



Showcasing Undergraduate Research Excellence

Programme and Abstracts SURE Conference

2nd March 2016
Bournemouth University
Talbot Campus



Find out more at surebu.org.uk

We are **SURE**. What about you?

Content	Pages
About SURE	1
Programme Overview	1
Programme and abstracts	2 - 57
Keynote lecture	2
Poster session	3 - 24
Oral presentations 1	25 - 29
Oral presentations 2	30 - 34
Oral presentations 3	35 - 39
Oral presentations 4	40 - 43
Oral presentations 5	44 - 47
Oral presentations 6	48 – 52
Oral presentations 7	53 – 57
Organising Committee	58

Showcasing Undergraduate Research Excellence (SURE)

SURE is a Fusion-funded project aiming to celebrate undergraduate research at Bournemouth University across all Faculties and levels of study. The project disseminates the benefits of students' engagement in research and is seeking ways in which undergraduate work can increasingly make an impact to local communities, businesses and the environment. The principles underpinning SURE are: (1) Most types of undergraduate work involve elements of research; therefore, research is a core element of academic life and should be inclusive and valued; (2) Research skills are widely applicable in most professional practices; (3) Research co-creation promotes student engagement by stimulating personal and professional development; (4) Engaging students in research is a well-recognised path to academic excellence. Congratulations to all students taking part in the conference – you are already inspiring others and contributing to the success of this project.

SURE Conference Programme Overview

10:00-11:00	Poster session (with refreshments)	K103, Kimmeridge House
11:05-11:40	Keynote	KG01, Kimmeridge House
11:45-12:40	Oral presentations 1	KG01, Kimmeridge House
	Oral presentations 2	KG03, Kimmeridge House
12:45-14:00	Lunch break (complimentary lunch will be offered to conference presenters at The Retreat, Poole House)	
14:00-15:00	Oral presentations 3	KG01, Kimmeridge House
	Oral presentations 4	KG03, Kimmeridge House
	Oral presentations 5	KG101, Kimmeridge House
15:00-15:30	Refreshments break	Kimmeridge House
15:30-16:30	Oral presentations 6	KG01, Kimmeridge House
	Oral presentations 7	KG03, Kimmeridge House
16:40-17:30	Drinks and awards	Atrium, Poole House

Serendipity or Cause and Effect: A personal evolution to academia

Dr Jonathan Williams

Senior Lecturer in Physiotherapy, Bournemouth University,
jwilliams@bournemouth.ac.uk

Fortune favours the brave.

This presentation will explore a personal narrative from free school meals to senior academic facilitated by a 'loaded' dice. It will explore milestones in a journey helped by serendipity. Simple decisions and their outcomes will illustrate that serendipity may actually be cause and effect, and how seizing opportunities can lead to great outcomes. This will be discussed in relation to employment, study and research leading to academia and perhaps the most important, education.

Speaker' short biography:

Dr Williams is a prominent researcher in the field of Physiotherapy and Biomechanics with a wealth of clinical and academic experience. He enjoys the challenge of experimental measurement and is passionate about the fusion of Physiotherapy with Engineering. He received his BSc (hons) in Physiotherapy from the University of Southampton, Master of Manipulative Therapy degree from Curtin University of Technology, Western Australia and Doctor of Philosophy from the University of Roehampton, London. Jon has a keen interest in the use of engineering principles to solve biomechanical and clinical problems.

10:00-11:00	K103, Kimmeridge House	Poster session
P1	Ashley Wilkie	Immersed Obsolescence, an art installation blurring the boundaries of reality and simulation
P2	Ebony-storm Stanberry	Is there evidence for syphilis in the Old World before Columbus trip to America?
P3	Elisabeth Johnson	The parasite <i>Pomphorhynchus tereticollis</i> : Native or non-native to the UK?
P4	Mark Villeneuve	Evaluating the methods used to study commingled skeletal remains
P5	Yvette Barbier	Into the fire: searching for industrial production sites at Madinat al-Zahra
P6	Nargilya Gulyamova	Identifying the effectiveness and toxicity of novel psychoactive substances from the users perspective: a mixed-method of quantitative and qualitative studies
P7	Christopher Dwen	The proximity of fly artefact deposition may mimic assault related blood spatter
P8	Carlyle Collins	Identification of counterfeit products using portable Raman and Fourier Transform Infrared Spectroscopy
P9	Nicola Barnes	An analysis of ASOS's approach to service augmentation and its impact on consumers' affective and value-based commitment
P10	Rosie Lumley	Designing a poster to increase awareness of the signs and symptoms of malnutrition and what to do if you think you may be suffering
P11	Hannah Skeels	An exploration of the literature to support the beneficial use of therapist self-disclosure in occupational therapy practice
P12	Alice Nicholls	Can the Prechtl method of assessment be used to predict the neurodevelopmental outcome, at eighteen months to three years, of infants born preterm?
P13	Zoe Drew	Identifying the most successful defensive strategy for penalty corners in women's hockey

P14	Kirsty Knight	Does tennis elbow demonstrate the same three pathological changes seen on imaging as lower limb tendinopathies?
P15	Nicole Learner	What is the effectiveness of physical activity in order to maintain cognitive function in nursing home residents with dementia? A literature review
P16	Vicki Wilkinson	Can body weight supported treadmill training improve gait in Parkinson's Disease?
P17	George Erskine	Is graded motor imagery effective at reducing pain in Complex Regional Pain Syndrome?
P18	Ella Salih-Miller	The Effect of interpersonal processes on the accuracy of eyewitness line-up identification and its relation to state anxiety.
P19	Tom Minor	SkyGlow: a night-time illumination model with light pollution from artificial light sources for urban environment simulation in computer graphics
P20	Lukasz Adam Hertlein	The chemistry, pharmacology and toxicology of central nervous system stimulant novel psychoactive substances (to be confirmed)

Immersed Obsolescence, an art installation blurring the boundaries of reality and simulation

Ashley Wilkie¹ and Dr Anna Troisi²

¹ BA (Hons) Digital Media Design, level H, i7240357@bournemouth.ac.uk

² Lecturer in Digital Media Design, Bournemouth University

In today's digitally advanced society, it becomes impossible not to perceive that we are overwhelmed by technology. The boundaries between the real and simulated worlds are blurred by the technology. The notion of old and new within this context become indistinct, as tech objects are continuously remediated, resurfacing, finding new uses, context and adaptations (Parikka 2015). Technologic obsolescence, as discussed by Slade (2006), has developed a psychologically advanced society that drives the development of technology, resulting in an ever-increasing waste. The notion of remediating technology has become a very recent reaction, both to the increases in e-waste as consumers react to brand over marketing and mass production. The physical waste within the installation is designed to illustrate a result of the over consumption and disposal of e-waste and to create a new product for artistic purpose. The installation allows the audience's senses to pass through reality via interaction with a medium, constituted by water immersed obsolete objects. This augmented reality was created through projection mapping onto water surface. Through the use of a public exhibition curated by Dr Anna Troisi the immersive installation was used to portray these ideas to the audience from which to gain a response as a result to they perceived understanding. The use of projection mapping within augmented reality is allowing designers to change audience's perception within their own environment, distorting their perception and therefore blurring the boundaries between realities. From the study it has been understood that through the use of tactile interaction different perception and emotions can be felt due to audience ability to socially participate through individual and group interaction. The key outcomes from my study are the feedback response from participants that showed this interactive installation started to break down the modern art gallery perception of interaction and involvement with the art itself.

Is there evidence for syphilis in the Old World before Columbus' trip to America?

Ebony-Storm Stanberry and Dr Karina Gerda-Radonic²

¹ BSc (Hons) Archaeological, Anthropological & Forensic Sciences, level H,
estanberry@bournemouth.ac.uk

² Lecturer in Biological Anthropology, Bournemouth University

Around 1495 a seemingly new disease spread its way across the Old World. It was soon to be known as the first global disease that still affects the world today. Syphilis is a sexually transmitted disease that can also be transmitted from mother to baby in the womb. It is caused by the bacterium *Treponema pallidum*, but where did it originate from? Columbus returned from America in 1493 AD and it has originally been thought that when he returned, not only did he introduce the New World to the Old but also brought syphilis with him, this is known as the Columbian Theory. After Columbus returned there was a large outbreak of syphilis and it quickly spread across Europe, but was this just coincidental? The definite origin of the disease remains an enigma. There are currently three theories as to how syphilis originated in the Old World. Two of these are investigated in this study: the Columbian theory and that syphilis may have always been present in both the New and Old World. This study aims to ascertain whether or not syphilis was present in the Old World through a metadata analysis of recorded archaeological cases prior to 1493 AD. These cases will provide the information needed in order to draw unbiased conclusions through the comparison of the physical symptoms of the different treponemal diseases. Preliminary findings indicate that the Columbian theory may be erroneous, with much evidence suggesting that syphilis was already present in the Old world.

The parasite *Pomphorhynchus tereticollis*: native or non-native to the UK?

Elisabeth Johnson¹, Alice Galligar¹, Dr Demetra Andreou², Caterina Antognazza³, Prof Robert Britton² and Dr Chris Williams⁴

¹ BSc (Hons) Archaeological, Anthropological & Forensic Sciences, level I,
i7764321@bournemouth.ac.uk

² Dep. Life & Environment Sciences, Bournemouth University

³ Research Assistant, Faculty of Science & Technology, Bournemouth University

⁴ Environment Agency, Brampton Office

Pomphorhynchus laevis is a non-native parasite that has been shown to be pathogenic to salmonid fishes resulting in its listing as a category 2 parasite (i.e. fish can only be moved between waters if they are free from *P. laevis*). In this study we have identified a new non-native parasite species to the UK- *Pomphorhynchus tereticollis*, which is a close relative to *P. laevis*. Seven fish species were sampled from seven rivers throughout the UK and *Pomphorhynchus* species were identified. This species is part of the acanthocephalan family, which tend to be located in the intestines of its final freshwater fish host. Once the parasite was collected, DNA extractions were performed and then using PCR (Polymerase Chain Reaction) the DNA was amplified for two genes: mitochondrial (cytochrome c oxidase subunit I, COI) and nuclear (ribosomal internal transcribed spacer, ITS). Phylogenetic trees were constructed in order to identify the parasite to species level and the data suggests the presence of a new species to the UK, *P. tereticollis*. This parasite was found in all rivers and all sampled species. No samples were identified as *P. laevis* which has been recorded in these rivers since the 1970s. The genetic work has been supplemented with morphological work confirming the species as *P. tereticollis*. The identification of a new species can have important implications for fish movement policy and biodiversity, as its presence in the UK could mean a loss of biodiversity and a decrease in the less adapted native species. There is thus a need to determine its impact and evaluate its possible inclusion as a category 2 parasite.

Evaluating the methods used to study commingled skeletal remains

Mark Villeneuve¹ and Dr Karina Gerdau-Radonic²

¹ BSc (Hons) Archaeological, Anthropological & Forensic Sciences, level P,
i7257404@bournemouth.ac.uk

² Lecturer in Biological Anthropology, Bournemouth University

It is not uncommon in archaeology and forensic investigations to discover multiple sets of human skeletal remains in the same context. The multiple sets can be part of the funerary ritual, or an unfortunate feature of natural disasters or human rights violations. A core part of the analysis involves knowing how many individuals are being dealt with. A researcher can attempt to determine the Minimum Number of Individuals (MNI) that would account for the bone specimens recovered. This study focused on three methods employed to estimate the MNI: the Zonation method, which counts coded regions on each bone, the Landmark method, which counts the number of specific features on a bone, and the Traditional method, whereby an individual uses his/her own individual judgement to determine which parts of a bone and how many bones are represented. The aim of the project is twofold: (1) to assess the level of inter- and intra-observer variation between users of each method, and (2) to assess whether the MNI estimates are different between researchers with different levels of experience. Three groups of participants (undergraduates, postgraduates and academics), individually go through a set of material from the university's archaeological collection and apply all three methods. While the study is still in the stage of data gathering, results from this project have the potential to improve the study of commingled remains in the future, and lead to more accurate and reliable use of these methods. Preliminary results of the undergraduate participants do reveal variations in their MNI estimations.

Into the fire: searching for industrial production sites at Madinat al-Zahra

Yvette Barbier¹, Dr Chloe Duckworth², Dr Derek Pitman³, Prof Kate Welham³
and David Gorvantes⁴

¹ BSc (Hons) Archaeology, alumni, ybarbier@gmail.com

² British Academy Post-Doctoral Research Fellow, University of Leicester

³ Department of Archaeology, Anthropology & Forensic Science,
Bournemouth University

⁴ Archaeologist, Spain, davidgorvantesedwards@yahoo.es

The province of Andalusia, Southern Spain, is home to the beautiful historic city of Cordoba, famous for its Roman and medieval Islamic architecture. Outside the city lie the little known c. 10th AD ruins of the once great medina (city), Madinat al-Zahra, built as a new powerhouse and cultural centre away from Cordoba. Construction took around 40 years to complete and the city reigned strong for a further 60-80 years, before being looted and abandoned to ruin. Excavation of this lost city began in 1910 and has led to the restoration of the main palace buildings over the last 80 years and the protection of the surrounding land containing the medina. The research presented here represents part of an exciting international research project, one of the first of its kind on the site, aiming to find the key production areas of the medina at Madinat al-Zahra. Locating the mint and evidence of industrial activity at the site will help to prove the status of the city along with its self-sustainability. A combination of non-destructive geophysical and geochemical surveying and analysis techniques (magnetometry, magnetic susceptibility and pXRF) were employed to complete a landscape survey. Magnetometry and pXRF surveys on the most promising area of the site revealed elevated levels of the metals lead, copper and manganese in the soil, along with abnormally high magnetic readings, all concentrated close to the palace ruins. These results indicate high temperature activities, such as a kiln for ceramics, their glazes or metal works, revealing a tantalising glimpse of evidence for a possible key production area of the site, or even the mint. The results open exciting possibilities for the future of this project on such a prominent archaeological site in Spain.

Identifying the effectiveness and toxicity of novel psychoactive substances from the users perspective: a mixed-method of quantitative and qualitative studies

Nargilya Gulyamova¹ and Dr Sulaf Assi²

¹ BSc (Hons) Forensic Investigation, level H, i7715160@bournemouth.ac.uk

² Lecturer in Forensic Sciences, Bournemouth University

Over the last few years, novel psychoactive substances (NPS) emerged as alternatives to classical drugs of abuse to surpass the regulations. The studies on the effectiveness and toxicity regarding NPS are very limited. Additionally, up-to-our knowledge there is no studies regarding users' perspective on the effectiveness and toxicity of NPS. This work investigates users' perspectives on the effectiveness and toxicity of NPS using a mixed-method rationale. The study utilised a mixed-method rationale of quantitative and qualitative studies. The quantitative studies encompass a systematic review that identifies the mostly used NPS, their effects and toxicity from the scientific and grey literature. Additionally, the qualitative studies further validate the effectiveness and toxicity from the users' perspective via examining online forums. The systematic review was applied by using MeSH terms of NPS, effectiveness and toxicity and their synonyms. Included studies (n =25) were those investigating the users perspectives on the effectiveness and toxicity of NPS. Qualitative data were extracted from seven discussion forums and a total of (n=378 threads) were obtained. Data was analysed using NVivo 10 for Mac using thematic analysis. In this respect, cathinones were the main NPS prevalent and they were used solely or in combination with other drugs. The effects reported from the use of cathinones were stimulant in relation to cardiovascular, respiratory and neurological systems. Additionally, the toxicity that the users experienced ranged from organ harm, multiple organ failure and even death. In summary, NPS were prevalent in high percentage among drug users. The mostly used NPS were cathinones as single and multiple drugs. Users preferred cathinones due to their availability, low cost and strong stimulant effects (more than classical drugs). However, major toxic effects were associated with the use of cathinones such as tachycardia, myocardial infarction, cardiac arrest, aggression and hallucinations.

The proximity of fly artefact deposition may mimic assault related blood spatter

Christopher J. Dwen¹, Alex Otto² and Joanne Millington³

¹ BSc (Hons) Forensic Science, level H, i7748971@bournemouth.ac.uk

² Demonstrator in Forensic Science, Bournemouth University

³ Senior Forensic Scientist at ArroGen and Visiting Fellow at Bournemouth University

Artefacts produced by flies at a crime scene, known as fly spots, during the process of blood feeding can often mimic other relevant bloodstain patterns. Several types of fly artefact have the potential to be confused with bloodstains encountered. Most commonly, the stain types confused with fly spots, are small, fine and mist sized specs created by medium to high force impact trauma (Benecke & Barksdale 2003; Byrd & Castner 2010). Both regurgitated blood droplets and faecal matter can mimic blood spatter. An experiment was conducted to investigate whether the size and morphology of artefacts deposited by the common housefly *Musca domestica* compare to those described within the current literature. The proximity at which they were deposited in relation to a blood source and similarities to assault derived spatter were also studied. A total of 13,355 blood artefacts were observed and recorded using the computer programme 'Image J', where artefact type, size range and general colour of artefacts were recorded. All fly artefacts recorded in the experiment showed morphological similarities to those reported in previous works, and are consistent with stain types attributed to defecation, regurgitation and tracking. The results from this study show that the type, size, and colour of artefacts deposited by the common housefly *Musca domestica* following a blood meal mimic assault related blood spatter. Furthermore, the high frequency that artefacts were deposited within close proximity of a blood source could confound a crime scene owing to their similarity with assault related spatter.

Identification of counterfeit products using portable Raman and Fourier Transform Infrared Spectroscopy

Carlyle Collins¹, Dr Sulaf Assi², Paul Kneller² and Prof David Osselton²

¹BSc (Hons) Forensic Science, level H, i7262010@bournemouth.ac.uk

²Department of Archaeology, Anthropology & Forensic Science,
Bournemouth University

Counterfeit products are intentionally and dishonestly mislabelled to deceive with regards to their origin and identify. This expanding phenomenon negatively impacts public health and the global economy. Because of the ubiquitous nature of counterfeit products mobile analytical techniques are needed to allow rapid, accurate in-field tests. Therefore, this work aims to identify counterfeit products using portable Raman and Fourier Transform Infrared Spectroscopy (FT-IR). Known counterfeits were analysed using the Bruker BRAVO Raman Spectrometer equipped with dual lasers and FT-IR Bruker Alpha. Products that underwent analysis were coffee, alcohol and medicines. Inbuilt (Hit Quality Index) and offline (Principal Component Analysis) methods were used to identify these products. FT-IR and Raman Spectroscopies were chosen because they are complimentary since most molecules would be active in either of these regions within the electromagnetic spectrum. For instance, coffee showed greater activity on the FT-IR when compared to Raman and vice versa for alcohol. Also, the medicines contained a more complex mixture of ingredients and were found to be both FT-IR and Raman active. After the instrumental analysis, in-built and offline analyses were successful in identifying the counterfeit products. In conclusion, Raman and FT-IR spectroscopy along with the combination of inbuilt and offline analyses were found to provide rapid and accurate techniques for the identification of counterfeit products.

An analysis of ASOS's approach to service augmentation and its impact on consumers' affective and value-based commitment

Nicola Barnes

BA (Hons) Marketing Communications, level H,
i7736573@bournemouth.ac.uk

High levels of trust and commitment are considered key to relationship marketing as they are associated with retention and ultimately profitability. As commitment is considered as crucial in relational networks (Morgan and Hunt 1994), it is valuable to examine activities undertaken by firms to build commitment. This has been explored in the context of buyer relationships using the example of ASOS. ASOS was chosen as they demonstrate many activities to build commitment amongst their customers particularly focused on service augmentation to create value. Fashion e-commerce is highly competitive, 25% of the market share is owned by purely online retailers of which ASOS has 5% (Mintel 2013). In this market environment, an organisation can benefit from relationship marketing strategies leading to commitment and differentiating themselves from competitors. ASOS offer their customers various additions to their basic service as an online retailer. The exploration has addressed ASOS's use of service augmentation and the effect on consumers' affective commitment, as suggested by Allen & Meyer (1990) and value-based commitment, as put forward by Sharma et al. (2006). A model to conceptualise the role of service augmentation in relation to commitment has been proposed. The model considers the KMV model (Morgan and Hunt 1994) and Fullerton's (2005) Service Relationships model as well as further seminal literature regarding commitment and service augmentation. The findings of this research have determined strategies adopted by ASOS which drive commitment, such as service quality, experience and differentiation. It argues that commitment leads to outcomes such as loyalty and advocacy. This study has contributed to relationship marketing knowledge through creation of a conceptual framework whilst also being useful to industry by providing insight in to how an organisation may build commitment amongst customers.

Designing a poster to increase awareness of the signs and symptoms of malnutrition and what to do if you think you may be suffering

Rosie Lumley¹ and Jemima Lumley-Marshall²

¹ BSc (Hons) Nutrition, level H, rosielumley@hotmail.co.uk

² Graphic Designer, Bristol

Malnutrition is an increasing public health, clinical and economic problem in the UK. Over a third of sufferers are 65 years old or older due to the increased prevalence amongst this age group. As the percentage of population over 65 is predicted to increase from 16% to 24.5% of the total population by 2035, so will the blight of malnutrition unless tackled head on. Malnutrition can have a devastating effect on a person's health leading to many issues that can be summarised as increased risk of mortality and morbidity plus reduced quality of life. It is also an economic burden currently accounting for 15% of total health and social care expenditure in the UK with half of this cost attributed to the health of the population of age over 65. Appropriate preventative nutritional interventions (in accordance with NICE clinical guidelines) and early treatment have been shown to reduce its prevalence and subsequent burden. As part of the Malnutrition Prevention Project, Dorset County Council recognise the significance of this problem and are actively committed to resolving it. Whilst on a work placement there, I created a poster highlighting the signs and symptoms of malnutrition and most importantly what to do if you think you, or a person you know, may be suffering. It was designed to be age appropriate, direct and clear. The poster is now included as a resource for confronting malnutrition by Dorset County Council, Bournemouth Borough Council and Poole Borough Council. With 93% of elderly people who suffer thought to be living in the community, the poster will be placed in key areas such as doctors' surgeries and day centres. This poster is expected not only to raise awareness of this devastating condition but point people in the right direction for further information, education and accessing the appropriate help for them.

An exploration of the literature to support the beneficial use of therapist self-disclosure in occupational therapy practice

Hannah Skeels

BSc (Hons) Occupational Therapy, level H, i7709144@bournemouth.ac.uk

Occupational therapists often meet people at times of difficult and unexpected transition. They are required to quickly create therapeutic relationships which convey empathy and a consistent willingness to both 'be there' and 'do with' clients during these difficult transitions (Price 2009). Therapeutic use of self is a concept within the therapeutic relationship used among many professions including occupational therapy. It provides reassurance to clients by the therapist manipulating their own responses through a variety of means, e.g. empathy, humility, honesty (Taylor 2008). Self-disclosure (SD) is a component of therapeutic use of self and is used widely among many professions. SD is a process whereby a person (in this context a therapist or other professional) communicates personal information that was previously unknown to another person (in this context the client) (Hargie and Dickson 2004). Traditionally, SD has been addressed in psychology/psychotherapy literature and as a result the literature surrounding this topic is largely from this background. In particular, self-disclosure is an essential component of client-centred therapy propounded by Carl Rogers in the mid 1900's which specifies a need for therapists to show transparency by expressing their feelings and being emotionally involved without disguising their personality behind a façade of professional impersonality. This literature review provides a summary and critique of current literature about therapist (or professional) self-disclosure to identify if it has beneficial outcomes. Common themes are identified and discussed accordingly in an attempt to answer the question: What is the evidence to support the beneficial use of self-disclosure as part of therapeutic use of self on therapy outcomes?

Can the Prechtl method of assessment be used to predict the neurodevelopmental outcome, at eighteen months to three years, of infants born preterm?

Alice Nicholls

BSc (Hons) Physiotherapy, level H, i7268803@bournemouth.ac.uk

In the UK one in thirteen babies are born preterm, before thirty-seven weeks gestation (WHO 2012; NHS 2015). Babies born preterm are at risk of abnormal neurodevelopment as the incomplete development of the central nervous system at birth means they are more vulnerable to injury (Behrman and Butler 2007). The Prechtl method of assessment, considered to be an indicator for later diagnosis of neurodevelopmental disorders, assesses general movements during two periods within the first few months of life. The aim of this literature review is to identify whether the Prechtl method of assessment can be used to predict neurodevelopmental outcome, between eighteen months and three years, in infants born preterm. A systematic search of the electronic databases MEDLINE, CINAHL, Science Citation Index, PsycINFO, Science Direct, Scopus, Social Sciences Index, Education Source, ERIC, SPORTDiscus, SciELO and SocINDEX was conducted in November 2015. A modified version of the Downs and Black quality index (1998) was used in order to appraise the methodological quality of the included studies. Five studies were found to be eligible when the inclusion and exclusion criteria were applied. The key themes that emerged from the literature was that abnormal general movements could normalized between periods, there was a difference in predictive validity between the writhing and fidgety periods, higher predictive validity was found by combining both periods and the assessment was more predictive of severe neurological developmental outcomes. In conclusion, the Prechtl method of assessment can be used to predict neuromotor outcome in preterm infants. Limited evidence was also found to suggest that it can be used to predict cognitive outcomes. Further research needs to be conducted in order to determine whether early prediction resulting in early intervention for preterm babies can impact on their neurodevelopmental outcome and function.

Identifying the most successful defensive strategy for penalty corners in women's hockey

Zoe Drew

¹ BSc Sport Development & Coaching Sciences, level H,
i7715780@bournemouth.ac.uk

This study focused on the defensive strategies of all the teams' penalty corners of the women's hockey tournament at the London 2012 Olympic Games. The analysis was completed using Key Performance Indicators, which included pitch location, shot type and defender location. Penalty corners represent a key goal scoring opportunity and Notational Analysis was undertaken for every penalty corner from twenty-eight matches of the competition. The analysis assesses the success of the various defensive strategies employed to defend against penalty corners. All data was collected from the most prestigious of tournaments, the Olympics, to allow a fair comparison across all defensive tactics. Inter and Intra-rater reliability was tested showing strong results ($k = 0.81 - 1.00$). The results indicate that the goalkeeper is most successful in saving shots whilst positioned on the goal line. The deflection shot was the most successful, with a success rate of 52%, therefore a defender should also be positioned on the goal line, to reduce the likelihood of this shot type being executed. After conducting the analysis, area 4, (the mid left section of the upper circle) was identified as the area which had the majority of the shots taken from; therefore it is essential for a defender to run out to this area.

Does tennis elbow demonstrate the same three pathological changes seen on imaging as lower limb tendinopathies?

Kirsty Knight¹ and Dr Jonathan Williams²

¹BSc (Hons) Physiotherapy, level H, i7714573@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Tennis elbow is considered to be an overload injury of the forearm extensors, affecting one-four percent of the population (Shiri et al 2006; Cook and Purdam 2008). Incidence peaks are observed between the fourth and fifth decade (Nirschl and Ashman 2003; Scher et al 2009). Furthermore, the reoccurrence rate within two years is 8.5%, making it an important burden on the National Health Service (Hudak et al 1996; Sanders et al 2015). Eccentric loading has been found to reverse neovascularization, hypoechoicity, and tendon thickening in lower limb tendonopathies (Ohberg et al 2004; Shalabi et al 2004; McCreesh 2012). However, it is unclear whether these changes exist in tennis elbow, questioning the effectiveness of eccentric loading. The aim of this review is to explore the pathological changes seen on imaging of the common extensor tendon (CET) and extensor carpi radialis brevis (ECRB) in individuals with tennis elbow. A systematic search of five databases was carried out in November 2015. After assessment of eligibility, eight studies were included in this review and were critically appraised using the Evidence Based Library and Information Practice (EBLIP) Critical Appraisal Checklist. A variety of different types of imaging were utilised in the studies. Changes were primary evident in the CET and all studies found at least one of the three pathological changes, hypochoicity being the most common finding. Following synthesis of the results, the following themes emerged; pathological changes, asymptomatic population, pathophysiology. Despite the different forms of imaging, overall there is moderate evidence to suggest that tennis elbow demonstrates neovascularization, hypoechoicity and tendon thickening. Tennis elbow demonstrates the same three pathological changes that have been seen to be reversed in lower limb tendinopathies. Future research should aim to investigate whether eccentric loading can reverse the pathological changes found on imaging.

What is the effectiveness of physical activity in order to maintain cognitive function in nursing home residents with dementia? A literature review

Nicole Learner¹ and Dr Jonathan Williams²

¹BSc (Hons) Physiotherapy, level H, i7241816@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Dementia is a non-communicable disease with no effective prevention, treatment or cure; a global epidemic projected to increase due to aging populations. Evidence is emerging for the use of exercise to decelerate cognitive decline. However, few studies exist among nursing home residents. Current UK guidelines provide limited recommendations on exercise or long-term management of dementia. Therefore, this systematic review aims to determine the effectiveness of physical activity to maintain cognitive function in nursing home residents with dementia. Literature search using specific criteria in CINAHL, MEDLINE complete, SPORTDiscus and ScienceDirect databases resulted in six relevant studies. These were critically appraised using the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool. All trials included different exercise programmes with various activity types and duration; however, all control interventions were social visits or activities. Three studies demonstrated improved cognition in the intervention groups, whilst one study observed a slower decline. Four studies found significant cognitive decline in the control groups. Two studies observed no significant changes in either the intervention or control groups. Overall, there is moderate-to-strong evidence that physical activity can effectively maintain cognitive function in nursing home residents with dementia. Overall, all exercise interventions had a positive effect on cognition. Results suggest that aerobic exercise of longer duration may be most effective in maintaining cognitive levels for those with mild-to-moderate cognitive impairment; whilst multimodal exercise programmes may have the same effect for moderate-to-severe dementia. One multimodal programme demonstrated significant improvements in cognition function, proving this the most effective intervention. Combining an exercise programme with standard daily activities appears no more effective than exercise alone. Future research should aim to determine an optimum exercise protocol and whether the positive effects on cognition can be maintained long-term with continued exercise.

Can body weight supported treadmill training improve gait in Parkinson's Disease?

Vicki Wilkinson¹ and Dr Jonathan Williams²

¹BSc (Hons) Physiotherapy, level H, i7218558@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Parkinson's disease (PD) is a progressive neurological condition, causing a range of disabilities, including altered gait. Impaired gait and balance can lead to falls, which causes injury or death to one in three people aged over 65 each year in the UK. Body weight supported treadmill training (BWSTT) has been shown to be an effective treatment to improve gait and function in patients with spinal cord injuries and stroke, however its impact on patients with PD has not yet been evaluated. Therefore, the objective of this study is to synthesise the literature regarding the effectiveness of BWSTT on gait and function in individuals with PD. A systematic search of CINAHL complete, Scopus, SPORTDiscuss, Science Citation Index and Science Direct was completed in October 2015. The keywords used in this search based on Boolean logic were 'Parkinson* AND Body Weight Treadmill Training'. The inclusion criteria included participants who had PD, were independently mobile, Hoehn and Yahr scale ≤ 3 and a Mini Mental State Examination (MMSE) score ≥ 24 . The outcome measures included the Unified Parkinson's Disease Rating Scale (UPDRS) and all gait parameters. Five papers met the inclusion criteria. The results indicate that all five papers demonstrated significant benefits of BWSTT on gait, particularly gait speed and three papers had significant UPDRS results. This review also concluded that the optimal BWSTT frequency and duration to elicit a change in gait should be 20 to 45 minutes three times a week. In conclusion, BWSTT could be used as a useful adjunct in gait rehabilitation in individuals with PD. Further research is needed to establish the long term effects of BWSTT as well as its benefits on gait and function when compared to treadmill training in order to establish the most cost effective treatment.

Is graded motor imagery effective at reducing pain in Complex Regional Pain Syndrome?

George Erskine ¹ and Dr Carol Clark ²

¹BSc (Hons) Physiotherapy, level H, i7241834@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Complex Regional Pain Syndrome (CRPS) is a neuropathic pain disorder resulting from either trauma, peripheral nerve lesion or spontaneously with no correlation between severity of injury and the degree of symptoms. The condition is painful and debilitating, affecting 26 in 100,000 patients per year. CRPS can be divided into type-1 (the absence of nerve injury) and type-2 (the presence of it). Graded Motor Imagery (GMI) is one method of treatment aiming to address the complex changes occurring within the central nervous system by increasing attention to the affected limb, and reconciling motor output and sensory feedback by activating cortical mechanisms. This study investigates whether GMI can reduce pain in patients with CRPS. A systematic search of PubMed, ScienceDirect, PEDro, REHADATA, CINAHL, Medline, Cochrane Library, SocINDEX and SPORTDiscus carried out in November 2015 resulted in six articles analysed in this review. Critical appraisal of methodological quality was conducted using the Downs and Black quality index. The majority of studies found GMI to be an effective method of decreasing pain in a wide population of patients with CRPS. GMI was also found to have lasting effects for at least 6 months. One article highlighted that GMI's original proposed order of hand laterality training, imagined movement and mirror therapy is the most effective treatment. One article found GMI to be ineffective at reducing pain; this research was carried out in practice and results could have been affected by multiple factors, such as the variable duration of the GMI program between participants. This review suggests that GMI is effective at reducing pain in patients with chronic CRPS type-1. However generalisation to the wider population of type-2 and acute CRPS is hindered by limited evidence. Furthermore, GMIs effectiveness in practice cannot be determined at present due to the lack of research. Further research is needed in order to establish effectiveness within practice and increase generalisation of evidence.

The effect of interpersonal processes on the accuracy of eyewitness line-up identification and its relation to state anxiety

Ella Salih-Miller¹ and Dr Xun He²

¹ BSc Psychology, level H, ellasalihmiller@gmail.com

² Lecturer in Psychology, Bournemouth University

Within the criminal justice system, eyewitness misidentification of criminal suspects can lead to the consequence of an innocent suspect being punished for a crime that they did not commit. The facilitating effect of interpersonal processes is a method that has not yet been applied to assist reducing misidentifications. Previous research on interpersonal processes has demonstrated that the mere presence of another participant completing the same task independently, without communication, can result in improved task performance. The current study aims to explore the effect of interpersonal processes in an eyewitness identification line-up task. A computerised face-matching task was employed in the style of a forensic identification line-up. Its purpose was to compare the performance of participants (N=71) who had completed the task individually (N=36) to pairs of unfamiliar participants who completed the task simultaneously, but individually (N=35), whilst unaware of each other's identification decisions. The state anxiety of participants was measured via a questionnaire to assess whether it affected performance. Results indicated that participants in the pair condition, although completing the task independently, identified targets more accurately than those who completed the task alone. Although state anxiety was rated to be higher in the pair condition, it was found that it could not account for difference in identification accuracy between individual and pair conditions. Participants in both conditions averagely displayed higher accuracy for target-present arrays than for target-absent arrays. Unexpectedly, state anxiety could account for the difference in target presence, suggesting that more efficient processing strategies were used in target-present arrays. It was concluded that interpersonal processes could possibly be applied as a tool by the criminal justice system to assist in reducing misidentifications. However, further supporting research should be provided, possibly within a real-life forensic setting.

SkyGlow: a night-time illumination model with light pollution from artificial light sources for urban environment simulation in computer graphics

Tom Minor¹, Robert Poncelet¹ and Dr Eike Anderson²

BSc (Hons) Software Development for Animation, Games and Effects, level H,
i7245143@bournemouth.ac.uk

²Senior Lecturer in Game Development, Bournemouth University

Computer Graphics models for rendering of daytime illumination and skies have existed for almost two decades. Night-time and twilight models, although they exist, are not as explored and are seldom implemented. Instead, the most common practices for night scenes are to modify the settings of a procedural daytime sky or use manually created HDRI (High-Dynamic Range Image) photographs as environment maps. The former fails to simulate all the phenomena and light sources that are visible to the naked eye at night, and the latter is limited to expressing terrestrial skies with little directability after the photograph has been captured. Additionally, none of the existing methods thus far has featured an analytical implementation of skyglow, the light pollution created from artificial light sources in built-up areas (such as cities), scattered in the atmosphere. However, there exist models for the calculation of skyglow in the field of astronomy. We have addressed this problem by integrating the existing Computer Graphics model for night-time illumination with the equations for skyglow derived from existing work in astronomy to create a physically-based night sky model designed for computer graphics. While it uses the real observable positions of the sun and moon given a specific date and location on Earth, the model itself could also be adapted for additional applications, such as the modelling of extraterrestrial skies in alien atmospheres as would be the case with a colony on Mars.

The chemistry, pharmacology and toxicology of stimulant-novel psychoactive substances

Lukasz Adam Hertlein¹ and Dr Sulaf Assi²

¹ BSc (Hons) Forensic Investigation, level H, i7257191@bournemouth.ac.uk

² Lecturer in Forensic Sciences, Bournemouth University

Novel Psychoactive Substances (NPS) are structural modifications of controlled drugs, made to circumvent the legal system. The number of online stores selling at least one NPS has increased by 523 between 2010 and 2012. There is limited information regarding specific mechanisms of action and adverse effects, meaning that those newly introduced substances are accompanied by a rising number of hospital administrations and fatalities. The most commonly used groups of NPS are synthetic cathinones and synthetic cannabinoids, with the majority of NPS being central nervous system (CNS) stimulants. The aim of this work is to determine the chemistry, pharmacology and toxicology of synthetic cathinones and synthetic cannabinoids. A systematic literature review was carried out between June and November 2015 using 11 databases: CINAHL Complete, Environment Complete, Medline Complete, Science Citation Index, Science Direct, Scopus, Wiley, PubMed, Web of Science, Google Search and Google Scholar. Search terms used were “Synthetic Cathinones”, “Synthetic Cannabinoids”, “Toxicity”, “Chemistry”, “Pharmacology” and “Effects”. Only full-text, peer-reviewed references written in English were included. Studies of adult and teenage patients diagnosed with NPS intoxication as well as fatality cases were included in the review. The initial search results consisted of 400 articles to consider, which were filtered to exclude irrelevant titles. The remaining 73 titles had their abstracts examined, with those not suitable to the research question being excluded. The remaining 51 references were included in the review. Preliminary results show that synthetic cathinones decrease catecholamine clearance from the synaptic cleft leading to tachycardia, chest pains and psycho-motor agitation at low doses, and amphetamine-like effects at high doses. Synthetic cannabinoids affect both endogenous cannabinoid receptors (CB1 and CB2) to produce cannabis-like effects with five-times the potency of THC. Both substances have dose-dependent toxicity and build tolerance and dependence.

11:45 - 12:45		KG01, Kimmeridge House	Oral presentations 1
11:45	Christopher Gillespie	Does stretching improve functional movement kinematics as well as range of movement?	
12:00	Oliver Phillips	Associations between cooking skill and confidence, and the ability to meet dietary recommendations: a cross sectional study	
12:15	Magnhild Sletten	Do moose <i>Alces alces</i> spend more time in areas of increased food availability created as a result of changed logging practices?	
12:30	Amir Paul Daly	Growth autoinhibition of the toxic cyanobacteria <i>M. Aeruginosa</i>	

Notes:

Does stretching improve functional movement kinematics as well as range of movement?

Christopher Gillespie

BSc (Hons) Physiotherapy, level H, i7248486@bournemouth.ac.uk

The purpose of this review was to critically evaluate the current literature pertaining to the commonly held belief that stretching can alter functional movements and not just range of motion (ROM). Stretching is often used to increase ROM within a muscle or group of muscles surrounding a joint. However, the effect of muscle stretching on function movement is much less clear. This review aims to provide a contemporary understanding of whether stretching; resulting in an increase in specific ROM has any carry-over into more function movement. A systematic search of the literature retrieved 5 articles, selected using specific inclusion and exclusion criteria designed to answer the aim of the review. These articles were critically appraised using the Downs and Blacks (1998) critical appraisal tool. The details and outcomes of the studies were also extracted in order to achieve the aim of this review. A total of 116 participants were included over the five articles. The stretching interventions across the articles included both short and longer term stretching effect on a wide range of functional movements from running to standing hip movements. Several methodological flaws or risks for bias were identified, in particular this issue of blinding. All studies reviewed showed an improvement in ROM post stretching intervention, however not all showed an alteration in functional movement. There is good evidence from the literature reviewed that stretching can increase specific ROM, however, there is conflicting evidence to support whether stretching can alter functional movement. Further research is suggested to overcome previous limitations in study design and help to quantify the relationship between stretching and functional movement.

Associations between cooking skill and confidence, and the ability to meet dietary recommendations: a cross sectional study

Oliver Phillips¹ and Dr Fotini Tsofliou²

¹ BSc (Hons) Nutrition, level H, oliverphillips@outlook.com

² Senior Lecturer in Nutrition, Bournemouth University

Non-communicable disease rates are increasing globally and in the United Kingdom (UK). A controllable risk factor can be attributed to diet. The UK government has created a series of recommendations in order to optimise health through diet. The inability to cook has been identified as a barrier to eating healthily. Evidence suggests that cooking skill and cooking confidence negatively impact food choice and dietary intake. This study aims to explore any associations between cooking skill, cooking confidence and the ability to meet the government's recommendations on diet. Furthermore, evidence suggests that cooking skill and confidence has reduced throughout recent decades. This study used a Likert-type scale to measure cooking skill and confidence in a sampled population. A. Nutrient intake was assessed using a 24-hour dietary recall method. Results suggest that perceived cooking confidence and skill were high. Significance was tested using Man-Whitney U and Spearman's Tests with significance set at $p < 0.05$. As expected a positive correlation between cooking confidence and cooking skill was found ($p < 0.05$). Two significant results were found in this study, firstly the study suggests people who met the dietary recommendations for vitamin A had a higher cooking skill than the people who did not ($p < 0.05$). Also a positive association between cooking confidence and energy intake was found ($p < 0.05$). However, true significance was in question due to a very small sample size. Therefore, the null hypothesis could not be disregarded, and suggests that cooking confidence and skill is not associated with nutrient intake and the ability to meet the UK dietary recommendations.

Do moose *Alces alces* spend more time in areas of increased food availability created as a result of changed logging practices?

Magnhild Sletten¹, Karen Marie Mathisen², Juuli Vänni³ and Dr Anita Diaz⁴

¹ BSc (Hons) Ecology & Wildlife Conservation, level H, magsletten@gmail.com

² Associate Professor, Hedmark University College, Koppang, Norway

³ Turku University of Applied Sciences, Turku, Finland

⁴ Associate Professor, Dep Life & Environmental Sciences, Bournemouth University

The Norwegian population of moose *Alces alces* causes huge financial loss to the logging industry each year by browsing on young pine *Pinus sylvestris*. There is currently a conflict between landowners wishing to manage for a small population and landowners wishing to manage for a large population, which benefits forestry and the hunting industry respectively. One solution that may benefit all landowners is to modify the number of moose in an area by providing increased alternative food sources. This study investigates if moose will spend more time in an area where logging residues have been left in large piles to ensure that they remain above snow level, thereby providing a source of food in the winter. Trail cameras were used in control and experimental areas to collect data on (i) total frequency of moose visits, (ii) the duration of each visit, and (iii) changes to behaviour concerning browsing, resting, and walking between experimental and control sites. Preliminary results indicate that the sites with increased food availability have a significantly higher frequency of moose visits, and that moose visiting the sites are more likely to browse and rest instead of just passing through. The result from this study will inform management decision, and provide evidence that availability as a result of changes in logging practices can sustain a large moose population without increasing the damage to young pines.

Growth autoinhibition of the toxic cyanobacteria *M. Aeruginosa*

Amir Paul Daly¹, Dr Daniel Franklin², Ian Chapman² and David Hartnell³

¹ BSc (Hons) Biological Sciences, alumni, amirpauldaly@gmail.com

² Dep Life & Environmental Sciences, Bournemouth University

³ PhD student, Dep Life & Environmental Sciences, Bournemouth University

The increasing incidence of harmful cyanobacterial blooms is a threat to animal and human health as well as ecosystem stability. Currently, a variety of management methods exist ranging from biological ‘bottom up’ and ‘top-down’ controls, which limit nutrient availability and increase the abundance of zooplankton respectively. *Microcystis aeruginosa* is a common, toxin producing, freshwater cyanobacterium. Using flow cytometry, cultures were monitored to assess when they had reached different population growth stages. Quorum sensing is a method through which cells can coordinate and elicit a response caused by a stimulus or change in environment or to their own population size. Autoinhibition experiments were conducted by applying the extra-cellular, cell free medium from older, chlorotic nutrient deplete cultures and its effect observed on nutrient replete cultures in varying doses at different batch culture growth stages. An autoinhibition investigation was also carried out as to whether or not autoinhibition could be achieved under dark conditions. Previous experiments conducted by Cohen et al (2013) on different cyanobacteria species suggested that there was only an effect under light conditions and that it may have an effect on the photosystems. Previous work by Hartnell (2012) revealed that an observable effect of autoinhibition was found only in the exponential phase of the batch culture cycle. The findings of this experiment show that an observable effect between control and test cultures can only be found in the exponential phase under all dose conditions under irradiation. This research project has demonstrated the conditions required to successfully induce growth autoinhibition of this common, toxic cyanobacterium; under irradiation and in the exponential phase of growth. Development of a product created from the isolated active agent may prove a valuable addition to management strategies for the control of harmful algal blooms. However, isolation and purification of the responsible compound is still required.

11:45 - 12:45		KG03, Kimmeridge House	Oral presentations 2
11:45	Jade Offer	An evaluation of team-based learning in the teaching of Applied Pathophysiology to student nurses (2016)	
12:00	Rye Buffery	The effectiveness of Education Programmes in the transition from hospital to home: perspectives of adult caregivers of Acquired Brain Injury patients	
12:15	Michael Humphrey	What are the Benefits of Physical Exercise in Patients with Full Term ADHD?	
12:30	Naomi Morgan	What is the effectiveness of mental imagery on improving function for adults with upper limb dysfunction as a result of stroke? A review of literature	

Notes:

An evaluation of team-based learning in the teaching of Applied Pathophysiology to student nurses (2016)

Jade Offer¹, Philippa Empson², Dr Jonny Branney³ and Dr Jacqueline Priego³

¹BA (Hons) Accounting & Business, level I, i7675363@bournemouth.ac.uk

²BSc (Hons) Adult Nursing, level I, i7694303@bournemouth.ac.uk

³ Faculty of Health and Social Science, Bournemouth University

Team-based learning (TBL) is thought to be an innovative approach to teaching and learning that confers advantages over traditional teaching methods. This research used quantitative and qualitative methods to evaluate TBL in the teaching of applied pathophysiology to undergraduate student nurses. This combined approach has not been previously reported in the literature. This study aims to determine whether student nurses report (a) being better prepared for class; (b) a preference in relation to lectures or TBL; and (c) satisfaction with the TBL approach. Student nurses studying an applied pathophysiology unit were recruited from year 2 of an adult nursing degree programme. One topic within the unit was taught using TBL and. Immediately after delivery of this topic, students were invited to complete the validated Team-based Learning Student Assessment Instrument (TBL-SAI) (Mennenga 2012). At least six months later students were invited to participate in (a minimum of three) focus-group discussions in relation to their experience with TBL. Institutional ethical approval was granted for both aspects of the study. About 200 student nurses completed the TBL-SAI. Preliminary results indicate that students had completed pre-class preparations, exhibited a preference for TBL and were satisfied with the approach. Preliminary findings from focus-group discussions confirm these results but complicate the picture. While TBL was popular, lectures were also felt to have their place in teaching delivery. Students also noted that working in teams could be challenging. It is expected that the final analyses will confirm these early findings and suggest that TBL is a viable teaching method.

The effectiveness of Education Programmes in the transition from hospital to home: perspectives of adult caregivers of Acquired Brain Injury patients

Rye Buffery

BSc (Hons) Occupational Therapy, level H, i7217036@bournemouth.ac.uk

Every 90 seconds an Acquired Brain Injury (ABI) patient is admitted to hospital which means 956 patients are admitted per day (Headway 2015). The severity of the ABI depends on the injury and can affect global areas such as cognition, physical, behaviour and emotions (Headway 2015). This disruption of normal life not only affects the individual but family, friends and caregivers as well (Bury 1982). This literature review explores the following; what interventions are available to families during the recovery process, how is it delivered and does the family understand the injury? Initially a Multi-Disciplinary-Team (MDT) advises and explains what is happening and what the next steps are. One of the professionals is Occupational Therapy (OT). OT has a core theory, value of occupations and knowledge of impact and affect it has on everyday life. OTs are in a position to facilitate life with an ABI injury (Holmqvist 2012). The families' perspective depicted in the literature review has explored the questions above and provided new valuable knowledge of understanding such as; reinforcing the significance of families as an extension to the MDT as a valuable source to inform clinicians of family's concerns and struggles to improve practice development and delivery for future patients, the need of ABI education sessions and other components being delivered by professionals and/or through peer support. Peer support allows normalisation of family's experiences, coping strategies to overcome similar situations and emotional problems. Therefore a vital proposal recognised by this literature review is 'When is the most appropriate time to introduce ABI educational programs earlier in the rehabilitative process for families and caregivers? This would allow an earlier opportunity to facilitate a positive outlook, increase family's social networking between professionals and services, family's self-management of situations, therefore establishes the need for OT throughout the ABI rehabilitative process.

What are the benefits of physical exercise in patients with full term attention deficit hyperactivity disorder (ADHD)?

Michael Humphrey

BSc (Hons) Physiotherapy, level H, i7280602@bournemouth.ac.uk

ADHD has long been considered a childhood disorder, for which there is an extensive body of evidence supporting the use of physical exercise as a treatment/management strategy. Increasingly, evidence is showing that not only does the disorder persist into adulthood in some 60% of cases, but that there is a maturation of the disorder, presenting the patient with a differentiation of symptoms into adulthood. Interestingly, there is scant research into the effects of physical activity on these adult symptoms, despite its proven effectiveness upon the childhood stage of the disorder. This review has gathered the available evidence for appraisal, to develop an understanding of any benefits of exercise in this population and what possible implications are generated by its use. Identification of the need for any further research will also be outlined. Between October and November 2015 searches were made on the Ebscohost database, covering CINAHL and MEDLINE complete, using Boolean phrasing with the terms “adult ADHD, adult attention deficit hyperactivity disorder, physical exercise, physical activity, benefits and benefits of exercise”. From an original figure of 831, five studies were considered for this review. Despite the dearth of research into this topic, the emergent themes from this review show that physical exercise is indeed an effective method of managing symptoms of ADHD in adults. Results were somewhat scattered, with various outcome measures and physical interventions used; however, the resounding conclusion was a positive one. Physical exercise can be used to treat/manage the symptoms of adult ADHD, however there is a need for standardisation of data collection, study design and presentation of results. It is yet to be shown what types of exercise are the most beneficial, upon which particular symptoms. There is clearly enough evidence to show that more extensive, targeted research is needed to prove more specific or indeed greater benefits for the patient.

What is the effectiveness of mental imagery on improving function for adults with upper limb dysfunction as a result of stroke? A review of literature

Naomi Morgan¹ and Dr Clare Taylor²

¹ BSc (Hons) Occupational Therapy, level H, i7217036@bournemouth.ac.uk

² Senior Lecturer, Faculty of Health and Social Science, Bournemouth University

In the United Kingdom, there are 152,000 strokes per year costing health and social care £4.38 billion (Stroke Statistics 2015). Of the 1.2 million stroke survivors in the UK, 77% of them are affected by upper limb (UL) dysfunction (Stroke Statistics 2015). Mental imagery (MI) is an intervention that involves mentally rehearsing a movement or action (Ivey and Mew 2010). It is thought that during MI, the same neural pathways are used when the task is completed physically (Caldara et al. 2004). Thus, MI could help maintain neural pathways, help prevent their deterioration and prepare for motor function (Ivey and Mew 2010). Various types and regimes of MI were identified. All of the studies differed in their approach to 'usual therapy', use of a control group or randomisation process. Auditory imagery after usual therapy appears to be the most effective and pragmatic (Guttman et al. 2012, Nayeem et al. 2012, Nilsen et al. 2012) form of MI. However, the studies are not consistent in their results and are hindered by poor methodology and evidence of misreporting. Type, location of and time since stroke has been identified as important factors to consider in relation to MI ability (Stinear et al. 2007; Dettmers et al. 2012) and 'spontaneous recovery' (Kwakkel et al. 2006). The studies varied in the amount of detail about type of stroke, and time since stroke varied from 7 weeks to 4.5 years (Riccio et al. 2010; Guttman et al. 2012). In light of this, and due to the lack of systematic reviews found in the search, it is not possible to determine if MI is an effective intervention for improving UL dysfunction.

14:00 - 15:00		KG01, Kimmeridge House	Oral presentations 3
14:00	George Torpey	“My Child Skips to School”: factors influencing a parent’s choice of primary school in a low income area	
14:15	Beth Nagel	Does feedback on technique improve the valgus angle at the knee in females during a jump-landing task? A Literature Review	
14:30	Amanda Forsgren	Women responses to female sociopaths in media	
14:45	Bahijja Umar	The Politics of Child Marriage	

Notes:

***“My Child Skips to School”*: Factors influencing a parent’s choice of primary school in a low income area**

George Torpey, Jazmine Friend, Eamon Rafferty and Jasmine Mead

BA (Hons) Sociology & Anthropology, level 1, george.torpey@hotmail.co.uk

This research highlights the importance of understanding the value of education within contemporary society, in particular, with regard to low income areas. It not only looks at attitudes towards education but also factors that may create and reinforce these attitudes. We explore how reputations of schools are formed, and how this influences parents decision concerning which school is best for their child. Using ethnographic research, combining expert interviews, focus groups and surveys with local residents and parents, we studied parents’ perceptions of schools within a low income area of Bournemouth. We spoke to over 40 parents throughout the research and on top of that spoke to members of Staff at one particular school, along with the local children’s centre and the church. Our focus was on one main school which was under subscribed by over half its capacity. We found that location and family links were key to a parent's decision in choosing a school. Attitudes held by the parents on education itself are also key to how successful a school can be. Ofsted reports and other official statistics were not seen as a reliable source of information, as they might be in more affluent areas. Within a tight-knit community the perceived reputation of a school can often be hard to change, but we suggest that first-hand experience of the school may provide one way of doing so. Our research will hopefully help schools realise the importance of parent & school interaction. Alongside that, reiterate the importance of valuing education throughout the family not just with the child attending school.

Does feedback on technique improve the valgus angle at the knee in females during a jump-landing task? A Literature Review

Beth Nagel

BSc (Hons) Physiotherapy, level H, i7945882@bournemouth.ac.uk

Non-contact anterior cruciate ligament (ACL) injuries are 4-6 times more likely to occur in women compared to men (Ford et al 2005). There are several predisposing kinematic factors for this type of injury, one of which is the presence of knee valgus during landings tasks (Hewett et al 2005). This review investigates if feedback training in women could reduce knee valgus during jump-landing tasks. A systematic search of MySearch (including: Academic Search Complete, CINAHL, Medline Complete, PubMed, Science Direct, SPORTDiscuss and Web of Science) was carried out resulting in a total of five appropriate articles meeting the inclusion/exclusion criteria. A thorough critical appraisal using the Downs and Black appraisal tool was carried out on all articles for comparison, with methods and results also being compared. Four out of five of the included articles found that feedback on jump landing tasks could significantly improve valgus at the knee. Comparison of intervention duration suggests that a longer duration of intervention leads to greater improvements of valgus. Verbal feedback may be more effective than visual feedback in reducing knee valgus. All participants had to be free of injury across the five studies and be physically active or involved in a sports team, but were not screened for a valgus angle as part of the inclusion criteria. Feedback on technique during jump-landing tasks is an effective way to significantly improve valgus at the knee in women. The optimal duration and delivery method requires further research for definitive conclusions to be made. Future research should consider retention of technique and long-term effects on valgus.

Women responses to female sociopaths in media

Amanda Forsgren

BA (Hons) Television Production, level H, amandak.forsgren@gmail.com

A sociopath is a person with a disorder of personality, often exhibiting criminal and manipulative behavior (dictionary.com). What relevance does the representation of female sociopaths have in today's society? Can this representation be a step forward for feminism or does it promote society to call women crazy by example? Through a sample of five women aged above eighteen, the study includes qualitative research interview transcriptions. The design of the research consists of three, thirty-minute interviews per woman over the course of three weeks. The interviews consist of semi-structured questions in order to gather uninfluenced responses from the women. The transcriptions give insight into the women's responses and their individual opinions in relation to their identities and morals. Findings reveal reactions to formats used to represent female sociopaths, opinions on desensitization of violence and questions of the relevance of feminism in regards to female sociopaths in media. Alongside the interview transcriptions, the study reveals through Facebook group involvement, where women encounter representations of female sociopaths in online media. This thesis uncovers the inconvenient truth about violent women represented in media and how women encounter these representations, not just in stereotypically violent genres but all genres and platforms of media surrounding their everyday life. The research challenges are discussed, such as dealing with interviewee's cancellations, successful strategies to find a suitable Facebook group and whether interviews can provide true, uninfluenced responses.

The politics of child marriage

Bahijja Umar

BA (Hons) Sociology & Social Policy, level H, i7210703@bournemouth.ac.uk

The phenomena of child marriage have been extensively researched. However, child marriage is only explored within the single paradigm of culture. The trouble with perceiving and postulating child marriage only as a cultural problem negates the political discourse and strategies used by families and governments. Hence, child marriage should be explored by taking a multidimensional approach focused not only on culture but also on politics and economics. The discourse in some countries has led to inefficient policies to deal with this matter. Within this paper one shall focus upon three specific case studies: UK, Bangladesh and Nigeria. The three cases studies are analysed in depth and demonstrate how insufficient or inefficient policies lead to the pathologisation and problematisation of child marriage. Thereby, further exacerbating the problem and negating the local politics that occurs within communities.

14:00 - 15:00	KG03, Kimmeridge House	Oral presentations 4
---------------	------------------------	----------------------

14:00

14:15	Gemma Dufty	How are world crisis events presented by the media to children?
-------	-------------	---

14:30	Hana Lalji	Privacy and property rights, in today's cyberspace: a case study exploring the tension between copyright and the European Convention of Human Rights
-------	------------	--

14:45	Callum Sulsh	How influential is design fiction as a concept for innovation?
-------	--------------	--

Notes:

How are world crisis events presented by the media to children?

Gemma Dufty¹ and Dr Ann Luce²

¹ BA (Hons) Communications & Media, level H, gemma-dufty@gmail.com

² Senior Lecturer In Journalism And Communication, Bournemouth University

In light of the current debate around media and children, current literature provides evidence that the media are keeping certain topics of interest away from children. For over 40 years, Newsround has been the pinnacle of sourced news for children aged 6-12 and more recently First News has joined this platform attracting millions of children every week. How these particular news sources frame and provide crisis events to children is the focus of this study, emphasising the relationships in the newsrooms that dictate what news children see. Lemish and Gotz (2007) have noted how broadcasters have intentions to produce programmes that will provide children with limited and brief explanation on serious news stories in the media. Audiences use the media to gain information about social events occurring around them and to increase a better understanding of the world. In avoiding these subjects, children will ultimately have less diverse cultural knowledge as they are being presented with an idealistic world, not a realistic one. Jon Snow, a respected UK journalist has noticed how children have a watershed to protect them but no mechanism to inform them. He brings to light the avoidance of presenting any such taboo subjects, which he believes causes a lacking of interest in the news media production as this important group in society are failing to be informed. Millions of children are being attracted to these news sources, which do not give a balanced view of the world. Matthews (2010) underlines that this could be due to children being seen as an immature audience however, emphasises the need for the news media to position the way they present to children. At the end of the day, if the media is avoiding children, they will end up avoiding the media.

Privacy and property rights, in today's cyberspace: a case study exploring the tension between copyright and the European Convention of Human Rights

Hana Lalji¹ and Dr Dinusha Mendis²

¹LLB (Hons) Law, level H, i7237054@bournemouth.ac.uk

² Associate Professor in Law, Bournemouth University

This paper will focus upon the nature of copyright, and how copyright is targeted through the freedom of expression (Art. 10 European Convention of Human Rights ECHR) and the right to private life (Art. 8 ECHR). To examine the current state of UK copyright, cases such as *His Royal Highness Prince Charles'* famous 'Hong Kong diary' expressing his opinion, will be evaluated and analysed. This case presented the complexities in balancing the freedom of information against, the exploitation of copyright, to censor information based upon public interest and privacy. From a European Perspective two Dutch cases will be analysed. These include *Nadia Plesner's* conflict concerning Louis Vuitton's property right and incarnations of the cartoon character *Miffy* sniffing cocaine. These cases will explore whether such activities were within the "social custom" which is an element considered within the Dutch Copyright Act. Additionally, the paper will consider whether the internet has played a subsequent role within the conflict. Are 'fashion-show photographs' and 'file sharing services' within the 'public interest'? If so, can fundamental rights violate copyright to allow freedom of expression to prevail? In exploring these issues within the context of privacy and freedom of expression and copyright, a final element of this paper will examine whether copyright exists as an 'engine of free expression', in today's cyberspace world to encourage creation.

How influential is design fiction as a Concept for innovation?

Callum Sulsh

BA (Hons) Digital Media Design, level H, i7709015@bournemouth.ac.uk

Science-fiction writer Bruce Sterling defines design fiction as the “deliberate use of diegetic prototypes to suspend disbelief about change”, commonly applied within the duration of a film to ensure escapism. My research delves into the boundless potential of design fiction, examining its effectiveness as a way of inspiring and achieving innovation. This will be explored through credible science-fiction films including the *Minority Report*, *Space Odyssey* and *X-men* which all share the commonality in accurately depicting futuristic technologies. Thus recognising the collaborative relationship between scientific consultants and artistic visionaries with the ability to test potential technologies of the future through the framework of science-fiction cinema. The premise that diegetic prototypes, within films, spark innovation by Kirby (2010) *“accounting for the ways in which cinematic depictions of future technologies demonstrate to large public audiences a technology’s need, viability and benevolence”* is the approach entertained within this study. Through analysing particular scenes within the key science fiction films stated above, I will perform textual analysis from within a humanities framework. This is not a new trail of thought as the identification of diegetic prototypes which predict future technology has gained notoriety, through both industry and institutional contributions. Whereby theories such as “the multiple discovery theory”, “the network effect” and the “internet of things” deserve further recognition within the vastly collaborative nature of new digital media. For this reason, this study argues that the sub-genre of design fiction should be recognised as a fundamental technique in devising innovation through cinema to worldwide accessibility. In turn promoting the boundless possibilities of the contemporary era. Through research into the collaborative nature of the digital era, whereby the success of design fiction in contribution to contemporary technological triumphs, should not only be recognised, but also utilised in order to ensure prosperity in future innovation.

14:00 - 15:00		K101, Kimmeridge House	Oral presentations 5
14:00			
14:15	Lydia Schmidt	<i>"If I did not have community relationships, I don't know where I would be": social cohesion and social capital in West Howe</i>	
14:30	Emily Diaz	Psychological issues in understanding terrorism: is terrorism religiously inspired?	
14:45	Bethany Buckwell	Understanding social and physical mobility: experiences of public transport in a low income area	

Notes:

***"If I did not have community relationships, I don't know where I would be":
social cohesion and social capital in West Howe***

Lydia Schmidt

BA (Hons) Sociology & Anthropology, level I, i7209903@bournemouth.ac.uk

Residents of socioeconomically deprived areas and communities face systematic deprivation and are affected by wider social and economic inequalities, which also pose challenges to local public service providers. This presentation will report on the findings of an ethnographic research project exploring social capital and cohesion in a West Howe, Bournemouth – a community comprising a relatively high number of low-income households, facing challenges in terms of employment, education, health and social mobility. The theory underpinning our project was guided by traditional definitions of social cohesion and social capital such as Bourdieu and Wacquant (1992) and Putnam (2000), and how these relate in a real life setting. Conducting semi-structured interviews with the local neighbourhood officer and a local service user, combined with survey questionnaires across the wider community, we researched social solidarity both within formal service settings and in informal social networks, interactions and relationships. Our data was analysed using thematic analysis and our key findings were that social bonding counteracts the effects of inequalities caused by systematic deprivation and helps keep this community afloat. In addition, social cohesion and social networking is high between community residents and informal service settings, but there is greater mistrust and miscommunication with formal local institutions. In a time of strict governmental budget cuts within the community and local authority setting, our research is relevant in understanding and potentially guiding community development projects in their delivery of services. Our findings provide a contribution to the hot topic of community structure and social relationships and we hope to influence the process of policy making regarding formal services within the community setting. Our research provides new knowledge for both academics and industry/policy makers use in understanding the lived experiences of regional populations and their relationships between themselves as a community and community workers. Furthermore, how these social bonds and ties can be increased and improved to support both the wellbeing of residents and the delivery of community development services in a socio-economically deprived residential setting.

Psychological issues in understanding terrorism: is terrorism religiously inspired?

Emily Diaz

BA (Hons) Politics & Media, level C, i7623392@bournemouth.ac.uk

Terrorism in today's world has evolved into a direct threat to the security of many countries. This essay will explore whether terrorism is religiously inspired or not, with a contemporary focus on Islam, as Islamic religion is at the forefront of many contemporary terrorism events. Nevertheless I will argue that religion, by itself, is generally not sufficient to nurture or create a terrorist. This essay is split into 7 sections each one focusing on a different area of terrorism. These are: the terrorist life cycle, religiously motivation, individual versus group psychology, leaders versus followers, the need for belonging, Ideology as the main driver in terrorism and finally the concept of the 'other' as central to terrorism. The conclusion has been drawn based on research from a multitude of documents, journals and news articles. It has become clearer that individual terrorists are acting upon values into which they have been comfortably socialized, both directly by teaching and indirectly by life experiences of themselves and important others. What is apparently religion-based terrorism has undermined international peace and social stability, which has ultimately led the international community into deep fear. However terrorism is an extremely complex phenomenon whose causes seem almost uniquely subject to oversimplified passionate interpretation. Overall terrorism has no religion, but is due to a multitude of factors all combined. . Even so, I would agree with Horgan 2006 when he notes 'we are still nowhere near an agreed understanding of terrorism'. Religion is an important component of human civilization and its contribution to mankind is undeniable. The ethical and legal norms it advocates still provide and play an irreplaceable constraints role of people's behaviour for peace and stability of human society. Overall however terrorism is a result of a multitude of factors and is not solely religiously inspired.

**Understanding social and physical mobility: experiences of public transport
in a low income area**

Bethany Buckwell

BA (Hons) Sociology & Anthropology, level I, bethbuckwell@hotmail.com

In contemporary society, ease of mobility is extremely important in accessing the necessary services for an adequate level of health and wellbeing to be maintained. Focusing on a low income area of Bournemouth, this project set out to understand people's experiences of public transport and the limitations they face in mobility. We chose Bournemouth as our primary location for this study as it was an easy to access location with multiple transport services running through the area. Using a broad ethnographic approach we conducted a number of observations, surveys and interviews with various residents in the area, individuals from the Bournemouth Transport Group, and those from the council. In order to acquire our data we used a number of methods including qualitative and quantitative research, to which we were able to extract patterns from concepts and test hypotheses using our data to support these conclusions. Content analysis, narrative analysis and framework analysis are three of the methods used throughout this project to analyse the data gathered. Acquiring this data from a range of individuals provided us with a diverse range of perspectives aiding the process of pinpointing the overall conclusions and suggesting improvements the area could implement in the future. In regards to academic contributions, transport is an area that is often overlooked and needs extensive research to be conducted, in order to help these deprived areas. Similarly the use of this research in appliance to the community makes evident the problems residents are experiencing and the improvements the council must therefore make as our research explicitly demonstrates the views of the public and the drawbacks they face in accessing public transport and wider services.

15:30-16:30		KG01, Kimmeridge House	Oral presentations 6
15:30	Roxanne Blanks	An experimental investigation into thermally induced shrinkage of bone	
15:45	Charlotte Loy	An investigation into a 19 th century cholera burial pit	
16:00	Michael Gara	Does resistance training in a hypoxic environment promote greater increases in muscle strength and hypertrophy than in a normoxic environment?	
16:15	Demitri Kambouris	Correct exercise technique via motion capture technology	

Notes:

An experimental investigation into thermally induced shrinkage of bone

Roxanne J. I. Blanks¹ and Dr Martin J. Smith³

¹ BSc (Hons) Biological Anthropology, alumni, i7257404@bournemouth.ac.uk

² Senior Lecturer in Forensic & Biological Anthropology, Bournemouth University

Thermally induced shrinkage (TIS) of bone is a well-documented phenomenon; however few researchers have attempted to quantify the amount of shrinkage experienced by bone at varying temperatures. Nor has previous research studied variation in TIS between cortical (thin compact bone found in the shaft of long bones) and trabecular bone (spongy bone found in the ends of long bones). Incorrect sex and stature estimations due to the effects of TIS may result in the mis/non-identification of burned human remains through comparisons to missing person's databases. The aims of this research were to quantify the amount of TIS experienced by bone at 200-1000°C and to produce correction factors applicable to metric studies of burned bone accounting for TIS. Pig and lamb femoral (thigh bone) samples from both ends of the bone (proximal and distal epiphyses) and the shaft (diaphysis) were heated between 200-1000°C at 200°C increments in a muffle furnace. Three repeats were conducted per temperature for each section of bone studied. The small sample size used an acknowledged limitation of this study. The results of this study revealed that there are differences in TIS between epiphyseal trabecular bone and diaphyseal cortical bone with trabecular bone shrinking to a greater extent than cortical sections burned at the same temperatures. The current study also found that TIS significantly increases above 600°C with shrinkage of 33.25% and 24.43% in pig distal epiphysis depth and pig proximal epiphysis depth respectively at 1000 °C. This study has contributed to the knowledge of TIS demonstrating that TIS is a more complex phenomenon than previously thought. Correction factors have been proposed to eliminate some of the problems of TIS when performing metric analyses of burned bone. However further research is necessary to better understand TIS its implications for the study of burned human remains.

An investigation into a 19th century cholera burial pit

Charlotte Loy

¹ BSc (Hons) Archaeological, Anthropological & Forensic Sciences, level 1,
i7679226@bournemouth.ac.uk

In archaeology the knowledge of what a society was like is invaluable to understanding the past. Mass graves are rarely representative of the society as a whole as only particular groups tend to be found, e.g. young men placed in a burial pit after a battle. Disease mass burials have the possibility of being more representative as it may affect all age groups and social classes. This research focuses on a Cholera mass grave in the city of Sheffield that holds 339 people who died in an epidemic in 1832. Disease control at the time was rudimentary it initially affected the poor but the Master Cutler was also killed in the outbreak suggesting social class did not stop the disease. The data were collected by analysing documentation and comparing the results to other mass graves that represented their society, e.g. East Smithfield plague burial excavations. This research is ongoing through a process of visiting the site and checking historical references such as the burial register in the Sheffield archives, but also maps, photographs and newspaper articles from the time. Interestingly this site is relatively unknown in the literature and there are aspects that need assessment, such as the specific location of the bodies, the peculiar scattering of topsoil markers and the nature of those markers. To compare with previous investigations two other excavations have been selected, ones that show a mortality profile more fitted to a living society as they have both been affected by disease. Constructing and analysing a mortality profile is the main goal for this research. While still taking place this study shows the deaths reflect more of a living population rather than the more typical deaths of the very old or very young and the location of the bodies now has a clearer definition.

Does resistance training in a hypoxic environment promote greater increases in muscle strength and hypertrophy than in a normoxic environment? A systematic review and meta-analysis

Michael Gara¹ and Dr Jonathan Williams²

¹BSc (Hons) Physiotherapy, level H, i7247359@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Recent research has examined the effects of resistance training in a hypoxic environment on muscle strength and muscle hypertrophy. The aim of this review is to examine the available evidence in an attempt to answer whether resistance training in a normobaric hypoxic environment stimulates greater increases in strength and muscle hypertrophy than training in normoxia. A systematic search of MEDLINE, ScienceDirect, Scopus, SPORTDiscuss, Science Citation Index and CINAHL was conducted in November 2015. Key search terms used were “hypoxic training or hypoxia training”, “strength or hypertrophy” and “resistance training”. Six articles were identified as appropriate for inclusion in this review and a meta-analysis was conducted to evaluate the results from the studies. Results highlighted significant increases in both strength and hypertrophy from both hypoxic and normoxic training when compared to baseline levels. Overall significant differences were not recorded between hypoxic and normoxic groups. The hypoxic group recorded increases of 25.3±32.5% and 5.9±36.3% in strength and hypertrophy respectively. Meanwhile the normoxic group recorded increases of 18.4±628.3% and 4.0±42.5% respective of strength and hypertrophy. One study did highlight a significant difference ($p<0.05$) in increases in strength and hypertrophy between hypoxic and normoxic training. Significant differences were also recorded in growth hormone, glycolytic enzyme and myoglobin levels by several of the studies. This review suggests that hypoxic resistance training at normobaric pressure can affect the intracellular environment and lead to enhanced increases in strength and hypertrophy when compared to normoxic resistance training. However further research is necessary to discover the optimum reduction in fraction of inspired oxygen and training prescription required for consistent observation of the enhanced effects of hypoxic resistance training.

Correct exercise technique via motion capture technology

Demitri Kambouris

BSc (Hons) Games Technology, level H, demitri.kambouris@gmail.com

There is a common misconception within the general population on which technique, if any, should be applied when engaging in resistance training (Merritt and Stoppani, 2015). This research investigates and demonstrates the correct (research proven) lifting technique required for maximum muscle stimulation at the lowest injury risk via motion capture (mocap) technology within a game engine, as a visual learning tool for the average gym enthusiast. The Bournemouth University's (BU) mocap studio will be used to capture an individual performing three compound bodyweight exercise movements, the press-up, lunge and squat. Initially it was proposed to capture three compound resistance exercises, as these have higher risk factors if performed incorrectly. However, it was now possible to mobilise the required equipment to the mocap studio. The motion capture is set to take place on March 4th 2016 through a uniquely developed 3D bipedal asset, fully rigged equipped with the mocap animation(s). After testing, the asset will then be imported into gym level to create an appropriate setting for the animation(s), which will then be presented on PC as an executable program. The final objective (to be achieved beyond the scope of this project) is to develop a user-friendly GUI commercial product which will run on PC be used as a visual learning aid for users' to execute correct exercise technique/form.

15:30-16:30		KG03, Kimmeridge House	Oral presentations 7
15:30	Cassia Seibert-Santos	Is non-invasive ventilation really a breath of fresh air for those with motor neurone disease?	
15:45	Chloe Harris	The effectiveness of water-based therapy in the pulmonary rehabilitation of patients with Chronic Obstructive Pulmonary Disease	
16:00	Charlotte Fodor	Recuperating the social model of disability into literature: are portrayals of impairments in dystopian texts problematic?	
16:15	Charlotte Fodor	What is the evidence that the utilisation of Character Strengths could enhance occupational therapy engagement and outcomes?	

Notes:

Is non-invasive ventilation really a breath of fresh air for those with motor neurone disease?

Cassia Seibert-Santos

BSc (Hons) Physiotherapy, level H, i7258679@bournemouth.ac.uk

Motor neurone disease (MND) is a neurological disorder characterised by the progressive degeneration of motor neurones, muscle wastage, the inability to breathe normally leading, eventually, to death (Tollefsen et al. 2010). Although relatively rare, approximately 50% of patients with MND die within two to four years of diagnosis. Non-invasive ventilation (NIV) is widely used to support normal breathing in MND. Evidence shows that NIV helps relieve some respiratory symptoms in MND and improves quality of life and survival (Radunovic et al. 2013). Despite these positive aspects, studies demonstrate that only a third of patients referred for NIV accept to use it, and only 5% continue to use NIV to the end of their life. This literature review aims to explore the evidence relating to the perception and views of people with MND on the use of NIV. Furthermore, this study seeks to understand the reasons behind patients' decision to accept or decline NIV. A search of the literature was conducted and five studies which met the inclusion criteria were reviewed. The studies were conducted in Sweden and in the UK. A synthesis was conducted using a simplified version of meta-ethnography. Three main themes emerged: resistance to MND, wish to stay alive and desire for autonomy. The key underlying assumption across the five studies seems to be the need MND patients have to be fully supported when making choices regarding NIV. Much has been published on the positive impact of NIV on the QOL and survival of MND patients. However, there is scarce evidence on how those patients perceive NIV and on the factors which influence them to accept or decline the intervention. More research is needed to explore if factors, such as culture, religiosity and level of education influence decision-making in MND, regarding the use of NIV.

The effectiveness of water-based therapy in the pulmonary rehabilitation of patients with Chronic Obstructive Pulmonary Disease

Chloe Harris ¹ and Dr Carol Clark ²

¹BSc (Hons) Physiotherapy, level H, i7241075@bournemouth.ac.uk

²Senior Lecturer in Physiotherapy, Bournemouth University

Respiratory disorders are one of the most common conditions in acute hospitals. Predominantly this is Chronic Obstructive Pulmonary Disease (COPD) with 900,000 diagnosed cases, killing 25,000 people a year (NHS 2014). In COPD, respiratory function decreases due to mechanical and physiological mechanisms, consequently causing severe breathlessness. Breathless patients often become less active, leading to deconditioning, reduced physical activity which further impacts on respiratory function. Many patients with COPD have additional symptoms often related to increased weight and painful joints, restricting their ability to participate in land-based exercise. There is a clinical requirement to identify environments which enable COPD patients to increase their exercise capacity and improve respiratory function. The aquatic environment harbours broad rehabilitation potential in a range of therapy specialisms, however it remains an under-used modality in patient pathways. Through buoyancy, hydrostatic pressure and thermodynamics, immersed joints can be offloaded by 40-60% of the patient's bodyweight allowing various rehabilitation strategies to enhance physical capability. This literature review aims to explore the current evidence regarding effectiveness of aquatic pulmonary rehabilitation programmes in improving exercise capacity in COPD patients. By completing a series of literature searches on medicine and rehabilitation databases, current evidence has been collected and appraised using the Downs and Black tool (1998). Preliminary screening of this research suggests that water-based exercise is tolerated better than expected by patients with COPD; it is suggested hydrostatic pressure on the chest wall improves respiratory muscles strength and function. In addition, there is compelling evidence to support water-based exercise in relation to improving quality of life, reducing anxiety, and increasing exercise capacity. Initial themes suggest water-based exercise is functionally beneficial in those with COPD. Further clinical research is required to ascertain parameters needed to successfully implement water-based pulmonary rehabilitation programme in acute hospitals.

Recuperating the social model of disability into literature: are portrayals of impairments in dystopian texts problematic?

Charlotte Fodor

BA (Hons) English, level H, charlottefodor@msn.com

This research explores how certain stigmas attached to impairments transcend into portrayals of the disabled subject in speculative works of literature, specifically in reference to the dystopian sub-genre. I will use the following texts in support of my argument: Kazuo Ishiguro's *Never Let Me Go* (2006) and Herbert George Wells' *The Country of the Blind* (1904). My central argument addresses the notion that disability discourse in literature should critique how society is ordered, rather than fixate on an individual's limitations. Currently, the positioning of the disabled subject in dystopian texts is too often used as a tactic to express the unfairness of society; suggesting that to be disabled is to be vulnerable, incapable and easily susceptible to exploitation. These treatments and representations are problematic because they efface the identity of people with disabilities and perpetuate social oppressions. Such representations also suggest a continued internalisation of inferiority in relation to the consciousness of people with disabilities (Charlton, 1998). Furthermore, this tactic also undermines what being disabled means. The antonym of "ability" is "inability", whereas "disability" is a neutral noun. Therefore, the connotation of disability should not relate to an individual's limited ability due to impairment but refer to the environments that generate difficulties for a person to live a fulfilling life (Quayson, 2007), as demonstrated by the social model of disability (Lang, 2001). I will use these points to reach my conclusion that in order for writers of dystopian literature to improve on disability representation and write more progressive narratives, the social model of disability's perspective should be integrated into portrayals of impairments. Increasing awareness about the social model of disability through literature would not only improve representation and our understanding of impairments but encourage individuals to consider environmental inadequacies in our social structure.

What is the evidence that the utilisation of Character Strengths could enhance occupational therapy engagement and outcomes?

Josephine George

BSc (Hons) Occupational Therapy, level H, i7257361@bournemouth.ac.uk

In an economic climate where funding cuts have become a way of life for service providers, and the threat of a dismantled NHS looms persistently on newspaper covers, it is all too clear that a new approach is needed to sustain the management of public health. It is unsurprising, then, that recent years have seen a drive for pro-active wellbeing-creation (Hanlon et al 2011; HM Government 2011, 2012), thus building a vision of reduced service pressures via the prevention of ill-health. Occupational Therapists (OTs) appear to be best placed to put this drive into action, but are impeded by practice tools that enable them to only support service users from a point of ill-health towards a point of neutrality, and not beyond this into the realms of wellbeing. In an approach well paired with OT, positive psychology offers a classification and handbook that presents the potential to fulfil this need through a shift in focus from 'What is wrong?' to 'What is strong?' (Peterson and Seligman 2004). This literature review explores the potential of these psychological classifications to equip OTs to empower service users to strive and thrive beyond neutrality; bringing the creation of wellbeing into fruition. Evidence was identified indicating that utilisation of character strengths could increase motivation to engage in OT, produce functional improvements, and be a functional device in enhancing OT outcomes beyond neutrality. Furthermore, themes emerged to support the translation of evidence into OT practice, indicating that benefits could be facilitated via identification of character strengths early in the therapeutic process, and reinforced through narrative dialogue with service users. The explored approach exceeds current models of practice that only meet neutral levels of health, instead providing potential for biographical disruption to lead to posttraumatic thriving: beyond neutrality, facilitating the creation of wellbeing.

Organising Committee:

Centre of Excellence in Learning

Prof Gail Thomas thomasg@bournemouth.ac.uk

Faculty of Science & Technology

Luciana S. Esteves (Chair of SURE) sure@bournemouth.ac.uk

Sulaf Assi sassi@bournemouth.ac.uk

Christos Gatzidis cgatzidis@bournemouth.ac.uk

Pippa Gillingham pgillingham@bournemouth.ac.uk

Faculty of Management

Shelley Broomfield sbroomfield@bournemouth.ac.uk

Andrew Callaway acallaway@bournemouth.ac.uk

Mary Beth Gouthro mgouthro@bournemouth.ac.uk

Maria Musarskaya mmusarskaya@bournemouth.ac.uk

Faculty of Media and Communication

Fiona Cownie fjcownie@bournemouth.ac.uk

Faculty of Health and Social Science

Carol Clark cclark@bournemouth.ac.uk

Sara White swhite@bournemouth.ac.uk

Further support:

Research and Knowledge Exchange Office

Rachel Bowen rbowen@bournemouth.ac.uk

BU Events

Sam Taylor and Rebecca Marney buevents@bournemouth.ac.uk

General Contact:

Email: sure@bournemouth.ac.uk

twitter: @SURE_BU

surebu.org.uk

Showcasing Undergraduate Research Excellence

2nd March 2016

SURE Conference Programme Overview

10:00-11:00	Poster session (with refreshments)	K103, Kimmeridge House
11:05-11:40	Keynote	KG01, Kimmeridge House
11:45-12:40	Oral presentations 1	KG01, Kimmeridge House
	Oral presentations 2	KG03, Kimmeridge House
12:45-14:00	Lunch break (complimentary lunch will be offered to conference presenters at The Retreat, Poole House)	
14:00-15:00	Oral presentations 3	KG01, Kimmeridge House
	Oral presentations 4	KG03, Kimmeridge House
	Oral presentations 5	KG101, Kimmeridge House
15:00-15:30	Refreshments break	Kimmeridge House
15:30-16:30	Oral presentations 6	KG01, Kimmeridge House
	Oral presentations 7	KG03, Kimmeridge House
16:40-17:30	Drinks and awards	Atrium, Poole House



Find out more at surebu.org.uk

We are **SURE**. What about you?