outcomes include an archive of case studies (Stake 1995) and the thesis ***The Causality and Performativity of Scars*** to provide a critique of conversational art as practice and the dissemination of findings formulated from participation and research within both an academic and public environment.

Word Count: 148

72 William Dott, University of Leicester

Chemical Safety: Getting to the Heart of the Problem

Heart disease is the most common cause of death in Western culture, so it is important to identify and steer away from the use of drugs and environmental chemicals (compounds) with the potential to damage the heart. The current method for determining if new compounds are harmful to the heart requires testing on a vast number of animals, costing a considerable amount of time and money. Therefore, a cell model, predictive of animal outcomes, will be developed to reduce and replace animals in research and enable early prediction of heart damage induced by new compounds. To achieve this, ten genes in the heart, most affected in previous animal studies, were selected as markers of heart damage. These gene markers will be measured in a heart cell model to determine if this

	<p>cell model can mimic the outcome observed in animals. This is cutting edge research, addressing a very real problem</p> <p>Word Count: 150</p>
73	<p>Haitham Al-Abri, Nottingham Trent University</p> <p>Urban Pattern and Architecture of Omani Mountain Settlements: <u>al-Hamra and Barkat al-Mawz</u></p> <p>This research focuses on studying the cultural spaces of the settlement quarter (<i>harah</i>) of <i>al-Wista</i> in al-Hamra oasis and <i>as-Saybani</i> in Barkat al-Mawz oasis, both traditional mountain settlements established about 500 years ago in the Dakhiliyah (Interior) region of Oman. This will be achieved through investigating the language and context of the urban pattern and architecture of the two settlements. Although fragments of information lie scattered in publications, these describe the settlement in more general terms. This research will focus on a detailed study of the two settlement quarters bringing together an analysis of all factors contributing to settlement formation (climate, surroundings, location, protection, social and living resources.). The study will address urban and architectural characteristics of both settlements and aim to establish a comparative analysis of settlements of the Omani Interior. For the latter, studies conducted by other scholars on Omani settlements will be used.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Professor Soumyen Bandyopadhyay, Professor in Architecture and Design; School of Architecture, Design and Built Environment PGR Tutor, Nottingham Trent University 2. Professor Paul Collins, Academic Team Leader, School of Architecture, Design and Built Environment, Nottingham Trent University <p>Word Count: 146</p>
74	<p>This number has been left intentionally blank</p>
75	<p>Ishita Mishra, Nottingham Trent University</p> <p>Ethnic Identity in Intercultural Communication</p> <p>David Cameron's Munich speech on 5 February (BBC, 2011), has renewed debate on multiculturalism in UK, especially in reference to the identity (or crisis of it), of South Asians (SAs) (Indians, Pakistanis and Bangladeshis). Post 9/11 and 7 July, multi-cultural societies are facing the challenge of protecting their multi-ethnic fabric. There is a growing concern that people are becoming more conscious of how they interact with whom and the 'who' is increasingly perceived along the lines of ethnicity and religion.</p> <p>Research to date has reported significant differences between the interaction patterns of SAs and Whites (Andersen, 2000) but there is a paucity of research with respect to SAs</p>

	<p>in UK.</p> <p>The investigation of communicative differences in actual natural social interactions between English and SAs in the present research has revealed how both the communities claim their 'ethnic' identity differently and negotiate their interpersonal relations despite the cultural differences thus generated. Andersen, Peter A. (2000), 'Explaining Intercultural Differences in Nonverbal Communication', in L.A. Samovar & R.E. Porter (Eds.), Intercultural communication: A reader. Belmont, DA: Wadsworth, 9th ed., pp. 258-279</p> <p>1. BBC online, (2011). <i>State multiculturalism has failed, says David Cameron</i> available at http://www.bbc.co.uk/news/uk-politics-12371994 accessed on 11.03.2011</p> <p>References:</p> <p>1. Professor Brendan Gough (brendan.gough@ntu.ac.uk) 2. Dr Philip Mignot (philip.mignot@ntu.ac.uk)</p> <p>Word Count: 150</p>
76	This number has been left intentionally blank
77	<p>Khairi Abusabee, Nottingham Trent University</p> <p>Thin Film Device Engineering for Transparent Thin Film Transistors</p> <p>The emerging application of flexible and invisible electronics has generated interest in the potential for metal oxide based thin film transparent transistor devices to be fabricated at low temperature on low cost, flexible substrates.</p> <p>One of the primary materials of interest is zinc oxide (ZnO), but as a thin film layer it requires high temperature processing to produce the required electrical properties. This prevents the use of plastic substrates. As an alternative to thermal annealing, we have investigated excimer laser processing (excimer KrF laser irradiation $\lambda=248\text{nm}$ 20ns pulse) of low temperature ZnO thin films. The results, based on photoluminescence, x-ray diffraction, and cross sectional electron microscopy show that it is possible to improve the films crystal structure, with modification of grain barrier and defect properties, but at low temperatures suitable for use on plastic. The laser treatment is being used to optimise ZnO films for thin film transistor (TFT) applications.</p> <p>Word Count: 150</p>
78	This number has been left intentionally blank
79	<p>Leah Bleakley, Nottingham Trent University</p> <p>"The Great Social Evil"</p> <p>During the Victorian era the vice of prostitution became regarded as the greatest of social evils, threatening to bring Victorian society to its knees. The women who had fallen and engaged in prostitution, those 'dreaded creatures' as they were termed, were often</p>

	<p>perceived by the public, media and legal sector as noxious and corrupting influences. Or were they? This research project endeavours to produce a nuanced survey of how prostitution was interpreted in provincial towns using Birkenhead, Chester and Crewe and Nantwich as a case study, expanding upon and challenging existing research which has focused primarily on extraordinary locations and events. Furthermore, it approaches the topic using an interdisciplinary approach endeavouring to allow a more distinguished study via a legal-historical analysis</p> <p>Word Count: 121</p>
80	This number has been left intentionally blank
81	<p>Rebecca Thompson, Nottingham Trent University</p> <p>Explaining the Crime Drop: Focus on Theft</p> <p>A considerable body of research has documented the dramatic fall in crime in many industrialised countries over the last 20 years (Tonry and Farrington, 2005). Between 1995 and 2008/09, all crime recorded by the British Crime Survey (BCS) fell 45%, with a 47% drop in other theft of personal property (Walker <i>et al.</i>, 2009: 3). It is my contention this overarching trend is likely to be composed of two underlying trends: one mirroring the more general decreases in crime, and one which reflects increased theft due to the greater availability of electronic goods attractive to thieves, including mobile phones and laptops. The study builds on Farrell <i>et al.</i>'s (2008) "security hypothesis". Deconstructing such trends may assist practitioners in formulating effective crime prevention strategies and provide fresh impetus in the promotion of corporate social responsibility to 'design-out' crime. Thus the research has far-reaching implications for practitioners, industry and the wider public.</p> <p>Farrell, G., Tilley, N., Tseloni, A. and Mailley, J. (2008) "The Crime Drop and the Security Hypothesis", <i>British Society of Criminology Newsletter</i>, 62: pp. 17-21</p> <p>Tonry, M. and Farrington, D.P. (eds) (2005) "Crime and Punishment in Western Countries 1980-1999", <i>Crime and Justice: A Review of Research</i>, Vol. 33, Chicago, IL: University of Chicago Press</p> <p>Walker, A., Flatley, J., Kershaw, C. and Moon, D. (2009) "Crime in England and Wales 2008–2009", <i>HO Statistical Bulletin 11/09</i>, London: Home Office</p> <p>Word Count: 150</p>

Coventry University Poster Summary Winner:

Claire Taylor, Coventry University

General Practice Nurses' Experiences of Delivering Health Behaviour Change Interventions: An Interpretative Phenomenological Analysis.

Health behaviour change (HBC) interventions are increasingly being delivered by practice nurses. However, little is known about their experiences of delivering such work. Such understanding may serve to support future delivery of HBC interventions by this group.

Semi-structured interviews were undertaken with seven nurses. Transcripts were analysed using Interpretative Phenomenological Analysis.

Three of the nurses imparted information when delivering HBC interventions. These nurses saw themselves as experts and wished to be perceived as a credible source of information. The remaining nurses imparted information but more importantly offered support and encouragement. They saw their role as a facilitator or partner.

The nurses' approach to HBC appeared to be associated with training they had received, their designated nursing role, their perceptions of what their patients expected and availability of time. The findings of the study suggest that, if addressed, these barriers may enhance delivery of HBC interventions by nurses' in general practice.

References:

Smith, J.A. (1996) Beyond the divide between cognition and discourse: Using Interpretative Phenomenological Analysis in health psychology. *Psychology & Health*, 11, 2, 261–271.

Smith JA, Flowers P, Larkin M. (2009) *Interpretative Phenomenological Analysis: Theory, Method and Research*. London: Sage.

Word Count – 150