

POSTGRADUATE RESEARCH SHOWCASE 2014

28 – 30 APRIL 2014



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1**Postgraduate: Ana Cinta Gonzalez Cabral****College: Business School****Poster Title: The hidden economy: Looking for ant trails after an elephant stampede****Abstract:**

The hidden economy has captured the attention of many academics and revenue agencies. The measurement of the hidden economy represents an outstanding challenge due to the intrinsic nature of this multi-faceted phenomenon. An amalgam of methods to estimate the size of the hidden economy have been proposed. These methods have achieved varying, and sometimes questionable, degrees of success. The research will investigate new methodologies with a particular focus on “ghosts” and “moonlighters” An outline of some of the methods proposed is displayed.

2**Postgraduate: Nimrita Singh****College: Business School****Poster Title: Online customer journey mapping in fashion retail****Abstract:**

Customer journeys are essentially the series of events, “that customers go through to learn about, purchase and interact with the company’s offerings” (Norton and Pine, 2013 pp12). This research project explores the different emotions customers go thru during the online customer journey and behaviours that lead to actual purchases.

3**Postgraduate: Hui Tan****College: Business School****Poster Title: Construction of a family identity through consumption in Chinese wedding rituals****Abstract:**

This study explores the family identity construction processes through consumption in Chinese weddings. The role of consumption rituals in individual identity construction process has long been studied in the Consumer Culture Theory. However, how a family’s identity, as a unit, is constructed through various negotiations of individual and group identities has not been studied in the context of rituals. My research will contribute to consumption theory by extending our understanding on the role of ritual consumption in identity construction from an individual level to a family level.

4**Postgraduate: Pierre Aumjaud****College: Engineering, Mathematics and Physical Sciences****Poster Title: Vibration problems in lightweight sustainable transport.****Abstract:**

Aeroplanes, cars, train and boats, all need to become lighter in order to improve fuel efficiency. To achieve that, manufacturers are using more honeycomb filled structures. Transport vehicles suffer lots of vibrations when in use, and apart from being uncomfortable and stressful for passengers they can also promote early failure of components through fatigue. To help guard against this, 'vibration dampers' are often used, which absorb some of the vibration energy in rubbery materials. The Double Shear Lap-Joint damper recently developed at the University of Exeter can mitigate vibrations very effectively in honeycomb sandwich structures.

5**Postgraduate: Lokeshwar Bandhu****College: Engineering, Mathematics and Physical Sciences****Poster Title: Macroscopic acoustoelectric charge transport in graphene****Abstract:**

Surface acoustic waves (SAWs) are the waves propagating along the surface of a material. The electrostatic fields associated with SAWs propagating on a piezoelectric substrate can be used as a contactless probe to study the electronic properties of various nanostructures such as quantum wires and quantum dots. The hybridization of SAWs with graphene, a 2-D material with unique properties, allows these fields to confine charge carriers of graphene in the moving lateral potential wells giving rise to an acoustoelectric current; an effect that has been exploited in the development of various single electron/photon SAW devices for metrology and quantum information processing.

6**Postgraduate: Kelly Curtis****College: Engineering, Mathematics and Physical Sciences****Poster Title: Lighting the way for rapid cancer diagnosis****Abstract:**

More than 1 in 3 people will be diagnosed with Cancer in their lifetime. At present the 'gold standard' for diagnosis is tissue removal, followed by microscopic analysis by a pathologist. A potentially less invasive and more rapid approach is to consider a technique that measures the interaction of tissues with light. This incident light causes the molecules within to vibrate, with each type of molecule vibrating in a different way. As Cancer develops these molecules change, therefore their interactions also change. Detecting these differences between the vibrations of normal and cancerous tissues is the basis for this diagnosis technique.

7

Postgraduate: Laura Dawkins

College: Engineering, Mathematics and Physical Sciences

Poster Title: How should an extreme windstorm be defined?

Abstract:

This poster presents the method by which 50 of the most extreme European windstorms were selected for a new, freely available catalogue of extreme windstorms (www.europeanwindstorms.org) The way in which a windstorm can be characterised is first presented. The characteristic that best represents extreme insurance loss and meteorologically extreme windstorms is then investigated. This optimal characteristic is considered to be the one in which the 23 extreme insurance loss storms, identified by the re-insurance industry collaborators, are most extreme and the non-extreme insurance loss storms selected are meteorologically extreme.

8

Postgraduate: Charles Downing

College: Engineering, Mathematics and Physical Sciences

Poster Title: Beautiful models: quasi-exact problems in quantum mechanics

Abstract:

Modern science is increasingly dependent on models which can only be solved on a computer. In some sense such computational work loses the mathematical beauty and feeling of equations that can be played with by mankind with pen and paper alone (these are known as exactly solvable models). Here we report some hitherto unknown exactly solvable problems in quantum mechanics, with applications in the research of two dimensional materials such as graphene, of which Exeter is a world leader.

9

Postgraduate: Michael Gibson

College: Engineering, Mathematics and Physical Sciences

Poster Title: Understanding the efficient parallelisation of cellular automata on CPU and GPGPU hardware.

Abstract:

Cellular Automata are distributed model of the universe which are based on local interaction, which create emergent behaviours. These algorithms allows for the study of virtual life, distributed computing, as well as naturally occurring emergent phenomena such as flood inundations. We harness the massively parallel power of the modern General-Purpose Graphics Processing Unit (GPGPU), in order to gain large speed increases in processing of these simulations. This particular study demonstrates some of the interesting factors of Cellular Automata; Some of the factors which affect the speed of the GPGPU over the common but modern CPU.

10**Postgraduate: Daniel Hewson****College: Engineering, Mathematics and Physical Sciences****Poster Title: Structural ordering and self-assembly of mesogenic cellulose nanocrystal phases****Abstract:**

Colour is not produced by pigments alone. Physical structures with nanoscale order are known to produce colour by the interference and diffraction of light. This phenomenon is responsible for the iridescent colours seen in bubbles and is common in many of nature's plants and insects such as butterflies and beetles. The physical structures range from thin layers and gratings to twisted columns and plates. Cellulose nanocrystals form these structures in solution from which thin films can be prepared and applied to surfaces utilised by the fashion industry, anti-counterfeiting and electronic industries.

11**Postgraduate: Leonardo Micheli****College: Engineering, Mathematics and Physical Sciences****Poster Title: Development of a novel 144-cell densely packed 500x CPV assembly on insulated metal substrate****Abstract:**

Photovoltaics is the third most important renewable energy source in terms of globally installed capacity, but the cost of this technology still represents a limit for the growth of its market. The idea behind the Concentrating Photovoltaic is to use cheaper refractive or reflective materials to replace part of the more expensive semiconductor surface. In this poster, a new 144-solar cell assembly for concentrating photovoltaic applications is presented. It is expected to generate about 2.5 kWe and has been fully developed in the South-West of England. This assembly represents a novelty for the innovative low-resistance and flexible electrical pattern.

12**Postgraduate: Haidar Mohamad****College: Engineering, Mathematics and Physical Sciences****Poster Title: Time resolved optical study of Spin Seebeck Effect (SSE) within a YIG/Cu/Ni₈₁Fe₁₉ trilayer****Abstract:**

We present a new approach to the study of the SSE, motivated by a proposal for a new optically activated data storage device. Ultrafast laser pulses are used in a pump-probe method to induce a large thermal gradient within a YIG/Cu/Ni₈₁Fe₁₉ trilayer, and then monitor the magnetic response by means of the Magneto-Optical Kerr Effect (MOKE). The absorbed spin current exerts a torque that is expected to modify the magnetisation dynamics in the Ni₈₁Fe₁₉ layer. The results obtained from the samples are compared to assess the size of the torque resulting from the SSE.

13**Postgraduate: Atchara Namburi****College: Engineering, Mathematics and Physical Sciences****Poster Title: Detecting crickets in outdoor scene videos using online codebook background subtraction****Abstract:**

The aim of this work is to distinguish foreground (cricket) from the background in the outdoor-videos. This task is challenging because outdoor-videos have non-uniform changes such as a rapid-changing of sunlight, shadows, and grass moving. Codebook Background Subtraction (CBS) works well on illumination changes as the outdoor scene by using colour distortion and brightness. However, CBS works poorly in dark areas of the image. There are many dark areas particularly crickets and burrow in the videos used in this research; thus the original CBS makes the false detection around the dark-area. The proposed method is to construct the dark codeword in order to cope with that problem.

14**Postgraduate: Joe Osborne****College: Engineering, Mathematics and Physical Sciences****Poster Title: The hidden haze – where have the aerosols gone?****Abstract:**

Anthropogenic aerosols – pollutants emitted from fossil fuel and biomass burning – have a significant, yet poorly quantified, effect on regional and global climate. Using climate models we show that aerosols not only exert an influence on regional temperature, but also on the regional hydrological cycle. This influence is also evident in some observed regional temperature and precipitation patterns, but, crucially, observed Northern Hemisphere mid-latitude precipitation changes show little evidence of a response to aerosols. We consider why this might be the case and the wider implications.

15**Postgraduate: Alireza Pakgohar****College: Engineering, Mathematics and Physical Sciences****Poster Title: Hierarchical multi-project planning and supply chain management: an integrated framework****Abstract:**

This work focuses on the need for new knowledge to allow hierarchical multi-project management to be conducted in the construction industry. A system framework was developed using a multi-agent-system architecture and utilising procedures to deal with short, medium and long-term planning.

The framework integrates operational decisions (time-cost optimisation along with multi-attribute utility theory) with tactical decisions (bid preparation and negotiation) and strategic decisions (KPI rule models and enterprise supply chain configuration).

The framework was empirically evaluated by four case studies in national and international companies. The positive feedback from these cases indicates strong acceptance of the framework by experienced practitioners.

16**Postgraduate: Nina Raoult****College: Engineering, Mathematics and Physical Sciences****Poster Title: Improving the fit of a land-surface model to data with ADJULES****Abstract:**

The JULES land-surface model is a mathematical representation of the flows of energy, carbon and water between soil, vegetation and atmosphere. It is used by the UK Met Office to predict future climate. ADJULES is a tool developed to “tune” internal model parameters (e.g. leaf nitrogen concentration and temperature-sensitivity of photosynthesis) so that JULES’ predictions (e.g. CO₂ flux between plants and atmosphere) match real life observations more closely. This is a challenging problem because of the time taken for JULES to run on a computer and the large number of parameters to be varied between runs.

17**Postgraduate: Katie Shanks****College: Engineering, Mathematics and Physical Sciences****Poster Title: 1000 SUNS – that’s how we make solar power cheaper****Abstract:**

At present we are able to produce 40% efficient solar cells in labs, but to cover a rooftop would cost far too much money. Less expensive Mirrors and Lenses can be used to capture large areas of light and concentrate it to a small area where solar cells are placed and because we have only a small area of them, it’s a fraction of the cost but still produces the same amount of energy. Concentration is measured in Suns and evidence shows that the higher the concentration (no. of Suns) the more efficient solar cells become (if they can be kept from overheating).

18**Postgraduate: Tom Sturges****College: Engineering, Mathematics and Physical Sciences****Poster Title: Graphene meets plasmonics****Abstract:**

This project unites the typically unconnected areas of graphene science and plasmonics. Graphene, a single layer of carbon atoms, has attracted much attention since it was first isolated in 2004, due largely to its remarkable electronic and quantum properties. Plasmonics is the study of the interaction of light with metals.

We have theoretically shown that an array of metallic nanoparticles with the same lattice structure as graphene inherits many analogous properties, despite the obvious and stark differences between these two systems. We unveil that the plasmons in this material behave as relativistic quantum particles, as do the electrons in graphene.

19**Postgraduate: Rachel Trimble****College: Engineering, Mathematics and Physical Sciences****Poster Title: Characterisation of poly(etherketone) for selective laser sintering****Abstract:**

Selective laser sintering (SLS) is an additive manufacturing process which uses 3D data to create objects. Each new material must be characterised experimentally if it is to be used effectively for SLS. The material of interest in this project is semi-crystalline polymer HP3 PEK. By heating it in a hot stage and taking pictures through a microscope, the melting process is identified. For effective building it must be heated to 390°C so it melts fully, but not past 400°C, as this results in degradation. The next step is to ensure these temperatures are adhered to in the SLS machine.

20**Postgraduate: Martha Vardaki****College: Engineering, Mathematics and Physical Sciences****Poster Title: Raman microscopy and bladder cancer detection in urine****Abstract:**

Bladder cancer is the fourth most common cancer in UK men with 7,400 cases in 2010. The abnormal growth of bladder cells can be currently diagnosed with cytology and cystoscopy.

Raman microscopy is a non-invasive vibrational technique which has already shown potential for early cancer detection. Taking advantage of the light matter interaction, it yields chemical information on the composition of the sample.

In this study, Raman microscopy was employed to study urine samples from positive and negative patients using a near infrared laser. The results were evaluated using multivariate analysis, showing potential of Raman spectroscopy as a diagnostic tool for bladder cancer diagnosis.

21**Postgraduate: Hannah Wakeford****College: Engineering, Mathematics and Physical Sciences****Poster Title: Water in the atmospheres of hot Jupiter exoplanets****Abstract:**

Using the Hubble Space Telescope we have observed the transit of three Jupiter sized exoplanets, planets that orbit other stars, to look for evidence of water in their upper atmosphere.

As the planet passes in front of the star it blocks out some of the light, but a small portion of the starlight shines through the planets upper atmosphere before reaching us. Imprinted on that light, as weak absorption lines, are the tale-tale signatures of various gasses.

We reveal a startling diversity in the atmospheres of these exoplanets with a variation in the water detected in similar worlds.

22**Postgraduate: Rachel Warren****College: Engineering, Mathematics and Physical Sciences****Poster Title: Benchmarking the performance of daily temperature homogenisation algorithms****Abstract:**

The temperature data that we use for so many scientific purposes are not as reliable as we would like. Especially at the daily scale where extreme events may affect society we need data we can rely on. This work aims to use statistics to improve what we know about our data and in turn improve the data itself.

23**Postgraduate: Claire Wollacott****College: Engineering, Mathematics and Physical Sciences****Poster Title: Klein tunnelling in bipartite honeycomb arrays of metallic nanoparticles****Abstract:**

Light interacting with metals has resulted in remarkable technological and artistic breakthroughs. A well-known example is that of stained glass windows, whose colour is generated from the interaction of light with small metallic particles embedded in the glass.

Justified by these successes, we explore arrays of metallic nanoparticles interacting with light and analyse the propagation of radiation in this system. Remarkably, we unveil that light in this novel material is transported by collective electronic excitations that mimic the behaviour of relativistic quantum particles. This is an astonishing achievement connecting the field of classical electromagnetism with relativistic quantum theory.

24**Postgraduate: Sahand Zanjani-pour****College: Engineering, Mathematics and Physical Sciences****Poster Title: Stresses on the disc in different postures****Abstract:**

Back pain is one of the most common health conditions suffered across the world and it is suggested that acquiring different postures raises the probability of developing back pains. Our aim is to incorporate magnetic resonance (MR) data into a numerical model to compare forces that arise in different postures. A numerical spine model in the supine posture was created based on available MR data for 4 subjects. Movements between standing and sitting ere also calculated and applied separately. The results were calculated in one level and compared to available experimental results. Kinematic MR data could help to assess daily postures.

25**Postgraduate: Temilola Aanamu****College: Humanities****Poster Title: 'Before the white men came': the female gender lifecycle in nineteenth-century Yorubaland.****Abstract:**

My research, which explores the lives of nineteenth-century females in Yorubaland (present day South-West Nigeria), attempts to understand how women lived before widespread imperial influences or as articulated by the indigenous population 'before the white men came'. This line of enquiry is necessary if we are to understand how colonialism altered Yoruba gender orders and women's places within it. It was discovered that in pre-colonial times, both age and sex were primary modes of social classification. So, it explores female life using these categories through a gender life-cycle model. It contends that biological females passed through four distinct lifecycle stages: Childhood, Adulthood, Seniority and Old age and death.

26**Postgraduate: Zoe Bulaitis****College: Humanities****Poster Title: Visualising value****Abstract:**

I am a PhD Candidate working within the field of Literary Criticism and Theory. My research interests lie in Higher Education Policy and the Humanities. Specifically I am interested in understanding definitions of "value" in Higher Education Institutions in the contemporary period. This poster outlines some of the preliminary issues that I address in my research, and poses the question "how can you measure the value of the humanities?" Whilst the "cost" of an education may be clearly defined, "value" remains a term that encompasses a wider field of qualitative factors, and can open up discussion beyond markets and economics

27**Postgraduate: Marianne Connors****College: Humanities****Poster Title: Écoute: film dialogue vs subtitling****Abstract:**

Pragmatic particles (e.g. English well, listen, so; French écoute, enfin, bon) play an important role in dialogue, helping to mitigate disagreement and other potential causes of conflict. The constraints of subtitling (e.g. character limits, pressure on subtitlers to rush translations) mean that these particles are often omitted or badly translated. This study explores the meaning of the French particle écoute in a corpus of films and television programmes, and contrasts this to the translations proposed in the English subtitles.

28**Postgraduate: Callan Davies, Anna-Marie Linnell, Nora Williams****College: Humanities****Poster Title: Staging Exeter****Abstract:**

Staging Exeter is an RCUK/Catalyst-funded project that seeks to revitalise the city's historic performance spaces. The project is a collaboration between the University's English and Drama students and performers from the local community. It culminates in an exhibition-cum-performance in the historic Guildhall on Friday 2 May. This poster is a "physical multimedia map" based on Hogenberg's 1587 cartographic representation of the city, plotting the various media and materials involved in and produced by the project.

29**Postgraduate: Jane Devoy****College: Humanities****Poster Title: Parenthood in contemporary cinema****Abstract:**

An investigation into representations of parenthood within independent twenty-first century cinema. What do these representations tell us about current attitudes to parenthood, and about how and by whom they are voiced within the framework of contemporary filmmaking? How might cinema have agency in presenting voices and seams of experience commonly neglected or silenced within mainstream cinema? A practice-research project comprising a short film INHABIT, a feature screenplay DRAGONFLY and a critical reflection on films by Joanna Hogg, Miranda July, Michael Winterbottom and Asghar Farhadi.

30**Postgraduate: Tara-Monique Etherington****College: Humanities****Poster Title: Japanese Manga in English: reading between the lines! (and pictures)****Abstract:**

*This poster demonstrates some of the methodologies involved in reading and interpreting manga (Japanese comics) in English translation. Reading manga is a stimulating experience that stretches beyond the meanings supplied by the text. From considering pictures at face-value to employing research on culturally specific contexts, the manga reader can engage in a reading practice that draws on their familiar cultural understandings while also engaging with new and unfamiliar signifiers. This poster looks at how the supernatural is used to construct representations of gender and sexuality through juxtaposed representations of modern and Edo Japan (1603-1868) in the manga, *Black Bird* (2009-2014).*

31**Postgraduate: James Freeman****College: Humanities****Poster Title: Freedom: the history of a political word in numbers****Abstract:**

This poster examines the history of 'freedom' as a tool of political rhetoric. It asks how speakers used the idea differently over time, topic and party to persuade their audiences. For example: Did the dominant stories and metaphors associated with freedom change during the twentieth century? Were there 'Tory' or 'Socialist' modes of talking about freedom, and, if so, when did they emerge? Innovatively, by splicing political history with rhetoric, corpus linguistics and 'big-data' computing, these questions are answered quantitatively. Dividing each problem into theory, method, results and interpretation, the poster combines infographics with annotated segments of software code to highlight the possibilities of exploring language through computers.

32**Postgraduate: Helen Frost****College: Humanities****Poster Title: They sowed the wind and now they are going to reap the whirlwind****Abstract:**

My research is a study into how the British media represented the allied bombing war against Germany during World War Two, including the representation of the bombing in the British press, art, cinema, radio and advertising. My research then follows with an exploration of how that representation was interpreted by the British public and how it shaped their views and opinions on British bombing policy.

33**Postgraduate: Mandy Kingdom****College: Humanities****Poster Title: Bones and crossed boundaries****Abstract:**

There is a strong move within academia at this time to be more collaborative and to widen our research to involve and incorporate other departments and disciplines. This is not a new concept in the area of bioarchaeology. This poster highlights the areas, disciplines, different bodies and organizations needed and involved in bringing together a specific bioarchaeology project on 'The Past People of Exeter'. By crossing interdisciplinary boundaries the project will benefit from the wealth of new technologies, ideas, views, skills and knowledge from many different areas.

34**Postgraduate: Betsy Lewis-Holmes****College: Humanities****Poster Title: Designing the modern female body 1870-1914****Abstract:**

My research concerns the historical beginnings of gym and fitness culture for women. Physical culture, as it was known, was increasingly popular leisure pursuit during the late nineteenth century, but for women it was problematic as gaining strength was at odds with traditional notions of femininity. My project assesses how women learnt about their own bodies and how they interacted with these sporting cultures, with a particular interest in material culture – the exercise machines, devices, how-to books and sporting fashions that were part of female search for health.

35**Postgraduate: Saud Mousa Alsalahi****College: Humanities****Poster Title: Teachers' perceptions of and readiness for teacher leadership****Abstract:**

Theories and literature as support for teachers' inclusion in development of the school as well as its leadership can be seen numerous and varied, though they seem to be on the generality basis rather than as a reality. This as a critical issue has attributed to a school culture of distrusted and undervalued situation for teachers. This small scale study investigates teachers' perception of and readiness for teacher leadership in their schools. Context of the study will be Saudi Arabia where 20 will be involved. Specifically, the study aimed to explore whether these teachers are able to practise their identity and agency as leaders in their profession. Interviews will be used to collect data.

36**Postgraduate: Amanda Phipps****College: Humanities****Poster Title: Theatre on the First World War: an interdisciplinary approach****Abstract:**

The First World War's position within education and the use of artistic representations as learning tools has been hotly debated. These debates have limited discussions by presenting factual accounts as battling against the arts and creating hostile disciplinary boundaries between History, English and Drama. Such boundaries have been established with seemingly little examination of what the arts teach schoolchildren to remember about the conflict. This is demonstrated by an analysis of theatre companies' interaction with schools. Education packs from theatre companies about their First World War plays suggest these boundaries are in fact fluid and less oppositional than current debates allow.

37**Postgraduate: Anna Tzakou****College: Humanities****Poster Title: Geopoetics project: The Body is the Ground upon which we Walk.****Abstract:**

Under the notion of meeting and through the theme of 'landscape makes identity possible', Geopoetics Project sought to examine communal myths of present. By applying performance practices (Grotowski Paratheatre, Anna Halprin) into the natural and historical topographies of Nisyros, the laboratory aimed to investigate embodied stories inherently held into the land and to knit creatively an expression of our unfolding selves in 'here and now'.

Geopoetics Project took place in Nisyros between the 12th of May and the 8th of June of 2013. It was the second performance practice laboratory of a PhD Research in Performance Practice.

38**Postgraduate: Richard Wells****College: Humanities****Poster Title: Transformations of the Apple: material fruit, mythic symbol, model object - from food to thought****Abstract:**

The apple, this most commonplace of objects, generates a range of meanings which are among the most strikingly pervasive and powerfully evocative in Western culture. My research provides the first comprehensive study of how this dynamic imagery is mobilised through works of art and radical social movements.

Through a series of case-studies which include Newton, the New World, Modern Art, and current environmental debates, I investigate how we formulate and argue about our relationship to the natural world and to each other using the apple as a Model Object.

The research will also make a contribution to the UK creative economy through publication and a touring exhibition.

39**Postgraduate: Matthew Black****College: Life and Environmental Sciences****Poster Title: Muscle metabolic responses and fatigue mechanisms during moderate-, heavy- and severe-intensity cycling exercise****Abstract:**

It is clear that healthy humans can exercise at a low intensity for a long time with minimal feelings of discomfort. However, increasing exercise intensity (e.g., running at a faster speed) increases discomfort and shortens the duration of exercise. This study aimed to investigate what happens within the exercising muscle during exhaustive exercise at different intensities. We found that during high-intensity exercise fatigue was caused by changes in the muscle environment. However, the cause of fatigue during low-intensity exercise was due changes in the nervous system. These results further our understanding of fatigue development during exercise at different work rates.

40**Postgraduate: Bert Bond****College: Life and Environmental Sciences****Poster Title: Exercise intensity and postprandial endothelial function in adolescents****Abstract:**

Diseases of the blood vessels are the biggest cause of death in UK, and the process underlying these diseases has its origin in childhood. Current health guidelines recommend that children achieve a minimum of 60 minutes of exercise per day, however the majority of 11-15 year olds are not achieving this. This study was to determine if a brief bout of high-intensity interval exercise could promote blood vessel health, and whether such an effect is superior to an equivalent bout of moderate-intensity exercise in 14-15 year old boys and girls.

41**Postgraduate: William Bowditch****College: Life and Environmental Sciences****Poster Title: Associatively mediated stopping: a novel paradigm****Abstract:**

When you're required to stop to a familiar cue, such as a red traffic signal, is the resulting cessation entirely a conscious act of control, or can it be unconscious and automatic? It is often assumed that cancelling a movement is a controlled process. However, recent evidence suggests that, through practice, acts of control can become automatic. Currently, little is known about the precise nature of the stimulus-stop associations that presumably drive these effects. We therefore sought to develop a task that combines response inhibition with a learning task, where coloured stimuli are variably related to withholding (or enacting) a response.

42**Postgraduate: Emma Cockcroft****College: Life and Environmental Sciences****Poster Title: High intensity interval exercise improves glucose tolerance and insulin sensitivity in adolescent boys.****Abstract:**

High intensity interval exercise (HIIE) promotes cardiovascular health in adults. Its effects in youth, however, are currently unknown. This study aimed to examine the influence of just a single session of HIIE in adolescent boys, compared to moderate intensity exercise and rest.

Results showed that both exercise types improved the ability to process sugar compared to rest. This indicates the potential of HIIE as an effective alternative to “traditional” exercise recommendations for adolescents, who have a well-documented low level of habitual physical activity and fitness.

43**Postgraduate: Sarah Crowley****College: Life and Environmental Sciences****Poster Title: Deconstructing conflicts in invasive species management****Abstract:**

Efforts to manage invasive wildlife populations can become entrenched in conflicts between human stakeholders. Conflict is triggered when an action (e.g. a management proposal) forces a variety of perspectives into opposition. Over time, conflict situations become increasingly complex and polarised and therefore increasingly difficult to resolve.

Deconstructing conflicts allows us to:

- *identify and focus on core, non-negotiable issues*
- *isolate and examine each position’s arguments*
- *consider the impact and scale of additional influencing factors*

44**Postgraduate: Holly East****College: Life and Environmental Sciences****Poster Title: The development and evolution of atoll rim reef islands, Huvadhu Atoll, Maldives Archipelago.****Abstract:**

Coral reef islands are low-lying (<5 m above mean sea level) accumulations of wave deposited sediments derived from surrounding coral reefs. Reef islands have high ecological and socioeconomic value, but are considered among the most vulnerable environments to climate change, particularly to sea-level rise. The Maldives Archipelago is a nation comprised of >1,200 reef islands, which support a population of >320,000. This research represents the first detailed study of Maldivian atoll rim islands. A series of 28 island cores are analysed to propose a model of rim island evolution and development.

45**Postgraduate: Lilo Henke****College: Life and Environmental Sciences****Poster Title: Reconstructing the climate with models and proxies****Abstract:**

To understand future climate change, we must understand what happened in the past. Proxies like tree-rings and corals are crucial for this, but can be messy and limited.

When looking at large-scale patterns like El Niño-Southern Oscillation (ENSO), it can be difficult to combine proxies to get one coherent record. How do you deal with differences in proxy sensitivity to ENSO? How do you compare tree ring widths to isotope ratios or sediment grain sizes?

Using climate models and some statistical analysis, we can get more information out of these important proxies and paint a clearer picture of the past.

46**Postgraduate: Philippa Holder****College: Life and Environmental Sciences****Poster Title: Little and often makes much: testing for persistence of dietary pesticides in bees****Abstract:**

Bumblebee and honeybee populations are exposed to pesticide residues in the nectar and pollen from treated flowering crops on which they feed. If a pesticide is persistent, even small, sublethal residues could build up in a bee's body over time and cause death.

Using a proposed new EU protocol, I tested three pesticides found in nectar and pollen, two of which are included in the recent EU 2-year ban for use on bee-attractive crops. I found that thiamethoxam and cypermethrin act as non-persistent toxicants in both bumblebees and honeybees, whereas fipronil is persistent in both species.

47**Postgraduate: Jamie Johnson****College: Life and Environmental Sciences****Poster Title: Palaeoecological records of coral community development from inner-shelf turbid-zone reefs of the Great Barrier Reef****Abstract:**

The inner-shelf of Australia's Great Barrier Reef is dominated by terrigenous sediments and characterised by high sedimentation and water turbidity. Additionally, these shallow coastal waters have been subjected to marked increases in sediment and nutrient yields since European settlement (ca. 1850) as the result of catchment modification, primarily for agricultural intensification. Due to the lack of long-term (> decadal) coral community data it is necessary to create baseline records in order to place contemporary ecological changes within the appropriate temporal context. This poster will present preliminary palaeoecological coral community data from a number of inner-shelf reef sites.

48**Postgraduate: James Kelly****College: Life and Environmental Sciences****Poster Title: Dietary nitrate supplementation: effects on plasma nitrite and pulmonary O₂ uptake dynamics in hypoxia and normoxia****Abstract:**

Nitrate-rich beetroot juice can reduce the oxygen (O₂) cost of low-intensity cycling exercise and increase time-to-exhaustion during high-intensity cycling. These effects are thought to result from the conversion of nitrate to nitric oxide (NO), which is linked to the regulation of muscle contraction and the efficiency of aerobic energy production. NO can also increase muscle blood flow and O₂ delivery into the active muscle. This could be particularly beneficial when normal O₂ availability (21%) is reduced. This work may have important implications for the treatment of disease conditions where O₂ delivery to muscle is reduced and during exercise at altitude.

49**Postgraduate: Jeffrey Lambert****College: Life and Environmental Sciences****Poster Title: Improving intervention fidelity for interventions promoting physical activity for depression****Abstract:**

Psychosocial interventions for treating depression have become more complex making them increasingly difficult to implement and evaluate (Craig et al., 2008). The aim of this study is to conduct an assessment of an intervention designed to increase physical activity for depression, to understand the extent to which it was delivered and received by patients. Audio transcripts of treatment sessions will be analysed thematically for adherence and competence of delivery, using a process-specific intervention fidelity checklist. In addition, patient interviews will take place to assess acceptability and receipt of the intended intervention processes. Results will inform further iterations of the intervention.

50**Postgraduate: Felix Leung****College: Life and Environmental Sciences****Poster Title: The impact of Ozone on crops productivity****Abstract:**

Tropospheric ozone (O₃) is the third most important anthropogenic greenhouse gas. It is harmful to human health and detrimental to plant productivity, as it causes significant crop production losses. Currently O₃ concentrations are projected to increase globally, which have a significant impact on food security. My aim is to quantify the impacts of present-day and future tropospheric ozone on crop production at regional scale until 2050, using the Joint UK Land Environment Simulator adapted to include the major global crop types (JULES-crop) . This will contribute to a more complete understanding of the impacts of climate change on food production.

51**Postgraduate: Sinead McDonagh****College: Life and Environmental Sciences****Poster Title: Antibacterial mouthwash attenuates the physiological effects of chronic nitrate supplementation in humans****Abstract:**

Nitrate-rich beetroot juice (BR) can reduce blood pressure (BP). This beneficial effect may be absent if strong antibacterial mouthwash is used before ingesting a small amount of nitrate. The aim of this study was to find out whether different strengths of antiseptic mouthwashes lessen the typical BP response when BR is taken over several days. Healthy participants gargled with strong or weak mouthwashes, or water, alongside BR intake for six days. BP during walking was higher after strong mouthwash use compared to water, but not weak mouthwash. These results have important implications for dietary advice which aims to lower BP.

52**Postgraduate: Lee Moore****College: Life and Environmental Sciences****Poster Title: The influence of perceived required effort and support availability on challenge and threat states and subsequent motor performance****Abstract:**

How individuals respond to a stressful task is determined by their evaluations of the task and their coping resources. Individuals who evaluate that they have sufficient resources to cope with task demands experience a challenge state, whereas individuals who evaluate that they have insufficient resources experience a threat state. Research has shown that a challenge state leads to better performance and more positive health outcomes. However, no research has examined what factors influence individuals' evaluations and subsequent challenge and threat states. To address this issue, this study examined the impact of two determinants: perceptions of required effort and support availability.

53**Postgraduate: Gary Murphy****College: Life and Environmental Sciences****Poster Title: Hidden killers: Sponge erosion on coral reefs****Abstract:**

Siphonodictyon coralliphagum is an inconspicuous bioeroding sponge which lives within coral colonies. As it grows it needs to excavate an increasingly larger cavity within the coral, weakening reef structure and ultimately leading to coral colony death. The only evidence for this species existence at the surface, are yellow chimneys which provide access to the surrounding water. This research sought to develop a method of relating the visible cover of the sponge at the reef surface to the erosion within the coral colony, in order to help understand the extent of erosion caused by this species on reefs.

54**Postgraduate: Samantha Parnell****College: Life and Environmental Sciences****Poster Title: Social marketing to encourage sustained participation in physical activity****Abstract:**

Of growing concern in the UK is the lack of physical activity participation that the general population take part in on a regular basis. Specifically, 68% of boys and 76% of girls fail to meet the government's recommendations of a minimum of 60 minutes per day of a mix of moderate (walking) and vigorous activity (running), including activities that strengthen muscle and bone. Social marketing is being investigated within the school context as a method to encourage long term physical activity patterns in school children.

55**Postgraduate: Nicola Perera****College: Life and Environmental Sciences****Poster Title: Shifting sands in the climatic fitness seascape of Arabidopsis thaliana****Abstract:**

By Darwinian evolution the fittest or best-adapted individuals in a population will produce the most progeny and therefore their genes will increase in prevalence over time. A fitness landscape is a common representation of evolutionary fitness as the mountains and valleys of high and low performance. However a fitness landscape is static it doesn't represent the dynamic evolutionary pressures imposed in nature. A fitness seascape on the other hand represents the rolling waves of varying selective pressure. We have tried to capture the fitness seascape as it relates to climate in the model plant species Arabidopsis thaliana grown in a common garden over two consecutive years.

56**Postgraduate: Stuart Read****College: Life and Environmental Sciences****Poster Title: We are disabled enough! How group identification influences tendency to challenge assumptions of disability illegitimacy.****Abstract:**

Assessing the severity of a disability is a complex and subjective process, often leading healthcare providers to doubt the legitimacy of a disabled person's need for support. We show that the degree to which a disabled person identifies as being part of a larger disability support network can have beneficial consequences for their ability to challenge assumptions of illegitimacy, and through this, also promote positive outcomes for their willingness to seek support, and their subjective well-being.

57**Postgraduate: Paul Rose****College: Life and Environmental Sciences****Poster Title: Thinking outside of the lab: using students and social media to improve zoo animal welfare****Abstract:**

Science is needed to improve how we keep the myriad of species that reside in captivity. As global conservation challenges increase, more species will be brought into managed situations. Fundamental understanding of behavioural ecology and natural history is required for successful animal management. Traditional animal behaviour experimentation relies on direct observations. Using photographs uploaded onto online social media websites as well as real-time photographic records of species' activity patterns, retrospective and current analyses of behaviour are possible. Both undergraduate and postgraduate student projects, managed centrally, can increase the volume of data collected and provide comparison between zoos and wider application of results.

58**Postgraduate: Nicole Sanderson****College: Life and Environmental Sciences****Poster Title: Climate, permafrost and microtopography controls on peatland carbon storage in Eastern Canada****Abstract:**

In Eastern Canada, permafrost reached its southernmost extent during the Little Ice Age. Recent warming and permafrost degradation during the last 150 years are altering peatland microtopography, hydrology and carbon cycling; this trend is projected to continue. However, the response of the peatland carbon sink to decadal and centennial-scale climate change is poorly known. The aim of this project is to examine the effect of ecohydrological change on carbon accumulation rates for the last millennium in peatlands along the Gulf of St Lawrence using a detailed chronology and series of well-established proxy indicators.

59**Postgraduate: Anthony Shepherd****College: Life and Environmental Sciences****Poster Title: Effects of dietary nitrate supplementation on blood pressure, the O₂ cost of exercise, and walking performance in individuals with Type 2 diabetes****Abstract:**

Individuals with Type 2 diabetes (T2D) have reduced exercise capacity, which may negatively impact quality of life. Dietary nitrate (NO₃⁻) supplementation has been shown to reduce the oxygen cost of exercise in healthy volunteers. The aim of this study was to determine if similar effects from NO₃⁻ were observed in individuals with T2D. Participants consumed 70 mL/day of either NO₃⁻ rich (6.43 mmol NO₃⁻; BR) or NO₃⁻ depleted beetroot juice (0.07 mmol NO₃⁻; PL) for 4 days. Dietary nitrate supplementation did not significantly reduce the O₂ cost of exercise, resting BP, or improve 6MWT performance in subjects with T2D.

60**Postgraduate: Graham Thomas****College: Life and Environmental Sciences****Poster Title: Characterising virulence factors of the bee pathogen *Nosema ceranae*****Abstract:**

Nosema ceranae threatens the two economically important pollinators honey and bumble-bees. Although the *N. ceranae* genome has been published, the molecular basis underpinning pathogenicity is not known. We hypothesise virulence factors exist amongst *N. ceranae* secreted-protein genes. We have started characterising these genes, identifying candidate factors by their expression in baker's yeast. We offer experimental data supporting the identities of NcORF-01664 and NcORF-01663 as polar tube proteins (PTP) 1 and 2 respectively and identify a putative PTP4. We also show two unknown proteins target lipid droplets. Increased knowledge on virulence factors and disease progression will ultimately lead to disease mitigation.

61**Postgraduate: Chris Thompson****College: Life and Environmental Sciences****Poster Title: Dietary nitrate improves cognitive function and exercise performance during prolonged intermittent sprint cycling****Abstract:**

Dietary nitrate (NO₃⁻) may improve both physical and cognitive performance via its influence on blood flow and muscle metabolism. Following a week of dietary NO₃⁻ or placebo, 16 participants performed a series of alternating cognitive tasks interspersed within a prolonged intermittent sprint test (~80 mins).

The findings from this study suggest that dietary NO₃⁻ enhances repeated sprint performance and may slow the decline in cognitive function that typically occurs during team sport gameplay.

62**Postgraduate: Dimitris Vlachopoulos****College: Life and Environmental Sciences****Poster Title: Sport participation and bone health in youths: the PRO-BONE project****Abstract:**

Osteoporosis is a common health problem associated with a high morbidity and mortality. In order to improve the outcome for osteoporosis, primary prevention remains the most important action in public health. Exercise has been largely suggested as a key factor for developing healthy bones, but there are differences between sports: football (osteogenic) while cycling or swimming (non-osteogenic). We present PRO-BONE project that aims 1) to longitudinally assess bone health and its metabolism in adolescents engaged in these sports and 2) to examine whether a short and inexpensive plyometric jump training programme is positively associated with bone health in these adolescents.

63**Postgraduate: Susanne Vogeler****College: Life and Environmental Sciences****Poster Title: Identification of nuclear receptors in the Pacific oyster, *Crassostrea gigas*, reveals targets for xenobiotics****Abstract:**

*Aquatic environments are at high risk from chemicals, which enter the watercourses through anthropogenic pollution. Marine invertebrates, including molluscs, take up and bioaccumulate chemicals with disastrous effects on their development and survival. Nuclear receptors, which regulate the expression of genes, are activated by binding specific ligands. Chemicals can directly interact with these receptors and modulate normal gene expression. However, knowledge on the chemical-receptor interaction in marine invertebrates is limited. My project investigates the presence, expression and biological function of nuclear receptors in the Pacific oyster (*Crassostrea gigas*) to gain a deeper insight in mollusc gene expression regulation and how it is affected by chemicals.*

64**Postgraduate: Stephanie Wright****College: Life and Environmental Sciences****Poster Title: Sediment and cigarettes: nature's safety blanket?****Abstract:**

Cigarette butts are the most common item of beach litter. Comprised of the bioplastic cellulose acetate, they are gradually degraded into smaller particles by sun light. Thus, they may represent a source of microscopic plastic litter – microplastics - as well as toxic chemicals such as nicotine and heavy metals. Here we assess the toxicity of cigarette butts to a marine worm. We determine whether sediment provides protection from the potential hazards of cigarette-butt microfibers, acting as nature's safety blanket.

65**Postgraduate: Mustafa Ahmeb****College: Medical School****Poster Title: Mutations in PRUNE cause severe autosomal recessive developmental delay****Abstract:**

Global neurodevelopmental delay is a severe condition presenting soon after birth which affects various aspects of brain function. Genetically inherited forms of the condition are increasingly discovered in genetically isolated communities. Here we report the identification of two families from Oman and India with global neurodevelopmental delay and microcephaly associated with two novel mutations in the PRUNE gene. Our investigations of the effect of the mutation on PRUNE protein function show that both mutations result in defects in cell proliferation, differentiation and migration, all essential processes in early brain development, confirming PRUNE as a molecule crucial for normal brain development.

66**Postgraduate: Myo Myo Aung****College: Medical School****Poster Title: Do gut hormone (GLP-1) based therapies alter skin blood flow in healthy lean individuals?****Abstract:**

Synthetic versions of our natural gut hormones are now being used to control blood sugar levels in people with diabetes. There is increasing interest in whether they have additional beneficial effects on our heart and blood vessels. Our study examined the skin blood flow response to locally delivered synthetic gut hormones (Exenatide and Liraglutide) in healthy participants. Both Exenatide and Liraglutide significantly increased skin blood flow in healthy individuals suggesting that these substances may have favourable effects on blood vessel, and thus may have additional clinical benefits in people with diabetes.

67**Postgraduate: Emma Baple****College: Medical School****Poster Title: Hypomorphic PCNA mutation underlies a novel human DNA repair disorder****Abstract:**

A number of human disorders, result from mutation of genes encoding molecules important for DNA repair. We identified a novel neurodegenerative syndrome comprising features associated with disordered DNA repair resulting from a (p.Ser228Ile) sequence alteration of the proliferating cell nuclear antigen (PCNA). PCNA is essential for DNA replication and repair, mutations that profoundly impair PCNA function would thus be incompatible with life. Patient cells exhibit significantly abnormal responses to UV irradiation. The p.Ser228Ile change also profoundly alters PCNA's interaction with Flap endonuclease 1 (Fen1) DNA metabolism enzyme. Taken together our findings detail the first mutation of PCNA in humans.

68**Postgraduate: Katy Barwick****College: Medical School****Poster Title: Molecular studies of hereditary motor neuropathy identifies a new disease mechanism and a novel therapeutic option for clinical intervention****Abstract:**

Neurodegenerative diseases are becoming increasingly prevalent with the aging population, and are among the major contributors to disability and disease worldwide. The identification of the gene defects responsible has played a major role in our understanding of the pathogenic processes involved, and provided opportunity to develop targeted pharmacotherapies. We investigated four hereditary motor neuron disorders to determine the biological basis of each. Identification of the disease genes responsible has highlighted a new disease mechanism and potential targeted treatment option for these conditions, which we aim to investigate in transgenic mice as a prelude to treatment trials in patients.

69**Postgraduate: Matthew Devall****College: Medical School****Poster Title: The potential role of mitochondrial methylation in Alzheimer's Disease****Abstract:**

Alzheimer's Disease (AD) is a chronic disease which affects over 25 million people worldwide. Despite increasing research, current treatments merely work to reduce some symptoms and don't address the underlying cause. Research has investigated the role of the mitochondria in AD; however as of yet, no study has solely focussed on how the recently revitalized field of mitochondrial methylation may be altered in disease progression. This poster will discuss the potential role of mitochondrial methylation in AD whilst taking into account the potential caveats that must be considered in this field.

70**Postgraduate: Holly Hardy****College: Medical School****Poster Title: Concentration and time-dependent effects of class 3 Semaphorins in growth cone morphology and guidance****Abstract:**

A functional nervous system depends upon neurons connecting with appropriate targets. Axons are neuronal extensions which follow precise paths to connect with other neurons, muscles or glands. The growth cone, a motile structure at the axon tip, integrates environmental cues and guides this extension, steering axons to their goal.

Aberrant pathfinding results in developmental impairments and cognitive alterations (e.g. learning and memory deficits). Furthermore, connections are constantly remodelled; this ability declines with age, impacting on quality of life and well-being. How axon guidance is regulated is key to understanding how the brain is wired up in both health and disease.

71**Postgraduate: Gaurav Harlalka****College: Medical school****Poster Title: Mutations in B4GALNT1 (GM2 Synthase) underlie a new disorder of ganglioside biosynthesis.****Abstract:**

We investigated complex form of hereditary spastic paraplegia in families from Kuwait, Italy and the Old Order Amish. Our genetic studies identified mutations in B4GALNT1 (GM2 synthase) as the cause of this neurodegenerative phenotype. Biochemical profiling of glycosphingolipid biosynthesis confirmed a lack of GM2 in affected subjects in association with a predictable increase in levels of its precursor, GM3, a finding that will greatly facilitate diagnosis of this condition. The study of patients and animal models of these disorders will pave the way for a greater understanding of the role gangliosides play in neuronal structure and function.

72**Postgraduate: Abigail Higgins****College: Medical school****Poster Title: The association of ADHD with socioeconomic disadvantage: a systematic review****Abstract:**

This study explored whether attention deficit/hyperactivity disorder (ADHD) is more likely to occur in young people from socioeconomically disadvantaged backgrounds. We reviewed all studies published which explored this association and collated the results. 42 studies have explored this association with mixed findings. There is evidence that ADHD is associated with a disadvantaged socioeconomic background, however this is a complex association which may in fact be due to family factors related to socioeconomic disadvantage, for example parental mental health.

73**Postgraduate: Kath Maguire****College: Medical school****Poster Title: Stories, games and theoretical models: towards a public sociology of involvement****Abstract:**

Words matter when discussing involvement in health research. Patients, service-users, clients, consumers, survivors or people-with-lived-experience; words reflect setting, culture and understandings.

Words make identity claims. 'Service-users' can imply all patients and carers; or only people who often use services. It can claim rights, compared to those not using services; or show less power than 'service-providers'. 'Survivors' may reject 'victimhood' or challenge mental health systems.

This project uses sociological theories to explore discussions of public involvement. Narratives from participants are reflected back to them through stories games and models making analytic tools more accessible and providing a 'reality check' for researchers.

74**Postgraduate: Reza Maroofian****College: Medical School****Poster Title: Mutations in KPTN cause macrocephaly, neurodevelopmental delay, and seizures****Abstract:**

The proper development of neuronal circuits during brain development is critically dependent on an intricate series of molecular and cellular cues and responses. Using linkage analysis and whole-exome sequencing to investigate Amish families, we demonstrated that mutations in KPTN, encoding kaptin, cause a syndrome typified by macrocephaly, neurodevelopmental delay, and seizures. Immunofluorescence analyses in cell cultures showed that endogenous kaptin associates with dynamic actin cytoskeletal structures, an association which is lost upon introduction of the identified mutations. Together, our studies define kaptin alterations responsible for macrocephaly and neurodevelopmental delay and identify kaptin as a molecule crucial for normal human neuromorphogenesis.

75**Postgraduate: Martina Muggenthaler****College: Medical School****Poster Title: Identification of a new gene responsible for cleft lip and palate, congenital cardiac malformations and myopia in humans and mice****Abstract:**

Cleft lip and palate (CL/P) is a common birth defect of complex aetiology involving genetic and environmental factors. Over recent years the genetic causes of CL/P have been pursued intensely, but remain poorly characterized. We investigated an inherited form of CL/P amongst the Amish associated with congenital heart malformations and short-sightedness. Genetic studies identified a new gene responsible for this condition. A mouse model of this gene exhibits the same clinical features, strongly supporting our findings that this molecule plays an important role in the normal development of the palate, heart and eye and likely underlies other forms of CL/P.

76**Postgraduate: Sarah Piece****College: Medical School****Poster Title: Using 'free text' in the CPRD to improve studies: an example testing the association between microscopic haematuria and bladder cancer****Abstract:**

Bladder cancer is the seventh most common cancer in the UK. In the absence of screening, diagnosis relies on symptom presentation, generally to the GP. Macroscopic haematuria is a known marker of bladder cancer, but the risk associated with microscopic haematuria had not been estimated owing to lack of data. We expanded previous analysis of coded data within a large electronic database to include the uncoded record of haematuria symptoms. This permitted not only the first ever estimate of the association between microscopic haematuria and bladder cancer, but also an analysis of GPs' preferences for method of symptom recording.

77**Postgraduate: Adam Streeter****College: Medical School****Poster Title: Pneumococcal vaccination in the elderly and a new approach to confounding bias****Abstract:**

Vaccination against pneumococcal infection is currently recommended for adults aged over 65y. However the practical and ethical difficulties in conducting trials in this age group limit the evidence for this policy. Furthermore there is a need to evaluate vaccination effectiveness away from the ideal environment of the clinical trial. Analysis of patient records offers an opportunity to do just that.

Analysis of observational data has traditionally been impeded by bias due to confounding variables, hidden or unmeasured. This study proposes to apply a new method, that is not contingent on identifying confounders, to estimate vaccine effectiveness in the population.

78**Postgraduate: Samantha van Beurden****College: Medical School****Poster Title: People's experiences with free internet-based weight loss interventions****Abstract:**

The current study explored experiences with eHealth weight loss interventions to provide a better understanding of the facilitators and barriers to adherence.

Semi-structured recorded interviews were conducted with patients who were offered lifestyle advice and access to free internet-based weight loss programmes. Thematic Analysis was used on the transcripts.

Barriers to adherence included time, effort and excessive reminders. Ongoing engagement was facilitated by face to face contact and perceived success of changes.

These findings may help inform the development of new eHealth behaviour change interventions and highlight the potential for use of eHealth alongside weight management advice within primary care.

79**Postgraduate: Joana Viana****College: Medical School****Poster Title: Molecular mechanisms of schizophrenia****Abstract:**

Schizophrenia is a psychiatric disease that affects approximately 1% of the world population and is characterised by hallucinations, delusions, lack of emotion, among other symptoms. The results of several years of research in the field of epidemiology of schizophrenia indicate that the disease is possibly a result of a combination of molecular and genetic mechanisms. My research consists in studying different molecular and genetic aspects that are potentially associated with schizophrenia, using different disease models, such as post-mortem brain samples from schizophrenia patients, animal models and cell line cultures.

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Postgraduates: Kim Boddy, Dawn Thorley, Anna Maxwell, Cian Carney, Pierre Court, Andrew Mearns, Sadie Mattinhouse, Hannah James, Jess Pares-Landells and Mel Parry

College: Social Sciences and International Studies

Poster Title: What is the role of the educational psychologist?

Abstract:

The role of the educational psychologist (EP) has been subject to much internal professional debate over the last 100 years. We asked current trainees, course tutors, practising EPs and teachers what they thought constituted the role of the EP in three key words. These info-graphs depict the responses on the basis of their frequency, highlighting the similarities and differences in opinion between and within these four groups.

81

Postgraduate: Philippa Dell

College: Social Sciences and International Studies

Poster Title: Why So Loud? A social-ecological approach to the study of anthropogenic noise disturbance of cetaceans in the Pelagos Sanctuary

Abstract:

This project takes a social-ecological approach to the issue of noise disturbance of cetaceans in the Pelagos Sanctuary, a Marine Protected Area in the Ligurian Sea. It is interdisciplinary in nature, involving two strands of research: Ecological, involving acoustic analysis to identify sources and potential impacts of anthropogenic noise in the sanctuary; and Anthropological, investigating the socio-economic barriers to marine mammal risk mitigation through a series of qualitative interviews of representatives from the various maritime industries contributing to underwater noise pollution in the sanctuary. Industries of interest include fishing, Naval Military, eco-tourism, shipping and recreational maritime tourism.

82

Postgraduate: Peter McWilliam

College: Social Sciences and International Studies

Poster Title: Teaching mathematics using technology

Abstract:

This poster reports on a study in The Bahamas where there has recently been an increased focus on the use of Information and Communication Technology (ICT) in the mathematics classroom. The purpose of the study was to investigate pre-service and in-service primary and secondary school mathematics teachers' perspectives on using ICT when teaching mathematics and to use action research to investigate the impact of a technology based intervention designed to raise pre-service teacher's awareness of the potential value of using ICT.

83**Postgraduate: Davide Pettinato****College: Social Sciences and International Studies****Poster Title: Western Muslims and faith-based activism for social justice: developing a multi-disciplinary framework****Abstract:**

How to study Western Muslim activism for social justice? The three different dimensions of the question (i.e.: Western / Muslim/ activism) have been traditionally approached through three different and independent theoretical perspectives:

- 1. Social Movement Theory: to analyse activism in Western societies;*
- 2. Liberation Theology: to understand faith-based activism for social justice;*
- 3. post-Orientalism: to study Islam and Muslims in a critical way that challenges prejudices and stereotypes.*

The poster highlights how these approaches have significant shortcomings when used in isolation to address the research question, and it proposes the advantages of an original multidisciplinary framework.

84**Postgraduate: Suthee Ploisawaschai****College: Social Sciences and International Studies****Poster Title: The development of writing and identity among senior researchers****Abstract:**

This research explores how three senior researchers, i.e. professors, develop their writing and identity as academic authors over the trajectory of their career. The research involves interviews with the professors and textual analysis of their written works based on the concept that any kind of language use can reflect an interaction between writers and readers. This interaction dimension of language is related to the identity as an author in that it can suggest how writers organise the textual structure, craft their argument, show their confidence in what they argue, as well as how they engage with their readers.

85**Postgraduate: Mariachiara Slucca****College: Social Sciences and International Studies****Poster Title: Unmanned Aerial Vehicles (UAVs) and Unmanned Combat Aerial Vehicles (UCAVs): how do increasingly high-performing and autonomous systems undermine international stability and security****Abstract:**

As flawed systems, UAVs and UCAVs need technological upgrades. My research aims to examine the impact technological advancements have on international security and stability. Since increasingly high-performing and autonomous systems lower the war threshold, it is important to understand how can action-reaction dynamics be kept under control and escalation be prevented.

Specifically, my research focuses on how can deterrence work if systems act automatically and autonomously. In order to test deterrence theory, I analyse the hypothesis UAVs are equipped with nuclear weapons: if human operators are excluded from decision-making process, how could deterrence work in that case?



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