



**University of Brighton**

Doctoral College

2016

Postgraduate Research Student Conference



**27 — 30 June**

Colleges of Social Sciences and  
Life, Health and Physical  
Sciences, including BSMS and  
MRes Clinical Research

Moulsecoomb Campus

Abstract  
Booklet



## Welcome from the Director of the Doctoral College



On behalf of the Brighton Doctoral College I would like to welcome you to the 2016 Doctoral College Postgraduate Research Student Conference. This is an important event in our year, when research students, supervisors, colleagues and visitors get together in a single forum to celebrate the incredible range, depth and quality of research that takes place across the university. It is right at the centre of our researcher development programme, building on workshops and other events that have guided students on communicating their research to diverse audiences.

The philosophy behind this conference is, therefore, avowedly pedagogical: to hold an event that helps students learn how to plan and present papers and posters, and that gives students insights into the organisation of academic conferences. At the core of this is a belief that the conference should, as far as possible, be run by students for students; the enthusiasm with which this idea has been met by the postgraduate community has been overwhelming. This includes those

members of the organising committee who have taken it upon themselves to arrange everything that you will experience, as well as the 100+ students from all disciplines who have bought into the idea and submitted abstracts to be a part of the conference.

Throughout our work in the Doctoral College we are constantly reminded of the high quality and diverse range of research topics that are being undertaken by our students and supported by our academic colleagues. Equally we often see significant overlap in different areas of research that perhaps go unnoticed and unexplored without the exposure that is given to them through presentation at this conference. We would urge you all, students and staff alike, to take this opportunity to network with your colleagues from other disciplines, to listen to papers on subjects that you would not usually have the opportunity to hear, and to foster new dialogues and collaborations across the university. The skills that you develop, as well as the networks that you co-create, will serve you well in the future.

Of course, we should not forget that many people have contributed to organising and staging this conference, for the good of all. The student organising committee has been tireless in its work, as have our Directors of Postgraduate Study and team of administrators. To all of them we owe many thanks.

Enjoy the conference!

**Professor Neil Ravenscroft**  
**Director of the Doctoral College**





## Brighton Doctoral College Postgraduate Research Student Conference 2016

'New insights, effectively shared'  
27 - 30 June 2016, Moulsecoomb campus

### Foreword by the Conference Organisational Committee

It was early in 2012 when it was decided that the newly formed Doctoral College would organise a conference for the 140 research students within the university. The purpose of this conference would be to provide a multi-disciplinary event where all research students would be given an opportunity to present their research projects to a diverse audience from a range of subject areas and gain invaluable feedback.

The members of the Conference Organisational Committee met regularly to design and plan the conference, from session planning, budgeting and registration to organising sponsors, keynote speakers, and the very important decision of whether to provide biscuits during the coffee breaks!

During planning we were guided by three key principles that served as the foundation for previous campus-based conferences.

Firstly, that the conference should be as fully integrated between schools as possible. From the very beginning we envisaged a conference where the sessions included students from all schools within the Doctoral College to create a mixed event where students would be able to see the ideas, methodologies and results of research projects from new and unfamiliar disciplines.

Secondly, that everyone should be able to present their work in this comfortable and familiar environment. As such everyone who submitted an abstract was given a place in the conference, and we tried our best to accommodate students' presentation style choices.

Finally, that the conference should be free to attend for everyone. Thanks to fantastic support from the Doctoral College, we achieved our aim and created a conference on a carefully planned budget that was, and continues to be, free for everyone attending.

Our conference is still underpinned by these principles today. Every year, our event highlights and shares the excellent and impactful research being conducted by Doctoral students at the University of Brighton.

We very much hope you enjoy the conference that we have worked so hard to create!

### *The Conference Committee*

#### **The Conference Committee**

##### **Staff members:**

Fiona Sutton

Lynne McChesney

##### **Student members:**

Kimberley Belle

Gigliola Brintazzoli

Jennifer Holland

Richard Kulczak

Tochukwu Ozulumba

Patricia Soares

Willem Stander

Omama Tariq

Helen Williamson

#### **Acknowledgements**

The Conference Committee would like to thank the following people for their support and guidance throughout the organisation of the conference:

To Lorraine Slater for all her work on the conference handbook and edublog.

To Sarah Longstaff for her support with the publicity and with setting up the conference webpage on staff central.



Follow the conference on Twitter!

Tweet using **#UoBRSC2016**

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# Daily Timetables and Presentation Titles

Monday 27 June

9.00 - 9.25 Room: Huxley Foyer		Registration and Tea/Coffee			
9.30 - 10.15 Room: Huxley Lecture Theatre		<b>Keynote Speaker - Prof Colin Smith</b>			
<b>The Genomics Revolution: a New Era for Biology and the Creative Destruction of Medicine</b>					
10.30 - 12.00 Oral Presentations					
	Room: Cockcroft 808 Chair: Nafessa Ullah		Room: Galileo E33 Chair: Barbara Seebacher		
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor	
10.30 - 10.45	Madeleine Conaghan PhD, CEM	Dr E Elton Dr P Charchalakis Dr E Stipidis	Denise Harris MPhil, SHS	Dr A Grant Dr J Morris	
10.45 - 11.00	Jack Turner PhD, CEM	Dr C Crua Dr G de Sercey Prof S Sazhin	Fawzia Zaidi PhD, SHS	Prof J Scholes Prof S Cooper	
11.00 - 11.15	Jonathan Dale MPhil, SET	Dr H Burgess Prof A Cundy Prof C Firth	Jane Harvey-Lloyd PhD, SHS	Dr G Stew Dr J Morris	 Follow the conference on Twitter! Tweet using #UoBRSC2016
11.15 - 11.30	Binyamien Rasoul MPhil, SET	Dr F Gunzel Dr M Rafiq	Sarah Elliott Prof Doc, SHS	Dr A Glynn Dr J Elliott	
11.30 - 11.45	Oday Al-Mamorri MPhil, SET	Dr J Martinez-Rueda Dr K Stone	Alison Newport MRes Clinical Research, SHS	Dr C Clarke	
11.45 - 12.00	Ameer Baiee MPhil, SET	Dr M Rafiq Dr A Lampropoulos Dr P Cacciola	Heidi Von Kurthy MPhil, SHS	Dr G Stew Dr K Aranda	

Monday 27 June (cont)

12.00 - 13.30 Poster presentations and buffet lunch Huxley Foyer						
13.45 - 15.15 Oral Presentations						
	Room: Cockcroft 808 Chair: Fawzia Zaidi		Room: Galileo E33 Chair: TBC		Room: Watts 311 Chair: Patricia Soares	
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor	Student	Supervisor / Advisor
13.45 - 14.00	Khawla Mahmood Phil, CEM	Dr K Tsakiri Dr A Fish	Ann McCarthy PhD, SHS	Dr L Redhead Ms P Chowdary Prof A Moore	Sharon Colebrook Hutchens MRes Clinical Research, SHS	Dr P Vuoskoski
14.00 - 14.15	Sylvanus Iro PhD, SET	Dr M Brolly Dr G Awcock Prof D Nash	Kathryn Carver PhD, SHS	Dr N Petty Dr A Grant	Peter Marsh PhD, SHS	Dr K Saber-Sheikh Prof A Moore Dr S Chubb
14.15 - 14.30	Peshawa Jaf MPhil, SET	Dr M Smith Dr F Gunzel	Julie Vincent MRes Clinical Research, SHS	Dr T Fotis	Catherine Gray MRes Clinical Research, SHS	Dr C Theodosius
14.30 - 14.45	Musa Jato MPhil, SET	Dr M Smith Prof A Cundy	Shafq Al-azzawi MPhil, PABS	Prof M Santin Dr G Phillips Mrs A Guildford	Hannah Perry MRes Clinical Research, SHS	Dr C Morriss-Roberts
14.45 - 15.00	Megi Kamenica MPhil, PABS	Dr A Willows Dr P Cragg Dr B Patel	Ross Webster MRes Clinical Research, SHS	Dr L Redhead	Kevin Barrett Mres Clinical Research, SHS	Dr N Dunne
15.00 - 15.15	Areej Al-Jwaid MPhi, SET	Prof A Cundy Dr I Savina Dr J Caplin	Heather Leake Date MRes Clinical Research, SHS	Dr S Glaspole		

		Monday 27 June		
Name	First Name	Time	Room	Title/Topic
Al-Azzawi	Shafq	14.30 - 14.45	G E33	Bifunctionalisation of the dendronised carrier system with Apo-E peptide and drug used in the treatment of Alzheimer's disease for enhancing blood brain barrier permeability and targeting
Al-Jwaid	Areej	15.00 - 15.15	C 808	Bioremediation of phenol in wastewaters using polymer-supported bacteria
Al-Mamorri	Oday	11.30 - 11.45	C 808	Seismic upgrading of precast concrete structures using hysteretic energy dissipation devices (HEDDs)
Baiee	Ameer	11.45 - 12.00	C 808	Flexural behaviour of high strength cementitious thin members reinforced with textile fibre polymers
Barrett	Kevin	14.45-15.00	W 311	Power imbalances in Educational Research
Carver	Kathryn	14.00-14.15	G E33	Biographical restorying following a heart attack
Colebrook Hutchens	Sharon	13.45 -14.00	W 311	The lived experience of women who have anal incontinence following a vaginal delivery
Conaghan	Madeleine	10.30 - 10.45	C 808	Reducing the cognitive demands on the driver from the in-vehicle system
Dale	Jonathan	11.00 - 11.15	C 808	The hydrodynamic and sedimentation processes in a new, anthropogenically constructed intertidal environment
Elliott	Sarah	11.15 - 11.30	G E33	Physiotherapy seven day working and practice based education
Gray	Catherine	14.30 - 14.45	W 311	Patients' experience of receiving information about a randomised clinical trial
Harris	Denise	10.30 - 10.45	G E33	The meaning and perceived function of supervision in an NHS organisation
Harvey-Lloyd	Jane	11.00 - 11.15	G E33	Being and becoming a radiographer
Iro	Sylvanus	14.00 - 14.15	C 808	Mapping and monitoring of gully erosion developments in Southeast Nigeria with satellite remote sensing and geographic information system
Jaf	Peshawa	14.15 - 14.30	C 808	Recharge and water flow in the chalk unsaturated zone
Jato	Musa	14.30 - 14.45	C 808	Modelling urban diffuse pollution in groundwater
Kumenica	Megi	14.45 - 15.00	C 808	Lithium sensors
Leake Date	Heather	15.00 - 15.15	G E33	An exploration of medicine-taking behaviour in people living with Human Immunodeficiency Virus (HIV) infection
Mahmood	Khawla	13.45 - 14.00	C 808	Flood analysis: methods to enhance prediction accuracy
Marsh	Peter	14.15 - 14.30	W 311	A hermeneutic interpretation of life with Rheumatoid Arthritis: Translating lived experience into material and form
McCarthy	Ann	13.45 - 14.00	G E33	The multi-factorial nature of the development of ankle joint disease in Haemophilia
Newport	Alison	11.30 - 11.45	G E33	The occupation matters experience
Perry	Hannah	14.45 - 15.00	W 311	The lived experiences of the older population that have fallen at home wearing indoor footwear
Rasoul	Binyamien	11.15 - 11.30	C 808	The effect of rice husk ash on the mechanical and durability properties of concrete
Turner	Jack	10.45 - 11.00	C 808	A phenomenological model for the end of injection in diesel fuel injectors
Vincent	Julie	14.15 - 14.30	G E33	The introduction and use of Entonox® as an alternative method of analgesia for intrauterine contraceptive device insertion
von Kurthy	Heidi	11.45 - 12.00	G E33	The everyday experience of the craft of embroidery
Webster	Ross	14.45 - 15.00	G E33	Does bedside swallow assessment demonstrate variations in oro-motor and swallow presentation between Alzheimer's dementia and vascular dementia patients?
Zaidi	Fawzia	10.45 - 11.00	G E33	Decision making by experienced midwives as the primary responders in an obstetric emergency

## Tuesday 28 June

9.00 - 9.25 Room: Huxley Foyer			Registration and Tea/Coffee			
9.30 - 10.15 Room: Huxley Lecture Theatre			<b>Keynote Speaker - Prof Kate Galvin</b>			
<b>'In the Middle of Everywhere': The Intertwining of Rurality, Well-being and Ageing</b>						
10.30 - 12.00 Oral Presentations						
	Room: Cockcroft Chair: TBC		Room: Galileo E33 Chair: TBC		Room: Watts 311 Chair: Madeleine Conaghan	
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor	Student	Supervisor / Advisor
10.30 - 10.45	Heather Baid MPhil, SHS	Prof J Scholes Dr J Richardson	Ella Hodder MPhil, CEM	Dr D Covill Dr M Best Dr N Dowell Prof M Cercignani	Eugenio Gamba MPhil, CEM	Prof A Bruce D Z Podolyak
10.45 - 11.00	Paul Calleja MPhil, SHS	Prof J Scholes Dr N Dunne Dr J Trapani	Tochukwu Ozulumba MPhil, PABS	Dr S Sandeman Dr P Dyer Prof A Cundy	Chantal Nobs PhD, CEM	Prof A Bruce Dr Z Podolyak Dr W Wilkinson
11.00 - 11.15	Kitty Suddick PhD, SHS	Dr V Cross Dr P Vuoskoski	Jenny Venton MPhil, CEM	Dr P Harris Dr G Phillips	Cristina Boscariol MPhil, CEM	Dr D Sarker Dr C Crua Prof M Marengo
11.15 - 11.30	Ben Hodgson MRes Clinical Research, SHS	Dr N Petty	George Goodwin MPhil, BSMS	Dr A Dilley Dr M Mengozzi	Jeremy Evans PhD, SET	Prof A Church Dr S Bagaeen
11.30 - 11.45	Philippa Coales PhD, SHS	Dr V Jenkins Dr A Benson	Ieva Satkeviciute PhD, BSMS	Dr A Dilley Prof P Ghezzi	Niall Walkden PhD, PABS	Dr A Rott Dr D Scott Prof A Church
11.45 - 12.00	Omama Tariq MPhil, SHS	Prof J Huber Dr A Memon Dr C Rosten	Karen Poole MRes Clinical Research, SHS	Mrs K Suddick	Ndukari Rufus PhD, SET	Prof A Cundy Dr M Smith

Tuesday 28 June (cont)

12.00 - 13.30 Poster presentations and buffet lunch Huxley Foyer						
13.45 - 15.15 Oral Presentations						
	Room: Cockcroft 808 Chair: Niall Walkden		Room: Galileo E33 Chair: Gigliola Brintazzoli		Room: Watts 311 Chair: Tochukwu Osulumba	
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor	Student	Supervisor / Advisor
13.45 - 14.00	Kate Kemsley MRes Clinical Research, SHS	Dr N Dunne	Barbara Seebacher PhD, SHS	Dr R Kuisma Dr A Glynn	Almas Baimagambetov MPhil, CEM	Prof J Howse Mr A Delaney Dr G Stapleton
14.00 - 14.15	Claire Hudson MRes Clinical Research, SHS	Dr M Darking	Daire Cantillon PhD, BSMS	Dr S Waddell Prof M Newport Dr I Cooper	Oluseyi Olarewaju MPhil, CEM	Dr G Uchyigit Dr A Fish
14.15 - 14.30	Sarah Ofori-Ansah MRes Clinical Research, SHS	Dr N Dunne Dr C Hebron	Eldhose Skaria MPhil, PABS	Dr K Ng Dr M Flint Dr B Patel	Shaun Shei MPhil, CEM	Prof H Mouratidis Dr S Kapetanakis Mr A Delaney
14.30 - 14.45	Susanne Simmons PhD, SHS	Prof J Scholes Dr N Dunne	Jane Birch MPhil, SET	Dr C Joyce Dr G Bilotta	Orestis Mavropoulos MPhil, CEM	Prof H Mouratidis Dr A Fish Dr M Panaousis
14.45 - 15.00	Kevin Hall MPhil, SHS	Prof A Moore Dr C Ridehalgh Dr J Lewis	Xingming Lu MPhil, CEM	Dr K Saeed Dr J Salvage Prof A Bruce	Bashaer Alhay MPhil, SHS	Dr L Redhead Dr M Bailey Dr D Covill
15.00 - 15.15	Stefan Hegenscheidt MPhil, SHS	Dr N Petty Dr V Cross	Sharmila Satthar PhD, CEM	Dr R Evans Dr G Uchyigit	Nikos Argyropoulos MPhil, CEM	Prof H Mouratidis Dr A Fish

		Tuesday 28 June		
Name	First Name	Time	Room	Title/Topic
Alhay	Bashaer	14.45 - 15.00	W 311	The influence of computer mouse design on the muscle activity, movement and position of the elbow and wrist joints
Argyropoulos	Nikos	15.00 - 15.15	W311	An approach for designing secure business processes through model instantiation
Baid	Heather	10.30 - 10.45	C 808	Data analysis for a constructive grounded theory study about sustainability in critical care practice
Baimagambetov	Almas	13.45 - 14.00	W311	Automated visualization of grouped networks
Birch	Jane	14.30 - 14.45	G E33	Impact of the invasive non-native species <i>Hydrocotyle ranunculoides</i> L.f. (Floating Pennywort) on native macrophyte communities
Bosciariol	Cristina	11.00 - 11.15	W311	Drop impact onto porous surface: scale effects
Calleja	Paul	10.45 - 11.00	C 808	Hospitalisation of heart failure patients: Informal carers' changing roles
Cantillon	Daire	14.00 - 14.15	GE33	Modelling drug-tolerant mycobacterial sub-populations using a low shear, micro gravity culture system
Coales	Philippa	11.30 - 11.45	C 808	An exploration of perceived contributory factors and prevention of work-related spinal disorders (WSD) in the physiotherapy profession
Evans	Jeremy	11.15 - 11.30	W 311	Critical community engagement in the Community Seagrass Initiative
Gamba	Eugenio	10.30 - 10.45	W 311	Fast-timing measurements using LaBr3:Ce detectors
Goodwin	George	11.15 - 11.30	GE33	The role of axonal transport disruption in the development of mechanical sensitivity along intact nociceptive axons
Hall	Kevin	14.45 - 15.00	C 808	The effectiveness of treatment for posterior shoulder tightness in combination with exercise compared with exercise alone in individuals with shoulder impingement syndrome: a randomised feasibility study
Hegenscheidt	Stefan	15.00 - 15.15	C 808	Understanding the clinical encounter between musculoskeletal physiotherapists and patients in Germany: Perspectives in evolution?
Hodder	Ella	10.30 - 10.45	G E33	Development of intervertebral disc scaffolds using 3D-biplotting and quantitative MRI in regenerative medicine
Hodgson	Ben	11.15 - 11.30	C 808	Making sense of non-specific low back pain: a grounded theory approach
Hudson	Claire	14.00 - 14.15	C 808	How and to what extent do patients with kidney disease value the use of PatientView in their self-care practice?
Kemsley	Kate	13.45 - 14.00	C808	Healthcare professionals experiences of treatment escalation planning in the acute setting when a patient's recovery is uncertain
Lu	Xingming	14.45 - 15.00	G E33	Design and development of flame based one-step nanoparticle synthesis generator
Mavropoulos	Orestis	14.30 - 14.45	W 311	Apparatus: Reasoning about security requirements in the Internet of Things
Nobs	Chantal	10.45 - 11.00	W 311	Determining the characteristics of exotic nuclei to identify applications outside of Nuclear Physics
Ofori-Ansah	Sarah	14.15 - 14.30	C 808	Exploring experiences of shared decision making in adult pre-dialysis patients and carers
Olarewaju	Oluseyi	14.00 - 14.15	W 311	Enhancing cross-domain collaborative filtering by integrating semantic concepts (tags) into Matrix factorization technique
Ozulumba	Tochukwu	10.45 - 11.00	G E33	Designing nanostructured scaffolds for the remediation of environmental and biological tissue contaminants
Poole	Karen	11.45 - 12.00	G E33	The use of Botulinum toxin in neurological conditions: Patients' perceptions of the effect and impact
Rufus	Ndukari	11.45 - 12.00	W 311	Remediation of groundwater contamination of Ogoniland
Satkeviciute	Ieva	11.30 - 11.45	G E33	Axonal transport disruption along intact axons causes neuropathic pain behaviours and signs of central sensitisation in the absence of ongoing A- and C-fibre activity
Satthar	Sharmila	15.00 - 15.15	G E33	Method for evaluating sentiment analysis system
Seebacher	Barbara	13.45 - 14.00	G E33	Measuring the immeasurable




Shei	Shaun	14.15 - 14.30	W 311	Modelling cloud computing systems from a security requirements perspective
Simmons	Susanne	14.30 - 14.45	C 808	A grounded theory study: how do fathers experience the transition to parenthood when their infant is admitted to a neonatal Intensive Care Unit and following discharge home?
Skaria	Eldhose	14.15 - 14.30	G E33	Micromoulding and characterisation of epoxy microneedle arrays
Suddick	Kitty	11.00 - 11.15	C 808	The acute stroke unit as transitional space: the lived experience of stroke survivors and healthcare practitioners
Tariq	Omama	11.45 - 12.00	C 808	Role of family support in buffering the transition towards lifestyle changes recommended to patient with diabetes living in Pakistan
Venton	Jenny	11.00 - 11.15	G E33	A proelastic model of the spinal cord
Walkden	Niall	11.30 - 11.45	W 311	Ecology, Economy and Culture: Cultural ecosystem services provided by scavengers in South Africa

## Wednesday 29 June

9.00 - 9.25 Room: Huxley Foyer			Registration and Tea/Coffee			
9.30 - 10.15 Room: Huxley Lecture Theatre			<b>Keynote Speaker - Prof Etienne Wenger-Trayner</b>			
<b>Research and social learning theory</b>						
10.30 - 12.00 Oral Presentations						
	Room: Watts 311 Chair: Kirsti Laerdal		Room: Galileo E33 Chair: Jennifer Holland		Room: Mithras 117 Chair: Hanno Martens	
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor	Student	Supervisor / Advisor
10.30 - 10.45	Leane Owen MRes Clinical Research, SHS	Dr S Ryan	Diane Ramsey MPhil, SHS	Dr J Cameron Dr W McGowan	Josie Maitland MPhil, SHS	Prof A Hart Dr S Eryigit-Madzwamuse Prof P Haynes
10.45 - 11.00	Rosalie Barrett MRes Clinical Research, SHS	Dr C Hebron	Charlotte Clee MRes Clinical Research, SHS	Dr K Aranda	Anne Rathbone MPhil, SHS	Prof A Hart Dr C Walker
11.00 - 11.15	Narmeen Bokhari PhD, CEM	Dr A Belz Dr R Evans	Michael Huggett PhD, SHS	Dr G Stew Dr K Aranda	David Glynne-Percy MPhil, SHS	Prof A Hart Dr J Cameron Dr S Eryigit-Madzwamuse
11.15 - 11.30	Toby Chown MRes Clinical Research, SHS	Dr A Grant	Cara Redlich MPhil, SASS	Prof F Henwood Dr L Ward Dr D Harley	Caroline Spence Prof Doc, SHS	Dr K Aranda Dr N Dunne
11.30 - 11.45	Rachel Heathershaw MPhil, SHS	Dr C Ramage Dr K de Vries	Patricia Soares PhD, BSMS	Prof S Mukhopadhyay Dr K Fidler Dr S Bremner	Gillian Teideman Prof Doc, Education	Dr G Stew Dr A Pickering
11.45 - 12.00	Majed Al-Jefri MPhil, CEM	Dr R Evans Prof P Ghezzi Dr G Uchyigit	Maria Trotman MRes Clinical Research, SHS	Dr C Morriss-Roberts	Chris Sweeney PhD, Education	Prof D Stephens Dr J Smith

Wednesday 29 June (cont)


12.00 - 13.30 Poster presentations and buffet lunch Huxley Foyer						
13.45 - 15.15 Oral Presentations						
		Room: Galileo E33 Chair: Omama Tariq				
Time			Student	Supervisor/ Advisor		
13.45 - 14.00			Mana Al Mashreef MPhil, S&SM	Dr C Weeden Dr N Jarvis		
14.00 - 14.15			Indra Kusumawardhana MPhil, S&SM	Dr A Benson Dr S Goss-Turner Prof G Wisker		
14.15 - 14.30			Kirsti Laerdal PhD, S&SM	Dr C Palmer Dr J Lester		Follow the conference on Twitter! Tweet using #UoBRSC2016
14.30 - 14.45			Hanno Martens MPhil, S&SM	Dr N Jarvis Dr C Weeden		
14.45 - 15.00			Hillary Kipnis PhD, S&SM	Dr D Burdsey Dr J Caudwell		
15.00 - 15.15						

		Wednesday 29 June		
Name	First Name	Time	Room	Title/Topic
Al-Jefri	Majed	11.45 – 12.00	W 11	Text-based measures of information quality in health information
Al Mashreef	Mana	13.45 - 14.00	G E33	Tourism as a tool for sustainable development in desert areas: the case of Najran Region, the Kingdom of Saudi Arabia
Barrett	Rosalie	11.00 - 11.15	W 311	Physiotherapists' lived experiences of working in rapid response teams
Bokhari	Narmeen	11.15 - 11.30	W 311	Addressing the search skills gap: helping researchers in less developed countries to conduct better online research with a subject-specific search tool and skill-improving policies
Chown	Toby	11.30 - 11.45	M 117	Time for a new story? A narrative inquiry into how children affected by family alcohol and drug problems use the arts within therapy
Clee	Charlotte	10.45 - 11.00	G E33	Community mental health nurses' experience of working with young people who have previously attempted suicide - a phenomenological study within Child and Adolescent Mental Health Services (CAMHS)
Glynn-Percy	David	11.00 - 11.15	M 117	Triggering and sustaining serious leisure participation as a route to resilience in middle childhood: a practitioner perspective
Heathershaw	Rachel	11.45 - 12.00	W 311	A critical exploration of the variety of forms in which role modelling as a leadership behaviour can be performed in nursing
Huggett	Michael	11.00 - 11.15	G E33	How women diagnosed with borderline personality diagnosis negotiate identity in relation to risk
Kipnis	Hillary	14.45 - 15.00	G E33	Samud: Everyday resistance and the role and meaning of sport and physical activity in the lives of Palestinian women in the Occupied Palestinian Territories
Kusumawardhana	Indra	14.00 - 14.15	G E33	A constructivist-thinking to curriculum development: challenge and approach in hospitality and tourism higher education
Laerdal	Kirsti	14.15 - 14.30	G E33	Co-construction of hospitality culture: behaviour, encounter and social constructions in English hotels
Maitland	Josie	10.30 - 10.45	M 117	Mixed methods study of school staff experiences of an academic resilience approach: A whole systems perspective
Martens	Hanno	14.30 - 14.45	G E33	The tourism destination image effects of sport events: a longitudinal study of Germans visiting the Middle East
Owen	Leane	10.45 - 11.00	W311	Physiotherapy students' perceptions of dementia
Ramsey	Diana	10.30 - 10.45	G E33	How do people with learning disabilities experience work?
Rathbone	Anne	10.45 - 11.00	M 117	Changing the odds? Developing a co-operative inquiry group of learning disabled people on resilience: the epistemological challenges and values
Redlich	Cara	11.30 - 11.45	G E33	Care Online: reflections of one participant
Soares	Patricia	11.45 - 12.00	G E33	Children and young adults with filaggrin-related eczema may have different healthcare needs than filaggrin-unrelated eczema
Spence	Caroline	11.15 - 11.30	M117	Young children's experiences of insulin pump therapy - a discussion of the findings
Sweeney	Chris	14.00 - 14.15	G E33	Social class, habitus and reflexivity: an analysis of trainee teachers' understandings
Teideman	Gillian	13.45 - 14.00	G E33	Navigating learning in higher education: An exploration of year 1 undergraduate Physical Education student experiences of learning
Trotman	Maria	11.45 – 12.00	G E33	The lived experiences of fear of falling in the elderly patient: An interpretive Phenomenological study

## Thursday 30 June

9.00 - 9.25 Room: Huxley Foyer			Registration and Tea/Coffee			
9.30 - 10.15 Room: Huxley Lecture Theatre			<b>Keynote Speaker - Prof Gillian Bendelow</b>			
<b>The crisis in emergency mental healthcare: linking 'lived experience' to local and national policy development</b>						
10.30 - 12.00 Oral Presentations						
	Room: Cockcroft 808 Chair: Hasan Gilani		Room: Galileo E33 Chair: TBC			
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor		
10.30 - 10.45	Willem Stander MPhil, SASS	Dr K Johnson Prof K Browne Dr O Jenzen	Kimberley Belle MPhil, BBS	Dr S Greener Dr G Tsekouras		
10.45 - 11.00	Gigliola Brintazzoli MPhil, SASS	Prof F Henwood Dr D Harley	Mehabad Ali MPhil, BBS	Dr P Ruggiero Prof P Quattrone		
11.00 - 11.15	Nick Marks MPhil, SASS	Dr M Erickson Dr C Walker	David Wright MPhil, BBS	Dr D Lain Prof J O'Reilly		
11.15 - 11.30	Helen Williamson MPhil, SASS	Prof P Squires Dr C Johnstone	Stuart Hill MPhil, BBS	Prof J O'Reilly Dr L Fletcher		
11.30 - 11.45	Michael Williams PhD, S&SM	Dr U Merkel Dr C Palmer Dr P Gilchrist				
11.45 - 12.00	Ashley Tya Austin MPhil, SASS	Prof G Bendelow Dr K Johnson Dr H Thurston				

Thursday 30 June (cont)

12.00 - 13.30 Poster presentations and buffet lunch Huxley Foyer						
13.45 - 15.00 Oral Presentations						
Room: Cockroft 808 Chair: Ieva Satkeviciute			Room: Galileo E33 Chair: TBC			
Time	Student	Supervisor/ Advisor	Student	Supervisor/ Advisor		
13.45 - 14.00	Peter Morgan MPhil, Humanities	Mr E Michail Dr C Bergen Dr A Rupprecht	Hasan Gilani MPhil, S&SM	Dr A Benson Dr R Cheng		
14.00 - 14.15	Michael Stephenson-Huxford Prof Doc, SASS	Prof D Waller Dr G Stew	Jennifer Holland MPhil, S&SM	Dr C Weeden Dr J Lester		
14.15 - 14.30	Julie May Prof Doc, SASS	Prof D Waller Dr N Sherriff	Dicle Kortantamer MPhil, BBS	Dr N Marshall Prof T Brady		Follow the conference on Twitter! Tweet using #UoBRSC2016
14.30 - 14.45	Adam Kincel PhD, SASS	Dr A Grant Dr L Zeeman	Kamal Mahmes PhD, BBS	Mr S Reeve Ms R Boxer Prof K D'Silva		
14.45 - 15.00	Jay Beichman PhD, SASS	Prof D Waller Dr G Stew	Yousuf Al Mabsali MPhil, BBS	Mr R Hayward Dr W Heering		
15.00 - 15.15						

		Thursday 30 June		
Name	First Name	Time	Room	Title/Topic
Al Mabsali	Yousuf	14.45 - 15.00	G E33	Reliability and conventional financial statements and analyst forecast errors: UK corporate perspective
Ali	Mehabad	10.45 - 11.00	G E33	Balanced scorecard, performance management and measurement and change in emerging nations: an institutional perspective on the case of Kurdistan region
Austin	Ashley	11.45 - 12.00	C 808	'Mad or bad'? Women with personality disorders in crisis and the role of the emergency services
Beichman	Jay	14.45 - 15.00	C 808	Therapy wars: Pluralism, contentious issues and diplomatic attempts at resolution
Belle	Kimberley	10.30 - 10.45	G E33	The impact of the relationship between learning and development and personnel with dyslexia, on SME development
Brintazzoli	Gigliola	10.45 - 11.00	C 808	Technology, care and a sense of home
Gilani	Hasan	13.45 - 14.00	G E33	Impact of corporate brand identity on employee brand citizenship behaviour: UK retail sector
Hill	Stuart	11.15 - 11.30	G E33	The role of ethical assurance in reducing pay inequality and promoting pay fairness
Holland	Jennifer	14.00 - 14.15	G E33	Navigating uncertainty: The influence of risk on consumer decision-making in Ocean cruising
Kincel	Adam	14.30 - 14.45	C 808	Inhaling and exhaling culture - on applying autophenomenography in psychotherapy and social science
Kortantamer	Dicle	14.15 - 14.30	G E33	Understanding leadership of change projects in the financial services industry
Mahmes	Kamal	14.30 - 14.45	G E33	Corporate social responsibility disclosure: Accounting education insights and empirical evidence with reference to the Libyan Extractive Sector (2009-2014)
Marks	Nick	11.00 - 11.15	C 808	Reassembling the bicycle: an exploration of ontological possibilities
May	Julie	14.15 - 14.30	C 808	Client choices when selecting a private practice counsellor/psychotherapist and the implications for accredited voluntary regulation
Morgan	Peter	13.45 - 14.00	C 808	How did the British understand 'mass killing' of the Armenians in the Ottoman Empire between the 1890s and the 1920s?
Stander	Willem	10.30 - 10.45	C 808	Gay men and mental health help-seeking: the role of social media
Stephenson-Huxford	Michael	14.00 - 14.15	C 808	Reaching conclusions: autoethnographic research into my first onset experience of panic
Williams	Michael	11.30 - 11.45	C 808	Rock music events as spectacle: U2's Union of Rock and Resistance. Findings, analyses and interpretations of the fans' experiences of U2's 360° tour
Williamson	Helen	11.15 - 11.30	C 808	Developing an understanding of illegal firearm supply in England and Wales
Wright	David	11.00 - 11.15	G E33	Comparing the employment of older workers in UK and Germany







# Keynote Presentations



# Abstracts of Keynote Presentations

Monday 27 June

## Professor Colin Smith

Professor of Geonomics, School of Pharmacy & Biomolecular Sciences

### The Genomics Revolution: a New Era for Biology and the Creative Destruction of Medicine

The pace of technological development in biological research is breathtaking. Advances in DNA sequencing technologies are enabling us to completely decode the genomes of all organisms, both rapidly and cheaply. Biology and healthcare have joined the 'Big Data' club that has traditionally been the domain of astronomy and high-energy physics - where genomic data storage is already taking up 10s of Petabytes and will soon generate up to one Exabyte of data! This digital genomic data is revolutionizing our understanding of biology and is providing new and unprecedented approaches to understanding the causes of diseases, including cancers, and how they can be effectively treated. We are steadily moving towards a more individualized approach to classifying disease and targeting treatments – an approach coined 'precision medicine'. It may not be long before we all have our complete genomes decoded and stored as part of our NHS records. I had my own genome sequenced three years ago and have since donated it to a public repository. Many consumers around the world are getting their genomes analysed by companies and such 'direct-to-consumer' genetic testing is becoming very popular, with individuals taking a keen interest in their own genetic 'variants', learning some biology along the way. In this talk I will give an overview of the new genomics technologies and will illustrate how the results obtained can be used to inform lifestyle changes, direct targeted therapies and reveal your ancestry.

Tuesday 28 June

## Professor Kate Galvin

Professor of Nursing Practice, School of Health Sciences

### *'In the Middle of Everywhere': The Intertwining of Rurality, Well-being and Ageing*

When visiting her grandfather's home in rural west England, she exclaimed: "Grandad, you live in the middle of nowhere", to which he replied "No, I live in the middle of everywhere". This interaction is from a phenomenological study that was undertaken as part of a research council funded interdisciplinary collaborative project into older peoples' lives in rural settings: (*Grey and Pleasant Land? An Interdisciplinary exploration of the connectivity of Older people in Rural Civic Society*).

The particular focus I will take is on the meaning of mobility for older people and the significance of this for their transport needs. The emerging findings of our phenomenological study indicate how older peoples' sense of well-being in rural life is particularly connected to a sense of embedded 'at-homeness' in their locality and landscape. It is this intertwining of rurality, well-being and ageing that is

emerging as pivotal for understanding older people's mobility needs. These findings are consistent with a 'dwelling-mobility' theory of well-being in which the meaning of mobility is always in play with the meaning of dwelling. In their experiences of storied places, older people in rural settings may be teaching us about portals, pathways and homecomings that we are in danger of losing in our increasingly decontextualized world.

Wednesday 29 June

## Professor Etienne Wenger-Trayner

Professorial Fellow, School of Applied Social Science

### Research and social learning theory

Learning is often viewed as something individuals do as they acquire information and skills. It is usually associated with some form of instruction, often separated from practice. I will present a different perspective on learning, one that starts with the assumption that learning is an inherent dimension of everyday practice and that it is fundamentally a social process. Learning theory matters to both research and practice. It shapes the questions we ask and what we do to facilitate learning. After briefly introducing some basic tenets of social learning theory, I will present a model of how social learning takes place in communities of practice. It was originally developed as a framework for evaluating social learning. It is now being used as a general tool for facilitating social learning. It also has potential as a mixed method for action research in complex interventions.

Thursday 30 June

## Professor Gillian Bendelow

Professor of Sociology of Health & Medicine, School of Applied Social Science

### **The crisis in emergency mental healthcare: linking 'lived experience' to local and national policy development**

Working in partnership with Sussex Partnership Trust and Sussex Police to explore the high rates of detention by police of severely distressed individuals under Section 136 of the Mental Health Act 1983, a feasibility research project funded by the British Academy and NIHR was able to link the narrative 'lived experience' of sufferers/ service users to emerging good practice across inter-agency emergency mental health responses in Sussex. Instead of being detained in police custody for safekeeping, suicidal and vulnerable people were able to access appropriate help and support, and the research is currently being used to influence policy development at the national, as well as the local level.





# Session Presentations



# Abstracts of Presentations

## Majed Al-Jefri

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Text-based Measures of Information Quality in Health Information

The quality of online health information is important in healthcare. Nowadays, people refer to Internet to ask for everything in their daily life including health information. The Pew Research Centre reported that 72% of Internet users sought health information online in 2012. Furthermore, the emergence of the Web 2.0 technology has transmuted the way that Internet users seek online information including online health information. However, this means any person can easily create a website and produce any content. This includes health websites or health information content on blogs or forums which could be distributed without being carefully verified and that could have a severe influence on people's health. A recent study found that Health Information Quality varied across medical domains and across websites, the study stated that the overall Health Information Quality is still problematic.

Health Information Quality is evaluated using standard instruments with predefined criteria such as JAMA benchmarks, HON code, and DISCERN with which the evaluation is done manually. There is scope to develop a tool that can automatically assess the quality of health documents on the Internet to save time of effort of users. The aim of this research is to demonstrate that Natural Language Processing and machine learning techniques can be used to improve the measurement of information quality in health documents utilizing existing metrics as well as new content-based metrics. We also want to investigate whether such metrics can give a deeper semantic notion of information reliability of health information documents.

**Keywords:** Health Information Quality, Natural Language Processing, online health information, machine learning.

**Supervisors:** Dr Roger Evans, Prof Pietro Ghezzi, Dr Gulden Uchyigit

## Yousuf Khamis Al Mabsali

MPhil, College of Social Sciences  
Brighton Business School

### Reliability of Conventional Financial Statements and Analyst Forecast Errors' UK Corporate Perspective

Since the series of corporate scandals that hit major institutions in the world, the collapse of Enron and WorldCom in US and similarly the failure of other corporations such as Ferranti, Coloroll, British and Commonwealth, BCCI in UK, (Fulgence, 2014). All of these scandals affected the trust and integrity of financial reporting. A number of the prior studies provided empirical evidence that reported earnings are managed intentionally through different tools. Likewise, evidence also was obtained that analysts provide biased earnings forecasts. Most people aware of dot-com bubble in 1990s that hit technological firms industry. During that time the share prices were traded at multiple of earnings. It was claimed that managers provided poor quality of financial reporting and on the other hand analysts

issued aggressive earnings forecast, (Morris, 2008). As Liu and Song (2001) state that analysts contribute highly to the crash by overoptimistic in forecasting earnings for internet firms and consistent results also found by O'Brien and Tian (2006). The aim of this thesis is to explore and determine the tools that are used by UK managers to meet or just beat analyst forecasts post-IFRS and to examine whether UK analysts have any incentives to allow managers to meet or beat their forecasts.

*Supervisors: Mr Robert Hayward, Dr Walter Heering*

## Oday Al-Mamorri

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Seismic upgrading of precast concrete structures using hysteretic energy dissipation devices (HEDDs)

Over the years precast or prefabricated concrete (PC) frames have been extensively used as industrial facilities with one-storey portal frames as the most common structural configurations. The lateral load resisting system of PC frames relies primarily on the response of cantilevered columns. Due to lack of adequate strength, stiffness and ductility at their connections, many PC structures were damaged beyond repair during the 1999 Marmara earthquake in Turkey and the 2012 Emilia Romagna earthquake in Italy. This study proposes a new redesign technique based on the insertion of yielding hysteretic energy dissipation devices of low invasivity at a beam-column connection. This technique will provide a cost effective and practical solution to improve the seismic performance of existing PC structures. A number of parametric studies (using inelastic analysis techniques) will be conducted to investigate the change in performance of the above structures with (upgraded state) and without (original state) devices. The analyses required will be static (pushover) and dynamic (time-history by direct integration using scaled natural accelerograms as seismic input). Furthermore, testing under reversed cycling loading of steel "C-devices" will be carried out to investigate the energy dissipation capacity. Results from these studies will allow the development and validation of a calibration criterion that ensures device activation under the design earthquake to enhance seismic performance.

*Supervisors: Dr Enrique Martinez-Rueda, Dr Kevin Stone*



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## Mana Al Mashreef

MPhil, College of Social Sciences  
School of Sport and Service Management

### Tourism as a Tool for Sustainable Development in Desert Areas: The Case of Najran Region, the Kingdom of Saudi Arabia

This presentation introduces a PhD project in its early stages, and intends to report the aim and objectives of the research, and current progress.

The aim of the research is to determine the contribution that tourism might have for the sustainable development of desert areas, in particular the Najran Region in the Kingdom of Saudi Arabia. This study

has identified some fundamental research questions: Can tourism be considered a sustainable development tool in desert areas, specifically, in the Najran region, KSA? How do key stakeholders (such as government, councils, NGOs, local communities, etc.) view tourism as a potential tool for development in Najran? To what extent are local communities involved in the decision-making process in tourism development in Najran? How might tourism be strategically developed in Najran, to ensure that principles and best practices of tourism development are adhered to? How does the knowledge generated in this study inform wider theoretical paradigms and debates related to tourism development and research, specifically, in desert areas?

Several gaps are evident in research about tourism development. Firstly, knowledge of tourism development in desert areas is scarce, especially in the context of Arab countries. Secondly, a review of the literature revealed a lack of local stakeholder participation, especially women, in decision-making in tourism development. Therefore, the value of this research is in increasing understanding of tourism development in desert areas, and to extend knowledge of how local communities perceive decision-making in tourism development.

Qualitative methodologies will be used to answer the research questions. Although not fully decided, it is likely semi-structured interviews and focus groups will be used to collect data from key stakeholders in tourism development in the Najran region. In this research, it is recognised that positionality will be a key challenge to the researcher due to my employment in the Saudi Commission for Tourism and National Heritage (SCTNH) since its establishment in 2001 to date.

*Supervisors: Dr Clare Weeden, Dr Nigel Jarvis*

## Shafq Al-azzawi

PhD, College of Life, Health and Physical Sciences  
School of Pharmacy and Bimolecular Sciences

### **Bifunctionalisation of the dendronised carrier system with Apo-E peptide and drug used in the treatment of Alzheimer's disease for enhancing blood brain barrier permeability and targeting**

Alzheimer's disease (AD) is a neurodegenerative disease caused by plaque accumulation of abnormal deposits of amyloid- $\beta$  ( $A\beta$ ) in the brain. AD is considered an epidemic with 33.9 million people worldwide suffering from this disease. The development of drugs to combat AD is hampered due to the presence of the blood-brain barrier (BBB). Receptor mediated transcytosis is one of the promising strategies to deliver molecules with low BBB permeability by utilising natural transport route.

This project focusses on the innovative combination of Apo-E peptide integrated into a dendronised drug carrier system with the potential for improved the brain endothelial uptake and targeting. ApoE-derived peptide acts as a ligand that can be recognized by lipoprotein receptors which are widely expressed in brain endothelium. ApoE-derived peptide and dendronised carrier system were synthesised using solid phase peptide method by microwave peptide synthesiser. This carrier system was loaded with one of poorly permeable AD drugs that decrease  $A\beta$ . Immortalised brain endothelial cell has been used as a model for blood brain barrier. This study has demonstrated the successful designing and functionalisation of a biocompatible drug carrier system with the potential to act as novel carrier for improved crossing and targeting the blood brain barrier.

*Supervisors: Prof Matteo Santin, Dr Gary Phillips, Mrs Anna Guildford*



## Bashaer Alhay

MPhil (Physiotherapy), College of Life, Health and Physical Sciences  
School of Health Sciences

### The influence of computer mouse design on the muscle activity, movement and position of the elbow and wrist joints

**Aim:** to investigate the influence of computer mouse design on the posture of the elbow and wrist joints in order to minimise the risk factors associated with WRMSD.

**Methodology:** This study will use an experimental study design with repeated measures. Each participant will be randomly allocated to use three different computer mice and perform a computer game task for 15 minutes. Elbow and wrist movement measurements will be taken using a non-invasive instrument at several time intervals (4<sup>th</sup> minute, 8<sup>th</sup> minute and 12<sup>th</sup> minute). Also, muscle activity of the elbow and wrist joints will be measured using EMG at several time intervals (4<sup>th</sup> minute, 8<sup>th</sup> minute and 12<sup>th</sup> minute). At the beginning, a pilot study will be done to investigate practical experimental issues relating to equipment suitability, identify suitable subject numbers, task detail and choice of mouse design.

**Sample:** convenience sampling approach will be used in this study in order to achieve the required sample size easily.

**Recruitment process:** participants will be recruited via email with an attached information sheet. Flyers will be handed out to students around the campus with the same wording as the email.

**Benefits:** This study will help the manufacturer to improve the computer mouse design in order to fit the computer user's hand and that will help to improve task performance and allow the posture to be in a comfortable position whilst performing the task. In addition, this study may help the clinicians working with patients with WRMSD and clinicians working in ergonomics.

*Supervisors: Dr Lucy Redhead, Dr Martin Bailey, Dr Derek Covill*

## Mehabad S. Ali

MPhil, College of Social Sciences  
Brighton Business School

### Balanced Scorecard, Performance Management and Measurement, and Change in Emerging Nations: an Institutional Perspective on the Case of Kurdistan Region

After three decades of public sector reform and the emergence of New Public Management (NPM) in the developed countries and the various attempts to perform the same movement in the developing countries. Also, the emerging indications by most of the developed countries to go beyond the NPM towards post-NPM is a current issue of argument among scholars. This research project will investigate the public sector reform in Kurdistan Region as a developing country and specifically in the General Board of Tourism. To what extent is the concept introduced and the possibility to go further to post-NPM. Another issue that the research investigates is studying the management accounting change in the same context. This will be investigated through the application of a performance management and measurement tool namely the balanced scorecard. The research adopts institutional theory and

structuration theory and specifically ter Bogt and Scapens framework, and Giddens framework. The analysis of the case study will be done through action research methodology and using observation, focused groups, interviewing and questionnaire methods to better understand the change process.

*Supervisors: Dr Pasquale Ruggiero, Prof Paolo Quattrone*

## **Areej K. A. Al-Jwaid**

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### **Bioremediation of phenol in wastewaters using polymer-supported bacteria**

Phenol is a toxic compound, which is widely distributed into the environment from different sources mainly from effluents of industrial processes. Various bioremediation methods have been achieved to remove toxic phenols, from the environmental waters by using different bacterial strains. However, the higher concentrations can negatively effect on bacterial growth. Therefore, to protect and enhance the potential capacity of bacteria to degrade elevated concentrations of phenols, different strategies have been carried out. Immobilisation of bacterial cells by using different types of macroporous cryogels, that possess specific features have considered as one of supported materials to bacterial growth.

The aim of this research is to develop a new approach based on immobilisation strategies to remove elevated concentrations of phenol from wastewater. In initial experiments, two bacterial strains *Pseudomonas mendocina*, *Rhodococcus koreensis* plus a mixture of both strains, were used to synthesis macroporous cryogels by a cryogelation process. Four different types of cross-linker polymer solutions at different concentrations have been used [GA 0.5% , PVA 1% + GA 0.5% , PVA-al 1% , 0.5% and PEI-al 0.25%, 0.6%]. The cryogel samples were achieved to degrade phenol at concentration 50mg/l in a batch cultures. Samples crosslinked with (PVA-al 1% +PEI-al 0.25%) and (PVA-al 0.5%+PEI-al 0.6%) cross-linker polymer solutions have shown stability and activity to reuse it for 5 weeks.

The preliminary results of SEM, Rheometry tests and phenol degradation experiments are demonstrated that monolithic cross-linked cell cryogels could be promising in generating effective and scalable bioremediation –based systems to eliminate toxic phenols from wastewater.

*Supervisors: Prof Andrew Cundy, Dr Irina Savina, Dr Jonathan Caplin*

## **Nikos Argyropoulos**

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### **An Approach for Designing Secure Business Processes through Model Instantiation**

Abstract: Security is a critical aspect of the business processes utilised by organisations to produce value. To avoid the harmful impact of security shortcomings, organisations should take it into consideration during the early process design stages and align it with their overall strategy. Flexibility and adaptability of the produced process designs are also desired, as a result of the volatile environment in which business process operate. To avoid the need for costly and extensive process redesign efforts, we propose a framework for the derivation of secure business process designs by creating reference models from which process instances can be easily generated. Such reference

models are generated from high level goal models to ensure strategic alignment and provide linkage between the organisational strategy and the operational level. They can then be instantiated to a number of different process designs, which fit specific situational security needs.

*Supervisors: Prof Haris Mouratidis, Dr Andrew Fish*

## Ashley Tya Austin

MPhil, College of Social Sciences  
School of Applied Social Science

### ‘Mad or bad’? Women with personality disorders in crisis and the role of the emergency services

The Mental Health Crisis Care Concordat (HM Government, 2014) has highlighted the need to identify and subsequently address where a particular group or section of society is reaching crisis at a disproportionate rate, or frequently accessing mental health services through involvement with the Criminal Justice System. Research conducted by Bendelow et al (forthcoming, 2016) between 2012 and 2015 has identified that women with a personality disorder diagnosis are overrepresented in figures illustrating repeat detentions under Section 136. Overwhelming histories of sexual abuse/domestic violence and a sense of disenfranchisement from mental health services and abandonment within this group contribute to these recurrent episodes of extreme distress. In depth narrative interviews have revealed that a lack of access to appropriate services and inadequate responses to help-seeking as a result of a dominant perspective of their condition as ‘untreatable’ has led to these individuals becoming trapped in a cycle whereby the only way they feel able to obtain help is through public enactments of extreme emotional distress which lead to police intervention and detention under S136.

The presentation will discuss initial observations from a secondary analysis of these narrative interviews in the context of the intention, direction and approach of this new study, which has emerged out of the wider body of work led by Professor Gillian Bendelow. The study aims to produce new knowledge about how women diagnosed with a personality disorder understand and conceptualise their diagnosis in relation to their life histories and sense of self. It will act to destigmatise and challenge the marginalisation of women in this situation by privileging their voices and contributing to the development of new strategies and appropriate forms of support which are directly informed by ‘lived experience’ and will serve to alleviate severe distress for the women concerned as well as to reduce the burden on emergency services.

*Supervisors: Prof Gillian Bendelow, Dr Katherine Johnson & Dr Hannah Thurston*



Huxley Building, Moulsecoomb campus

## Heather Baid

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Data analysis for a constructivist grounded theory study about sustainability in critical care practice

This constructivist grounded theory study is exploring sustainability within the context of critical care. Sustainability is the capacity for something to exist indefinitely within the limits of financial, social and environmental resources. Due to a limited amount of resources, the NHS has sustainability plans to reduce its financial cost and be more environmentally friendly whilst still meeting high quality care for all (Sustainable Development Unit 2016). It is important to know more about sustainability and critical care practice because critical care is a large consumer of NHS resources. There is also no published research to date asking people who work in critical care about their thoughts and ideas in regards to sustainability.

The research questions for the study include:

- How is sustainability constructed by practitioners working in critical care?
- What are the social processes involved in making sustainability issues a component of critical care practice?

Recruiting for participants began with purposive sampling followed by snowballing and theoretical sampling. Qualitative, in-depth, semi-structured interviewing is the method of data collection with interviews being conducted online or over the telephone. In keeping with grounded theory methodology, constant comparison analysis is being maintained throughout the data collection period which is still ongoing. The purpose of this oral presentation is to provide a brief overview of the data generated for the study thus far leading to a more detailed discussion about how the data is being analysed using constructivist grounded theory approaches (Charmaz 2014) and dimensional analysis (Bowers and Schatzman 2009; Kools et al. 1996).

#### References:

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*Supervisors: Prof Julie Scholes, Prof Janet Richardson*

## Ameer Baiee

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Flexural behaviour of high strength cementitious thin members reinforced with textile fibre polymers

Flexural behaviour of high strength cementitious thin members reinforced with textile fibre polymers. In countries with developed infrastructure, such as the UK, a considerable number of bridges (the most high value asset within the infrastructure) do not meet the modern day safety and serviceability standards due to either deterioration or an increase in traffic demand on them. This highlights the need for strengthening these existing structures since their replacement will not be feasible given the required funds to re-build them. Textile reinforced mortar (TRM) represents a promising material in field of durable construction and strengthening applications and is the subject of this research. In this paper, the results of an experimental program is presented exploring the correlation between the tensile and flexural behaviours of the both high and normal strength cementitious thin members reinforced with different amounts and types of textile fibres. The variables examined within the experimental work included type of fibre (carbon or basalt), reinforcement ratio, and mesh size of textile fibres and compressive strength of the mortar. It was found it was found that the correlation is highly influenced with fibre types in comparison with other investigated parameters.

*Supervisors: Dr Imran Rafiq, Dr Andreas Lampropoulos , Dr Pierfrancesco Cacciola*

## Almas Baimagambetov

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Automated Visualization of Grouped Networks

Modern world is all about data and its interpretation. Over the years data has increased not only in size but also in complexity, requiring new visualization techniques to be devised. By complexity we understand multiple types of relationships that exist between data items: they can be grouped into common sets or form a network. Such type of data is called grouped network data, where network is represented by a graph and groups are represented by curves. Visualization of multiple types of relationships in grouped network data allows data analysts to identify patterns and unveil new information. As the amount of data increases, manual analysis and subsequent visualization quickly become difficult. Automated layout tools can be of great benefit to data analysts when they wish to visualize this type of data. However, existing visualization techniques and software tools produce suboptimal results and provide limited support to data analysts in their attempt to visualize grouped network data. Previous research suggests that layouts produced by existing techniques can be improved if the curves and the lines were visualized simultaneously, as drawing one before the other compromises the layout of the latter. This paper presents an algorithm that addresses some limitations seen in the existing layout tools. The paper also introduces a potential approach for generating effective layouts for grouped network diagrams. This approach can be seen as a foundation for developing a novel layout technique which visualizes both aspects of grouped network diagrams simultaneously.

*Supervisors: Prof John Howse, Mr Aidan Delaney, Dr Gem Stapleton*

## Kevin Barrett

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Power Imbalances in Educational Research

Recruitment issues in research pose serious threats to both the internal and external validity of studies. Despite these concerning implications, recruitment issues are argued not to receive due attention (Gul & Ali 2010). Studies often mention the number of participants who decline to participate; however, the majority of the studies often fail to mention the specific reasons behind insufficient recruitment or retention of the participants. This is likely to remain an under-represented element of the literature due, in part, to ethical constraints. This lack of data poses the risk of researchers not appreciating the dynamics behind under-recruitment and thus not recognising some of the avoidable errors inherent with this phase of research practice.

This presentation addresses some of the theoretical issues surrounding recruitment to research ventures and some of the possible solutions and compromises inherent within them as experienced within an actual project. It also considers the range of impacts that poor recruitment can result in.

*Supervisor: Dr Nina Dunne*

## Rosalie Barrett

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Physiotherapists' lived experiences of working in rapid response teams

Accident and emergency (A & E) departments are facing their most challenging period for more than a decade in the UK. Rapid response teams (RRTs) have been set up to help alleviate this crisis. RRTs are now working alongside GPs and other community health professionals and the ambulance service to reduce the burden on A & E. They aim to provide a swift response, particularly to home-based patients who have health and social care needs thereby reducing the pressure on other health services and decreasing admissions.

Physiotherapists, along with other non-medical professionals, are now finding themselves working in emergency care in the community within RRTs. There is a paucity of evidence looking at physiotherapists working within this clinical setting. Current research is focused on the effectiveness and impact of the team as a whole, rather than considering the physiotherapist individually or their experiences of working in such a team.

A better understanding of working in RRTs as an experience lived-through by the physiotherapist, may have implications for practice, and could include insights into training and education and the role of physiotherapists within RRTs.

This presentation will consider any initial findings and discuss the journey so far.

*Supervisor: Dr Clair Hebron*

## Jay Beichman

MPhil (Counselling and Psychotherapy), College of Social Sciences  
School of Applied Social Science

### Therapy Wars: Pluralism, Contentious Issues, and Diplomatic Attempts at Resolution

Using the method of thematic analysis (TA) I have transcribed 9 interviews with 9 therapists from different 'schools' (3 person-centred, 1 person-centred / brief solution-focussed therapy, 1 humanistic, 1 integrative, 1 humanistic-integrative, 1 transactional analysis, 1 pluralistic).

I am in the preliminary stages of developing my analysis so this presentation will explore descriptions and initial interpretations of how the participants discussed the themes I have provisionally identified as relevant to my question/topic of how therapists make sense of pluralistic approaches to therapy.

From the transcriptions I have identified a major theme around what have been described in existing literature (both grey and academic) as 'Therapy Wars' (theme 4), conflicts both external and internal, focussed, for the most part, on issues of superiority/inferiority of different therapeutic approaches. I have further interpreted from the interview data that participants discussed three major 'contentious issues' that fuel the therapy wars: 'Identity and Approach', 'Horses for Courses or One Size Fits All?: The Flexibility-Rigidity Continuum' and differences of opinion around the notion that 'It's the Relationship' (themes 1-3). Participants also discussed what might be seen as 'diplomatic attempts at resolution' - associated with aspects of pluralistic approaches - of these wars through 'The Practice of Metacommunication', toleration or not of different positions along 'The Uncertainty-Understanding Continuum' and 'Common Factors' (themes 5-7).

*Supervisors: Prof Di Waller, Dr Graham Stew*

## Kimberley Belle

MPhil, College of Social Sciences  
Brighton Business School

### The Impact of the Relationship between Learning and Development and Personnel with Dyslexia, on SME Development

Small and medium-sized enterprises (SMEs) despite their small-scale output, relatively high production costs and simple organisational structure, have consistently bred government interest by reason of their ability to fuel innovation and stimulate economic growth. Although innovation consciousness is one of the key instruments for determining entrepreneurial success, it is dependent on a firm's ability to preserve organisational knowledge and manage key resources such as personnel.

Innovation conscious SMEs are known for practising Human Resource activities of an informal nature, which allow them to actively adapt to their changing environments, and expand their portfolio of products and services by acquiring knowledge from informal learning experiences. While robust knowledge comes from experiential learning, the probability of informal learning having the ability to promote knowledge retention and transfer, has been found to be lower than learning that is acquired through activities which are constructed with intentional learning outcomes in mind.

The incorporation of formal and informal learning practices, therefore has the potential to create a dynamic learning experience for employees that is more flexible, easily transferable and financially strategic. Resultantly, the facets, advantages and disadvantages of formal and informal learning require significant consideration when designing and delivering learning mediums that meet all employees' training needs and support learner participation, as innovation conscious SMEs tend to consist of highly skilled employees who are important to business innovation and success. The neglect of consideration for these personnel, particularly individuals suffering with dyslexia, can hinder the effective access and usage of learning and operational systems.

The following research is therefore seeking to qualitatively explore whether experiential learning which is an intangible asset of SMEs, can be utilised to create learning interventions that are equally advantageous to the personnel development of individuals with dyslexia, as well as the development of innovation mindful SMEs.

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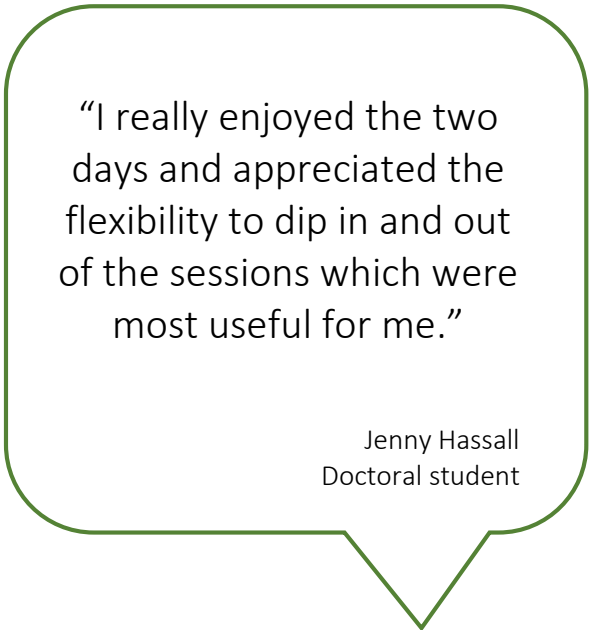
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Supervisors: Dr Susan Greener, Dr George Tsekouras



"I really enjoyed the two days and appreciated the flexibility to dip in and out of the sessions which were most useful for me."

Jenny Hassall  
Doctoral student



## Jane Birch

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Impact of the invasive non-native species *Hydrocotyle ranunculoides* L.f.(Floating Pennywort) on native macrophyte communities

*Hydrocotyle ranunculoides* L.f. (Floating Pennywort) is an aggressively competitive aquatic plant species in the family Araliaceae and native to South America. It is invasive and non-native in the United Kingdom, Europe and many countries worldwide. It has a large capacity for vegetative spread and dominance of waterways causing considerable problems for their ecology and costing £25 million annually in recreation losses and management costs in the UK and Europe. The study site, Pevensey Levels in East Sussex, has three statutory designations; SSSI, SAC and Ramsar and is particularly species rich in macrophytes (aquatic vascular plants) but 10% (45km) of the watercourses are infested by *H. ranunculoides*. This research is investigating the impact of *H. ranunculoides* on native macrophyte communities to determine if it can be managed in an effective and sustainable way.

*H. ranunculoides* on the Pevensey Levels is managed either by mechanical means only or mechanical means followed by chemical spray. Macrophyte communities on 60 sample sites, both infested and non-infested, are being monitored and nutrient levels and environmental variables measured in the sediment and water. Trends in nutrients and environmental variables in relation to *H. ranunculoides* presence and the management methods are discussed. Observational and photographic evidence of the first germination and seedling growth of *H. ranunculoides* in the UK will be presented. The implications for future spread and management of the species as a result of the ability to reproduce from seed as well as by vegetative means will be discussed.

Keywords: *Hydrocotyle ranunculoides*, Floating Pennywort, invasive, non-native, macrophyte communities, germination

Supervisors: Dr Chris Joyce, Dr Gary Bilotta

## Narmeen Bokhari

PhD, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Addressing the Search Skills Gap: Helping Researchers in Less Developed Countries to Conduct Better Online Research with a Subject-specific Search Tool and Skill-improving Policies

Performing online research effectively and efficiently is a skill that needs to be learnt and honed through experience, Universities teach online skills courses to under-graduate students as a matter of routine, and many offer online research skills courses for PhD students (Heine and O'Connor, 2014). With experience, search behaviour undergoes changes such as decreasing search-by-subject queries and increasing keyword-based searches (Chu and Law, 2007). It cannot be assumed that students arrive at their universities with a full set of online research skills.

We investigate the substantial gap between the ability of researchers in developed countries to do their research online and the severely restricted ability of researchers in less developed countries to do the same, to address the gap, we looking at Saudi Arabia as an example of a less developed country,

and the UK as an example of a developed country. I have also selected Microbiology as an example research field to ground my studies and evaluation experiments.

The long-term solution is likely to be systematic programs for teaching students digital information literacy (Training researchers in conducting more efficient and effective online research), but in the research reported here we investigate the extent to which the online search skills gap can be ameliorated in the short term by applying simple NLP techniques such as document classification, clustering and re-ranking, TESSIS (A Tool for Enhanced Subject-Specific Internet Search), it is an add-on tool for improving internet search results for researchers, with example application to Microbiology), applied as a post-process to the search results produced by a generic web browser.

*Supervisors: Dr Anja Belz, Dr Roger Evans*

## Cristina Boscarol

MPhil, College of Life, Health and Physical Sciences  
School of Computing Engineering and Mathematics

### Drop impact onto porous surface: scale effects

**Introduction:** In this work the isothermal impact of drop on a porous surface is investigated. The study of drop impact, spreading and rupture, has an evident relevance in different fields. The outcome of a drop impact can be well predicted for smooth surfaces, but the effects of surface porosity and roughness on droplet impact are not well understood.

Roisman et al. [1] developed a model describing the different regimes of splashing thresholds by analysing two substrate characteristics: roughness and porosity. They proposed an experimental map obtained by different combinations of Reynolds, Weber numbers and surface roughness, concluding that the two most significant parameters influencing the prompt splash-position are Weber number and a ratio given by two geometrical characteristics linked to roughness. They found more difficulties in describing the experimental results about impact onto porous substrates due to irregular morphologies of the target, and the addition of several parameters to the problem, such as substrate porosity and pore diameter. They observed that in this case deposition without splash is more probable. This outcome may be due to a rapid, partial penetration of the drop into the target but further work is needed to clarify this phenomenon.

This research aims at defining a map of regimes to describe the different kind of outcomes given by drop impact, for different combinations of pore dimension, impact velocity, drop radius, liquid surface tension and viscosity.

Pore dimension is defined as the mean pore diameter. In order to identify the different regions of the transition map, it was chosen to make reference to the dynamic ( $p_d$ ) and capillary ( $p_c$ ) pressures

$$p_d = \frac{1}{2} \rho v_i^2 \quad p_c = \frac{\sigma}{D_{pore}} \quad (1)$$

where  $\rho$  is the density of the droplet,  $v_i$  the impact velocity,  $\sigma$  the surface tension and  $D_{pore}$  the mean pore diameter. The flow characteristics are mainly described thanks to the dimensionless Weber and Reynolds number [2]

$$We = \frac{\rho d v_i^2}{\sigma} \quad Re = \frac{\rho d v_i}{\mu} \quad (2)$$

where  $d$  is the droplet diameter and  $\mu$  the liquid viscosity. In defining a dimensionless number given by the ratio between drop diameter and pore diameter,  $\frac{d}{D_{pore}}$ , the purpose is to observe if at the same value of this number, the same outcome in terms of impact outcome results. By clarifying the roles that the dimensionless diameter has on the impact outcome, without avoiding the effects of impact velocity and liquid characteristics, a more thorough prediction of drop impact outcome on complex surface could be achievable.

**Material and methods:** The experiments carried out in this study consisted of drop of water impacting on stainless steel meshes purchased from Plastock, with a mean pore size ranging from 25 to 425  $\mu\text{m}$  and a thickness ranging from 25 to 125  $\mu\text{m}$

A combination of different surface materials and liquids is necessary in order to study their respective influence. In order to avoid elasticity due to the thin thickness of the meshes, it was necessary to carefully attach the meshes to a flat surface. The optical setup included a Photron Fastcam SA4 high speed camera (with a resolution of 1024x800 pixels), and angled at 61°. The test area was illuminated using a custom-built high-speed LED light source, synchronised to the high-speed camera.

The drops were generated using a 21 gauge needle, with inner diameter 514  $\mu\text{m}$  and outer diameter 819  $\mu\text{m}$ .

**Results and Discussion:** By reporting a transition map with respect to  $\frac{p_c}{p_d}$  and the Weber number, the experiments are aimed at outlining the different drop impact regimes. At lower values of impact velocity ( $p_c > p_d$ ) deposition occurs, otherwise, increasing the value of impact velocity ( $p_d > p_c$ ) an imbibition is obtained. Kumar et al. [3] pointed out that the overall imbibition is influenced both by the material of the porous media and capillary and showed that increasing drop size brings to a slower imbibition. The third region describes the splashing threshold, reached by a further increase of impact velocity. The general trends of impact outcomes given by the present work are shown in the video sequences below.

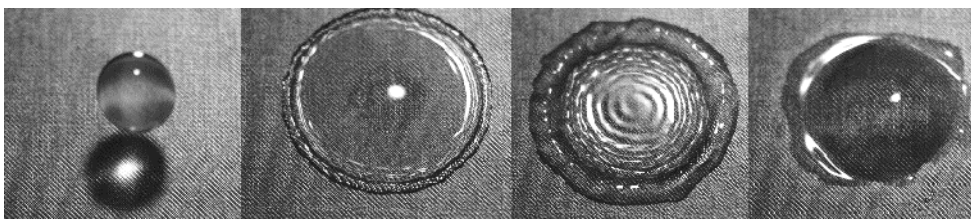


Figure 1. Deposition outcome:  $d = 3,02 \text{ mm}, v_i = 2,04 \text{ m/s}, D_{pore} = 25 \mu\text{m}$

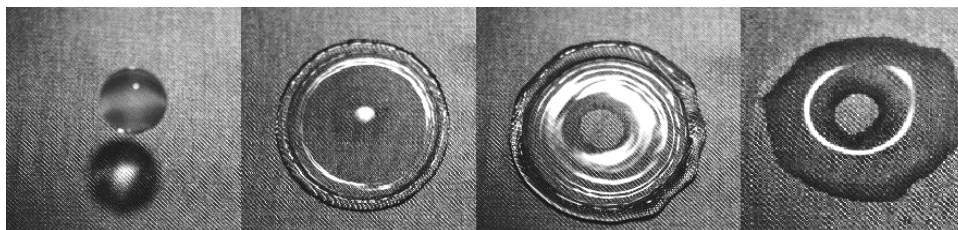


Figure 2. Partial imbibition outcome:  $d = 3,01 \text{ mm}, v_i = 2,04 \text{ m/s}, D_{pore} = 25 \mu\text{m} \rightarrow$  Same impact parameters, different outcome.

## Nomenclature

$p_d$	Dynamic pressure [Pa]
$p_c$	Capillary pressure [Pa]
$\sigma$	Surface tension [N/m]
$\rho$	Liquid density [kg/m <sup>3</sup> ]
$D_{pore}$	Pore diameter [m]
$d$	Droplet diameter [m]
$v_i$	Impact velocity [m s <sup>-1</sup> ]
$We$	Weber number
$Re$	Reynolds number

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*Supervisors: Dr Dipak Sarker, Dr Cyril Crua, Prof Marco Marengo*

## Gigliola Brintazzoli

MPhil, College of Social Sciences

School of Applied Social Science

### Technology, care and a sense of home

Using an ethnographic approach, 16 older people aged 61-95 living in East Sussex, all using one or more telecare devices provided by a local telecare provider, not affected from severe cognitive impairment and not too ill or distressed to take part in the research project, were interviewed and observed in their own home during a period of six months. The study was guided by the domestication theory, a conceptual framework in Science and Technology Studies and Media Studies that describes the processes by which new technology is 'tamed' or 'appropriated' by its users. The domestication theory, particularly wellsuited with a qualitative approach, provides a potentially important theoretical framework for understanding technology use within everyday contexts, such as the home. In particular, Silverstone & Hirsch (1992) identified four non-discrete stages of the domestication model (*appropriation, objectification, incorporation and conversion*). Using Thematic Analysis, the first stage is currently being analysed. Five themes, related to the *appropriation* stage, have been already identified: 1. Triggering event (a significant event influencing the adoption of telecare); 2. General wellbeing of the older people using telecare (mental and physical health); 3. Family, friends and neighbours' influence on the adoption of telecare; 4. Specific telecare devices used by the older people; 5. Knowledge of how telecare works. The next step will involve analysis of the remaining three stages.

Keywords: older people, care technologies, telecare, home, domestication approach

*Supervisors: Prof Flis Henwood, Dr Dave Harley*

## Paul Calleja

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Hospitalisation of Heart Failure Patients: Informal Carers' Changing Role

**Rationale for research:** Informal carers are considered key shareholders in the recovery of Heart Failure (HF) patients. The shift in responsibility of care to informal carers may be burdensome. Furthermore, patients and informal carers are generally unprepared for the hectic and 'unfriendly' environment that hospitals offer and this experience may adversely affect the role of the primary care giver once the HF patient has been discharged after a period of hospitalised care. It has been found informal carers felt a change in their role when their relatives were admitted to hospital; this could affect their decision making ability, participation in care and increase their burden.

**Aim:** The aim of the study is to determine in how the hospitalisation of HF patients impact informal carers and explore the importance of informal carers for HF patients while hospitalised.

**Methodology:** A constructivist approach to grounded theory will be used.

**Methods:** Data will be collected using face to face, semi-structured, in-depth interviews. A process of constant comparative analysis of the data will be used throughout the data collection period. The strategies of constructivist grounded theory will guide the analytical process and will include initial coding, focused coding and theoretical coding. The approach will also be guided by the principles of theoretical sampling, saturation, sensitivity and theory building set out by Charmaz.

**Sample:** It is expected that the sample will consists of 15-20 informal carers and HF patients who have had one or more hospital admission in the last 6 months due to exacerbation of HF. Theoretical sampling will then be used which may involve interviewing different participants such as more patients and informal relatives or using multiple interviews with the same participants or health care professionals. Subsequent application will be made where the sampling requires further ethical review.

**Timescale for the research:** January 2016-December 2017

**Likely impact:** In determining, the experiences of informal carers in this role, policies and procedures can be developed in order to address the specific needs of this population

*Supervisors: Prof Julie Scholes, Dr Nina Dunne, Dr Joseph Trapani*

## Daire Cantillon

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Brighton and Sussex Medical School

### Modelling drug-tolerant mycobacterial sub-populations using a low shear, micro gravity culture system

**Background:** Tuberculosis (TB) is a bacterial disease that primarily infects the lungs which is caused by the bacillus *Mycobacterium tuberculosis* (*M.tb*). Approximately 1 in 3 people are infected globally with 1.5 million people dying from TB in 2014 alone. Extended treatment times (>6 months) with at least

four antimicrobial drugs are required so as to remove sub-populations of *M.tb* that persist throughout the drug therapy. Despite the hypothesised clinical significance of drug tolerant *M.tb* sub-populations *in vivo* current drug development models for TB fail to account for these complex mycobacterial populations. This project aims to develop an *in vitro* culture system that represents the *M. tb* sub-populations present in the human lung, at which chemotherapy is targeted.

**Material/methods:** This work utilises a three-dimensional Rotary Cell Culture System (RCCS) to model mycobacterial growth in low shear conditions. *Mycobacterium bovis* (*M. bovis*) BCG was cultured in the RCCS using a growth protocol optimised to induce biofilm formation alongside non-rotating control cultures that did not form biofilms. *M. bovis* BCG biofilms were harvested after 21 days, homogenised to single cell suspensions and subsequently utilised for Antimicrobial Susceptibility Testing (AST). Mycobacteria derived from biofilm and control cultures were incubated with a range of concentrations of isoniazid, streptomycin or rifampicin for seven days at 37°C and cell viability quantified using cellular ATP levels and cellular metabolic activity to establish whether mycobacteria grown as a biofilm were more tolerant to first line *M.tb* drugs. In addition, the bacterial cultures used in the AST assays were passaged three times in antimicrobial-free media before repeating the AST assays to establish if the basis for drug tolerance is phenotypic origin, or genotypic.

**Results:** Planktonic *M. bovis* BCG derived from the RCCS-biofilm model exhibited isoniazid and streptomycin but not rifampicin drug tolerance compared to control planktonic cells. Subsequent passaging of drug-tolerant bacilli derived from the RCCS biofilms and controls in antimicrobial-free media showed that the observed drug tolerance of RCCS derived biofilm cells is of phenotypic rather than genotypic.

**Conclusions:** The growth of *Mycobacterium bovis* BCG as a biofilm induces an isoniazid and streptomycin drug-tolerant phenotype. This suggests that this low shear *in vitro* model may more accurately represent *in vivo* drug-tolerant *M.tb* populations than traditional *in vitro* models. Further understanding of the physiological state of mycobacteria in models that mimic the *in vivo* environments of the human lung will contribute to novel drug development strategies.

*Supervisors: Dr Simon Waddell, Prof Melanie Newport, Dr Ian Cooper*

## E Kathryn Carver

PhD, College of Life, Health and Physical Sciences  
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### Biographical Restorying following a heart attack

Coronary heart disease remains a leading cause of death and chronic illness in the world and addressing lifestyle risk factors by undertaking health related behaviour change is a key component of managing this condition. Knowledge and information to support health related behaviour change can come from any number of sources and behavioural psychology theories such as self-efficacy, self-knowledge and illness belief have been identified as influential in achieving successful health related behaviour change in those with coronary heart disease. However the evidence suggests we lack an understanding from the patient's perspective of the ways in which this information is used to support health related behaviour change. An increased understanding of the social processes and interactions which are utilised when gaining and interpreting this knowledge could help explain their role in influencing health-related behaviour change after a heart attack. This study seeks to explore these issues through the principal question: What are the social processes and interactions influencing health related behaviour change after a heart attack?

Data collection and analysis took place concurrently and iteratively utilizing a constructivist approach to grounded theory methodology. Semi-structured interviews were conducted with 12 individuals who had experienced a heart attack. Each participant was interviewed twice; between three and six weeks after their heart attack and again at six months after their heart attack. Analysis began during data collection and involved the constant comparison, categorizing and conceptualizing of data through a series of inductive, deductive and abductive cycles. Memos were used to record potential theories and to provide an audit trail for the emerging theory. A Symbolic Interactionist framework facilitated an increased understanding of how, the life story of those who have experienced a heart attack is shaped through interaction with those in the social world.

The findings suggest that undertaking health related behavior change is dependent on the bodily manifestations experienced after a heart attack and that change may be voluntary or enforced as a consequence of whether the bodily manifestations are perceived as a sign of health or ill-health. Behavior change is influenced by internal factors such as levels of confidence, individual perception of their state of health and the limitations to their daily lives as a consequence of their heart attack. External factors such as health care professionals, family and friends and media sources provide information which further influenced the internal factors as the individuals begin to make sense of and live with the consequences of having had a heart attack.

The emergent substantive theory proposes that human beings create stories of their lives which have to be adapted after a major life event such as heart attack. The theory identifies four narratives in which life is enhanced, limited, inhibited or unchanged by the heart attack. Through interaction with others, interaction with the self to make sense of the situation and undertaking health related behavior change their stories adapt to incorporate the impact of the heart attack.

The study should offers additional information on the factors influencing health related behavior change after a heart attack and provides further insight into the types of interventions that would support individuals in this situation to undertake health related behavior change.

*Supervisors: Dr Nikki Petty, Dr Alec Grant*

**Toby Chown**

**MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences**

**Time for a new story? A narrative inquiry into how children affected by family alcohol and drug problems use the arts within therapy**

Misuse of alcohol and drug continues to be a major social and public health problem. The NHS estimate that 9% of men and 4% of women in the UK show signs of alcohol dependence. Alcohol and drug problems cause difficulty not just for the individual but for everyone around them. Point estimate 1 in 11 children live in a family with alcohol problems. Children affected by family alcohol or drug problems have been described by clinicians as at a higher risk of a variety of social problems including depression, anxiety, poor academic achievement and co-dependency within relationships. Brighton Oasis Project offers children of families affected 16 sessions of arts based therapies. I work as a dramatherapist there. This piece of insider practioner research offers children the opportunity to take part in the research project. Children will be invited to create a story about a child coming to therapy. The stories

will be collected and made into a young person's document by an advisory panel of young people. The other output will be an academic paper. Using narrative analysis, the paper will look at the stories the children have created, comparing and contrasting them with broader clinical and academic narratives about children affected by alcohol and drug problems. It will seek to give voice to a group that is often unrepresented and to understand more about using the arts within therapy with this group.

*Supervisor: Dr Alec Grant*



Edward Bawden, Brighton Pier, 1975, University of Brighton Aldrich Collection

## Charlotte Clee

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

**Community Mental Health Nurses' experience of working with young people who have previously attempted suicide- a phenomenological study within Child and Adolescent Mental Health Services (CAMHS).**

Globally, Suicide is the second leading cause of death amongst 15-29 year olds (World Health Organisation 2014), and studies have found an association between suicide attempts and later mental health difficulties in young people (e.g. Groholt & Ekeberg 2009). The Royal College of Nursing has called for further investment in community services due to increased rates of attempted and completed suicide in the community (Primary Health Care 2015), and the National Institute for Clinical Excellence (NICE 2004) outline the 'emotionally demanding' role of caring for this client group, as well as the skill set required. Despite the growing concern regarding suicide attempts in the community, and the increasing pressures on community teams to manage this risk, there is a dearth of existing research exploring this phenomenon. Current literature has instead largely focused on the inpatient mental health nurses' experience of managing suicidal risk with patients on the ward (e.g. Takahashi et al 2011; Bohan and Doyle 2008).

Therefore, the current study aims to explore the community mental health nurses' (CMHN) experience of working within Child and Adolescent Mental Health Services (CAMHS), with regards to their lived experience of working with, and managing the safety of, young people (<18 years) who have previously attempted suicide. These insights will be sought through conducting qualitative interviews with CMHNS' currently working within a CAMHS community setting, using the methodology and methods of Interpretative Phenomenology. It is hoped that insights drawn will influence further research in this area and ultimately, improved services for young people alongside better working conditions for CMHNS'.

*Supervisor: Dr Kay Aranda*



## Philippa Coales

PhD, College of Life, Health and Physical Sciences  
School of Health Sciences

### **An exploration of perceived contributory factors and prevention of work-related spinal disorders (WSD) in the physiotherapy profession**

**Aim:** Create a theory regarding perceived causes and prevention of WSD in the physiotherapy profession.

**Background:** Prevalence rate of WSD in physiotherapy in various clinical and geographical areas is approximately 35% and has not altered over the last two-and-a-half decades.

**Methodology:** The study uses constructivist grounded theory methodology. Interviews, initially based on analysis of current literature, then iteratively on themes from previous interviews, were audiorecorded and transcribed. 2 pilot interviews were videoed for training purposes. Analysis of pilot interviews showed similar findings and were incorporated into the main study. Initial analysis was line-by-line coding directing further data requirements, focusing data collection and participant recruitment. NVivo assisted data analysis and data storage. Focused coding synthesised initial codes grouping them into categories. Further analysis, with constant comparison of codes and categories, will allow theoretical coding from which a theory will emerge.

**Recruitment and Sample:** 16 participants, who met the inclusion criteria, were purposively recruited from physiotherapists in a NHS Health Board in Wales. Subsequent theoretical sampling selected additional participants.

**Findings:** The participants consisted of 12 female and 4 male with age range 24 to 57, who represented NHS career bands 5 to 8b and many clinical speciality areas.

Themes regarding contributory factors to WSD included manual handling, pressure of work, type of patient, changes in working style, personal lifestyle and fitness to practice.

Themes regarding reduction of risk included staffing levels, adequate rest periods and facilities, fitness to practice and personal responsibilities.

**Expected outcomes:** Improved understanding to enhance the future safety of physiotherapists.

*Supervisors: Dr Virginia Jenkins, Dr Angela Benson*



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## Sharon Colebrook Hutchens

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### **The lived experience of women who have anal incontinence following a vaginal delivery**

Perineal trauma sustained in childbirth can result in connective tissue damage, neuropathy and muscle injury which contribute to the development of urinary incontinence, anal incontinence and uterovaginal prolapse.

Faecal incontinence has been shown to have a significant impact on quality-of-life scores, but it has been suggested that qualitative enquiry may provide greater depth to understanding the true impact and meaning of anal incontinence to the individual's health and well-being.

Based on the literature search only two studies were found exploring the experience of women with anal incontinence following delivery. Both studies were conducted outside of the United Kingdom and recruited women within the age range of 26-56 years, indicating that for some of the women, the delivery of their baby had taken place some years prior to the interview.

The aim of this study is to explore the early (less than 12 months) postnatal experiences of women who have anal incontinence following a vaginal delivery, taking an existential phenomenological approach.

Participants will be purposefully recruited from members of local National Childbirth Trust groups, postnatal exercise groups and one Sure Start centre. Two participants have been recruited to the study.

Face to face, interviews will be conducted, they will be voice recorded and transcribed verbatim. The interviews will take an open, in-depth structure to allow potential new themes to be revealed. The transcribed interviews will then be analysed based on the phenomenological method developed by Giorgi (2009) and will be underpinned with the philosophy of Merleau-Ponty.

It is hoped that the results will add to the evidence base and contribute to improving care for these women.

*Supervisor: Dr Pirjo Vuoskoski*

## Madeleine Conaghan

PhD, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### **Reducing the Cognitive Demands on the Driver from the In-Vehicle System**

This PhD investigates the cognitive demands placed on the driver from the in-vehicle system and how they can be reduced through Human Factors Design. There has been a 257% increase in in-vehicle system features over the past 40 years and with implementation of new technological advancements this number is set to rise to 329% over the next 15 years. Research is needed around this subject area to reduce the number of human error related deaths on the road as the percentage of the population involved in road incidents has increased by 11% since 1995.

The research is split into three studies to explore the effect of increased technology within the in-vehicle system and how to present information effectively through in-vehicle displays to limit cognitive load on the driver. The three studies look to build on each other to reduce the cognitive demands that the driver experiences.

Study 1 analysed the quantity and nature of the glances and interactions with the dashboard and centre console from a real-world driving study. The study revealed that the type of information presented may be more demanding than the location it comes from. Study 2 looks to quantify the cognitive demand of the tasks established in study 1 through multiple interfaces. The final study looks to build on the knowledge from the previous studies and follows the design process to reduce the cognitive load through design. The proposed solution will be measured for effectiveness using the same objective measures as Study 2.

*Supervisors: Dr Eddy Elton, Dr Periklis Charchalakis, Dr Elias Stipidis*

## Jonathan Dale

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### The hydrodynamic and sedimentation processes in a new, anthropogenically constructed, intertidal environment

Intertidal saltmarsh and mudflat environments provide numerous benefits to society through a range of ecosystem, economic and cultural services including coastal flood defence, species diversity and recreational opportunities. These environments are under threat from human activities such as land reclamation, climate change and sea level rise. To compensate for the loss of intertidal habitat previously defended sections of coastlines are being inundated to create new areas of saltmarsh and mudflat with new defences being constructed inland, a process known as managed realignment (French, 2006). However, managed realignment sites have been identified to have different ecological characteristics to natural environments (Spencer et al., 2012). These differences could be due variations in hydrodynamic and sedimentation processes, although little is known about these processes in newly created intertidal environments.

This study presents high frequency long term measurements of the hydrological and sedimentation patterns at the Medmerry Managed Realignment Site, UK, the largest open coast realignment site in Europe. Results provide an insight into the evolution of a newly created estuarine environment, evaluating the influence of anthropogenic and natural controls on the sediment regime.

Results are used to assess the influence of site engineering and design on the evolution of the newly inundated intertidal system. This study has implications for similar habitat recreation schemes and managing hydrodynamic and sedimentological processes in heavily engineered estuarine environments.

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FRENCH, P. W. 2006. Managed realignment - The developing story of a comparatively new approach to soft engineering. *Estuarine Coastal and Shelf Science*, 67, 409-423.

SPENCER, T., FRIESS, D. A., MOELLER, I., BROWN, S. L., GARBUTT, R. A. & FRENCH, J. R. 2012. Surface elevation change in natural and re-created intertidal habitats, eastern England, UK, with particular reference to Freiston Shore. *Wetlands Ecology and Management*, 20, 9-33.

*Supervisors: Dr Heidi Burgess, Prof Andrew Cundy, Prof Callum Firth*

## Sarah Elliott

Professional Doctorate (Physiotherapy), College of Life, Health and Physical Sciences  
School of Health Sciences

### Physiotherapy seven day working and practice based education

As Physiotherapy services change, the CSP advocate that it is vital for different types of student placement practice placements to emerge to prepare graduates for new ways of working. Many physiotherapy services are already providing a seven day service, with extended hours or twilight services and more will develop over the coming years due to it being highlighted as a key objective in the NHS plan. So student placements may be offered across a seven day week instead of the traditional five, and may extend later in the evening with some students experiencing a 12 hour shift pattern. This is a new experience for both physiotherapy students, practice educators and universities and currently little literature exists on this topic. My research utilising hermeneutic phenomenology has explored the experiences of physiotherapy students, practice based educators and university link tutors. Early data analysis indicating three key themes:

- Communities of practice support, facilitate and aid the development of practice based education in a seven day model of working.
- The workplace culture and environment is a major influencing factor on practice based learning in a seven day model of working.
- Experiential learning in a seven day model of working is significant in being and becoming a physiotherapist.

I will share my journey of data analysis, the ups and downs, the tears and tantrums! I will begin to discuss these themes in relation to current literature and the potential impact it may have on practice.

*Supervisors: Dr Angela Glynn, Dr Jenny Elliott*

## Jeremy Evans

PhD, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Critical Community Engagement in the Community Seagrass Initiative

Internationally Seagrass is declining by 7% per annum. The debilitation of an ecosystem that is a greater carbon sink per acre than the amazon, and supports 70% of commercial fish species in the UK, needs rapid national and local reaction. The Community Seagrass Initiative is a citizen science project aiming to raise awareness of Seagrass habitats in the South West of England. However while the programme describes itself as a community engagement project, its marine biologist team lack the methodologies and resources to initiate any community response beyond mapping by qualified volunteer divers from around the country.

To support the aim to engage coastal communities with their special marine habitats to promote conservation, this research will use a mixture of community voice and interviews to facilitate adaptive management solutions in the proximal communities. Working in Looe and Cawsand in Cornwall, The Plymouth Sound, Brixham and Salcombe in Devon alongside Weymouth in Dorset, the different socio economic and demographic challenges have not been considered.

Developing participatory anchoring impact assessment with local boat users will elicit changing attitudes and behaviours. Whilst mapping the Seagrass habitats and species levels is an important first step, creating community ownership through educative outreach in local groups will consolidate the growth and health of these habitats into the future. Visual elicitation in these communities will bring these hidden spaces to life, in places where their existence is contested, unknown, and undervalued.

*Supervisors: Prof Andrew Church, Dr Samer Bagaeen*

## Eugenio Gamba

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Fast-timing measurements using LaBr<sub>3</sub>:Ce detectors coupled with GAMMASPHERE

Many different mathematical models have been developed in the last decades aiming to describe the behaviour of atomic nuclei, but none of them is applicable across the entire nuclear chart. Lots of experimental data need to be collected in order to help scientists in finding a more generic model. An experiment was performed at the Argonne National Laboratory (USA) between December 2015 and January 2016, with the purpose of understanding the structural evolution of nuclei in the mass number  $A \approx 110$  and  $A \approx 150$  regions. The aim of the experiment was to measure the lifetimes of the lowest lying excited states of nuclei in these regions in order to get information about their shape. The nuclei of interest were produced through the spontaneous fission of <sup>252</sup>Cf and gamma rays emitted from the fission products were detected using GAMMASPHERE (an array of 51 Germanium detectors) and 25 Lanthanum Bromide (LaBr<sub>3</sub>:Ce) detectors. Lanthanum Bromide detectors are able to give access to lifetime measurements in the sub-nanosecond range while Germanium detectors have a very good energy resolution ( $\approx 2$  keV at 1333 keV). This was the first time that the GAMMASPHERE array was successfully coupled with an array comprising such a large number of LaBr<sub>3</sub>:Ce detectors.

My presentation is an overview on the experimental setup and the logic behind the acquisition system. Some preliminary results will be shown in order to prove the effectiveness of this arrangement.

Work at ANL is funded by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under Contract Number DE-AC02-06CH11357. This research used resources of Argonne National Laboratory's ATLAS facility, which is a DOE Office of Science User Facility.

*Supervisors: Prof Alison Bruce, Dr Zsolt Podolyák*

## Hasan Gilani


MPhil, College of Social Sciences  
School of Sport and Service Management

### Impact of corporate brand identity on employee brand citizenship behaviour: UK retail sector

The last 50 or more years have seen a great interest from academics and practitioners towards the subject of corporate branding and corporate brand identity (CBI) constructs (Balmer and Greyser, 2006, Melewar et al. 2012). It has been identified within corporate identity literature (Bruman et al, 2005; Punjaisiri et al, 2009; Foster et al, 2010) that discourses around individuals affecting corporate branding needs further research. In particular, Melewar et al. (2012) and Porricelli et al. (2014)

suggest that the analysis of organisational activities that leads to and that affects employees' "living the brand" behaviour needs further investigation.

Furthermore, despite the growing number of empirical studies in internal branding perspectives that attempt to understand employee brand behaviour (King & Grace, 2008; Burmann et al, 2009; Gilani 2011), the literature on linking the relationship between corporate identity and internal branding practices such as employees' brand commitment and brand citizenship behaviour (BCB) remain under researched and needs more academic focus (Melewar and Jenkins, 2002; Foster et al. 2010; Porricelli et al, 2014). A review of the literature on corporate and retail branding shows a growing body of conceptual work around employee branding, but also highlights that much of the recent work in the field has not focused on identifying key elements that would contribute particularly to the concept of retail corporate brand citizenship behaviour (Foster et al, 2010). There is, therefore, a clear need to understand how a retail corporate brand citizenship behaviour is impacted by the understanding and perception of retail employees about the retail corporate identity factors through its many key determinants, how is it developed and communicated.



"I enjoyed the conference and thought it was a good event to participate in and understand and discuss other people's research. It was well organised and a good couple of days to have attended."

Naomi Graham  
Doctoral student

Consequently, in order to address this gap in the literature, this research focuses on the multifaceted concept of corporate identity management in retail organisations with a particular focus on employee brand citizenship behaviour (BCB). By combining the two areas of corporate branding and retailing, this research aims to explore the concept of brand citizenship behaviour through the lens of corporate identity, within the context of UK retail organisations. This study concerns the definition, theoretical modelling and empirical research of the employee brand citizenship behaviour and brand identity constructs.

The literature review will consist of examining academic contributions on retail corporate identity, retail employee branding, services marketing, retail branding and organisational psychology. A thorough literature review would identify a proposed theoretical model indicating relationships amongst the predefined constructs of corporate brand identity (e.g. corporate communication, culture, visual, and behaviour) and proposed constructs of BCB (employee brand perception, commitment, and trust). A series of constructs would be proposed, along with their associated measurement scales, in adapting existing established constructs from their respective literature to the retail corporate branding context.

The first stage of qualitative research analysis through indepth interviews with the retail corporate directors would craft and revise the theoretical model reflecting the relationship between the corporate brand identity constructs that directly impact on brand citizenship behaviours of retail employees. The revised theoretical model would then be tested by using empirical data drawn from the retail sector and statistical data analysis using LISREL to evaluate the dimensions of retail corporate identity and BCB constructs, through researching and testing the hypothesised relationships between its specific dimensions.

In this regard, structural equation modelling is applied to analyse the data collected from approximately 350-400 retail employees across 35-40 retail stores. This allows a statistical examination of the constructs deployed in the study, a thorough investigation of the hypothesised relationships between

constructs, and an examination of the goodness-of-fit between the proposed structural model and the data collected. The subsequent analysis of the study's research findings allows for the modification of the initial framework of retail corporate branding to arrive at a modified definition for the construct.

In summary, the three stages focus on three main issues: a) the development of a theoretical model for the construct; b) the development and testing of newly adapted measurement scales previously not researched; c) the empirical testing of the retail corporate brand citizenship behaviour theoretical model and the hypothesised relationships between its constructs.

The proposed contributions of this thesis would be to expand current understanding in the corporate brand identity management debate and how it has a great influence, if any, on its employee's brand behaviours. A theoretical contribution in two main areas is expected: extending the existing theory by empirical testing, and by conceptualisation and operationalization of constructs. Further, the thesis will outline managerial implications for decision-makers in terms of shaping their future approaches to the management of their companies' corporate brands.

*Supervisors: Dr Angela Benson, Dr Ranis Cheng*

**David Glynne-Percy**

MPhil, College of Life, Health and Physical Sciences

School of Health Sciences

### **Triggering and sustaining serious leisure participation as a route to resilience in middle childhood: a practitioner perspective**

A good deal is known about the benefits of participation in extra-curricular activities for children and young people. We know from descriptive evidence that helping children and young people persevere at an activity is an important resilience building mechanism. We also know that leisure/extra-curricular/hobby activity promotes self-esteem and other positive health behaviours such as emotional control, social adequacy and functioning, reducing hyperactivity and countering anxiety and depressed mood.

Early interventions to promote perseverance in effort based rewards would appear to be crucial - evidence suggests that children entering secondary school without a serious hobby leave secondary school with no leisure interest. Evidence also suggests that disadvantaged children benefit most from leisure activity in closing the gap of academic achievement with their more advantaged peers. Therefore serious extra-curricular activity might be a potent avenue to explore in relation to improving the educational outcomes (academic resilience) of our most disadvantaged children.

Yet we know little about what triggers children to participate in extra-curricular activities and crucially how that interest can be sustained to the point that the activity becomes meaningful to that child. By using a critical realist methodology this research aims to uncover greater knowledge of contexts and mechanisms which may contribute to success in adversity. This is particularly relevant at a time when schools are increasingly under pressure to show that they are effectively using the Pupil Premium (£1300 for each Free School Meal child in primary schools) strategically to improve social mobility. This research aims to shed light on remarkable stories of where school practitioners have managed to trigger and sustain the interest of a disadvantaged (Free School Meal) Key Stage Two child (aged 9, 10, 11) in a leisure activity when that child had hitherto shown no apparent aptitude or interest in participating.

*Supervisors: Prof Angie Hart, Dr Josh Cameron, Dr Suna Eryigit-Madzwamuse*

## George Goodwin

MPhil, College of Life, Health and Physical Sciences  
Brighton and Sussex Medical School

### The role of axonal transport disruption in the development of mechanical sensitivity along intact nociceptive axons

Inflammation (neuritis) can cause C-fiber (pain) axons to become mechanically sensitive. Such axonal mechanical sensitivity (AMS) may drive movement-evoked radiating pain, and may be in part responsible for symptoms in those patients with neuropathic pain who do not have signs of an overt nerve injury. The mechanisms underlying AMS are not well understood. Our lab has shown that axonal transport is disrupted at the neuritis site. To better understand the role of axonal transport disruption in the development of AMS, we have used vinblastine (anti-mitotic agent) to disrupt axonal transport. The local application of vinblastine to the rat sciatic nerve also causes C-fibre axons to develop AMS. It is hypothesised that proteins transported along the nerve (towards the periphery) are accumulating at the site of disruption, causing AMS. The aims of this study are to 1) profile AMS 2) look into force discharge relationships 3) find out which channels are responsible for such mechanical sensitivity.

The sciatic nerves of anaesthetised rats were treated with vinblastine or complete Freund's adjuvant. *In vivo* recordings were performed from isolated C-fibre axons one to 14 days following treatment, and AMS was tested with a tapered silicone probe. Force-discharge relationships were determined *ex vivo*. Once a mechanically sensitive 'hotspot' had been located, a mechanical stimulator was used to apply increasing forces to the nerve. Mechanosensitive ion channel blockers (ruthenium red) were applied to these 'hot spots'. Force-discharge relationships were then reassessed following application of blockers. Molecular biology techniques were used to look for channel accumulation at the treatment site.

AMS developed rapidly from day one and peaked on day four. By day 14 AMS had recovered. AMS units were very sensitive to mechanical stimulation. There was a positive relationship between force applied and firing rate. Ruthenium red attenuated AMS, suggesting that channels blocked by this agent may be in part responsible for AMS. These channels include the transient receptor potential (TRP) family of channels. TRPA1 and TRPV1 channels were present at the treatment site. We have hypothesised that these channels are accumulating at the treatment site, leading to 'hot spots' of mechanical sensitivity.

*Supervisors: Dr Andrew Dilley, Dr Manuela Mengozzi*

## Catherine Gray

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Patients' Experience of Receiving Information about a Randomised Clinical Trial

Research is an integral part of the National Health Service and is firmly supported by patient groups, NHS professionals and politicians. Research can provide evidence to demonstrate that new procedures, devices and medications are safe, cost effective and ready to become integrated into routine clinical practice.

In a clinical trial, the patient recruitment process begins with clear and efficient communication regarding the nature and purpose of the particular research, including the experimental nature of the



trial and the treatment options available outside the trial setting. This level of awareness allows patients to provide a genuinely educated consent or refusal.

The aim of the study is to explore the experience of patients when presented with information on a clinical trial with a view to their potential participation. The patient's experience of this communication



Leaf Hospital, Eastbourne

process is to be explored by means of the qualitative methodology of Interpretive Phenomenological Analysis (IPA). To facilitate this analysis, a purposive sample of six to eight adults, all identified by the clinical team, will be invited to semi-structured, one-to-one, in-depth interviews. The interviews will be taped, transcribed and individually analysed. Outcomes will then be integrated to enable the identification of any shared experiences across the group.

The hope is that improved understanding about the patients' experiences in this context could highlight otherwise unrecognised emotional reasons for participating, or otherwise, in a clinical trial. The qualitative data may help to inform a more realistic – and hence a better quality – implementation design.

*Supervisor: Dr Catherine Theodosius*

## Kevin Hall

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### The effectiveness of treatment for posterior shoulder tightness in combination with exercise compared with exercise alone in individuals with shoulder impingement syndrome: a randomised feasibility study

**Introduction:** Shoulder impingement syndrome is the most common musculoskeletal shoulder condition. It is commonly treated with physiotherapy or surgery. Many authors recommend the treatment of posterior shoulder tightness in the management of shoulder impingement syndrome, but there is a lack of good quality evidence to support this perspective.

**Trial design:** The study will be a randomised, controlled, double blind (patient and assessor), parallel group, feasibility study with 1:1 allocation ratio. Both groups will receive an exercise intervention. In addition the treatment group will receive specific intervention for posterior shoulder tightness. The placebo group will receive a placebo intervention.

The primary outcome measure is the Shoulder Pain and Disability Index (SPADI). Secondary outcomes include the EQ-5D-5L questionnaire and the need for surgery following physiotherapy. Data collection will occur at 0, 6-8, 13-15, 26 and 52 weeks.

**Study Setting:** Patients will be recruited from the musculoskeletal clinics of Western Sussex Hospitals NHS Trust and treatment will take place in the physiotherapy departments. Physiotherapy treatment will be delivered over 13-15 weeks and will consist of 6-8 sessions.

**Sample size and data collection:** The sample size calculation is based on analysis of current surgical waiting lists and practical timescales for data collection of 2.5 years. The recruitment target is defined as the recruitment of 60 patients in 2.5 years.

**Statistical methods:** Descriptive statistics will be used to explore the distribution of this quantitative data in terms of central tendency and dispersion for continuous data; frequency counts and rates for categorical data. The mean difference in SPADI score between the two groups at 0, 6-8, 13-15, 26 and 52 weeks will be described for the treatment and placebo groups. The feasibility outcomes will be evaluated.

Study Sponsor - Mrs Vivienne Colleran  
Director of Clinical Effectiveness, Research & Innovation,  
Western Sussex Hospitals Trust.  
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*Supervisors: Prof Ann Moore, Dr Colette Ridehalgh, Dr Jeremy Lewis*

## Denise Harris

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### The meaning and perceived function of supervision in an NHS organisation

The focus of this study is the activity of supervision, including clinical supervision, within an NHS organisation.

I have undertaken several focus groups and interviews with staff employed by the organisation being studied and am currently in the process of analysing the data.

Early findings indicated that one of the main concerns of staff was around having some clear boundaries and framework around all types of supervision. However, it is apparent from the literature that this is not a straightforward task (Lynch et al 2008). Another concern was the purpose or focus for the supervision. There were also issues raised regarding the language used, with some staff groups feeling that the process did not apply to them as they '...did not need supervision' or were 'not clinical'.

This presentation will include the following aspects:

- A review of the process of data gathering and analysis
- An overview of the emerging themes
- A reflection on the impact of the organisational culture and expectations on this topic, the study and myself as the researcher

#### Reference:

Lynch, L., Happell, B., Sharrock, J. (2008). Clinical supervision: An exploration of its origins and definitions. *International Journal of Psychiatric Nursing Research*, 3(2): 1-19.

*Supervisors: Dr Alec Grant, Dr Jane Morris*

**Jane Harvey-Lloyd**  
PhD, College of Life, Health and Physical Sciences  
School of Health Sciences

### **Being and becoming a radiographer**

**Background:** The radiography profession is undergoing significant change in response to social, economic and political influences. This has resulted in increasing service demands and a requirement for graduates to possess a much wider range of skills (Decker, 2009). The pressures now being placed on newly qualified health and social care practitioners has initiated research in both nursing and medicine which has focussed on the transition of student to practitioner (Ross and Clifford 2002; Mooney, 2006).

**Aim:** The aim of this project was to explore the experience of transition from student to practitioner in diagnostic radiography

**Design:** An interpretive phenomenological approach was adopted consisting of three face-to-face interviews of each participant at three months, six months and twelve months post qualification. These time intervals have been identified in the literature as critical times (Decker, 2009; Smith and Pilling, 2007).

**Analysis and results:** Thematic analysis was utilised in that through examining each individual experience, commonalities and relationships, including differences across the participants may be identified (Gibson and Brown, 2009).

Six main themes were identified; needing support, settling in, developing confidence, becoming established, feeling useful and looking forward. These will be presented and discussed in view of current literature and contextualised in order to analyse the journey of a newly qualified radiographer in the first twelve months.

*Supervisors: Dr Graham Stew, Dr Jane Morris*

**Rachel Heathershaw**  
MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

**A critical exploration of the variety of forms in which role modeling as a leadership behaviour can be performed in nursing**

#### **Ethical Considerations**

Careful attention to ethical aspects must be given throughout the whole research process, a central tenet is that of 'doing no harm'. Participants need to know that they are being treated fairly, with clear processes in place should any difficulty arise during the research (Simons 2009). Consideration to the researcher's position must be given credence at all stages throughout the research. This continuous, transparent and critical process will be achieved through the use of reflexive memos affording a degree of review and evaluation during all stages.

De Laine (2000) suggests that being able to make ethical decisions includes being aware of personal values and principles within a context that is characterized by professional and power relationships. Being aware of this fact and how it could influence the research through either access to participants or data collection for example is essential, conducting research involving colleagues or peers can present challenges particularly in relation to boundaries (McDermid et al. 2014). It may not be possible to anticipate what ethical dilemmas may arise but thinking these through is essential (Simons 2009). My current academic role may present a power dynamic in respect of my responsibilities in regard to day-to-day responsibilities associated with course provision and partnership working therefore mitigation is essential.

Simons (2009) advises that in the democratic model, three key interrelational concepts underpin the ethical procedures: confidentiality, negotiation and accessibility. Confidentiality aims to secure the conditions and trust imperative for the collection of data; negotiation, the means to release non-harmful data to the public and accessibility, the need to communicate to wider audiences (Simons 2009).

#### References:

De Laine, M. (2000) *Fieldwork. Participation and Practice. Ethics and Dilemmas in Qualitative Research.* London. Sage.

McDermid, F. Peters, K. Jackson, D. and Daly, J (2014) Conducting qualitative research in the context of pre-existing peer and collegial relationships. *Nurse Researcher.* 21 (5) p. 28 - 33

Simons, H. (2009) *Case Study Research.* London. Sage

*Supervisors: Dr Charlotte Ramage, Dr Kay de Vries*

## Stefan Hegenscheidt

MPhil (Physiotherapy), College of Life, Health and Physical Sciences  
School of Health Sciences

### Understanding the clinical encounter between musculoskeletal physiotherapists and patients in Germany: Perspectives in evolution?

This research project aims to explore musculoskeletal physiotherapists' and patients' perspectives on the initial clinical encounter in a changing professional environment in Germany. Qualitative differences within or between the two groups' perspectives are explored, and the implications of these findings for their interaction during the clinical encounter is investigated. It is anticipated that the research findings could have the potential to improve clinical physiotherapy practice by informing patients and therapists as well as decision makers including educators, possibly affecting pre and/or postgraduate curriculum design in Germany.

Two interrelated threads characterize the inquiry, exploring physiotherapists and patients understanding of their own and each other's role in the initial clinical encounter as well as the impact this understanding has on their practice and action during this encounter. Due to the specific national context of the research topic, the project is carried out in Germany. A constructivist Grounded Theory approach is employed in order to develop an understanding of the participants' different perspectives, and to generate an explanatory theory on related interactional processes. Interviews are used as the

main method of data generation, but early findings from these may result in the use of additional methods of data generation as appropriate.

The project originates from observations made during clinical encounters in German musculoskeletal outpatient settings. It is currently in a phase of data analysis from a first set of interviews. This presentation focuses on intermediate analysis results. In addition, methodological consideration and insights into individual problems along the line of study will be included.

*Supervisors: Dr Nikki Petty, Dr Vinnie Cross*

## Stuart Hill

MPhil, College of Life, Health and Physical Sciences  
Brighton Business School

### The role of ethical assurance in reducing pay inequality and promoting pay fairness

The last thirty-five years have seen a substantial growth in income inequality in the United Kingdom (The High Pay Commission, 2011). By 2014 the annual average pay received by chief executives of FTSE 100 companies was just short of five million pounds whilst annual average national pay was a little over twenty-seven thousand pounds (High Pay Centre, 2015). As pay remains the major component of most people's income (ILO, 2015), such pay inequality forms a central part of the surrounding fairness debate in the United Kingdom. At the same time, this period saw a substantial growth in the availability and uptake of mechanisms designed to assure organisations' ethical performance, particularly with respect to the environment, society and their corporate governance (Institute of Business Ethics, 2013). Many of these approaches to ethical assurance include, and in some cases are exclusively composed of, measures relating to pay fairness. This paper presents a theoretical discussion of ethical assurance, offers initial findings and analysis of desk-based secondary research into the effectiveness of these systems in reducing pay inequality and considers the contribution of these approaches to achieving pay fairness. As a component of his PhD entitled, *Fair Pay in the UK: The role of the Living Wage in realising fair pay in the United Kingdom*, the author also offers connections to the wider pay fairness debate and the current ethical assurance intervention of the UK Living Wage.

#### References:

High Pay Centre (2015) *The state of pay: High Pay Centre briefing on executive pay*, London: High Pay Centre.

ILO (2015) *Global Wage Report 2014/15 – Wage and income inequality*, Geneva: International Labour Organization.

Institute of Business Ethics (2013) *Ethical indices*, London: Institute of Business Ethics.

The High Pay Commission (2011) *More for less: what has happened to pay at the top and does it matter?*, London: The High Pay Commission.

*Supervisors: Prof Jackie O'Reilly, Dr Luke Fletcher*

## Ella Hodder

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Development of intervertebral disc scaffolds using 3d-biplotting and quantitative MRI in regenerative medicine

Recent advances in rapid prototyping (RP), alongside the development of printable biomaterials, has opened up new avenues for tissue engineered scaffold design for site directed tissue repair. With RP techniques highly controlled micro-structural reproducibility as well as porosity control can be obtained. This work has fabricated scaffolds with regular micrometric geometry (nm) using a 3D extrusion based RP approach. The ability to finely tune these printed architectures in a repeatable way will allow scaffold designs to be optimised to meet native human disc guidelines; as defined by bio-imaging (MRI scans), biological assays, SEM microscopy and mechanical testing. The preliminary bio-imaging studies were carried out on ten healthy volunteers. The quantitative MRI results obtained successfully promoted the feasibility of using quantitative MR scan parameters, known as T2, T2\*, MTR and MR Spectroscopy, to characterise microstructural features of human discs with biological significance, within a confidence limit of 95%. Furthermore, biplotter parameter screening work has identified optimal extrusion conditions for the controlled plotting of alginate methylcellulose hydrogels and Polycaprolactone materials. The next steps in this project will be to combine the plotting materials to produce multi-material scaffold prototypes with varied micro-architectures for assessment via SEM, mechanical testing and qMRI scanning. This project has the potential to significantly impact worldwide healthcare goals, by contributing to the continued success of rapid prototyping in tissue engineering, and the improvement of scaffold designs for native disc restoration strategies; working towards an approach to improve patient outcomes and decrease economic burden.

*Supervisors: Dr Derek Covill, Dr Mark Best, Dr Nick Dowell, Prof Mara Cercignani*

## Ben Hodgson

MRes Clinical Research (Physiotherapy), College of Life, Health and Physical Sciences  
School of Health Sciences

### Making sense of non-specific low back pain: a grounded theory approach

Low back pain (LBP) is a common health condition and is one of the leading causes of disability. Despite a large increase in health resources aimed at managing LBP, disability related to LBP disorders continues to increase. For the majority of individuals it is difficult to identify a clear patho-anatomical cause for the symptoms resulting in the label 'non-specific LBP'.

Previous research suggests that some individuals with non-specific LBP are dissatisfied with the explanations they receive regarding their back pain and this can have a negative impact on how they respond to it. By understanding how individuals make sense of their diagnosis it is anticipated that the findings will help develop more effective ways to manage discussions regarding their back pain, and ultimately improve outcomes.

This study uses a constructivist grounded theory approach to capture how participants with non-specific LBP make sense of their diagnosis. Purposive sampling has been used to recruit 6 participants from an NHS physiotherapy department and data has been collected using semi-structured interviews. This presentation will give an overview of the research and discuss the initial findings.

*Supervisor: Dr Nikki Petty*

**Jennifer Holland**  
MPhil, College of Social Sciences  
School of Sport & Service Management

**Navigating Uncertainty: The Influence of Risk on Consumer Decision-Making in Ocean Cruising**

The presentation will discuss a PhD project in its middle stages and will discuss the evolution of the research including the aims and objectives, literature review, research design and methodology.

The aim of the research is to examine the influence that perceptions of risk have on consumer decision-making in ocean cruising. There is a 'culture of fear' in western societies that is distinct to the 21st century. Although statistically humans are living longer, safer and healthier lives, many people are more concerned about risk than in previous generations (Nakayachi, 2013; Slovic, 2000). This undercurrent of fear and uncertainty influences all spheres of life, including our behaviour as consumers. With recent global events such as natural disasters, health epidemics and terrorism, tourists (as consumers) are navigating increasing perceptions of risk and uncertainty (Korstanje, 2011). The presence of risk, whether real or perceived, has the potential to change travel decisions (Williams & Balaz, 2015). As risk and uncertainty are 'inherent' to tourism, understanding tourist risk perception is central to the decision making process.

There have been many attempts to define, conceptualize and understand the phenomenon of risk. However, defining risk is problematic and there is no universally-agreed upon definition (Aven & Renn, 2009). Risk goes beyond physical harm and includes financial, psychological, social, time-loss, and performance risks (Jacoby & Kaplan, 1972). However, risk is not well understood in tourism and the lack of research points to a knowledge gap in understanding the relationship of risk and consumer decision-making in tourism, and particularly in cruise studies. This research area is significant as there has been increased attention recently on possible risks related to cruising. Understanding the influence of risk on the decision-making process will help marketers and the tourism industry to better understand the consumer and the consumer decision-making process.

The research is conducted through a social constructionist lens, which accepts that knowledge is socially constructed and there are multiple interpretations and realities (Schwandt, 2014). Reflexivity and positionality are woven through the research to give a voice to the researcher's own experiences and relationship with the data. The project also has the potential to contribute to a greater understanding of risk in contemporary society, including how risk is defined and the deeper epistemological position.

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*Supervisors: Dr Clare Weeden, Dr Jo-Anne Lester*

## Claire Hudson

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### How and to what extent do patients with kidney disease value the use of PatientView in their self-care practice?

**Introduction:** The increasing prevalence of long-term illness, such as chronic kidney disease (CKD), in the UK alongside an ethos of patient participation is necessitating changes to health care provision. Patients are being encouraged to take a more active role in their health care management which includes being able to make decisions about their own self-care activities.

The role of technology has been identified as a means not just to supply information but to provide patients with the ability to control and manage self-care. Access to a patient portal encourages patients to become more actively involved in the monitoring and managing of their long-term care. The renal community has been involved in the development of PatientView (PV) which allows patients to access parts of their health record via the internet. It is thought that the use of PV, will increase patient awareness and improve long-term management through better self-care but there is no evidence to support this claim.

A practice-based approach, using observational interviews, will be used to gain an understanding as to how participants make use of PatientView and how this influences their choices in their care.

**Method:** A qualitative, practice-based approach will be used as this allows for the development of an understanding of how social and technical actions interact in daily life. In practice theory, social reality is created through actions associated with everyday life. In this research, there is a need to appreciate the interactions between the participants and PatientView and how this translates into actions for improving self-care.

A maximum of 23 participants, including both users and non-users of PatientView, will be recruited via an opt-in process and will include those who require long-term specialist kidney care, such as renal replacement therapy or those from low clearance clinics. Semi-structured interviews and participant observation of the use of PatientView will be used for data collection.

**Results:** Interviews with 5 users and 2 non-users of PatientView have been conducted and transcribed at present and further interviews are planned. The interviews will be analysed using thematic analysis. The researcher will identify codes across the interviews and use these to ascertain themes which illustrate the aspects of participant practice which appear to have benefit or value when using PatientView. Codes will also be identified from the interviews with participants who do not use



PatientView and used to demonstrate any differences or similarities in self-care practice when compared to users of PatientView.

**Conclusion:** Data collection and analysis are currently in progress. The themes drawn from the analysis of the interviews and observations will enable an understanding of the extent participants have used the information from PatientView to improve their ability to make choices about their care.

This research is expected to contribute to the understanding of the use of patient portals by patients and may inform future policy, decision-making and patient education relevant to PatientView.

*Supervisor: Dr Mary Darking*

## Michael Huggett

PhD (Health and Social Care), College of Life, Health and Physical Sciences  
School of Health Sciences

### How women diagnosed with Borderline Personality Diagnosis negotiate identity in relation to risk

I'm a Registered Mental Health Nurse with an interest in the diagnosis of Borderline Personality Disorder (BPD) and risk, this interest developing through having worked within a specialist therapeutic community for 8 years with women frequently in receipt of the diagnosis and, following the unit's decommissioning in 2013, encountering many others within the community labelled as such in my current role as a Specialist Practitioner for Children's Social Services.

BPD is a controversial diagnosis that has generated a great deal of critical debate as to the role of cultural assumptions around gender, race, sexuality etc. in the social construction and application of this label. My specific research interest is in how those subject to his diagnosis negotiate their identity in relation to risk, i.e. their 'risk identity', and navigate their way through mental health services.

*Supervisors: Dr Graham Stew, Dr Kay Aranda*

## Sylvanus Iro

PhD, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Mapping and Monitoring of Gully Erosion Development in Southeast Nigeria with Satellite Remote Sensing and Geographic Information System

This study presents novel low budget methodologies to trace and track gully development resulting from environmental variability and land-use change. Gully development is monitored from early development to maturity with regard to increasing and decreasing land area. Developments are then associated with landscape changes and occurrences of topography, and slope gradient. Regional monitoring of gullies through comparing and contrasting remote sensing and classification methods (Pixel and Object Based Image Analysis) is used to quantify the environmental influences on gully land area over the study period.

The presented research examines and identifies causes of Gully Erosion in Southeast Nigeria between years 1986-2015, focusing on 40 gully sites. Remotely sensed imagery from Landsat, Phased Array type L-band Synthetic Aperture Radar, Shuttle Radar Topography Mission, and Google Earth imagery are incorporated to determine land use and areal quantities such as rates of change. Classification and vectorisation methods are used to quantify these changes.

In general, results reveal a steady increase in the development of Gully/Open Land over the study period both on a local and regional scale, with increasing area of gullies identified to directly correspond to land clearance, manifested by reductions in classified vegetation. Quantitative methods were used to analyse the relationship between decreasing vegetation cover and increases in gullies/open land area with Pearson's correlation producing  $r = -0.94$  ( $p < 0.05$ ) and  $r = -0.97$  ( $p < 0.05$ ) for Pixel and OBIA respectively over a 70km X 70km area. Results indicate a very strong negative correlation between areas of vegetation loss and areas of Gully/Open Land development. 14 purposefully sampled gully sites were identified for more local analysis and further vectorised and extent quantified using satellite images. This allowed a more local assessment of gully changes in relation to landuse. As an example, two specific gully sites were examined to reveal rate of gully change. At the Okigwe site, where the gully is actively reducing in size due to government intervention, year on year gully area percentage changes ranged from 7% between 1986 and 1987 to -15% between 2014 and 2015 at . In comparison, at Njaba year on year percentage increases of 4% have been identified between 1986 and 1987 rising to 97% between 2014 and 2015. Comparisons and corroborations between gully vectorisation results are enabled through complementary use of Landsat and Digital Globe data, due to high levels of output similarity.

Analysis of study area topography at 30m resolution reveals that 90% of observed gullies develop on concave slopes with high values of 4 plan curvatures and greater than 15° inclines. Results also reveal that highest erosion rates are exhibited in areas, of ferralsol soil type. Principal Component Analysis was used to predict the weight of gully erosion factors in the study area which shows that component 1 explains 36% variance in each variable and it has a greater than 1 eigenvalue. Which indicates that vegetation loss is more important than other factors in driving gully formation in the study area. Further Cluster Analysis identifies the year 2013 to have the highest rate of gully change for the 14 gullies analysed.

*Supervisors: Dr Matthew Brolly, Dr Graham Awcock, Prof David Nash*

## **Peshawa Jaf**

MPhil, College of Life, Health and Physical Sciences

School of Environment and Technology

### **Recharge and water flow in the Chalk unsaturated zone**

The Chalk aquifer constitutes a major water resource in South East England, representing about 70% of total water consumption. The unsaturated zone in the aquifer system plays a crucial role in the hydrological cycle, determining the timing and magnitude of recharge and pollutant transport. Many studies have attempted to understand the physical properties of recharge and flow in the Chalk unsaturated zone, however, our understanding of the system is still incomplete. This study aims to improve understanding of key components in recharge and flow in the Chalk unsaturated zone and assess the influence of aquifer heterogeneity on the recharge process. Two locations (North Heath Barn and Pyecombe east) from the Brighton block of South East England were analysed for field monitoring data, complemented by a novel experimental investigation to produce improved models for recharge using computer modelling approaches.

A time series analysis of rainfall, water level and electrical conductivity have been analysed using autocorrelation and cross-correlation, linked to the matric potential data from tensiometers installed along the unsaturated zone profile. The result shows that the recharge is predominantly through the matrix by the piston flow mechanism. Relatively large increases in daily rainfall led to a dramatical change in recharge patterns, particularly when the unsaturated zone has a minimum thickness. Also, it is observed that water is kept and drained slowly to the water table as continuous recharge during summer due to the influence of the Chalk heterogeneity.

*Supervisors: Dr Martin Smith, Dr Friederike Gunzel*

## Musa Jato

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### Modelling urban diffuse pollution in groundwater

Diffuse urban pollution of surface and ground waters is a growing concern in many cities and towns. Traffic-derived pollutants such as salts, heavy metals and polycyclic aromatic hydrocarbons (PAHs) may wash off road surfaces in soluble or particulate forms which later drain through soils and drainage systems into surface waters and groundwater. In Brighton, about 90% of drinking water supply comes from groundwater (derived from the Brighton Chalk block). In common with many groundwater sources the Chalk aquifer has been relatively extensively monitored and assessed for diffuse rural contaminants such as nitrate, but knowledge on the extent of contamination from road run-off is currently lacking.

This project examines the transfer of traffic-derived contaminants from the road surface to the Chalk aquifer, via urban drainage systems. A transect of five boreholes have been sampled on a monthly basis and groundwater samples analysed to examine the concentrations of key, mainly road run-off derived, hydrocarbon and heavy metal contaminants in groundwater across the Brighton area. Trace concentrations of heavy metals and phenols have been observed in groundwater. Electrical conductivity changes in groundwater have also been used to assess local changes in ionic strength which may be associated with road-derived contaminants. This has been supplemented by systematic water and sediment sampling from urban gully pots, with further sampling planned from drainage and settlement ponds adjacent to major roads, to examine initial road to drainage system transport of major contaminants.

*Supervisors: Dr Martin Smith, Prof Andy Cundy*



Checkland Building, Falmer campus

## Megi Kamenica

MPhil, College of Life, Health and Physical Sciences  
School of Pharmacy and Biomolecular Sciences

### Lithium Sensors

Interest in lithium detection has been increasing in recent decades because of its greater use in medicinal and, especially, technological applications. Despite the available information there is a lack of methodologies to accurately detect and determination the concentration of this element over either the physiologically or environmentally relevant ranges. Pillar[n]arenes are cyclic molecules which can bind metal cations and will be used to modify electrochemical sensors either through incorporation in a solid matrix or attached to a gold surface. Computer modelling will be used to design derivatives that are predicted to have greater selectivity for lithium. To function in a biological environment the electrode will have to resist biofouling – the build-up of biomolecules such as proteins – on the active surface. This will be achieved by incorporating a filter into the electrode that only allows hydrated ions through. The increasing presence of lithium in seawater is becoming more relevant globally, therefore the sensors will also be designed to be robust enough for marine environments.

*Supervisors: Dr Alison Willows, Dr Peter Cragg, Dr Bhavik Patel*



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## Kate Kemsley

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Healthcare professionals experiences of treatment escalation planning in the acute setting when a patient's recovery is uncertain

The importance of advance care planning for patients living with chronic, life limiting illness is well documented. The Gold Standards Framework outlines the process of making plans for patients about their preferred priorities for treatment in the last few months, weeks and days of life. Recent research has also illustrated the extent to patients living their last year of life with recurrent hospital stays.

Advance care planning in acute hospitals is much more problematic and has been subject of 2 recent high court cases. The Tracey Vs Cambridge and Winspears Vs Sunderland cases have set legal precedence for cardio-pulmonary resuscitation discussions within healthcare settings. A recently published report by the Royal College of Physicians has found healthcare professionals do not always discuss 'Do not attempt cardio-pulmonary resuscitation' orders with patients and their families. The recent National Confidential Enquiry into Patient Outcome & Death also found patients are still inappropriately having cardio-pulmonary resuscitation (CPR) at the end of their lives.

This mixed methods research explores doctors and nurses' perceptions and understanding of treatment escalation planning, including DNACPR discussions, with patients in the acute hospital setting when their recovery is uncertain. The aim of the research is to explore the barriers and aids to decision making in order to support the introduction of an emergency advance care planning tool.

The presentation will illustrate how the research was carried out and present preliminary findings of the research.

*Supervisor: Dr Nina Dunne*

## Adam Kincel

PhD, College of Social Sciences  
School of Applied Social Science

### Inhaling and exhaling culture – on applying autophenomenography in psychotherapy and social science

Our body is a source of information that can enrich and personalise research studies. During this presentation breath will be selected as a point of focus that will lead us to a deeper exploration of cultural dynamics. Inhalation and exhalation are direct processes of exchange between ourselves and the world surrounding us and our bodies are in constant dialogue with people and cultures that we experience. If our bodies are products of the cultures we are living in, our breaths are the meeting point where this production originates.

*Supervisors: Dr Alec Grant, Dr Laetitia Zeeman*

## Hillary Kipnis

PhD, College of Social Sciences  
School of Sport and Service Management

### *Samud*: Everyday Resistance and the Role and Meaning of Sport and Physical Activity in the Lives of Palestinian Women in the Occupied Palestinian Territories

In the context of the ongoing settler colonization of Palestine, this research presentation will discuss how Palestinian women are resisting against multiple forms of power and oppression as they strive to live 'normal' lives while engaging in sport and physical activity. Thus, unlike the wealth of academic discussions on Arab women in sport which concentrate on the obstacles and barriers women confront in relation to the power structures of patriarchy, culture, family, and religion, this research has the twined goal of highlighting the impact of the gendered nature of settler colonialism in the everyday lives of sporting women in the occupied territories of Palestine and second, it aims to showcase how women resist by adopting the philosophy and technique of *samud*.

*Samud (Sumud)* is literally translated from Arabic to English as 'steadfastness,' but its meaning and importance in Palestinian society resonates further than its English translation. In practice, *samud* constitutes a diverse and dynamic form of everyday Palestinian non-violent resistance. Today, it has taken on a renewed importance for Palestinians, but particularly for women in the occupied Palestinian territories. Indeed, as my research results demonstrate, Palestinian sporting women employ the psychological and physical techniques of *samud* as they strive on an everyday basis to, at the very least,

live 'normal lives' in the context of the abnormal, evolving, and unpredictable restrictive conditions of life under occupation.

My research is based on three visits to Palestine where I lived in the West Bank city of Ramallah. I travelled around the West Bank and met with numerous athletes, stakeholders in sport, academics, and government officials, and engaged in numerous conversations with ordinary Palestinian citizens in the course of my daily life. In total, I conducted 12 interviews with female athletes who came from refugee camps and cities in and around Ramallah, Bethlehem, Jericho, Nablus, Qalqilya and Occupied East Jerusalem.

*Supervisors: Dr Dan Burdsey, Dr Jayne Caudwell*

## **Dicle Kortantamer**

MPhil, College of Social Sciences

Brighton Business School

### **Understanding leadership of change projects in the financial services industry**

This research aims to make a contribution to project management theory and practice by providing multi-faceted and rich understandings of leadership in everyday practice of projects. Organisational studies, political science and education literature abounds with varying conceptions and accounts of leadership. It is almost taken for granted that leaders are critical for organisational performance and survival. Yet project management field has traditionally neglected leadership. An emerging body of literature suggests that while leadership is a key issue for projects, there are potential problems with translating traditional conceptualisations of leadership to projects. These findings, together with increasing trends of projectification, highlight the pressing need for broadening understandings of project leadership. Departing from traditional conceptions of leadership as leader traits or behaviours, this research will take a relational orientation to explore different meanings of leadership and their collective negotiation. Employing a social constructionist perspective and an ethnographic research approach, leadership will be investigated as a social and dynamic process in relation to a change project within the financial services industry; an industry that has been undergoing major changes since the global financial crisis in 2008. Positing that leadership is inextricably linked to power and politics, the focus will be on metaphors as tacit understandings of leadership that are intertwined with fields of leadership practices within the project ecology. Findings can potentially have significant implications for how leadership is conceptualised in project management theory, how professional project management institutions approach leadership development and how project management practitioners perform leadership.

*Supervisors: Dr Nick Marshall, Prof Tim Brady*

## **Indra Kusumawardhana**

MPhil, College of Social Sciences

School of Sports and Service Management

### **A Constructivist-thinking to Curriculum Development: challenge and approach in hospitality and tourism higher education**

The positive growth of the travel and tourism industry in the 20th century is set to continue in the 21st century. This phenomenon creates a number of challenges for travel and tourism educators who have to respond accordingly. Challenges also take place in hospitality and tourism higher education

institution in Indonesia. However, it appears hospitality and tourism education has evolved in a heterogeneous and ad hoc manner, and does not necessarily meet the needs of the travel and tourism industry. This is because there are many different sub sectors and expertise or professions' involved in hospitality and tourism knowledge transfer process. And, we should recall that this is knowledge process is intended to enhance the graduates' knowledge and skills, and employability in the sector. The critical issue is to understand all partners in the knowledge exchange and transfer process – students, teachers, institutions and the hospitality industry – with the aim to enhance teaching and learning outcomes through quality curricula. The literature shows that mainstream educational curriculum model follows the 'procedural model' or 'objectives model', which means that plan and procedure of curriculum is undertaken rationally – the hospitality and tourism higher education discipline is one instance. While, the procedural curriculum model might influence educators administering teaching and learning strategies, it possibly interrupts the human development process – after all the aim of educational curriculum is to create the 'complete learner'. The complete learner is understood as a learner that is not only literate but a learner that possess a combination of knowledge, skills, and thinking to solve problems, to think creatively and to continue to learn in order to develop employment prospects, and develop social responsibility. The dimension of social sciences study reflects my study to draw constructivist educational theories to employ the qualitative case study methodological approach to my research inquiries. This is informing the multiples sources data collection methods that come from documentation and interview investigation. My explanatory-type case study investigates the deep learning approach that exists between academia and industry in respect of curriculum development. My study focuses upon a particular sphere of public hospitality and tourism higher education in Indonesia, which investigate curriculum development in the wake of dynamic growth of the industry, and in light of recent legal recognition of hospitality and tourism higher education as a new academic discipline study, within Indonesia.

Keywords: Curriculum development, Teaching and learning, Hospitality and tourism

*Supervisors: Dr Angela Benson, Dr Steve Goss-Turner, Prof Gina Wisker*

**Kirsti Margrethe Laerdal**

PhD, College of Social Sciences

School of Sport and Service Management

### **Co-construction of hospitality culture: behaviour, encounters and social construction in English hotels**

This presentation summarises the empirical insights that were gained during my fieldwork in Hydro and Hilton hotels. The research concerns how co-construction of hospitality culture comes into being in the hotels public spaces.

Drawing on social constructionism, the research implemented anthropological principles in a triangulation of methods and considered three interconnected theoretical themes as its framework. The manifestation of co-construction lies in the nature of the conversations and interactions. These social activities involve the hotel management, employees, guests and corporate customers as participants, and are significant parts in the dynamic co-construction and cultural performance in hospitality societies. Based on hermeneutical interpretation in the analysis, the presentation will report on social and cultural hotel practices and discuss social situational lifestyles. Hospitality culture is explored in this research, and its contribution belongs in the empirical work and the theoretical framework in which it is based, and where findings are embedded and understood.

The findings will be highlighted and illustrated directly related to two analytical diagrams. They are presenting the overarching themes, which have emerged and include sub-themes that are extracted as meaningful and contexts related. The two hotels are different in their characteristics and convey distinctive hospitality cultures through metaphorical perspectives and innovative social structures and correspond with the non hotel 'world'. However, the main feature of the presentation will be a critical reflection of the social and cultural structure in both hotels.

*Supervisors: Dr Cathy Palmer, Dr Jo-Anne Lester*

## Heather Leake Date

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health and Social Sciences

### An exploration of medicine-taking behaviour in people living with Human Immunodeficiency Virus (HIV) infection

**Background:** The widespread use of antiretroviral therapy (ART) has transformed HIV infection into a chronic, manageable condition, resulting in an ageing population of people with HIV (PWHIV), with higher rates of co-morbidities and polypharmacy in the over 50s. Adherence to ART has been heavily researched, but little is known about adherence to non-ART medicines in this group.

**Aim:** To explore medicine-taking behaviour in PWHIV who are taking both antiretroviral therapy (ART) and other medicines (non-ART).

**Methods:** Focus group and anonymous questionnaire. Data collected will include: self-reported adherence (SRA) to ART and non-ART; barriers and enablers to adherence. Data will be analysed for differences in SRA to ART and non-ART, and associations between SRA and specific barriers and enablers. Qualitative data will be analysed to obtain a deeper understanding of the factors affecting SRA to ART and non-ART.

**Sample and location:** 300 questionnaire respondents and 6-8 focus group participants will be recruited from clinics in the Sussex HIV Network (Brighton, Chichester, Crawley, Eastbourne, Hastings, Worthing). Participants (aged over 18 years) will have been stable on their current ART and at least 2 non-ART medicines prescribed for daily use for at least 12 months.

#### **Recruitment process:**

Questionnaires will be available in the study sites and will be widely advertised in the clinics and associated HIV community organisations. Recruitment to the qualitative phase will be by purposive sampling from those who have expressed an interest in participating.

**Expected research outcome:** To identify if differential adherence to ART and non-ART amongst PWHIV receiving their HIV care in centres in the Sussex HIV Network is an issue that merits further research.

*Supervisor: Dr Stewart Glaspole*



## Xingming Lu

PhD, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Design and Development of Flame Based One-Step Nanoparticle Synthesis Generator

In recent years, interest in nanoparticles has expanded rapidly because of their unique and remarkably different physical and chemical properties from the bulk material giving wide range of applications. There are many techniques developed in the literature to synthesis nanoparticle but flame based synthesis of nanoparticle technique is a promising one step method for producing nanoparticle in large scale. There are different diffusion flame configuration have been proposed in the literature, but very little work on premixed flame. In the present work the design, development and commissioning of the new combustion based nanoparticle synthesis system is presented. Firstly, the description of the new novel burner design and development with flexibility to generator both premixed and diffusion flames is presented. Secondly, the development of nanoparticle precursor loading system is presented. Thirdly, the particle collection system developed and integrated in the system is presented. Fourthly, successful commissioning, testing and methodology of the system operation is presented. Finally, results of the synthesis titanium oxide nanoparticles is presented.

*Supervisors: Dr Khizer Saeed, Dr Jonathan Salvage, Prof Alison Bruce*

## Kamal Mahmes

PhD, College of Social Sciences  
Brighton Business School

### Corporate Social Responsibility Disclosure: Accounting Education Insights and Empirical Evidence with reference to the Libyan Extractive Sector (2009-2014)

This thesis is motivated by the lack of research in developing countries in general and Libya in particular. The purpose of the thesis is to investigate the current state of Corporate Social Responsibility Disclosure (CSR) practice in the Libyan extractive sector, with a view to testing the various theoretical perspectives adopted in explaining the CSR phenomenon in light of the social significance of accounting education. It has three particular objectives. Firstly, it seeks to explore the extent and nature of CSR practice in Libya. Secondly, it attempts to identify and evaluate certain environmental factors which may significantly influence the extent and nature of CSR in Libya, determining the most appropriate theoretical explanation of the phenomenon and highlighting any interesting theoretical developments. Thirdly, it endeavours to investigate the perspectives of academic and professionals accountants in Libya regarding the nature of CSR practice, suggesting means by which to improve the national accounting education systems to delivers meaningful CSR into practice. To achieve this, three methods (triangulation approach) are employed in this thesis, namely, content analysis, questionnaire and interview.

The thesis will contribute to the literature on accounting disclosure and CSR practices. It will provide guidance to policy makers on essential disclosure features that should be the focus of attention to increase the level of corporate social and environmental reporting practice and thus enhance companies' images within society. The originality of this thesis is its being the first study to address empirically the potential role(s) of accounting education in ensuring social and environmental sensitivity in businesses through the CSR mechanism in Libya. The thesis seeks to draw the attention of accounting education to the importance of CSR practice.

*Supervisors: Mr Steve Reeve, Ms Rosie Boxer, Prof Kenneth D'Silva*

## Khawla Mahmood

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Flood analysis: methods to enhance prediction accuracy

A time series contains different scales which are also known as components, and describe the long term trend, the seasonal variations, and the short term trend. Practically, those components can be extracted by using digital filters. From this domain, we have tried to exploit this technique of filtering to predict the amount of the water discharge. By using climatic variables such as temperature, precipitation, wind speed, tide as well as ground water level, which have been collected for Cohoes, Poughkeepsie, and Utica in New York, we have designed different transfer function models. This transfer function model has the same idea of the regression analysis as both of them have dependent variable and one or more of the independent variables. The Kolmogorov-Zurbenko filter (KZ), which is classified as one of the low frequency pass filters, has been implemented to remove the seasonal and short term components from the studied variables data. This filter technique, which is just a developed version of the Moving Average (MA) filter, depends on two parameters, the window size and the number of iterations. The effectiveness of the decomposition process has been evaluated by calculating the total explanation for each model by using different parameters. It is common to observe autocorrelated residuals, which in turn means that one of the assumptions of the model has been violated. This could negatively affect the predicted model. To resolve this issue we use one of the Box-Jenkins models, which is known as the Autoregressive Integrated Moving Average (ARIMA) models. As soon as we design the model for each study area, the covariance matrix of each model will be taken as an element that represents the non-Euclidean structure to compare the amount of the water discharge between those three locations.

*Supervisors: Dr Katerina Tsakiri, Dr Andrew Fish*

## Josie Maitland

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Mixed methods study of school staff experiences of an academic resilience approach: A whole systems perspective

Whilst schools aim to provide equal opportunities for all children, in reality, some minority groups have very different experiences of the system that negatively affects their academic achievement and life outcomes (Sutton, 2009; EHRC, 2010; DfE, 2015).

Previous research into school initiatives that aim to tackle inequality have found that resistance to change, particularly amongst staff, is a significant challenge to the efficacy of these programmes and that such resistance is complex and not fully understood (Hynds, 2010). In addition, a systematic review of existing resilience interventions (Hart and Heaver, 2015) found that few of the approaches could be considered to be sustainable, considering their cost and reliance on external support.

The Academic Resilience Approach (ARA), has been developed by Williams and Hart (2014), as a whole school self improvement process aimed at students achieving good educational outcomes despite adversity. The evidence based approach provides free web based tools to review current school

practice and support strategic changes to planning and practice. ARA is currently being systematically evaluated in a county wide implementation involving 15 schools in Durham

This mixed method, systems orientated study aims to articulate and analyse staff perceptions of what factors enable or constrain AR implementation and what structural and perceptual changes might occur in the school.

Data will be collected from 15 schools participating in the Durham Resilience Project using a standardised pre/post questionnaire (The School Organisational Health Questionnaire, Hart et al, 2000) and semi-structured interviews with a subsample of staff at the end of the implementation.

This study will inform the broader findings of the Durham Resilience Project and contribute to a growing understanding of change and reform within school systems, particularly in relation to equity minded intervention.

*Supervisors: Prof Angie Hart, Dr Suna Eryigit-Madzwamuse, Prof Phil Haynes*

## Nick Marks

MPhil, College of Social Sciences  
School of Applied Social Science

### Reassembling the Bicycle: an exploration of ontological possibilities

'Actor-network theory' reminds us that our sense of 'things' 'existing' is an effect generated by relationships between the other, similarly 'made-up' 'things' that appear to surround us. Consciousness and language produce 'solid' entities, such as beings, subjects, objects, and things, but these 'punctualised actors' merely create an illusion of order – a frame of reference - that allows us to interpret the chaos of constant change and becoming.

Any 'order' is on the point of unravelling, but certain realities are maintained through texts, institutions and practices, while other realities are excluded or marginalised. 'Mental illness' is a tool used by Western 'biomedicine' to facilitate and legitimate exclusion or marginalisation on ontopolitical grounds. Medicine's texts, institutions and practices class feelings of exclusion and marginalisation as a 'disease' that operates at the level of the 'individual'. The vocabulary of 'diagnosis' operates to enhance these feelings through a detailed elucidation of difference. 'Schizophrenic' ontologies do not conform to the mainstream and are held in a state of seclusion, along with the people who are generated by them.

The practice of 'bicycle mechanics' involves entering a 'flow' state whilst engaged in the purposeful unravelling of order; the bicycle 'effect' is skilfully destroyed as the 'bicycle' is dismantled into its constituent 'actors'. The 'mechanic' understands the relationships between these actors and is able to reconfigure them in a way that is closer to an an-archic ideal. The 'bike workshop' is a space which permits the existence of multiple, co-existing ontologies. The 'mentally-ill bicycle mechanic' – who may be any member of the public - learns, in the workshop, to walk back 'upstream' as a 'nomad' towards a gradual apprehension of 'chaosophy'.

The bicycle workshop is a 'clinic' without clinicians; bicycle mechanics is a 'therapy' that operates on an aesthetic-ontological level. Its metaphorical 'workings' are the focus of this study – does it 'work' because it doesn't 'work'?

*Supervisors: Dr Mark Erickson, Dr Carl Walker*

## Peter Marsh

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### A hermeneutic interpretation of life with Rheumatoid Arthritis: Translating lived experience into material and form

The motivation for this research lies in bridging the gap in understanding of the lived experience of Rheumatoid Arthritis between public and patient. Developing public awareness has the potential to enhance medical practice's ability to combat the disease through earlier diagnosis and alleviate the social isolation of those who suffer from the disease, improving their quality of life.

Applying the understanding of embodied cognitive (Glenberg, 1997, Gallese and Goldman, 1998, Barsalou, 1999, 2003) and conceptual metaphor theories (Lakoff and Johnson, 1999), that abstract, conceptual thought is based on perceptual, modal experience, this research translates subjective experience into three dimensional models. Model making, as traditionally understood in the fields of architecture and design, offers the potential of a much richer source of information to that given by a purely linguistic approach, bringing alternative perspectives and fresh insight.

In employing hermeneutic philosophy within this arts and health, practice based research, a new methodology has been developed applying Gadamer's understanding of aesthetic appreciation through play to the process of design (Gadamer, 2004). This allows for the interpretation of meaning to be incorporated into three dimensional design practices through the act of translation.

*Supervisors: Dr Kambiz Saber-Sheikh, Prof Ann Moore, Dr Shirley Chubb*

## Hanno Michail Martens

College of Social Sciences  
School of Sport and Service Management

### The Tourism Destination Image Effects of Sport Events – A longitudinal Study of Germans visiting the Middle East

The presentation introduces a PhD project that started in January 2016. The focus of the presentation will be a brief review of existing literature, an explanation of the research questions, and a short description of the planned research approach.

The aim of the PhD study is to analyse the tourism destination image effects of sport event visitation in the Middle East. The image tourists have of a destination is a decisive factor in their destination decision-making process. Destination marketers put high hopes in the positive tourism destination image effects of sport events through tourist visits and international media coverage. Several countries in the Middle East, such as the UAE, Oman, Qatar and Bahrain are increasingly using internationally attractive sport events to increase their influx of tourists. The focus of this study will be on the German outbound market, the financially strongest outbound market within Europe.

Secondary aims of the study are, to analyse German tourists' cultural perceptions of the destination before and after their visit and to understand how they disseminate these perceptions in the year following their visit. The research will be approached inductively using a constructivist view. The project

will contribute to an improved understanding of the effects of sport events and cultural perceptions on tourism destination image, as well as the influence of these in the dissemination of travel experiences.

*Supervisors: Dr Nigel Jarvis, Dr Clare Weeden*

## Orestis Mavropoulos

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Apparatus: Reasoning about security requirements in the Internet of Things

Internet of Things (IoT) can be seen as the main driver towards an era of ubiquitous computing. Taking into account the scale of IoT, the number of security issues that emerge are unprecedented, therefore the need for proposing new methodologies for elaborating about security in IoT systems is undoubtedly crucial and this is recognised by both academia and the industry alike. We present Apparatus, a conceptual model for reasoning about security in IoT systems through the lens of Security Requirements Engineering. Apparatus is architecture-oriented and describes an IoT system as a cluster of nodes that share network connections. The information of the system is documented in a textual manner, using Javascript Notation Object (JSON) format, in order to elicit security requirements.

*Supervisors: Prof Haris Mouratidis, Dr Andrew Fish, Dr Manos Panaousis*

## Julie May

Professional Doctorate (Counselling & Psychotherapy), College of Social Sciences  
School of Applied Social Science

### Client choices when selecting a private practice counsellor/psychotherapist and the implications for accredited voluntary regulation

**Purpose:** To explore which factors are taken into account when clients are selecting a counsellor/psychotherapist to work with in private practice; to explore awareness of the current system of accredited voluntary regulation of counselling and psychotherapy and the implications of this system on selecting a private practitioner.

**Methodology:** A qualitative study informed by Pragmatism

**Methods:** 22 participants were recruited comprising 10 client participants, 10 counsellors/psychotherapist participants currently working in private practice and 2 professional/organisational participants. Data was collected using semi structured interviews and analysed using Thematic Analysis.

**Outcome:** Four themes of selection factors emerged and three themes of assessing these factors. Client participants were unaware of the profession's regulatory status and assumptions were made that the professional standing and competence of counsellors and psychotherapists working in private practice, could be taken on trust, without needing to be assessed or validated. These findings could be used to inform policy makers within and outside the profession.

**Aims:** I am coming to the end of 5 years professional doctorate study and am currently writing up. I would like to offer the conference an overview of the results which have emerged from analysis and generate feedback.

*Supervisors: Prof Di Waller, Dr Nigel Sherriff*

## Ann McCarthy

PhD, College of Life, Health and Physical Sciences  
School of Health Sciences

### The Multi-Factorial Nature of the Development of Ankle Joint Disease in Haemophilia

Haemophilia A and B are X-linked inherited bleeding disorders affecting males characterised by reduction or absence of circulating factor VIII and IX respectively leading to an inability to form an effective clot. Joint disease secondary to recurrent bleeds is the most disabling complication in people with haemophilia and despite the advances made in the haematological management including regular prophylaxis, the haemophilia community's goal of no or minimal joint damage is yet to be realised. A research need was thereby identified into the pathoaetiology of haemophilic arthropathy. This research programme has identified factors for investigation and performed necessary preliminary development of assessment tools. A case-control study was then undertaken to determine a) whether any of the potential influencing factors represented by the assessment tools could discriminate between the groups and b) if so, how influential they were. Three groups were recruited across multiple sites: haemophilia with ankle problems (HmAk), haemophilia with clear joints (HmC) and normal volunteers (NV) who all undertook a clinical and survey assessment battery for strength, flexibility, balance, fitness and function. Six items representing 6 domains could discriminate the HmAk from the others and a further three could discriminate the haemophilia groups from the NV. In order to assess the degree of influence a regression model was developed containing four items that could correctly predict 89.1% of the HmAk group membership. This research programme is the first of its kind in haemophilia and has produced important findings that are amenable for translation for clinical practice and will inform continued research programmes.

*Supervisors: Dr Lucy Redhead, Ms Pratima Chowdary, Prof Ann Moore*

## Peter Morgan

MPhil, College of Arts and Humanities  
School of Humanities

### How did the British understand 'mass killing' of the Armenians in the Ottoman Empire between the 1890s and the 1920s?

An answer to this question is important because it will illuminate an important change in conceptualisations and imaginings on the part of British society during a crucial period of modern history. Furthermore these arguably involved a significant degree of the articulating, manipulating and handling of a national identity that is still influential in the modern world. Therefore, subsequent conclusions will throw important light on the way in which British society reacts to and understands mass killing today. Moreover they will help to elucidate a greater understanding of the development of the concept of genocide. I will use the following three questions, questions which also demonstrate the main thrust of my hypothesis. What was the language, discourse and imagery used by the British

media, politicians and public in response to the mass killing of Armenians in the Ottoman Empire? What evidence is there of a new more 'modern' language and understanding to describe a new more 'modern' type of mass killing? What evidence is there of a relationship between the language, discourse and imagery used in the response to mass killing and that of those responsible for it? In short I intend to investigate whether understandings and conceptualisations of mass killing in this period reflected a projection of British inner concerns and fears regarding their own colonialism and divisive domestic questions. Moreover how this may have arguably contributed to a new type of mass violence which was subsequently categorised and understood as genocide.

*Supervisors: Mr Eugene Michail, Dr Catherine Bergen, Dr Anita Rupprecht*



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## Alison Newport

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### The Occupation Matters Experience: An Interpretative Phenomenological Analysis of the relationship between participating in the Occupational Matters Programme (OMP) and participant's recovery from a severe mental health condition

This study will investigate a participant's experience of participating in the OMP and aims to understand its meaning in relation to mental health recovery and well-being.

The OMP is a recovery-focussed intervention and embraces the key concepts of the recovery agenda, which is becoming a core element of modernised mental health practice. The OMP has been developed in response to the Occupational Therapy literature concerning the clinical and cost-effectiveness of preventative lifestyle interventions for healthy older people called Lifestyle Redesign© and Lifestyle Matters. It has adapted these two programmes to meet the recovery needs of working age adults with a severe mental health condition. Differences from these original programmes include a focus on: mental health rather than ageing; using daily activities to promote mental health recovery; an emphasis on participating in a work role and a reduction in the length of the programme.

This qualitative study will be conducted in a NHS Trust in South East England and will examine six people's **experience of the OMP producing a deep and thorough examination of its meaning in relation to their mental health recovery.** The study will employ an interpretative phenomenological analysis of the semi-structured interviews at both, week 10 and 20 of the programme.

It is hoped that this study will begin to develop an evidence base for the use of the OMP for people with a mental health condition, for different age groups, and in severe illness, thereby **not limiting it to a preventative intervention for healthy older people.**

*Supervisor: Dr Channine Clarke*

## Chantal Nobs

PhD, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Determining the characteristics of exotic nuclei to identify applications outside of Nuclear Physics

Less than 50% of all nuclei predicted by theoretical models have been created and studied in any detail to date. Many of these nuclei have applications in medicine and technology, from cancer therapy to smoke alarms. PET scanners typically use  $^{99}\text{Tc}$  as a radioactive tracer for imaging metabolic processes in the body. Nuclei, like  $^{99}\text{Tc}$ , with mass numbers close to 100 all exhibit similar characteristics to each other, they are non-spherical, they emit gamma-rays of similar energies and they have long-lived excited states. Understanding how nuclear characteristics change across this mass region not only provides an important test for nuclear models, but could lead to new applications outside the field of nuclear physics. This work focuses on one such nucleus,  $^{102}\text{Y}$ . Previous work investigating  $^{102}\text{Y}$  has suggested the existence of two long-lived states that beta decay to high-energy states in  $^{102}\text{Zr}$ . However, important information like the spin and energy of these states is unknown. Obtaining structural information for  $^{102}\text{Y}$  is the primary aim of this research project. An experiment at the University of Jyväskylä produced the nucleus of interest,  $^{102}\text{Y}$ , and specialist detectors measured the gamma rays produced following beta-decay to  $^{102}\text{Zr}$ . Through detection of the gamma-rays emitted it is possible to infer information about the structure of  $^{102}\text{Y}$ . This experiment adopted a novel technique for studying such nuclei, which was developed by a previous student at the University of Brighton, C. Rodriguez Triguero. This presentation will detail the experiment, and the experimental techniques adopted as well as preliminary results.

*Supervisors: Prof Alison Bruce, Dr Zsolt Podolyak, Dr William Wilkinson*

## Sarah Ofori-Ansah

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Exploring experiences of shared decision making in adult pre-dialysis patients and carers

Chronic kidney disease is an irreversible chronic condition, can progress to kidney failure and is treated with dialysis or potential kidney transplantation or no treatment. Evidence suggests that patients and carers become less engaged and are not able to make timely decisions on their treatment options. However, there is less literature on issues relating to the decision making process from the patients and carers perspective.

**Aim:** This study explored the lived experiences of being involved in shared decision making to identify common themes and for factors that enhances or deter their engagement.

**Methodology and methods:** This is a qualitative study that used semi-structured interviews. Sixteen participants were recruited from an acute hospital to the study and interviewed.

**Results:** There are mixed responses regarding patient involvement in decisions about their treatment options. While some patients and carers preferred to be actively involved others chose to be passive. Expected outcomes/contributions/benefits from the research.



The study will provide an understanding of patient and carer experience of decision making and may contribute to policies on service delivery on effective patient and carer education from their perspective. Patients and carers who engage in decision making about their treatment options and care have the potential to improve their knowledge on their condition, available treatment options, be able to self-manage aspects of their chronic condition and experience improved health.

*Supervisor: Dr Nina Dunne*



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## Oluseyi Olarewaju

MPhil, College of Life, Health and Physical Sciences  
School of Computing Engineering and Mathematics

### Enhancing cross-domain collaborative filtering by integrating semantic concepts (tags) into Matrix factorization technique

Recommender systems that depend on collaborating user or item resources are prone to personalization errors when the number of items rated by users is highly disproportional to the large amount of products or services available. The resulting sparseness from the imbalance limits the system's ability to find users with similar interest.

Techniques such as matrix factorization (MF) averts this problem by learning a predictive model from a set of rating values through the training of some machine learning algorithm. Semantic concepts in item/user data have also been considered in defining user needs and preferences for more accurate item recommendation.

Extending MF model based collaborative techniques to include components that can factor in the semantics within domain datasets and utilizing the otherwise hidden commonality, constitutes a genuine approach for achieving cross domain recommendation.

Specifically, we enhanced the matrix factorization techniques with parameters that creates larger overlap of the tags commonly shared between two domains. Semantic relationships between the tags are considered based on the basic conceptual unit they belong to in a lexical database (WordNet).

Similarity Metrics was used to compute relatedness of tags in the domain datasets and those with the highest score are treated as the same in the set of tagging resource. Our model enables the inclusion of tags that would have been otherwise neglected in the training phase as it is the case with other state-of-the-art cross-domain approaches in literature.

*Supervisors: Dr Gulden Uchyigit, Dr Andrew Fish*

Leane Owen

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Physiotherapy Students' Perceptions of Dementia

**Background:** Approximately 850,000 people are currently living with dementia in the UK. Physiotherapists represent one of the highest profile professions in UK healthcare and they are increasingly likely to meet people affected by dementia. Our knowledge and understanding of dementia may influence our perceptions of this disorder, which in turn can affect how we behave towards people with dementia. It is therefore important that dementia-related physiotherapy education in the UK is 'fit for purpose' and that we understand physiotherapy students' perceptions of dementia.

**Aims:** To gain insight into physiotherapy students' perceptions of dementia in order to improve understanding of what dementia means to physiotherapy students. This study may have implications for physiotherapy education in that it has the potential to inform and guide undergraduate physiotherapy courses regarding dementia-specific training.

**Methods and methodology:** In depth, one-to-one interviews were conducted to explore six final year physiotherapy students' perceptions of dementia. Interpretative Phenomenological Analysis methodology revealed four 'super-ordinate' themes: *'Being the student'*; *'The sense of loss'*; *'A scary place to be'*; *'Dementia is complex'*.

**Findings:** Learning about dementia in the classroom and on clinical placements was viewed as enjoyable and valuable. Participants perceived that loss and fear were attributed to dementia. Participants and health care staff perceived dementia as complex and challenging, which may result in stigmatizing behaviour. 'Person-centred' approaches were perceived to facilitate effective communication and engagement with people with dementia. Participants did not always feel supported by health care staff and clinical educators to implement what they felt was 'best practice'.

**Implications and recommendations:** Findings imply that there is a continued need to improve dementia-related education in health care. Dementia-related physiotherapy education should include skill development, particularly around communication, engagement and 'person-centred' approaches to physiotherapy. Findings imply the need for improvements in knowledge surrounding capacity, consent, and related terms. More research is required to evaluate dementia-related physiotherapy education in order to ensure it is meeting the needs of those affected by dementia.

Keywords: Dementia, perceptions, physiotherapy, students, interpretative, phenomenological, analysis

Supervisor: Ms Sarah-Jane Ryan

## Tochukwu Ozulumba

MPhil, College of Life, Health and Physical Sciences  
School of Pharmacy and Biomolecular Sciences

### Designing Nanostructured scaffolds for the remediation of environmental and biological tissue contaminants

Despite the unique properties which make them ideal for a range of health related applications, there are still many unknowns about the properties and performance of nanoparticles particularly when in contact with living systems. Also, it remains a challenge to establish criteria for handling and dispersal in addition to optimisation of the materials themselves for specific applications. Key issues associated with the testing and use of nanoparticulates are aggregation, toxicity and inflammation.

To minimize the challenges associated with their use, nanoparticulates are often encapsulated in polymer matrices. Electrospinning is the often preferred technique for producing nanofibrous meshes because of its relative ease, speed, versatility and the control it gives the operator over fibre microstructure. However, maintaining a fine balance between process variables, controlling the structures of electrospun membranes and producing large volume scaffolds are major challenges (Smith *et al.*, 2009; Li *et al.*, 2014; Zhang *et al.*, 2014). Additive manufacturing could provide a suitable alternative to electrospinning for synthesizing a macrostructured support for nanoparticle incorporation where larger scale synthesis and fabrication processes are required.

The aim of the project is to understand how modifications to the chemical structure of graphene based nanoparticles and synthesis routes of nanofibrillar meshes will impact their applications in the adsorption of contaminants, reduction of inflammation and inhibition of microbial growth. The scaffolds will be characterised and their functional performance will be evaluated using in vitro models developed to assess these issues. Nanoparticulate leaching from the scaffolds will also be investigated.

*Supervisors: Dr Susan Sandeman, Dr Patrick Dyer, Prof Andy Cundy*

## Hannah Perry

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### The lived experiences of the older population that have fallen at home wearing indoor footwear

This research study is an enquiry into falling and the experiences of indoor footwear post falling at home in the older population of Eastbourne, Hailsham and Seaford. It aims to give insight and reasoning into indoor footwear worn at home and the factors that may be associated with indoor footwear and falling.

It is proposed to focus on the gap in the current research and knowledge by offering an understanding and awareness into occurrences of falling within people's homes relating to indoor footwear, and the factors that may be associated with this, to reduce slips, trips and falls.

The research design is a qualitative inquiry using semi-structured interviews to gain the lived experiences of the older population that have fallen at home wearing indoor footwear. The data obtained will be examined following the approach of Smith, Flowers and Larkin's (2009) interpretative

phenomenological analysis. The intention is to gather rich data about the participants “lived experience” and identify what the impact of falling and indoor footwear has signified to the participants, for example do they believe their footwear was associated to their fall? This will enable themes and trends to be drawn out and analysed.

The researcher will aim to offer improvements to intervention within clinical practice and health promotion, in turn increasing the awareness of allied health professionals on how older people perceive indoor footwear and falling and endeavouring to decrease the number of falls experienced by the older population.

*Supervisor: Dr Christopher Morris–Roberts*

## Karen Poole

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### **The use of Botulinum toxin in neurological conditions: Patients’ perceptions of the effect and impact**

This research study aims to explore the patient’s perception of the effect and impact of Botulinum Toxin on their neurological condition. Spasticity is a phenomenon common to the clinical presentation of neurological disease and trauma and is often cited as one of the contributing factors to limitations in functional ability experienced by this patient group (Sommerfield et al. 1996). Botulinum Toxin is a potent neurotoxin, which when injected to a limb, causes temporary local muscle paralysis. This has led to its development as a therapeutic tool for clinical use in a range of conditions, most notably in the management of spasticity seen in neurological disease and injury.

Whilst the ability of Botulinum Toxin in changing the clinical rating of spasticity is underpinned by a significant body of evidence from RCT’s (Bakheit et al. 2010), it has been more difficult to demonstrate a link between the use of Botulinum Toxin and improvements in every day function (Shaw et al. 2010; Teasell et al. 2012). The evidence of its effectiveness has been drawn from studies using quantitative research designs (Reeuwick et al. 2006).

Spasticity is complex phenomenon which can be influenced by multiple internal and external influences (Ward & Javaid 2008). The relationship between the severity of spasticity and functional ability is not direct. Measurement strategies used in the current evidence base appear to lack sufficient sensitivity to capture subtle changes which are meaningful to individuals, and which may result in significant benefits beyond current conceptualisations of ‘function’.

In light of the complexities associated in evidencing the direct link between the use of Botulinum Toxin and changes in function, there is considerable variability in the guidance and funding recommendations for the use of Botulinum Toxin between professionals and across localities, counties and regions within the UK (Olver et al. 2010; Turner-stokes et al. 2009; Royal College of Physicians 2012; East Sussex HEMC 2011; Wissel et al 2009).

This study will use a qualitative research approach using interviews to explore patients’ perceptions of the effect and impact of Botulinum Toxin to gain insights that may not have been previously appreciated. This may add to the body of knowledge used to determine the effectiveness and benefits

of this treatment. Findings may also inform ways in which the effectiveness of Botulinum Toxin is measured in the treatment of spasticity.

*Supervisor: Mrs Kitty Suddick*

## **Diana Ramsey**

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### **How do people with learning disabilities experience work?**

This research study aims to examine the experience of work for people with a learning disability including the impact of their learning disability on their work-life experience. Central to this research question is the desire to establish the voice of the individual with a learning disability about their experience of the phenomena of work, as this is a highly neglected area in previous studies.

This presentation will examine, at this early stage in the research process, working with an advisory group of people with a learning disability. In particular it will explore reflexively the challenge of transitioning / adjusting from the role of health professional to developing researcher.

*Supervisors: Dr Josh Cameron, Dr William McGowan*

## **Binyamien Rasoul**

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### **The effect of rice husk ash on the mechanical and durability properties of concrete**

Sustainable development of the cement and concrete industry requires the utilization of industrial and agricultural waste components. At present, because of the huge demand of cement in concrete construction industry accompanied by deplete massive amounts of raw materials which can remain for next generations. Second, cement production is a major contributor to greenhouse gas (CO<sub>2</sub>) emissions that are implicated in global warming and climate change. The huge amount of agriculture waste material as by-product produced annually. By use these by-product will help contribute to the industry in saving the environment, find solutions regarding the disposal to landfills, to provide new knowledge to improve the construction industry methods and to sustain good product performance.

One of the most suitable sources of pozzolanic material among agricultural waste components is rice husk, as it is available in large quantities and contains a relatively large amount of silica. When rice husk is burnt about 20% by weight of the husk is transformed to ash in which more than 75% by weight is silica. Unlike natural pozzolan, the ash is an annually renewable source of silica. Observations from the experiments tests performed were conducted in the laboratory; the use of certain amount of RHA with potentially pozzolanic reactivity can significantly improve the workability, reduced heat evolution, reduced permeability, and the increase strength at longer ages.

*Supervisors: Dr Friederike Gunzel, Dr Muhammad Rafiq*

## Anne Rathbone

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Changing the odds? Developing a co-operative inquiry group of learning disabled people on resilience: the epistemological challenges and values

This presentation presents a co-produced participatory action research project with a group of learning disabled people (the co-researchers) who are members of community partner Arts Connect. This study is building from a conceptual view of resilience that advocates for changing, as well as beating, the adversities stemming from unjust structures, policies and processes (Hart et al, 2016 under review). The research questions (initiated by the author and refined with the co-researchers) are:

- What are the challenges that we face (*as learning disabled people*) and how can we be more resilient?
- What can we learn from the Resilience Framework and what can we teach people about it from our experience?
- What can our experience teach others who want to do research together as a team?

The co-researchers aim to become more resilient, teach others about resilience, share their research with others creatively and to learn new skills along the way.

The presentation focuses in particular on the epistemological issues raised by the study. It will provide an overview of the research process itself and how this utilised the principles and practices of co-operative inquiry methodology (Heron, 1996), including its “extended epistemology” (Heron & Reason, 2001). It will examine critically issues around the validity and ownership of jointly generated knowledge through the voice of lived experience, and the challenges and contribution of the group’s actions to promote social change.

*Supervisors: Prof Angie Hart, Dr Carl Walker*

## Cara Redlich

MPhil, College of Social Sciences  
School of Applied Social Science

### Care Online: Reflections of One Participant

This research project considers together ageing, care and technology. Recent technological developments into computerised or digital terrains are noted to have been largely accepted into the experience of daily living, permeating communication, pastimes, interactions and transactions (Miller and Horst, 2012). Indeed the British government appears eager to pursue the digital project, reportedly closer to launching the ‘Digital-by-Default’ agenda in an effort to determine how services will be provided (Government Digital Service, 2012/3). However, it is often argued that older people are particularly at risk of becoming digitally excluded by being unable or unwilling to take up new forms of technology and communication (Bell, 2007; Berry, 2011). Yet, further studies show that this is not necessarily the case. More specifically, older people have been shown to use the internet and associated devices in everyday, contextualized and often highly creative ways (Harley and Fitzpatrick, 2009; Khvorostianov et al., 2011; Xie, 2008).

My research as a PhD student is now at the analysis and writing up stage having undertaken interviews and wider ethnographic research in order to consider care online amongst older people. Drawing upon Ethics of Care as a guide in considering care online, I will focus on one participant in my research as a way of thinking about care online.

*Supervisors: Prof Flis Henwood, Dr Lizzie Ward, Dr David Harley*



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## Abadi Ndukari Rufus

PhD, College of Life, Health and Physical Sciences,  
School of Environment and Technology

### Remediation of Groundwater Contamination of Ogoniland

**Poster Presentation Objectives:** The development of local remediation and management solutions to gross hydrocarbon contamination in the Niger Delta

The Ogoniland axis of Rivers State, Niger Delta (Nigeria) is a heavily hydrocarbon-contaminated region, due to prolonged oil spillages and other oil and petrochemical activities on-going in the area. UNEP, 2011 issued an environmental impact assessment report on the state of oil pollution in Ogoniland which highlighted the severe problem of hydrocarbon-contaminated groundwater and surface waters, which in turn heavily impacts regional ecosystems and drinking water resources.

Despite the acknowledged severity of surface and groundwater contamination in this area, understanding of (a) hydrocarbon migration and exposure pathways, and (b) practical methods of managing the impact of hydrocarbon-derived contaminants, is limited. This research therefore investigates the distribution and concentrations of key hydrocarbon contaminants in groundwater and surface waters around major oil and petrochemical sites in Ogoniland; examines contaminant migration pathways between groundwater, surface water, and drinking water resources; and assesses the potential application of practical, more sustainable, water remediation or management methods, with particular emphasis on low-cost adsorption and enhanced natural attenuation approaches.

This presentation outlines results from field sampling, which has identified gross contamination of surface and groundwater, and discusses site conceptual models under development for key contaminants (BTEX, phenolic compounds and PAH), supported by laboratory core-flooding studies. The feasibility of the practical application of adsorbent-based remediation methods, based on testing of low-cost carbonaceous adsorbents and linking to the EU WaSClean project, is also discussed, in terms of the utility of these adsorbents (a) in reducing contaminant transfer to local receptors, and (b) for local community use.

*Supervisors: Prof Andy Cundy, Prof Martin Smith*

## Ieva Satkeviciute

PhD, College of Life, Health and Physical Sciences  
Brighton and Sussex Medical School

### Axonal transport disruption along intact axons causes neuropathic pain behaviours and signs of central sensitisation in the absence of ongoing A- and C- fibre activity

Signs of neuropathic pain can occur in the absence of a frank nerve injury. Our previous studies suggest that this may be due to inflammation of otherwise healthy sensory axons. Nerve inflammation (neuritis) has been shown to disrupt axonal transport, which has led to the hypothesis that transported ion channels accumulate at the site of disruption, causing a 'hot spot' of excitability. Aberrant firing from this site may drive spinal mechanisms that lead to painful symptoms. The role of axonal transport disruption in these mechanisms can be examined by applying low doses of the antimetabolic agent vinblastine to the rat sciatic nerve, which disrupts axonal transport in the absence of inflammation or axonal degeneration. We have examined the effects of vinblastine-induced axonal transport disruption and neuritis on the development of pain behaviours, ongoing activity and spinal cord c-fos expression.

Both vinblastine treatment and neuritis caused mechanical allodynia but not mechanical hyperalgesia. Cold allodynia developed in vinblastine animals but not following neuritis. In contrast, heat hyperalgesia was observed in neuritis animals but not following vinblastine treatment. Burrowing behaviour decreased in both groups compared to shams. An examination of A- and C- fibre activity revealed the development of ongoing activity in C-fibre neurons of neuritis animals (25%) but not in vinblastine animals. There were no signs of significant A-fibre ongoing activity. C-fos expression was upregulated in the dorsal horn in both neuritis and vinblastine treated animals.

Vinblastine-induced axonal transport disruption leads to signs of neuropathic pain. Differences in the pattern of behavioural changes compared to neuritis may be in part due to the absence of inflammation. The lack of significant ongoing activity and the upregulation of c-fos following vinblastine treatment suggests that axonal transport disruption may induce spinal changes via an alternative mechanism. In summary, ongoing activity from the periphery may not be critical for the development of neuropathic pain.

*Supervisors: Dr Andrew Dilley, Prof Pietro Ghezzi*

## Sharmila Sathar

PhD, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Method for Evaluating Sentiment Analysis System

Sentiment analysis is the computational study of people's opinions, appraisals, emotion toward entities, events and their attributes as expressed in text. This is important when a company or service provider wants to tailor their product to user needs. It can also be used for political analysis to predict election results during the campaign stage of political elections. Basic task in sentiment analysis is identifying whether a given textual reference is subjective or objective and identifying the polarity (whether it is negative, positive or neutral). In addition, some sentiment analysis methods involved in calculating sentiment scores, which will help to identify, how positive/ negative the given textual reference is?



This paper explains how to evaluate accuracy of a sentiment analysis system. In principal, the accuracy of the system is how well it agrees with human judgements or gold standard method.

*Supervisors: Dr Roger Evans, Dr Gulden Uchyigit*

## Barbara Seebacher

PhD Physiotherapy, College of Life, Health and Physical Sciences  
School of Health Sciences

### Measuring the Immeasurable

Mental imagery is similar to perception, but without direct sensory stimuli of any modality. In this context, unique phenomena occur during mental imagery, such as “seeing with the mind’s eye” or “feeling with the mind’s body”. Mental images are associated with internal representations, which came into existence when perceived information was stored in memory. Based on this notion of mental imagery, various types of mental imagery can be characterised, depending on distinct sensory modalities. Actually, Visual, auditory, kinaesthetic and other images have been used in psychological and physical rehabilitation. Mental imagery has played a significant role in theories of mental function at least since the days of Plato. Mental imagery has been discussed controversially over centuries because it is practised unseen to the observer in the individual’s brain. Therefore, mental imagery is challenging to measure. Indeed, behaviourists claim that there are no mental images at all, but rather mental descriptions related to language. This suggests that, the experience of pictures or sensations in our minds has nothing to do with the underlying visual or motor representation. In contrast, results from my study showed that motor imagery of walking improved walking, fatigue and quality of life in people with multiple sclerosis. But how will I be able to demonstrate in my further study whether or not these improvements could have been induced by motor imagery? Will it be possible to find out in which ways participants experienced the motor imagery? In my presentation, I would like to discuss and find some answers to these questions.

*Supervisors: Dr Raija Kuisma, Dr Angela Glynn*

## Shaun Shei

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Modelling Cloud Computing Systems from a Security Requirements Perspective

Cloud computing enables the provisioning of a wide range of cloud services, delivered on a self-servicing basis for cloud users based on the concept of abstracting physical and virtual computing resources. However users are required to sacrifice a degree of access and control over their data, relying on third party providers to ensure that their data is kept secure and available. This paper presents a cloud modelling language for defining essential cloud properties, enabling the modelling and reasoning about security issues in cloud environments from a requirements engineering perspective. The relationship between cloud computing and security aspects are described through a meta-model, aligning concepts from cloud computing and security requirements engineering. The work presented in this paper is part of an on-going research effort, thus we briefly introduce the overarching framework consisting of the modelling language proposed in this paper, a process to systematically apply concepts and tool support to guide developers. The central concept of the proposed approach is built around

cloud services, where the propagation of relationships from a social perspective, abstract software processes and the foundational infrastructure layer are captured. The proposed concepts are applied on a running example throughout the paper to demonstrate how developers are able to capture and model cloud concepts across multiple conceptual layers, facilitating the understanding of cloud security requirements and the design of security-embedded cloud systems to realise organisational needs.

*Supervisors: Prof Haris Mouratidis, Dr Stelios Kapetanakis, Mr Aidan Delaney*

## Susanne Simmons

PhD, College of Life, Health and Physical Sciences  
School of Health Sciences

### A grounded theory study: how do fathers experience the transition to parenthood when their infant is admitted to a neonatal Intensive Care Unit and following discharge home?

The aim of this study is to discover the social process of transition to parenthood for fathers of a preterm infant in the Neonatal Intensive Care Unit (NICU) and following discharge home. The small amount of current research in the parenting literature involving fathers of preterm infants indicate that health care professionals may be unaware of the specific needs of these service users during a difficult time in their lives. Data generation for this study is through semi-structured interviews. The interviews are transcribed verbatim and data analysis progresses through initial and focused coding, memoing and constant comparative analysis to generate categories and their properties. The theoretical perspective of symbolic interactionism enhanced both 'methodological direction and theoretical insight' for this study (Charmaz 2014:279).

*Supervisors: Prof Julie Scholes, Dr Nina Dunne*

## Eldhose Skaria

MPhil, College of Life, Health and Physical Sciences  
School of Pharmacy and Biomolecular Sciences

### Micromoulding and characterisation of epoxy microneedle arrays

**Introduction:** Microneedles (MNs) are an attractive approach to minimally invasive drug delivery and diagnostics in the skin [1, 2]. Micromoulding under vacuum [3] is a facile technique for producing solid MNs from polymeric materials. We have previously used this technique to produce MNs using poly (lactic) acid (PLA) for *in situ* skin biomarker capture [4]. Here, we investigated fabrication parameters for micromoulding epoxy MNs and assessed their mechanical properties against PLA MNs.

**Materials and Methods:** The epoxy resins evaluated were RX771C (Robnor Resins) and Agar 100 (Agar Scientific). Epoxy MN arrays were micromoulded based on a technique adapted from [3, 4]. Epoxy resins and hardeners were combined according to manufacturer recommendations to attain RX771C and two grades (i.e. medium and hard) of Agar 100 epoxy. Cure temperatures were 80°C and 60°C respectively for RX771C and Agar 100. To optimise processing conditions, we varied the application of pressure and heat, and observed effects on the physical characteristics of the epoxy MN arrays produced. The axial failure force (AFF) and shear failure force (SFF) of epoxy MNs were measured using a texture analyser and compared with those of PLA. Porcine skin penetration by MNs was confirmed by methylene blue staining as described previously [4].

*(cont)*

## Results and Discussion:

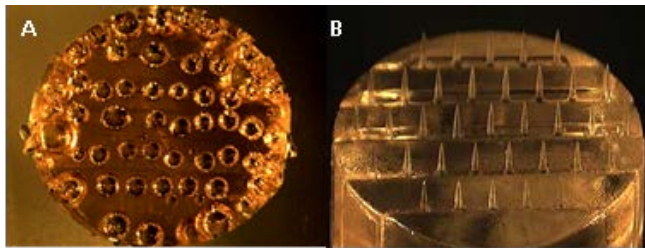


Fig. 1. Concurrent pressure and heat application during epoxy curing leads to entrapped gas bubbles and variable MN formation (A). Applying a short duration of lower pressure followed by thermal curing eliminated these problems (B).

Simultaneous application of heat and vacuum at 1000 mbar throughout curing produced variable MNs and gas bubbles entrapped in the base plate (Fig. 1A). Heating is desired to reduce the viscosity of the epoxy resin so it improves flow into the mould, but it appears to accelerate curing to the extent of preventing complete evacuation of air from the mould. Gas bubbles were eliminated and uniform MNs were formed from all epoxies when thermal curing was preceded by application of vacuum at 800 mbar for 45 mins without heating (Fig. 1B). Medium Agar 100 epoxy MNs exhibited the greatest mechanical strength among the epoxy MNs. Despite having significantly lower AFF and SFF than PLA MNs (Fig. 2), all epoxy MNs successfully penetrated the skin.

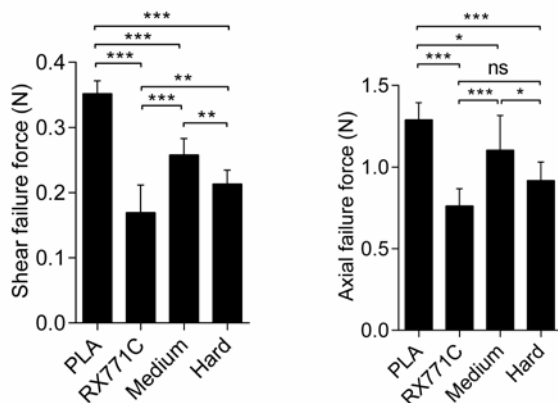


Fig. 2. Mechanical strength of epoxy MNs compared to PLA (mean  $\pm$  SD,  $n = 10$ ). \*\*\*  $p \leq 0.001$ ; \*\*  $p \leq 0.01$ ; \*  $p \leq 0.05$ ; ns:  $p \geq 0.05$  (one-way ANOVA with Tukey's test).

**Conclusions:** This research demonstrates the potential of epoxy systems as cost-effective materials for MN fabrication. Micromoulding of epoxy MN arrays requires careful manipulation of pressure and temperature to avoid gas bubbles and uniform MN formation. Furthermore, our work highlights the importance of the choice of suitable epoxies in ensuring desirable mechanical properties in the MNs produced.

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*Supervisors: Dr Keng Ng, Dr Melanie Flint, Dr Bhavik Patel*

## Patricia Soares

PhD, College of Life, Health and Physical Sciences

Brighton and Sussex Medical School

### Children and young adults with filaggrin-related eczema may have different healthcare needs than filaggrin-unrelated eczema

**Objective:** Eczema is characterised by chronic skin inflammation, cutaneous dryness and IgE mediated sensitization. More than 50% of individuals with eczema will develop asthma and/or other allergic diseases. Several loss-of-function mutations of the filaggrin gene have been identified in patients with eczema. Yet, the role of filaggrin on healthcare utilization is unknown. The aim of this study is to determine whether filaggrin mutations are associated with increased prescribing for eczema.

**Methods:** A secondary analysis of BREATHE, a cohort study of gene-environment associations with asthma severity, was undertaken. BREATHE data were collected on 1100 participants with asthma, between 2003 and 2005, in Tayside and Fife, Scotland. Through collaboration with the Health Informatics Centre in Dundee, BREATHE was linked to databases: Accident & Emergency, community prescribing and Scottish Morbidity Records. The data linkage allows longitudinal exploration of associations between genetic variation and prescribing.

**Results:** A significant but weak association was found between FLG mutations and prescribing for mild and moderate eczema, bacterial skin infection, asthma reliever medicine and hospital admission. A strong association was found between FLG mutations and prescribing of moisturisers (Incidence Rate Ratio IRR: 2.36, 95% Confidence Interval CI: 1.44-3.57), treatment for severe eczema (IRR: 2.27, 95% CI: 1.31-3.93) and a combination of long-acting  $\beta_2$ -agonist and corticosteroids (IRR: 3.33, 95% CI: 1.74-6.37).

**Conclusions:** The presence of filaggrin mutations, in this cohort, is associated with differences in prescribing for eczema and asthma. Defining subgroups of individuals who may require more prescriptions could help predict treatment costs and develop targeted management strategies.

Keywords: eczema, filaggrin, prescribing, genetic variation, longitudinal analysis.

*Supervisors: Prof Somnath Mukhopadhyay, Dr Katy Fidler, Dr Stephen Bremner*

## Caroline Spence

Professional Doctorate (Nursing), College of Life, Health and Physical Sciences  
School of Health Sciences

### Young children's experiences of insulin pump therapy – a discussion of the findings

Little is known about how pre-adolescent children experience their life situation when using insulin pump therapy as a treatment for type 1 diabetes. The purpose of this study, therefore, has been to explore the nature of such children's lived and contextualised experiences of this treatment strategy and to elucidate something of its existential impact. Findings highlight its far-reaching effects on all dimensions of a young child's life-world such that it textures not only what a child and their world "is" but also what he or she can "do".

Three key phenomena in particular emerge from the findings. Firstly, the centrality of the material world in the child's experience of insulin pump therapy is revealed and, more specifically, the impact this has on children's lived bodies. Secondly, findings highlight the agency of the children themselves in their own care and the considerable effort that this involves. Thirdly, is the significance of "place" and how this matters in terms of shaping the meaning of children's treatment experiences and modulating user-technology relations.

This presentation will consider some of these findings in dialogue with the existing literature and the methodological approach underpinning the study. I will also discuss some of the challenges that I have experienced in trying to not only make sense of the children's accounts but also in taking this data to a more theoretical, abstract level.

*Supervisors: Dr Kay Aranda, Dr Nina Dunne*



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## Willem Stander

MPhil, College of Social Sciences  
School of Applied Social Science

### Gay Men & Mental Health Help-Seeking: The Role of Social Media

Gay men suffer both poorer mental health outcomes and worse healthcare experiences than their heterosexual counterparts (Chakraborty et al., 2011; Elliot et al., 2015). Although literature on gay men's mental health help-seeking behaviours offer important insights into service engagement patterns within this population and the barriers that they face in accessing support, there remain significant gaps in our understanding. As much of the extant work focuses on help-seeking as a single decision toward or away from mental health services (*why* gay men might resist help-seeking), less is known about how gay men are making sense of a diversity of needs and supports (*how* gay men experience help-seeking). In particular, multiple and expanding help-seeking options are increasingly available through online and computer-mediated processes that offer different sources of assistance, such as formal, informal, and self-help resources; however, a paucity of research exists on gay men's utilisation of the Internet and

social media to seek help for mental health concerns. In my presentation, I argue that theoretical and empirical work on gay men's help-seeking can be enhanced by approaches considerate of the ongoing, subjective process of help-seeking. Furthermore, I address the challenges and possibilities of social media to help generate and support outreach work with vulnerable, isolated, and marginalised gay men in the context of mental health services. This expanded view is key to developing the knowledge important to enabling relevant and appropriate online supports for gay men struggling with mental health difficulties.

Keywords: Gay Men, mental health, help-seeking behaviours, Internet, social media

*Supervisors: Dr Katherine Johnson, Prof Kath Browne, Dr Olu Jenzen*

**Michael Stephenson-Huxford**  
Professional Doctorate, College of Social Sciences  
School of Applied Social Science

### Reaching conclusions: autoethnographic research into my first onset experience of panic

In February 2009 I began to experience panic attacks. There were no obvious antecedents for this, and my first attack was so intense that I sought help from my local hospital A&E. I was 44 years old at the time and enjoying life to the full.

As part of my professional doctoral studies, I have been researching these events in detail: examining possible 'triggers' for my first attack and trying to make sense of the circumstances leading to this unenviable experience. My research is rooted in the principles of analytic autoethnography; a research methodology that attempts to offer understanding of others through evaluation of self (Struthers, 2012). In particular, I have applied Chang's (2008) data collection methods and her 'ten point' strategy for analysis and interpretation.

Now approaching my final year, I will present my findings to date. I will also offer my thoughts on the practicalities of implementing Chang's methods and describing how analysis resulted in salient points emerging. Finally, I will consider work yet to be done in attempting to apply wider psychosocial understanding to personal triggers proposed.

*Supervisors: Prof Di Waller, Dr Graham Stew*

**Kitty Suddick**  
PhD, College of Life, Health and Physical Sciences  
School of Health Sciences

### The acute stroke unit as transitional space: the lived experience of stroke survivors and healthcare practitioners

Within the last decade stroke care has undergone significant development and change. Acute and hyperacute stroke units have been introduced. The focus of these units has been directed towards the medical and acute management of stroke. Research has explored transition and continuity after stroke, at different time points and more specifically when returning home. This study aimed to rectify the limited recognition given to the relevance and significance of transition within the acute stroke unit setting. The purpose of this research was to understand the acute stroke unit (ASU) as transitional

space as it was experienced by those living and going through the phenomenon (stroke survivors and health practitioners).

Four stroke survivors and four health practitioners took part in semi structured interviews that included an optional creative element. Detailed interpretive phenomenological analysis (IPA) was undertaken on one stroke survivor (Sarah) and one health practitioner (Clare). This process provided rich and detailed insight into the complexity of Sarah and Clare's idiographic experience and meaning making of the lived-through situation- presented as "close textual *readings*" (Eatough and Smith, 2006). This analysis was then extended to the other participants and across cases.

The inclusion of both the individual, idiographic accounts and across case analysis will be used to provide two different representations of phenomenological and hermeneutic understanding of the experience as it was lived. They will support the fundamental importance and meaning of transition for both stroke survivors and practitioners and contribute to understanding about the complexity of what is being experienced within the transitional space of the ASU.

This presentation will introduce the topic, discuss and justify the methodological decisions made, present (work in progress) findings and key aspects of my learning within this research journey.

Eatough, V and Smith, J (2006) '*I was like a wild wild person*': Understanding feelings of anger using interpretive phenomenological analysis. *British Journal of Psychology* 97: 483-498

*Supervisors: Dr Vinnie Cross, Dr Pirjo Vuoskoski*

**Chris Sweeney**

EdD, College of Social Sciences

School of Education

### Social class, habitus and reflexivity: an analysis of trainee teachers' understandings

This paper discusses the habituses of seven trainee teachers as they enter their training placements. Specifically, it examines their dispositional understandings of social class in their role as a teacher and how this affects their perceptions of the students from 'othered' social class backgrounds. Research methods used include semi-structured interviews to elicit details of how trainees' habituses have been shaped and subsequently to see how these habituses have developed during two training placements. Concept mapping is also used as an aid to memory recall during the interview process in order to develop trainees' understanding of their habitus. National policy documents and legislation are explored to see whether initial teacher training can be used as tool for creating a more equal society. Training institution policy documents are then examined for guidance on teaching related to social class during university-based lectures. The data shows that trainee teachers joining the profession from working class families make changes to their dispositions to align with placement expectations, whereas those from middle-class backgrounds do not see the need to moderate their dispositions. Similarly, the middle-class trainees do not see any need to adapt their teaching to accommodate those working-class students in their lessons, whereas the working-class students do make an effort to be more inclusive in their teaching. The ability, by trainee teachers, to reflect on the ways in which social class may, or may not, be significant within teaching in mainstream schools in England is explored as an outcome of this research.

Keywords: habitus, social class, initial teacher education

*Supervisors: Prof David Stephens, Dr John Smith*

## Omama Tariq

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Role of family support in buffering the transition towards lifestyle changes recommended to patients with diabetes living in Pakistan

**Background:** The role of the family and of spouses in relation to lifestyle behaviours of patients living with type 2 diabetes has received little attention so far. In the context of a developing country and under conditions of limited formal health care this may be even of more importance. Moreover, many South Asians are effected by diabetes and its complications and culturally appropriate lifestyle intervention that lead to its improvement in glycaemic control is urgently needed.

**Aim:** The research aims to identify barriers and facilitators influencing diet and physical activity levels in patients with type 2 diabetes in Pakistani adults. Moreover it will also explore family support and their relationships to self-care behaviours.

**Method:** This research is planned on interviewing patients (n=16), family members (n=16) and clinicians (n=6) based in diabetic centres in hospitals of Lahore, Pakistan in order to identify the barriers and facilitators to the lifestyle changes usually suggested as part of treatment and self-care. Framework Analysis (Ritchie and Spencer, 1994) will be used to describe and interpret participant's views. The Audio-taped interviews will be transcribed. Codes and categories will be created by considering each line and paragraph in an attempt to summarize what the patients, family members and medical professional are describing.

**Result:** themes that emerge from the data will help us understand the association between self-management of patients and support extended from family member.

**Conclusion:** Diabetes educators and healthcare providers should consider involving the family member to provide social support to enhance lifestyle changes in patients with type 2 diabetes.

*Supervisors: Prof Jorg Huber, Dr Anjum Memon, Dr Claire Rosten*

## Gillian Teideman

Professional Doctorate, College of Social Sciences  
School of Education

### Navigating Learning in Higher Education: An exploration of year 1 undergraduate Physical Education student experiences of learning

This doctoral study seeks to find out what it is like to be an 18-year-old and becoming a learner in Higher Education. It aims to describe and interpret through the stories of individual students how learning is experienced and develop understanding of the means by which students are supported in the transition to and during the early stages of learning at university.



Interpretative Phenomenological Analysis (IPA) has been used to gain insight into how learning is described; the perceived cognitive, affective and social demands on learning; and the challenges and barriers faced by students in becoming academic learners in Higher Education.

This presentation reports on the shift in research focus, with the movement from analysis to discussion. It considers the challenge of presenting a comprehensible idiographic narrative account of the experiences of six participants (theme within case) to the reader before engaging in a dialogue between the findings and extant literature. The session will briefly outline the IPA process employed and the difficulties of knowing when, and how deeply to interpret findings whilst retaining the individual voices of participants.

The session concludes by summarising the main findings and reflections on the research process at this stage.

*Supervisors: Dr Graham Stew, Dr Angela Pickering*

## **Maria Trotman**

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### **The lived experiences of fear of falling in the elderly patient: An interpretive Phenomenological study**

**Background:** The National Institute of Health and Care Excellence (NICE) guidelines for the 'Assessment and Prevention of Falls in Older People' (NICE, 2013, p.5) state that 'People aged 65 and older are at the most risk of falling', the guidelines also note that 30% those over 65 and 50% of people over 80 fall at least once a year. Fear of Falling (FOF) has been identified as a risk factor for falls and should be assessed. FOF can be defined as 'a lasting concern about falling that can lead an individual to avoid activities that he/she remains capable of performing' (Tinetti and Powell, 1993, p. 35). There is a gap in theoretical knowledge about the role of FOF as it transcends from our understanding of worry.

**Aims:** The aim of this research is to gain an insight into the lived experience of fear of falling.

**Methodology:** The proposed research project will aim to fill the gap in qualitative research design by using an interpretive phenomenological design, with six video recorded in-depth semi structured interviews. The video recordings will be transcribed and interpretive phenomenology analysis will be used to will explore how the participants make sense of their personal experience of FOF.

**Results:** The themes produced were impact of ageing after falling, battling against falls, need for support and feelings of Inferiority.

**Expected benefits:** The potential impact of this research is a deeper understanding of the experiences of FOF. This research will give an insight to what is behind the fear and how it affects the patients. By having a better understanding of the FOF more effective assessments and management plans can be produced. The visual evidence can aid training programs for clinicians within a health promotion context, to highlight further empathy of the condition and what the signs and symptoms might be.

**Key words:** Fear, Fall Prevention, Phenomenology, Falls, Elderly patients.

*(cont)*

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*Supervisor: Dr. Chris Morriss-Roberts*

## Jack Turner

PhD, College of Life, Health and Physical Sciences  
School of Computing, Mathematics and Engineering

### A phenomenological model for the end of injection in diesel fuel injectors

Residual fuel trapped inside the injector nozzle can be discharged after the end of the injection event, wetting the nozzle surface and potentially releasing large droplets into the flame. Post-injection fuel discharge can have a significant effect on engine performance. Recent trends by engine manufacturers towards multiple injection strategies give rise to an increase in the number of transient injection phases. As a result there is an increase in the frequency of post-injection fuel discharge, and the subsequent wetting of the nozzle surface.

In this study we used high-speed video to investigate the dynamics of end of injection at the microscopic level, for a range of engine-relevant operating conditions. We used production multi-hole injectors as well as simplified geometries, such as the ECN Spray B three-hole injector, and found the behaviour of these injectors to be similar. We present a statistical analysis of the frequency of post-injection fuel discharge as a function of operating conditions. We also show that, during the combustion event, the flame front appears to contact the areas involved in surface wetting from post-injection fuel discharge. We summarise our observations in a phenomenological model that describes the dynamics of end of injection, and the mechanisms that can lead to nozzle wetting and inadequate fuel mixing.

*Supervisors: Dr Cyril Crua, Dr Guillaume de Sercey, Prof Sergei Sazhin*

## Jenny Venton

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### A poroelastic model of the spinal cord

Syringomyelia is a rare disease characterised by the formation of fluid filled cavities in spinal cord tissue, causing a range of symptoms including pain and eventual paralysis. Current research to understand how these cavities form has focussed on mechanical, as opposed to biological causes. In

this study a poroelastic mathematical model has been developed to examine mechanical behaviours of spinal cord tissue that could lead to cavity formation.

Poroelastic materials such as spinal cord tissue consist of a solid containing many connected fluid filled spaces known as pores. A poroelastic material model allows pressure changes in the pores to affect deformations of the solid and vice versa. As altered pressure is often a precursor to cavities, the model will provide insight into how altered pore pressure affects stresses and deformations in the spinal cord tissue.

If stresses are high enough to potentially damage cord tissue, this would indicate the pressure levels likely to cause cavities. Spinal cord permeability and porosity data from diffusion MRI will increase accuracy of the model by providing more realistic tissue properties. With updated tissue properties, the model will provide a better picture of the processes involved in cavity formation.

*Supervisors: Dr Paul Harris, Dr Gary Phillips*

## Julie Vincent

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### The introduction and use of Entonox® as an alternative method of analgesia for intrauterine contraceptive device insertion.

**Aims:** Intrauterine contraception (IUC) provides long acting reversible contraception that is a safe, reliable and cost effective option to prevent unintended pregnancy. Many women will chose to have IUC device (IUCD) insertion without pain relief, but fear of pain at insertion is widely believed to be a deterrent to this method of contraception and a small percentage of women do experience severe pain. Commonly used analgesics for this procedure include oral pain relief and local anaesthetics but evidence to support the use of any specific method of analgesia is limited and often conflicting.

Entonox® is a safe, effective and widely used method of pain relief for procedural pain. This research proposal is to explore if Entonox® can provide an alternative, effective method of analgesia for IUCD insertion within a community contraception and sexual health clinic.

**Methodology:** Study design: A single-blinded, experimental, randomly selected, quantitative study with an active control group comparing Entonox® with intracervical local anaesthetic injection. The primary outcome of the study is compare level of pain experienced at two stages during IUCD insertion on 100mm Visual Analogue Scale and satisfaction assessment with Likert Scale questions.

Secondary outcome measures are whether level of pain and analgesic efficacy are related to participants' age, parity and/or previous IUCD insertion experience

**Recruitment:** From women who attend clinic requesting IUC as their preferred method of contraception. Women will be invited to participate if they are between the ages of 18-54, with no contraindications to IUC, Entonox® or LA injection.

**Results and expected outcome:** Data will be analysed using SPSS data analysis package. If proven to be effective, Entonox® will be introduced within the research site as an alternative analgesia for use during this procedure.

*Supervisor: Dr Theofanis Fotis*

## Heidi von Kurthy

MPhil (Occupational Therapy), College of Life, Health and Physical Sciences  
School of Health Sciences

### The everyday experience of the craft of embroidery

**Presentation focus:** Overview of narrative inquiry methodology combined with interpretative hermeneutic narrative analysis.

**Background:** Occupational therapy began with the use of arts and crafts to remediate physical and mental illness in conjunction with the medical model. The dominance of the medical model in modern times has led to the tendency of occupational therapists to reject art and craft in the favour of more biomedical or psychological interventions. Qualitative research about art and craft, however, has established a number of broad but recurrent themes in relation to engagement in art and craft activities and perceived health and wellbeing in patient and non- populations. In addition, the medical profession has also instigated renewed interest in the restorative use of art and music in contemporary practice. Despite this, very little attention has been given to understanding the complexity and subjectivity of engagement in specific art and craft activities in everyday life. This type of understanding is necessary for occupational therapists to adequately justify and proficiently prescribe traditional interventions in contemporary practice.

**Methodology:** The research follows a narrative inquiry methodology in order to illustrate the experience of embroidering in the context of everyday life. Four hand embroiderers were recruited to provide rich data from direct observation, interview and written documents. Interpretative hermeneutic narrative analysis enabled the construction of individual narratives from the storied data. The purported intention of the research is to provide occupational therapists much needed research material for deep reflection of the therapeutic use of crafts such as embroidering in future practice.

**Study question:** How do embroiderers experience their craft in the context of everyday life?

*Supervisors: Dr Graham Stew, Dr Kay Aranda*

## Niall Walkden

PhD, College of Life, Health and Physical Sciences  
School of Pharmacology and Biomolecular Science

### Ecology, economy and culture; Cultural ecosystem services provided by scavengers in South Africa

Scavengers are a keystone species in nearly every major ecosystem throughout our planet. Currently vertebrate scavengers in South Africa, such as vultures and brown hyena, which are crucial to disease control and structuring ecological communities are either under threat of extinction or will be in the near future. These scavengers play fundamental roles in ecological communities yet their significance is poorly understood. Furthermore, research focus on scavenger species has neglected evaluation of their socio-economic roles. We propose to utilise an ecosystem services approach for elucidating the how scavengers ecological, economic and cultural value are perceived by South African residents. Valuation will be assessed using a mixed methods approach; Cultural value and attitude will be measured quantitatively using a comprehensive questionnaire survey, and then explored in a series of semi-structured interviews. Economic value will be measured using a questionnaire survey with both a stated

and revealed preference components. Research aims to address clear gaps in knowledge and examine the disparity between actual value, perceived value and attitude.

*Supervisors: Dr Anja Rott, Dr Dawn Scott, Prof Andrew Church*

## Ross Webster

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Does bedside swallow assessment demonstrate variations in oro-motor and swallow presentation between Alzheimer's dementia and vascular dementia patients?

Dysphagia is prevalent in those with dementia (Logemann 1997). Different types of dementia present with different types of dysphagia. *Bedside Swallow Evaluation* (BSE) is the standard form of swallow assessment used in the NHS (RCSLT, 2009) However BSE have variable reliability (RCSLT 2009, Leder & Espinosa, 2002) and limited clinical evidence exists regarding BSE in dementia management (Alagiakrishnan *et al*, 2013).

**Hypothesis:** Given the variable presentations of Alzheimer's disease and vascular dementia BSE carried out by a Speech & Language Therapists (SaLT) will demonstrate consistent oromotor variations in patients with different types of dementia.

**Aim:** To establish utilising BSE whether a consistent variation of oromotor and swallow function is observable between different types of dementia.

**Methodology:** A prospective single group, descriptive study and quantitative analysis.

**Methods:** BSE carried out with acute admitted (WSHT) patients with a diagnosis of dementia and suspected dysphagia (n=117 in 2014) at admission and at an approximately one week follow up. BSE will assess oral status and oral function utilising a bedside oromotor assessment based on existing oromotor and mealtime assessment protocols (following Prier & Robbins, 1997; Sato *et al*, 2013; Ward *et al*, 2011).

**Sample and Location:** Convenience Sample. Individuals with a diagnosis of dementia admitted as inpatients to WSHT. Participants recruited by trained SaLT's and dementia specialists.

**Expected Outcomes:** BSE will consistently demonstrate variations in oromotor function in different types of dementia. This research highlights BSE validity and offers insight into the specific oromotor deficits clinicians can expect to identify with BSE.

*Supervisor: Dr Lucy Redhead*

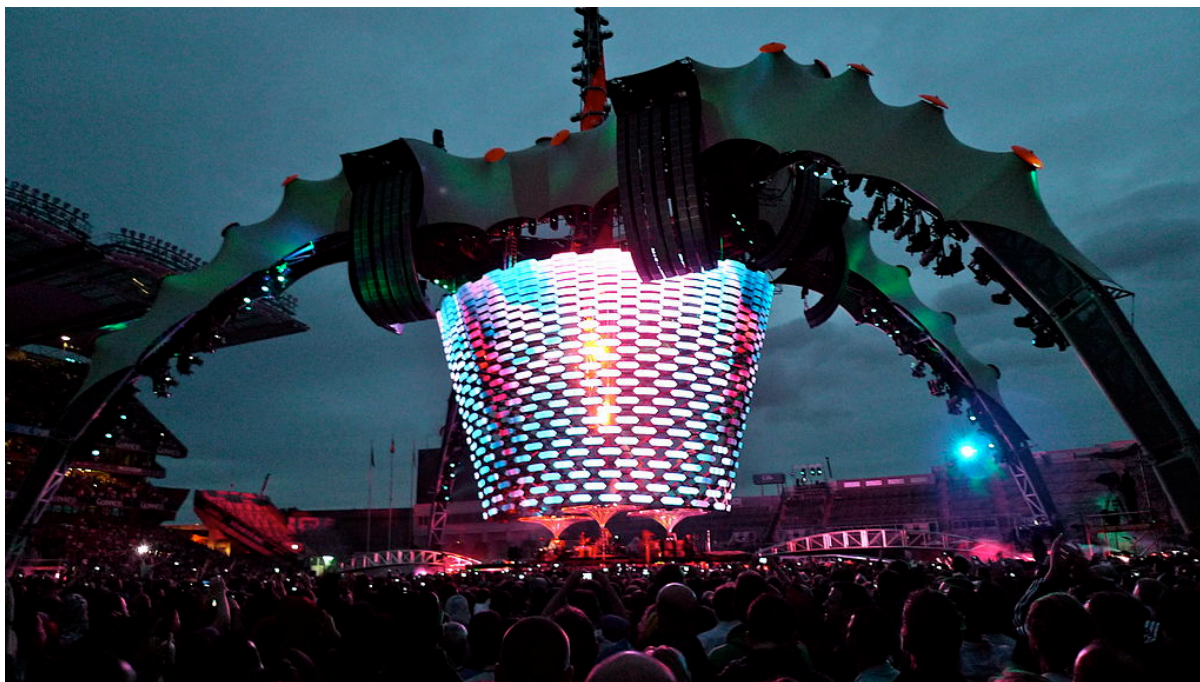
## Michael Williams

PhD, College of Social Sciences

School of Sport and Service Management

### Rock Music Events as Spectacle: U2's Union of Rock and Resistance. Findings, Analyses and Interpretations of the fans' experiences of U2's 360° Tour

This presentation outlines the preliminary findings and analyses of my research project, which focuses on rock music events as spectacle. My research aim is to develop a better understanding of the concept of spectacle and process of spectacularization in the context of rock music events. The project investigates the contribution of the spectators to the creation of spectacle. My research focuses on U2's (2009-2011) '360°' tour and adopts a multi-method approach, which includes examination of fan comments and conversations on selected online fora, qualitative content analysis of documentary material relating to the tour, and semi-structured interviews with fans. The research is also informed by my own insights as a fan of U2, and responses from the Show's Director.



U2 360° Tour Croke Park, by Kristian Strobec, Creative Commons 2.0 <http://creativecommons.org/licenses/by/2.0/>

Analysis of online conversations about U2's shows has revealed a range of significant findings, which help to understand the event as a spectacle from the fans' perspective. They also provide useful insights into the contribution of spectators to the process of spectacularization. The online discussions produce certain types of knowledge about the fans' understanding, practices and experiences of U2 shows. Although this preliminary phase revealed useful insights relating to the role of spectators in the event, it also highlighted a number of questions, which were addressed by interviewing fans, who attended the concerts. These included queries about the activities fans engage in at U2 shows, their views on the socio-political campaigns communicated in U2's 360° tour, and the emotions, values and beliefs that are promoted in the show. Five themes have emerged from the interview data, including community and identity; enchantment; atmosphere; politics and space.

*Supervisors: Dr Udo Merkel, Dr Cathy Palmer, Dr Paul Gilchrist*

**Helen Williamson**  
MPhil, College of Social Sciences  
School of Applied Social Science

### Developing an understanding of illegal firearm supply in England and Wales

**Title of research:** Criminal Armourers and Illegal Firearm Supply in England and Wales

Over the past decade recorded firearm offences in England and Wales have fallen significantly from a high of 11,088 offences between April 2005 - March 2006 to 4,994 offences between October 2014 – September 2015 (figures exclude air-weapons) (ONS, 2016). Recent statistics demonstrate over 50 percent of these recorded offences comprise of unidentified, imitation, reactivated or other firearms (Lau, 2012), indicating the presence of a number of individuals who are modifying, reactivating or manufacturing firearms from scratch. Currently there is relatively little known about these individuals, including where they are positioned within the overall gun supply process (Hales et al, 2006). An initial typology of criminal armourers, offered by Williamson (2015), identified seven potential categories of individuals who have previously been responsible for supplying these types of weapons to meet demand. This presentation will provide an overview of the development of this initial typology and introduce network structures identified in regard to the onward distribution of illegal firearms in England and Wales (thus far identified from open-source data only).

Furthermore this presentation will discuss the methodological approaches envisaged to undertake research with the aim to develop and explain the activities, motivations and *modus operandi* of criminal armourers and outline the emerging method of crime script analysis including its potential use for understanding this specific crime type.

*Supervisors: Prof Pete Squires, Dr Craig Johnstone*

**David Wright**  
MPhil, College of Social Sciences  
Brighton Business School

### Comparing the Employment of Older Workers in the UK and Germany

Extending working life is an objective for many nations. Ebbinghaus' influential cross-national analysis of early retirement, published in 2006<sup>1</sup>, identified pathways out of work which needed to be curtailed. He predicted that liberal welfare states regimes like the UK would react faster than conservative ones like Germany. However, in the 2014 report 'Fuller Working Lives'<sup>2</sup> the UK government could only report modest improvement "compared to many nations". A comparison of European Labour Force Surveys shows the employment of older people (aged 55 to 64) has increased much faster in Germany since 2003. This paper compares the employment transitions of older workers using data from the longitudinal surveys British Household Panel Survey, its successor Understanding Society and the German Socio-Economic Panel.

This paper investigates employment transitions for ten-year birth cohorts. Although only one aspect of labour market policy, the experiences of each successive generation of older workers demonstrate that fundamental changes are underway in response to changing economic conditions. For example, many of the most significant changes in the employment patterns concern successive generations of women

whose employment rates and working lives are increasing right up to and sometimes beyond pension age.

The evidence that many of these changes are common to both Germany and the UK seems to call into question the appropriateness of static 'Three Worlds'<sup>3</sup> or 'Varieties of Capitalism'<sup>4</sup> typologies of welfare states when describing current welfare states in favour of more dynamic models that can describe incremental change<sup>5</sup>.

*Supervisors: Dr David Lain, Prof Jackie O'Reilly*

## References:

- <sup>1</sup> EBBINGHAUS, B. 2006. *Reforming early retirement in Europe, Japan and the USA*, Oxford, Oxford University Press.
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- <sup>3</sup> ESPING-ANDERSEN, G. 1990. *The three worlds of welfare capitalism*, Cambridge, Polity.
- <sup>4</sup> HALL, P. A. & SOSKICE, D. W. 2001. *Varieties of capitalism: the institutional foundations of comparative advantage*, Oxford, Oxford University Press.
- <sup>5</sup> STREECK, W. & TRAMPUSCH, C. 2005. Economic reform and the political economy of the German welfare state. *German Politics*, 14, 174-195.
- <sup>6</sup> STREECK, W. 2010. *Re-forming capitalism: institutional change in the German political economy*, Oxford, Oxford University Press

## Fawzia Zaidi

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### Decision Making by Experienced Midwives as the Primary Responders in an Obstetric Emergency

The aim of this study is to understand and explain how experienced midwives as the primary responders make decisions in obstetric emergencies. The philosophy underlying the research questions is interested in the nature of human behaviour in relation to how the learning and cognitive abilities of the midwives informs their decision making, the nature of the complexity and uncertainty of the situation and how the two interrelate. Perspectives of context, conditions (ecology), processes (interactions), consequences and interactions are therefore crucial to the interpretation and study of descriptive decision making theory.

This presentation will discuss how using researcher generated video elicitation methods within an Interpretivist-constructivist approach, influenced by symbolic Interactionism avoided the ethical challenges and limitations of other methods of data collection. Researcher generated video elicitation provided a pragmatic means of gaining an understanding of the decision making processes of the midwives.

*Supervisors: Prof Julie Scholes, Prof Simon Cooper*

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# Poster Presentations



## Poster Titles and Presentation Times

### Titles and order of poster presentations for Doctoral College PGR conference 2016

College of Life, Health and Physical Sciences				Date of presentation	Order of presentation
Algarni	Fatimah	CEM	Investigating attitudes towards use of social media in teaching and learning among Higher Education teachers and students in Saudi Arabia	29th June	3
Al-Saedi	Ahmed	SET	Environmental study of the area between Shatt Al-Arab and Khor Al-Zubair, Southeast Iraq	29th June	1
Al-Thuwaynee	Ayad	CEM	Combustion synthesis and analysis of Fe <sub>2</sub> O <sub>3</sub> nanoparticles	28th June	6
Azzam	Ahmed	SET	The effects of Nano-particles on the compressive and tensile strength of concrete	29th June	2
Barker	John	PABS	Infection-responsive biomaterials: bacteriophage-tethered wound dressings and dermal substitutes for a targeted therapy	28th June	4
Bogdan	Iulia	BSMS	Fatigue in multiple sclerosis and relationship with metacognition of self	27th June	5
Booth	Simon	SHS	Do burn wounds with diagnosed infection receive therapeutic doses of antibiotic in the wound sufficient to treat infection?	28th June	3
Boyle	Paul	SHS	An exploration of the lived experience of disability for young adults with cerebral palsy	28th June	1
Cook	Claire	SHS	The lived-experience of impaired sensation in the feet related to Multiple Sclerosis.	27th June	1
Geoghegan	Blaise	PABS	Spin crossover and switchable behaviour in Iron-based surfactants	27th June	4
Gonzales	Rene	BSMS	Exploring correlations of spatial ability, stereopsis and manual dexterity for anatomy dissection and surgery.	29th June	6
Hachoumi	Lamia	PABS	The role of oxidative stress in age-related changes in the cerebral giant cells of the pond snail, <i>Lymnaea stagnalis</i>	28th June	5
Kyriazis	Diana	BSMS	Neural correlates of cognitive training in middle-aged adults	29th June	7
Morris	Hannah	SHS	Exploring the nature of coproduction of care between district nurses and frail older people	28th June	2
Nagy	Annamaria	BSMS	Can simulated surgeries facilitate diagnostic reasoning in undergraduate medicine?	27th June	6
Samaroudi	Myrsini	CEM	Digitally fabricated 3D representations of cultural heritage artefacts: properties and dynamics in narratives for different audiences	29th June	4
Schneider	Jens	SHS	Exploring the being, becoming and belonging of gender variant identities through a human doing perspective	29th June	5
Stanley	Richard	SHS	The experience of being a newly qualified physiotherapist: a descriptive phenomenological study	27th June	2
Tranquille	Dominique	CEM	Evaluating the effects of colour in LineSet diagrams	28th June	7
Ullah	Nafeesa	PABS	An investigation to establish the age of medication taking responsibility and its effect on adherence in paediatric patients with chronic illness	27th June	3

College of Social Sciences				Date of presentation	Order of presentation
Butterworth	Jake	S&SM	The role of Interceptive and Exteroceptive feedback on exercise regulation	June 30th	1
Donovan	Jo	Education	Exploring young children's peer to peer communication in an early years setting	June 30th	4
Stander	Willem	SASS	Gay men & mental health help-seeking: The role of social media	June 30th	3
Williamson	Helen	SASS	Criminal armourers and illegal firearm supply in England and Wales	June 30th	2

## Abstracts of Poster Presentations

### Fatimah Algarni

College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

Investigating attitudes towards use of social media in teaching and learning among Higher Education teachers and students in Saudi Arabia

Abstract unavailable at time of printing

*Supervisors: Mrs Audrey Marshall, Dr Lyn Pemberton*

### Ahmed Al-Saedi

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

Environmental Study of the area between Shatt Al-Arab and Khor Al-Zubair, Southeast Iraq

Iraq's water quality problems have increased steadily for the last thirty five years. The Tigris and Euphrates are the main source of fresh water in Iraq. These rivers rise upstream in Turkey, and then pass through Syria. There is no quota agreement to share water, which has led to a water crisis in southern areas, particularly in the city of Basra. Over the course of two decades, human activities, climate change and conflict in the region have led to significant impacts on surface and groundwater in Southern Iraq. Therefore, assessment of water quality is very important for knowing its suitability for various purposes.

Two additional environmental factors in Iraq are war remnants and depleted uranium from bombing. Most of Iraq is contaminated with high levels of radiation and dioxins, with three decades of war has declined in most provinces of the country, specifically in the southern area. Hence, this study aims to determine the geographic distribution of contaminants, particularly depleted U, in Southern Iraq in relation to geomorphology and geology.

The present study will be based around geochemical analysis of environmental materials from the area between Khor al Zubair and Shatt al Arab drainage basin, southwards to the Fao coastal zone on the Persian Gulf.

*Supervisors: Dr Martin Smith, Dr Norman Moles*

“The debates and questions were very helpful to me in terms of my research project.”

Barbara Seebacher  
Doctoral student

## Ayad Al-Thuwaynee

MPhil, College of Life, Health and Physical Sciences  
School of Computing, Engineering and Mathematics

### Combustion synthesis and analysis of Fe<sub>2</sub>O<sub>3</sub> nanoparticles

Metal oxides have been studied and gain considerable attention by many materials scientists due to their magnetic, electrical, optical, catalytic and mechanical properties these properties make the metal oxides useful in technological applications. Among them iron oxide nanoparticles have been used in diverse applications, including as catalysts, optical magnetic recording, gas sensors, electronic device, magnetic resonance imaging, hyper thermic malignant cell therapy, and targeted drug delivery. Combustion synthesis is the simplest and most economic method for nanoparticle production. Most importantly combustion synthesis has proven to be an easily scalable process that can achieve high product yields and high, continuous production rates. However, there are number of challenges associated with the combustion synthesis of nanoparticles to achieve good control of particle size, size distribution, phase and composition. In the present work, iron oxide nanoparticles will be synthesised in a low-pressure flame reactor based on the gas phase. The burner configuration will stabilised by using a premixed flame with propane, oxygen, and argon. A mixture of iron pentacarbonyl (Fe (CO)<sub>5</sub> in the argon will be added to the gases as a precursor material using the premixed flames to establish the effects of the flame parameters on the particle characteristics and properties. The material properties will be characterized using a variety of techniques such as X-ray diffraction, electron microscopy, and measurements of the specific surface area by Brunauer, Emmett and Teller (BET) method that based on physical adsorption of gases . In this work the effects of flame factors, such as precursor concentration, temperature, and residence time in then premixed flames on iron–oxide particle morphology, phase, composition and properties will be investigated.

*Supervisors: Dr Simon Busbridge, Dr Khizer Saeed*



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## Ahmed Azzam

MPhil, College of Life, Health and Physical Sciences  
School of Environment and Technology

### The effects of Nano-particles on the compressive and tensile strength of concrete

The addition of certain nanoparticles improve the mechanical properties of concrete, however the type of Nano-particles to be used, and their long term effects on the concrete, are actively being researched. Within this context, the literature regarding the addition of Nano Al<sub>2</sub>O<sub>3</sub> (NA) and Nano SiO<sub>2</sub> (NS) are scarce and is the subject of this investigation. The ordinary Portland cement type 32.5R/A-LL, conforming to EN-197, is partly replaced with NA and NS respectively to investigate and quantify their effects on the compressive and tensile strength of concrete. This paper presents the experimental results of the three replacement ratios of both NA and NS being 1%, 3% and 5%. Since the water to cement ratio (w/c) is an important factor in determining the strength of concrete, two different w/c

ratios of 0.5 and 0.4 have been used for the both nanoparticle replacements. The results show that NA and NS improves both the compressive and tensile strength of concrete, however the increase in compressive strength has been more profound. The optimum content of NA and NS has been found to be 5% and 3% for the w/c ratio 0.5 and 0.4 respectively. Practical significance of these results can be demonstrated from the fact that the compressive strength of a 37N/mm<sup>2</sup> concrete can be improved to 47 N/mm<sup>2</sup> by an inclusion of only 3% of NS (relative to the cement weight); meaning an approximate saving of about 100kg of cement for each m<sup>3</sup> of concrete.

**Keywords:** Nanoparticles; Nano Al<sub>2</sub>O<sub>3</sub>; Nano SiO<sub>2</sub>; mechanical properties of concrete; compressive strength; tensile strength.

*Supervisors: Dr Imran Rafiq, Dr Andreas Lampropoulos, Dr Pierfrancesco Cacciola*

## John Barker

MPhil, College of Life, Health and Physical Sciences  
School of Pharmacy and Biomolecular Sciences

### Infection-responsive biomaterials: bacteriophage-tethered wound dressings and dermal substitutes for a targeted therapy

While the advent of antibiotics has proved one of the most important and indispensable medical triumphs of the 20<sup>th</sup> century, the uncompromising mechanisms of antimicrobial resistance are threatening the return of a pre-antibiotic era. Attention is now focused towards alternative approaches to infection control; bacteriophage therapy, well-established in Eastern Europe and the former Soviet Union (FSU), is increasingly being considered as one option. Lytic phage are viruses that can infect and kill bacteria through cell lysis, releasing virion progeny to continue the infection process.

Wound pathogens can exhibit antibiotic resistance; increasing patient morbidity and the associated financial costs of treatment and prevention of nosocomial outbreaks. While for some time antimicrobial dosed wound dressings have provided limited microbial control, antibiotic resistance is providing a real threat to the treatment and management of chronic wounds. With high porosity polymeric wound dressings already being exploited as drug delivery carriers of traditional antibiotics, and the potential of phage in the management of bacterial infection, the immobilisation of phage within said wound dressings could provide a novel solution to the treatment of chronic antibiotic resistant wound infections.

The objective of this study is to produce and characterise virulent phage incorporated and immobilised wound dressings which demonstrate lytic activity against clinically relevant bacteria *in vitro*. Through judicious molecular design, the release characteristics of phage from the material will be established and modified to achieve enhanced bacterial control. Material structure, phage distribution and integrity will be visualised using a range of image analysis techniques. Finally, the developed phage immobilised biomaterials will be evaluated for cytotoxicity and biocompatibility.

*Supervisors: Dr Iain Allan, Dr Cressida Bowyer, Prof Stephen Denyer*

## Iulia Bogdan

MPhil, College of Life, Health and Physical Sciences  
Brighton and Sussex Medical School

### Fatigue in multiple sclerosis and relationship with metacognition of self

**Background:** Multiple sclerosis is an inflammatory condition affecting the central nervous system, and constitutes the greatest cause of non-traumatic disability in young adults in the Western world. Cognitive fatigue is often reported by patients with multiple sclerosis as the most debilitating symptom, because of its prevalence, impact on the quality of life, productivity and employment.

Previous studies looked into possible mechanisms behind fatigue in multiple sclerosis, concentrating around the role of the dopaminergic system. However, there is recent evidence for the role of brainstem-hypothalamus connections, which are carrying information from the internal body to higher structures.

**Hypothesis:** Our hypothesis is that the afferent pathways carrying information about the internal state of the body (interoceptive afferent pathways) have a role in experiencing the feeling of fatigue in patients with multiple sclerosis.

**Methods:** To investigate this, we will assess 72 patients with multiple sclerosis, with high and low fatigue scores. Depression and sleep disorders will represent exclusion criteria. We will use neuropsychological tasks testing awareness of the internal body (interoceptive awareness), self-evaluation of these internal states (metacognition of interoception) and self-reported interoceptive sensibility. We will combine these tasks with advanced brain scanning techniques, which will give us information on the microstructure and brain connectivity.

**Hoped outcome:** We will compare performance at interoceptive tasks in patients with multiple sclerosis and severe fatigue comparing to patients with multiple sclerosis and a low degree of fatigue. Moreover, we intend to identify the microstructural correlates of fatigue, interoception, and metacognition measures to identify the signature of fatigue on these patients.

*Chief Investigator: Dr Waqar Rashid*

*BSMS lead supervisor: Prof Mara Cercignani*

## Simon Booth

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### Do burn wounds with diagnosed infection receive therapeutic doses of antibiotic in the wound, sufficient to treat infection?

Burn wounds have a high incidence of Infection. Infection leads to increased pain and delayed wound healing. Due to the body's response to burn injury it has been demonstrated that higher doses of antibiotic are needed to achieve therapeutic levels in the blood, even if given intravenously. By the nature of the injury, blood vessels around the burn are damaged, thus the availability of antibiotic in the wound may be severely compromised. When bacteria are exposed to sub therapeutic levels of antibiotics, bacterial resistance occurs. Reducing antibiotic resistance has been made a key target for the NHS and global policy on health.

The study will examine:

- 1- What is the difference between systemic, circulating antibiotic levels and wound antibiotic concentration/ availability?
- 2- How do these levels correlate with measurable clinical outcomes, such as healing time, burn wound progression, need for surgery and resolution of infection?

*Supervisors: Dr Brian Jones, Dr Bhavik Patel*

## Paul Boyle

MPhil, College of Life, Health and Physical Sciences  
School of Health Sciences

### **An exploration of the lived experience of disability for young adults with cerebral palsy**

This poster presentation will introduce the broad ideas relating to the study. More children with cerebral palsy are living through to adulthood and it may be that societal expectations are increasing in as far as quality of life for people affected by disability (Department of Health, 2012; Frisch and Msall, 2013). 'Growing up' may involve completing or furthering education, starting employment and entering into relationships – along with becoming increasingly independent (Reddihough, 2013). This may be problematic however for a young person living with disability (Dodd et al., 2010). It is this experience of life during these early adulthood years that interests the researcher. Statutory services may be well established for children with cerebral palsy, but it appears the transition to adult services can be difficult, and there is limited research relating to how to support young adults to live meaningful lives.

A variety of methodologies have been considered to identify the best way in which to answer the research question: What is life like for young adults with cerebral palsy who are severely disabled? Gradually, the phenomenon of living with disability has become ever-more apparent and a phenomenological approach has been decided upon. If there is an increasing cultural expectation for quality of life for those affected by disability to improve then it would be reasonable to acquire a better understanding of the wants and aspirations of young adults living with cerebral palsy and in so doing illuminate as to what their lifeworld is like.

#### **References**

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Frisch D, Msall E (2013) Health, functioning, and participation of adolescents and adults with cerebral palsy: a review of outcomes research. *Developmental Disabilities Research Reviews* 18: 84-94.

Reddihough DS, Jiang B, Lanigan A, Reid SM, Walstab JE, Davis E (2013) Social outcomes of young adults with cerebral palsy. *Journal of Intellectual & Developmental Disability* 38(3): 215-222.

*Supervisors: Dr Anne Harrington, Dr Pirjo Vuoskoski*

## Jake Butterworth

MPhil, College of Social Sciences  
School of Sport and Service Management

### The Role of Interoceptive and Exteroceptive Feedback on Exercise Regulation

**Background:** Regular engagement in physical activity is important for both physical and psychological wellbeing. However, despite the acknowledged benefits of physical activity on health, as well as the numerous efforts to promote and increase exercise engagement, reported rates of physical activity have remained largely unchanged with individuals spending an increasing percentage of time engaged in sedentary activities. Consistent with social cognitive theories, participation in physical activity is thought to be guided by appraisal of previous exercise experiences, such that positive affective responses to exercise are likely to encourage greater engagement in future physical activity whereas negative experiences are likely to be perceived as aversive and may hinder engagement.

**Purpose:** Despite a growing body of evidence to support the role of affect and adherence, the underlying mechanisms that influence this exercise-affect response remain poorly understood. Therefore, the purpose of this research project will be to enhance current understanding of the emotional and perceptual responses to physical activity by developing a greater mechanistic understanding of these phenomena.

**Approach:** Over a series of investigations this research project will examine the physiological, neurophysiological, and perceptual factors that contribute to the positive and negative responses experienced during exercise, with the aim of developing a model to explain why some individuals experience exercise as adverse and unpleasant.

**Proposed Outcome:** The main outcomes are twofold 1) develop a model to describe the mechanistic basis of affective responses to exercise, and 2) develop appropriate interventions to encourage greater exercise participation by reducing negative experiences of physical activity.

*Supervisors: Dr Nicholas Smeeton, Prof Hugo Critchley*

## Claire Cook

MRes Clinical Research, College of Life, Health and Physical Sciences  
School of Health Sciences

### The Lived-Experience of impaired sensation in the feet related to Multiple Sclerosis

**Background:** The Multiple Sclerosis Society (2015) estimates there are more than 100,000 people in the United Kingdom living with Multiple Sclerosis (MS). A topical issue in recently published research is impaired sensation in the feet (Kalron et al. 2015; Dixon et al. 2014) which is a common symptom reported by people with MS. As yet, no published research has explored qualitatively the experiences of people with MS, living with impaired sensation in the feet.

**Research Question:** What are the lived experiences of impaired sensation in the feet related to people with MS?

**Method:** A purposive sample of 3-5 English speaking adults (18+) with MS reporting impairments in sensation of their feet for example; numbness, pins and needles or burning, will be invited to



participate. People who consent to take part in the study will be interviewed about their experiences at a location of their choice, likely to be their home. The data from the interviews will be transcribed and analysed using a descriptive phenomenological research method, developed by Giorgi (2009).

**Outcome:** The proposed study will produce contextual phenomenological knowledge about the unified and varied meaning of impaired sensation in the feet for those with MS, based on qualitative data. The results of the study may have implications for meaningful practice such as increasing the awareness of the phenomenon amongst therapists, potentially improving therapeutic relationships. It may also help to formulate ideas for future research and clinical interventions.

*Lead Supervisor: Dr Pirjo Vuoskoski*

## Jo Donovan

MPhil, College of Social Sciences

School of Education

### Exploring young children's peer to peer communication in an early years setting

Abstract unavailable at time of printing

*Supervisors: Dr Sara Bragg, Dr Sandra Williams*

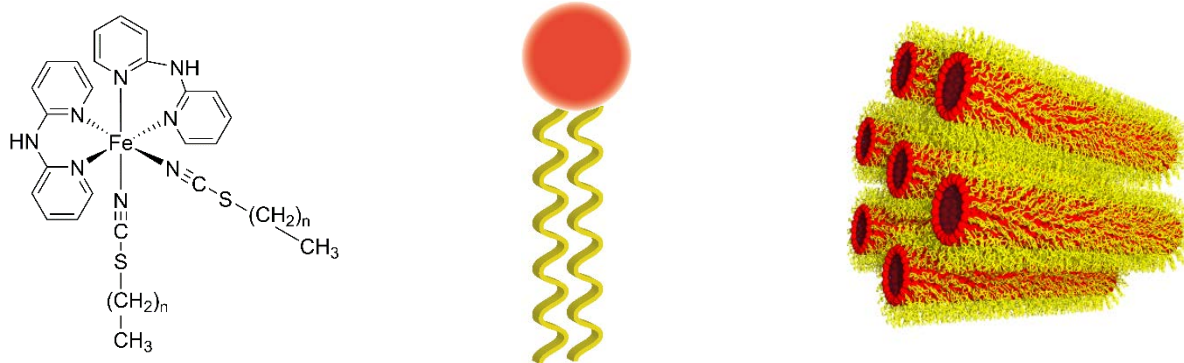
## Blaise Geoghegan

MPhil, College of Life, Health and Physical Sciences

School of Pharmacy and Biomolecular Sciences

### Spin crossover and switchable behaviour in Iron-based surfactants

Metal-based surfactants exhibit a key usefulness in Birefringence,<sup>[1]</sup> dichroism<sup>[2]</sup> and thermochromism<sup>[3]</sup> and thus have been thoroughly investigated over a number of years now. The presence of a metal ion in the head group of amphiphilic molecules facilitates the manipulation of intrinsic redox and magnetic properties via physical and chemical processes. Iron(II) has the potential to offer a switchable component to the magnetic properties of surfactant molecules via spin crossover events, thus resulting in phase-changing behaviour of lyotropic liquid crystal aggregates depending on the spin state of the metal ion centre. By designing spin-crossover ligands that possess a hydrophobic region it is possible to form lyotropic liquid crystal phases from spin-crossover Iron(II) complexes. The application of an external perturbation such as a magnetic field holds potential to initiate spin transitions, which in turn allows a non-invasive control mechanism for the activation/ deactivation of a “molecular switch” effect, which is the basis of producing smart materials of this nature. Such materials have an impending significance in the fields of drug & gene delivery and also in biological imaging systems due to the switchable nature that is installed in to the molecules via their judicious design. We intend to take a modular approach in the design, characterisation and cataloguing and of iron complexes containing alkyl chain ligands. By using a library of alkyl chain “tail group” ligands and spin crossover “head group” ligands a myriad of Iron-based surfactant complexes can be synthesised and characterised for any interesting magnetic and lyotropic liquid crystalline behaviour. *(cont)*



**Figure 1.** Structure of a basic motif for an alkyl chain based iron spin crossover complex (left). Simplified diagram of an alkyl chain iron complex where the alkyl chains provide a “tail group” and the iron centre forms the polar “head group” (centre). The inverse hexagonal (H<sub>II</sub>) LLC mesophase that is commonly formed by doubly alkylated amphiphilic molecules, which is common for drug delivery purposes (right).

#### References:

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2. *J. Am. Chem. Soc.*, 2003, **125**, 15, 4527–4533.
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Supervisors: Dr Peter Cragg, Dr Marcus Dymond, Dr Ian Gass.

## Rene Gonzales

MPhil, College of Life, Health and Physical Sciences  
Brighton and Sussex Medical School

### Exploring Correlations of Spatial Ability, Stereopsis and Manual Dexterity for Anatomy Dissection and Surgery.

- 1: Dr Rene Gonzales, Ophthalmologist, PhD Student at BSMS
  - 2: Dr Claire F. Smith, Head of Anatomy at BSM, Main Supervisor
- Project Funded by Brighton and Sussex Medical School (BSMS)

This project aims to understand how doctors learn and perform delicate operations. This study sought to evaluate and validate tests to determine an “ability baseline” and explore correlations between innate abilities and hand dexterity. The tests measured Spatial Ability, Stereopsis and Manual Dexterity. Spatial ability is the capacity to understand relations between parts of objects and their vicinity. This provides surgeons with orientation to navigate the area where they are operating and take decisions. It was tested with mental rotation of 3-D object diagrams and mental reconstruction of unfolded cubes. Stereopsis is the capacity to recognize the separation of objects at different distances. It depends on good vision, which provides the brain with two slightly different images (binocular disparity) that allow for the perception of depth. It was measured identifying objects while wearing polarised filters. Manual dexterity testing used a standardised board to challenge hand and finger coordination. The literature describes higher scores in spatial ability in males, which was not the case in the group of Medical Neuroscience and Podiatry students (N=27) of this study; females scored marginally lower, with no significant difference (Females: M = 7.95, SD = 2.12; Males: M = 8.88, SD = .84. Sig: t (25) =

1.188,  $p = .09$ ). There was a weak correlation with manual dexterity. Females scored marginally better in stereopsis, although not significantly (Fem:  $M = .95$ ,  $SD = .13$ ; Males:  $M = .93$ ,  $SD = .13$ . Sig:  $t(25) = -.41$ ,  $p = .60$ ), with a weak correlation with dexterity.

**Keywords:**

Spatial Ability; Stereopsis; Manual Dexterity; Medical Neuroscience; Podiatry; Surgical Dexterity; Depth Perception; Mental Rotation.

*Supervisors: Dr Claire Smith, Prof Gordon Ferns, Dr Kambiz Saber-Sheikh*

## Lamia Hachoumi

PhD, College of Life, Health and Physical Sciences  
School of Pharmacy and Biomolecular Sciences

The role of oxidative stress in age-related changes in the Cerebral Giant Cells of the pond snail,  
*Lymnaea stagnalis*

Brain ageing is accompanied by cognitive decline in a large proportion of the elderly population and is the major risk factor for neurodegenerative conditions such as Alzheimer's disease. The complexity of the mammalian brain has made it difficult to understand the neuronal ageing process. As a result, simpler models are utilised to investigate how neurons age. The invertebrate, *Lymnaea stagnalis*, is a useful model for neuronal ageing studies because of its relatively simple CNS and ability to link changes in defined behaviours to identified neurons. Importantly, *Lymnaea* neurons exhibit a number of age-related changes that are observed in mammalian neurons. This study investigated the mechanisms underlying age-related changes in the cerebral giant cells (CGCs) in *Lymnaea*.

Intracellular recordings revealed that CGC firing properties change with age. The role of oxidative stress in these changes was then assessed. It was observed that the pro-oxidant generator, 2,2'-azobis (2-amidinopropane) hydrochloride (AAPH), when applied extracellularly to young CGCs partially mimicked the ageing phenotype. The effects of 3 mM AAPH on CGC firing was irreversible and due to lipid peroxidation. Decreased CGC firing caused by 10 mM AAPH did not appear to be due to lipid peroxidation and its effects were reversible. This study also found that intracellular application of AAPH in young CGCs altered firing properties that were not reflective of old CGCs. In summary, extracellular AAPH induces changes in young CGCs that are largely consistent with age but at low concentrations does so by imparting a pro-oxidant effect and at higher concentrations may confer neuroprotection.

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## Diana Kyriazis

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Neural correlates of cognitive training in middle-aged adults

Cognitive training offers a potential approach for the prevention of cognitive decline and dementia in older adults. The current project will test the effectiveness of cognitive training in improving cognitive function in healthy middle-aged adults (40-50 years old). In addition, we will examine the structural and functional brain changes that result from cognitive training. Cognitive training in middle-aged adults

can be seen as a possible early intervention to delay or prevent cognitive decline in later life. A consistent finding is that varied and multi-domain training leads to greater generalisation of improvement in cognitive function. We will therefore use a cognitive training programme that includes a working memory task, a reasoning task, and an attention task. We will test for structural effects of cognitive training in white and grey matter with diffusion imaging and quantitative magnetisation transfer. Functional imaging will investigate activation and connectivity patterns of brain networks over time (pre- and post-training), as a measure of brain resilience. We will compare cognitive training to an active control treatment. All participants will complete baseline cognitive assessments, undertake either the cognitive training or the active control programme for 6 weeks, and repeat the cognitive assessments once training is complete. All participants will undergo 3 MRI scanning sessions: one as a baseline before cognitive training has commenced, one midway through the training programme, and one after training has been completed. If cognitive training can enhance cognitive resilience and improve, maintain, or reduce decline in cognitive function, this could potentially have an enormous public health impact.

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## Hannah Morris

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### Exploring the nature of coproduction of care between district nurses and frail older people

This research aims to explore the concepts and nature of coproduction of care between district nurses and frail older people. Exploration of the collaborative partnerships, beliefs, values, norms and meanings may provide understanding of how human capacity can be built to reduce ill being, distress and isolation.

The concept of coproduction considers people as equal and active participants in the development of services and care they receive. This is important in contemporary nursing concepts which focus on quality, collaboration, patient and staff experience and value for money.

This study lends itself to the naturalistic paradigm as it aims to explore human capacity and will draw upon the epistemological perspective of social constructionism. Exploring culture indicates an ethnographic approach. Focussed ethnography allows for an interpretative approach with an in depth exploratory study with short intensive field work. This approach focuses on social interactions within cultural groups and can be utilised effectively when the researcher has familiarity, experience and knowledge within the context of the research.

A hoped outcome of undertaking of this research would be to build upon existing knowledge and theoretical and conceptual frameworks by gaining deeper insights into the reality of the world for frail older people, exploring their understandings of care and the realities of coproduced care and if this is important or needed.

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### Can simulated surgeries facilitate diagnostic reasoning in undergraduate medicine?

**Background:** In 2015, the Institute of Medicine launched a report in which they highlighted that there is an urgent need for research on all aspects of the diagnostic process in healthcare. They emphasized the importance of diagnostic reasoning skills and called for better education and training in diagnostic reasoning across the continuum of medical education. A 2014 report by the General Medical Council also found that medical graduates in the UK are mostly unprepared for clinical reasoning and making diagnoses.

At BSMS, 4th Year medical students have the opportunity to practice diagnostic skills in a risk-free environment through the use of simulated GP surgeries. Our qualitative study explores what characterizes the diagnostic reasoning and decision making skills of 4<sup>th</sup> year medical students in a simulated setting, and how these simulated surgeries may help prepare medical students for future practice.

**Methods:** Volunteer participants are filmed during their simulated surgeries, followed by video-stimulated reflexive interviews, where students are asked to reflect upon their reasoning and decision making process. Thematic analysis is used to identify common themes.

**Results:** Ten 4th Year medical students were filmed during 18 simulated scenarios. Preliminary analysis suggests that gaps in medical knowledge relating to management and difficulties synthesising data are the most frequently reported challenges in the diagnostic process. We also found that the context of the simulated surgery has a strong influence on the reasoning process, and may lead to a reductionist approach in history taking. Finally, there has been some indication for premature diagnostic closure and the emergence of pattern recognition skills.

**Discussion:** Our findings suggest that the design of the simulated surgeries could be adapted to better suit the facilitation of diagnostic reasoning skills. Our findings are also consistent with the existing literature on the common cognitive causes for diagnostic error. The future stages of this study will involve exploring the diagnostic skills of 5th Year medical students and junior doctors in primary care settings.

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### Digitally fabricated 3d representations of cultural heritage artefacts: properties and dynamics in narratives for different audiences

The aim of this project is to discuss the intrinsic and extrinsic properties of digitally fabricated 3d representations of artefacts (DFR), explore their power within cultural heritage (CH) narratives and assess their characteristics in ways that address expectations and needs of distinctive audience groups.

The cultural heritage (CH) sector has been used over the last decades as a prosperous field for testing 3d imaging, 3d processing and 3d printing. As it often happens with the introduction of new technologies, the main focus of researchers and CH professionals until recently has been on developing more accurate and effective imaging techniques and on creating digitally fabricated objects to serve processes such as the documentation, preservation and communication of CH. Instead of contributing to a general discussion, this project will try to inform us on how the intellectual (extrinsic) and physical (intrinsic) properties of DRF function within narrative contexts that describe the object itself or aspects of the environment/exhibition/collection where it belongs. Hence, its scope is not to understand if a DFR is a successful replica of an artefact or what do the visitors of an exhibition learn when using one. On the contrary, it will explore the properties of DFR in relation to audience requirements and will test them in real life scenarios. It will then propose a conceptual model that will analyse terms and relations, so as to describe DFR and how these work for people in a formal way.

The desired outcome of the research will be to find ways to incorporate specific features of DFR in narratives that are targeted to distinctive audience groups within CH environments.

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## Jens Schneider

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### Exploring the being, becoming and belonging of gender variant identities through a human doing perspective

This study will use a narrative approach with multiple cases to explore the transaction between the individual performance of doing and the process of gender role change by gender variant individuals in the German context. This research project has the potential to contribute to health sciences in general and especially to occupational science by increasing understanding of the process of gender role change from a 'human doing perspective', specifically by exploring the dimensions of 'being, becoming and belonging'. This poster presentation sets out the framework for this study. Firstly, it defines gender variant identities, secondly, it describes how gender identities are shaped and performed, and finally, it shows the relation of gender variation to health sciences and occupational science. Gender variant identities are individuals whose gender identity and/or gender expression deviate from their biological sex. These include individuals with different forms of gender variation for example: transsexuals, cross-dressers, gender non-binary and queer people. Human beings shape and perform their gender identities largely through the performance of doing which is related to particular social roles and gender-normative behaviour as an expression of cultural practices, such as dressing specific clothes. This is equivalent with gender variant individuals but it can be presumed that the performance of doing might differ from cisgender identities. This will be elaborated in relation to health and occupational sciences based on literature.

Keywords: Gender variant identities, human doing perspective, health sciences, occupational science

*Supervisors: Dr Lee Price, Dr Katherine Johnson*

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### Gay Men & Mental Health Help-Seeking: The Role of Social Media

Literature on gay men's mental health help-seeking behaviours offer important insights into service engagement patterns within this population, yet significant gaps remain. As much of the extant work focuses on help-seeking as a single decision toward/away from mental health services (why gay men might resist help-seeking), less is known about how gay men are making sense of a diversity of needs and supports (how gay men experience help-seeking). Specifically, multiple and expanding help-seeking options are increasingly available through online and computer-mediated processes; however, little research exists on gay men's utilisation of the Internet and social media to seek help for mental health difficulties. This study explores how gay men perceive, interpret, and respond to mental health concerns, and considers how they employ a variety of online approaches, strategies, and supports in the help-seeking process. Additionally, it investigates the role of social media to help generate and support outreach work with vulnerable and isolated gay men in the context of mental health charities/services. This poster provides an overview of the research project and its attempt to adopt a multi-method qualitative approach involving the collection and analysis of face-to-face, online, textual, and visual data. This expanded view is key to developing the knowledge important to enabling relevant and appropriate online supports.

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## Richard Stanley

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### The experience of being a newly qualified physiotherapist: a descriptive phenomenological study

Being a newly qualified health professional exerts many challenges on an individual which they must overcome in their first years of practice. Whilst research exploring the experience of newly qualified nurses presents a wide array of emotional and practical challenges related to entering practice, only limited research has studied the experiences of newly qualified physiotherapists. Improving knowledge of their experiences may lead to new insight into the challenges that physiotherapists encounter in their first years of practice.

This research will outline the lived experience of being a newly qualified physiotherapist by using a descriptive Husserlian phenomenological approach. Data will be collected through individual interviews with 3-6 newly qualified physiotherapists working in their first two years of practice. The main outcome of the research will be a description of the essential structure of this lived-through experience from a physiotherapeutic perspective. This will provide students, practitioners who support newly qualified colleagues, managers and educationalists insight into the lived experience of newly qualified physiotherapists. This insight may stimulate stakeholders to contextualise and reflect on these lived experiences.

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### Evaluating the Effects of Colour in LineSet Diagrams

Data items often lie in overlapping sets and a number of set visualization techniques have been developed in recent years. LineSets are an overlay technique, they can be applied to many different data sets. Here, we apply them to network diagrams. LineSets are composed of lines that are overlaid on nodes or a node-link network. The set-lines are labelled to indicate the represented set. Nodes represent individual entities (data items). A node represents a member of a set if the set-line passes through it. Nodes that are not passed through by set-lines are not members of any of the sets. Two nodes represent related data items if an edge passes between them. Alper et al.'s initial paper on LineSets focused on exploring the potential of their new technique. Their research established that Linesets should be generated with paths that are as linear as possible as well as being smooth. However, there are a number of other graphical choices to be made when drawing LineSets; one of these choices is colour. This paper identifies how colour (hue, value, or monochrome) should be applied to LineSets drawn on networks.

The study materials and collected data is available at:

<http://www.cem.brighton.ac.uk/research/VMG/linesets-study-2015>

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### An investigation to establish the age of medication taking responsibility and its effect on adherence in paediatric patients with chronic illness

The factors affecting adherence in paediatric patients with chronic illnesses are being explored, with the aim of determining the age at which medication taking responsibility is achieved and its effect on adherence.

The current factors affecting adherence in patients aged 5-16 years old have been explored by conducting a systematic review of literature, with particular focus on studies using self-reporting methods. Results indicated that a lack of support received from family, peers and healthcare professionals was a significant cause of poor adherence, as well as the complexity of the medication regimen. To validate these findings, a focus group with paediatric nurses was implemented. Additional factors to non-adherence were identified as family factors, such as parental beliefs regarding medication and family structure.

To generate a convergence of opinions regarding the most important factors in daily practice which negatively impact adherence, a Delphi technique including twenty-three healthcare professionals with paediatric medicine experience was undertaken. Results are presented as a mean calculated from a 5-point ranking scale and indicate patients 'needing constant reminders from parents or caregivers to take medication' ( $3.65 \pm 0.76$ ) and 'becoming more responsible for medication taking' ( $3.39 \pm 0.92$ ) as

leading causes of poor adherence as seen in practice. In contrast, 'not having a friend to discuss their medication or condition with' was deemed the least relevant factor to affect adherence (2.00 ± 0.98).

The factors leading to poor adherence are numerous, through qualitative research methods these have been isolated to highlight regimen complexity, increased responsibility and family influences to be important predictors to medication adherence.

Future work includes collecting quantitative data via a questionnaire study targeting primary caregivers to identify the age of medication taking control and adherence rates.

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### **Criminal Armourers and Illegal Firearm Supply in England and Wales**

Recent statistics suggest over 50 percent of recorded firearm offences in England and Wales comprise of weapons that are unidentified, imitation, reactivated or 'other' (Lau, 2012), indicating the presence of a number of individuals who are modifying, reactivating or manufacturing firearms from scratch. Currently there is relatively little known about the individuals who are involved in the supply of these types of weapons including where they are positioned within the overall gun supply process (Hales et al, 2006). This poster will provide an overview of current research which aims to address this gap in knowledge. Working in collaboration with the National Ballistic Intelligence Service (NABIS) this research will explore the role of these individuals in order to understand and explain how they became involved in illegal firearm supply, their motivations and the essential skills and contacts required in managing their activities. It will build upon statistical and operational information held on the NABIS database in relations to successful firearm supply operations with case-studies analysis and interviews with the police officers involved. Additionally, interviews will be sought with post-conviction armourers in order to explore the inner-worlds of the firearm suppliers. Working on the initial assumption that criminal armourers act as rational decision makers this research will involve the application of crime script analysis to identify a fuller range of intervention points which have the potential to disrupt future illegal firearm supply.

*Supervisors: Prof Pete Squires, Dr Craig Johnstone*

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