School of Health, Sport and Bioscience

Research & Knowledge Exchange Report
2011-12
In the School of Health, Sport and Bioscience we are committed to deliver and promote Research and Knowledge Exchange in line with the University’s Strategic Plan for Research (2010-2015). Much of our research is focused on improving health and well-being. Research areas include: public and community health, physiotherapy, podiatry, rehabilitation, medical biosciences, biotechnology, forensic science, applied sports science and herbal medicine.

Our research is carried out at national and international levels, and undertaken with a variety of partners including the NHS, industry and other UK and overseas universities. We continue to focus our research around the strengths of our institute (IHHD) and research groups, ensuring that we have viable and sustainable areas of research and a successful submission to REF 2014.

There is an expanding capability for Research and Knowledge Exchange in the School. We are developing critical capacity to support a wide range of post graduate research due to targeted research investment in early career researchers, PhD scholarships, sabbaticals and successful external grant capture. The School generated £878k in external research income in 2010-11 and has a target of £2m in 2011-12. Since last year, we have doubled our output of peer review publications and have several PhD completions.

We currently have over 20 PhD students involved in health related research. Our research programmes involve home and international students who form part of a dynamic academic community. Our students gain research training in areas that make a difference to human health and science in the local, national and international context.

Wendy Drechsler
January 2012

---

**Contents**

- Institute for Health and Human Development (IHHD) 2
- Human Motor Performance Group (HMPG) 4
- Medicines Research Group (MRG) 6
- Infection and Immunity Research Group (IIRG) 8
- Neurorehabilitation Unit (NRU) 11
- Disability, Sport and Health Research Group (DSHRG) 12
- Applied Sport Sciences Research Group (ASSRG) 14
- Learning and Teaching Research Group 15
- Doctoral Research 17
- Publications 2010-2011 21
Group Research Interests

The Institute for Health and Human Development is an established and internationally recognised centre for research, innovation and community engagement in health and wellbeing. We bring together expertise from across UEL to undertake research on health and wellbeing, their social, cultural and economic determinants and how communities and families can take responsibility to improve their mutual support, health and wellbeing.

Our work is developed and conducted within coherent areas of research which build on UEL’s existing strengths and reputation, and which exploit opportunities presented by current interest in social, economic and human development in East London and in global trajectories of social and economic development and wellbeing. IHHD’s research portfolio, both in the UK and globally, spans four broad strands:

- Research on the health and wellbeing status of communities and the cost-effectiveness of policies and interventions which promote health and wellbeing
- Research into the ways in which social, economic and cultural factors influence uptake, acceptability, accessibility and effectiveness of health and social care services
- R&D for Local Authorities and Primary Care Trusts to commission upstream health promotion services
- Research on International Health and International Health Systems Development.

Impacts

Research at IHHD has generated widespread impacts both within the UK and internationally. Examples of these include:

- **Well London.** We wrote the London Health Commission/GLA successful bid to the Big Lottery and collaborated with South London and Maudsley NHS Trust and others in implementing and evaluating the Well London Programme using a coproduction approach
- **IHHD’s Olympic related research** has been influential in helping local policymakers and practitioners to plan the health and social legacy post the Olympics next year
- **IHHD research feeds directly into Policy.** As well as chairing the 3rd Sector Health Network for London, Adrian Renton sits/sat on the board of a number of policy groups including the Go London Advisory Board, 2012 Public Health Steering Group, London Health Commission, and the Mayor’s Health Improvement Strategy Group
- **Access to antenatal care.** Findings from our collaboration with Newham University Hospital NHS Trust and other local partners on improving access to antenatal care for women in Newham have been feeding into local decision-making on promoting health and early intervention
- **International Health.** IHHD through Prof Mala Rao is working on several projects which are feeding directly into policy making and service design in India.

Grants & Collaborations

- Genomic and lifestyle predictors of foetal outcome relevant to diabetes and obesity and their relevance to prevention strategies in South Asian peoples. EU FP7, total grant = £2.9m (to UEL = £129,383); Feb 2012 to Jan 2015
- A meta-narrative review of conceptualisations and meanings of ‘community’ within and across research traditions. Arts and Humanities Research Council £28,000; Mar-Oct 2011
- The effects of schools and school-environment interventions on health: evidence mapping and syntheses. NHS National Institute for Health Research, total grant = £182,641 (to UEL = £30,676); June 2010 to March 2012
- Can specific approaches to community engagement help to reduce inequalities in health; for whom, under what circumstances, and with what resources? NHS National Institute for Health Research, total grant = £154,389 (to UEL = £5,363); April 2011 to March 2012
**Crime, fear of crime, and mental health: evidence synthesis of theory and effectiveness of interventions. NIHR, Total grant = £396169; Jan 2010 – Dec 2011**

**Evaluating the impact of urban regeneration on health and health inequalities in adolescents and their parents. NIHR, Total grant = £1,969,274 (UEL = £35396); Sep 2010 – Aug 2015.**

**News Items**

- The Well London Alliance Partnership won a Health Promotion and Community Well-being award from the Royal Society for Public Health
- IHHD was one of a select group pre-qualified from more than 100 organisations across England to provide expert input around co-production, service design and public participation, impact measurement, leadership and change management for the newly launched NESTA People Powered Health programme
- Angela Harden gave the keynote address at the 7th Mixed Methods International Conference at the University of Leeds in June. She spoke about methods she has developed to integrate qualitative research into systematic reviews
- IHHD received a First Class Bronze Award for an excellent effort at implementing the Green Impact initiatives.

**Conference & Invited Talks**

Harden A (2011) 7th Mixed Methods International Conference, 29th June to 2nd July, University of Leeds, UK.


Harden A (2011) Katholieke Universiteit Leuven, Pedagogical Institute, Andreas Vesaliusstraat 2, Leuven, Belgium.


Phillips G (2011) Society for Social Medicine 55th Annual Scientific Meeting; Coventry, UK.


Renton A (2011) Queen Mary University of London Global Health Week. London. 28th December.


Selected Publications


Human Motor Performance Group (HMPG)

Group Research Interests

The Human Motor Performance Research Group (HMPG) is a multidisciplinary team of clinical scientists with backgrounds in physiotherapy, podiatry, exercise physiology and biomechanics. We investigate how physical factors impact physiological and biomechanical function across the lifespan and the evaluation of physical interventions to mitigate the effect of disease and trauma are central to the work of HMPG.

Key research themes include

- the effect joint bleeding on physiological and biomechanical function in children with haemophilia
- the manifestation of disease on the growth, development and function of the paediatric foot and lower limb
- understanding factors that can influence walking in a variety of conditions
- the impact of stroke on dimensions of physical fitness and the therapeutic use of exercise to alleviate the effects of neurological illnesses.

Impacts, Grants & Collaborations

Haemophilia is an inherited disorder characterized by recurrent bleeding into joints, leading to irreversible joint disease and painful deformity. Recent advances in the medical treatment for children with haemophilia at a cost of approximately £100,000 per annum per child has resulted in significantly less joint bleeding and damage than in previous generations. Our recent multi-centre doctoral research has shown that young haemophilic children with a history of ankle joint bleeding have smaller, weaker muscles and walk differently when compared to their healthy peers. These abnormalities were not detected with current clinical haemophilia-specific outcome tools. Is it possible to identify and prevent children within this group of high cost patients who are at risk to go on and develop long term joint dysfunction?
This is the objective of Dr Wendy Drechsler and her team at UEL, in collaboration with Dr David Stephensen from the Kent Haemophilia Centre, Canterbury who have received £100k post-doctoral funding from the National Institute of Health Research to undertake this work at UEL. The team is carrying out this innovative multi-centre research in collaboration with St Thomas’, Addenbrookes, Oxford and Kent and Canterbury NHS Trusts. Additional doctoral-level research is investigating biomechanical walking patterns and muscle function including contractile properties, voluntary activation levels, muscle atrophy and architecture in adolescent and adult haemophilic men aged 16-25 years at UEL’s human motor performance laboratory. We are one of the few research groups on an international level evaluating muscle morphology in children using real-time ultrasound.

Childhood obesity is one of the key challenges facing today’s healthcare providers. Successful external grant funding of £183k has enabled Dr Stewart Morrison and colleagues to explore the impact of obesity on the biomechanical function of the foot and lower limb. This work is supported by 2 PhD students and has gathered both national and international interest. The work draws upon collaborations with local clinicians and primary schools and filters into a wider portfolio of paediatric based work being conducted by HMPG. Dr Morrison is also looking at the pediatric rehabilitation of children with developmental coordination disorder and the impact of Turner syndrome on the foot and lower limb.

Dr. Mary Cramp is involved in movement science research with a particular interest in neurological dysfunction and rehabilitation. Application of physiological and biomechanical techniques is central to the research and she is supervising a number of PhD students working in the Human Motor Performance laboratories at the University. Current work focuses on understanding factors that can influence walking in a variety of conditions, the impact of stroke on dimensions of physical fitness and the therapeutic use of exercise to alleviate the effects of neurological illnesses. The work is conducted in collaboration with local NHS trusts and clinicians including Prof. Helen Dawes and colleagues at Oxford Brookes University and Prof. John Marsden & Dr. Jenny Freeman and colleagues at Plymouth University.

- Stephensen & Drechsler (2011 – 2014) NIHR Clinical Lectureship. Development of outcome tools and an evaluation pathway to monitor clinical progression in young boys with haemophilia (£99,440)
- Drechsler & Scott (2010 – 2013) Progressive changes in biomechanical characteristics, muscle physiological properties and function in teenagers and young adults with haemophilia. School of HSB PhD Studentship (£45,000)
- Ferrari, Morrison, Drechsler (2011 – 2014) The relationship between foot position and muscle strength in the child with Juvenile Dermatomyositis (JDM). School of HSB PhD Studentship (£45,000)
- Stephens D. (Canterbury & Kent NHS Trust, Research Fellow UEL) and Drechsler W.I. (UEL PI) (Jan 2012 – Dec 2012) Are there changes in muscle function and gait in adolescents with haemophilia? Department of Health Clinical Lectureships Grant Application £39,765

News Items

Dr David Stephensen was invited onto the UK Haemophilia Centre Director’s Organisation (UKHCDO) Outcomes Working Party to lead on the development and co-ordination of the collection of outcome data on people with haemophilia in the UK.

Dr David Stephensen in collaboration with Dr Wendy Drechsler and Professor Oona Scott was invited to submit a review on the Biomechanics of haemophilia arthropathy in the lower limb to the journal Blood Reviews.

Dr Wendy Drechsler and Dr David Stephensen collaborated with Dr David Bevan, Haemophilia Centre Director of the Haemophilia Reference Centre, St Thomas’ Hospital, London and Dr Gillian Evans, Haemophilia Centre Director of the Kent Haemophilia Network, Kent and Canterbury Hospital, Canterbury to build on and integrate our research to establish care pathways and an evidence-based approach to evaluate and improve musculoskeletal outcomes for children and adults with haemophilia.

Dr Stewart Morrison was invited to chair a concurrent session at the Annual Conference of the Society of Chiropodists and Podiatrists. Stewart was also an invited guest lecturer on the undergraduate podiatry programme at the University of Galway. Dr David Stephensen was invited to chair a session at the 5th Annual Meeting of Physical Therapists in Haemophilia.
Dr Mary Cramp in collaboration with Dr Tim Hunter and Alison Lyddon explored the test-retest reliability of the spatiotemporal parameters of gait in addition to the influence of floor surface on these parameters measured using DataGait system.

Conference & Invited Talks

Stephensen D, Drechsler WI, Scott OM. Alteration in muscle strength and architecture in boys with severe haemophilia following ankle joint haemarthrosis. World Congress of Physical Therapy (WCPT) June 2011, Amsterdam, Holland.


Cousins, SD, Morrison SC, Drechsler WI. What are the effects of excessive body mass on foot loading in children? 16th European College of Sport Science Congress (ECSSC), 6th-9th July 2011, Liverpool, UK.

Cousins SD, Morrison SC, Drechsler WI. The Reliability of Planter Pressure Assessment in Children Aged 7 to 11 Years. 16th European College of Sport Science Congress (ECSSC), 6th-9th July 2011, Liverpool, UK.

Selected Publications


Medicines Research Group (MRG)

Group Research Interests

The Medicines Research Group is associated with the Institute of Human Health and Development, situated within the School of Health, Sport and Bioscience at UEL. We are concerned with gaining a detailed understanding of the human pathological state and employing this knowledge to discover, design, develop and deliver drugs to the patient and consumer, with a view to treating or managing disease. Thus a multidisciplinary approach is required to contribute to the overall development of pharmacologically active compounds from their earliest stages of conception at the bench through their presentation as therapeutic medicines, to the analysis of their use in both developed and disadvantaged communities. Many of these activities are underpinned with cutting-edge analytical sciences.

The improvement from RAE2001 to RAE2008 in Professions Allied to Health and Medicine, led to enhanced reputation and the monies secured have been strategically invested in alignment with the cross-institutional themes of health and wellbeing. As an emerging research grouping at RAE2008, MRG has provided a clear focus on multidisciplinary teamwork and key appointments to the Faculty have been oriented to the successful approach. This has resulted in a healthy critical mass of productive researchers that culminates in research-informed teaching.
Impacts, Grants & Collaborations

- Three BSc (Hons) Forensic Science students Hannah Barber, Silvana Marza and David Holland scoop poster prizes for their undergraduate research projects in chemistry and toxicity of phytomedicines at the National Forensic Teaching and Learning Conference, Nottingham Trent University, June 2011
- £22,000 Pendry and colleagues achieved a UEL Challenge Fund Award in collaboration with AVA to design and deliver a Medicinal Herb Garden at Stratford campus. July 2010
- £3,600 Nuffield Scholars from Sir George Monoux College (Thompsett/Corcoran £1,200) and successful UEL Research Internship awards on protein-misfolding in neurodegenerative disease (Thompsett £1,200) and Casalotti (£1,200)
- £87,000 MRG (Corcoran) led a successful bid with HMPG (Carpenter, Culpan) for a HSB PhD scholarship “Developing novel metabolomic biomarkers allied to exercise, health and disease” Feb 2011
- £2,000 Start-up Research Grant UEL (Casalotti) on Changes in gene expression related to drug addiction
- £2,000 Proteomics contract from King’s College London to train PhD student September 2011
- £350 Corcoran invited as School Research Seminar speaker at University College Dublin October 2011
- £1,000 Travel Grant Universidad Veracruzana, Mexico. Corcoran as key speaker at Natural Products Symposium, Veracruz and interviewing prospective PhD students November 2011
- £1,000 Elsevier Travel grant to Pendry for Amsterdam Editors Conference, November 2011
- Conacyt Mexico Research Council student due to start Sept 2012, Corcoran collaborating with University College Dublin for pilot funding on Irish medicinal plants for wound-healing and antimicrobial activity.

News Items

MRG published an invited Anglo-Saxon review in Drug Discovery Today, July 2011, which is set to be a highly-cited multidisciplinary paper spanning medical humanities, linguistics, pharmacology and herbal medicine practice. The piece features in In Focus.

August 2011 saw the official opening of the Herbal Medicine Garden at UEL by Dr Henry Oakley, The Garden Fellow, Royal College of Physicians. Piece features in In Focus.

Dr Barbara Pendry, FNIMH, Editor-in-Chief and Dr Olivia Corcoran, Co-Editor proudly launched the Journal of Herbal Medicine the first journal dedicated to research impacting the clinical use of herbal medicines in Europe. The first issue was published September 2011 by Elsevier, Germany.

Alexander Lyons joined MRG/HMPG as the first Joint HSB PhD scholarship on Exercise metabolomics. This project is underpinned by MRGs international expertise on systems biology October 2011.

MRG were approached in October by a leading herbal product manufacturer to provide data in defence of a warning from the Advertising Standards Agency on their product information.

Dr Alberto Sanchez-Medina, Universidad Veracruzana, Mexico visited MRG during October to carry out quality analysis of OTC Mexican phytomedicines and to teach pharmacology undergraduates. He is working with Corcoran to publish their ongoing research in Forensic Science International on legal herbal highs such as “Mexican mint” widely available in the UK, that have serious implications for adolescent health and safety.

MRG’s Scutellaria in lung cancer paper was named in the top 10 hottest papers in Toxicology and Applied Pharmacology, Science Direct 10 November 2011.

Pharmacology at HSB was strengthened with three new appointments of experienced research active staff (Ayoub – anti-inflammatory drugs; Rahman – natural product antimicrobial drugs; Seed – anti-inflammatory drugs and contract analysis).
Conference & Invited Talks


Corcoran O (2011) Impact of analytical technology in sourcing phytomedicines from native plants. Invited seminar. 18th October 2011, School of Biological and Environmental Sciences, University College Dublin, Ireland.

Corcoran O (2011) Invited seminar, Impact of analytical technology in the search for phytomedicines from native plants: putting the folk back into medicine. 29 November 2011. Natural Products Symposium, Universidad Veracruzana, Mexico.

Selected Publications


MacLennan E, Pendry BA (2011) The evolution of herbal medicines as an unorthodox branch of British medicine: The role of English legislation from 1914 to the present day. Journal of Herbal Medicine, 1, 2-14.


Infection and Immunity Research Group (IIRG)

Group Research Interests

Research within the Infection and Immunity group explores the interactive role between the host and pathogen. Particular emphasis is placed on elucidating the mechanisms with a role in causing disease pathologies as well as the mechanisms that control the response of the hosts own immune system to the invading pathogen.

Our multidisciplinary team provides a broad mixture of skills that cover both infection and immunity thus enabling us to synergistically deliver our research aims. Our group provides a forum supporting a broad range of related research areas recognised both nationally and internationally. This in turn has resulted in several fruitful collaborative links with prestigious institutions around the globe. Through working as a research-oriented group, we provide a scientifically stimulating environment to enhance and benefit the experience of our post-graduate research students.
Our focus is primarily elucidation of the mechanisms that underpin the development of the immune system and the function of the immune response at both cellular and acellular levels.

Investigation of potential virulence factors and other mechanisms utilised by pathogens compared to their less virulent environmental counterparts.

Assessment of interactions between host and pathogens that might influence clinical consequences or likelihood of infection.

**Impacts, Grants & Collaborations**

Recent Successful Funding Bids:

- **2011** Changes in gene expression related to drug addiction. Start up research grant UEL £2,000 [Stefano Casalotti]
- **2011** Rickettsia in soft ticks. UEL Research Development Funding £5000 [Cutler]
- **2011** In situ typing of leptospirosis among UK wildlife. Nuffield vacation studentship. £1588 [Cutler]
- **2011** The role of Hedgehog signalling in T cell activation and proliferation. UEL start up grant £2000 [Outram]
- **2011** Virulence factors in Arcobacter. UEL Undergraduate Research Internship Scheme, £2,000 [Scotti]
- **2011** Do Leptospira spp. in environmental and wildlife pose a risk to human or veterinary health? UEL Undergraduate Research Internship Scheme £2000 [Cutler]
- **2011** University College London Hospitals Charity: Fast Track Award with Dr. A. Antoniou (University College London) £34,424 [Guiliano]
- **2011** Children’s Center for Immunology and Vaccines (CCIV) Pirot Award, Emory University in collaboration with T. Lamb (Emory) and J. Mead (CDC) $50,000 [Guiliano].

**News Items**

Successful PhD Completions:

- Samuel Osei-Djarbeng (Reg 2006) co-supervisory role for student registered at UEL. [Exam passed 2011] (Secondary Supervisor Sally Cutler)

**Conferences**


Cutler SJ, Adamu H, Abdissa A, Tolosa T, Gashaw A. Rickettsia of Ethiopian *Argas persicus* soft ticks. 6th International Meeting on Rickettsia and Rickettsial Diseases 5th-7th June 2011 Heraklion, Crete. [Oral]

Invited Presentations


Cutler, S.J. Microbiological dangers of water sports. Institute of Biomedical Sciences Congress 26th-28th September, Birmingham.

Cutler, S.J. Emerging technologies and pathogen discovery. Institute of Biomedical Sciences Congress 26th-28th September, Birmingham.

Cutler, S.J. Thirty years in Medical Microbiology – what has changed? Wessex Applied Microbiology meeting 1st-3rd April 2011.

Cutler, S.J. One Health Control of Bacterial Zoonoses. Infectious Disease and One Health: Vaccines and Therapeutics Meeting Emory University/CDC, Atlanta, USA 2nd February 2011.

Selected Publications


* Equal contribution.


Neurorehabilitation Unit (NRU)

Group Research Interests

Our vision is to employ state-of-the-art assistive technology to enhance recovery of functional movement, intricate sensory awareness and communicative skills following stroke, traumatic brain injury, spinal cord injury and cerebral palsy. The main thrust of our work involves using adaptive robotics and advanced neuroimaging technologies and we have built an innovative hub for their development in the NRU.

Together they offer an exciting insight into how clinical interventions impact on brain function. Of course the opposite is also true – how can brain function act as a monitor of the effectiveness of a clinical intervention? Indeed, we are interested in how to use indices of brain function to activate robots and computers as a means of communication when movement or speech is not possible.

Clinical Trials

The NRU has a mission to enhance the quality of life and potential of community members who live with central nervous system injury (CNS) by undertaking clinical trials. Such interventions can be designed for use early after brain injury [e.g. acute and subacute stages of recovery after stroke or traumatic brain injury], once the brain has recovered function somewhat [e.g. in chronic stages of stroke recovery] or in circumstances where the symptoms of brain injury have been present for some time [e.g. spinal cord injury or cerebral palsy].

The NRU is also developing research for improving quality of life in the following areas:

Stroke Rehabilitation
We are currently recruiting to a robot-therapy trial in the acute recovery stage after stroke. This trial is only available through the NHS acute stroke units involved. We are planning to recruit to a robot-therapy trial for stroke patients in the chronic stage of recovery. This will be open to community stroke survivors who have left NHS care and rehabilitation support. We will announce the start date for possible inclusion here.

Cerebral Palsy Rehabilitation
We are currently seeking funding to start a robot-therapy trial for children and adolescents.

Spinal Cord Injury Rehabilitation and Brain-Robot interfaces
We are developing human-robot interfaces for improving communication in individuals with little or no movement capabilities.

Impacts, Grants & Collaborations

EU COST Action TD1006 "European network for robots in rehabilitation" [2011-2016; 0.5M euros].

News Items

We have, with neurosurgeons, recently pioneered the use of non-invasive brain stimulation to alleviate previously intractable chronic neuropathic pain. By first localising the position of most effective cortical stimulation through the scalp, it will now be possible to fully implant an epidural stimulator unit. We think this will work significantly better than if the stimulator was implanted with no prior localization procedure. It is hoped that this non-invasive pre-operative localization procedure will enable better reduction of chronic pain after, for example, stroke or alternatively, limb amputation where a common symptom is phantom limb pain.

Conference & Invited Talks

Society of Neuroscience, San Diego CA, USA

Selected Publications


Disability, Sport and Health Research Group (DSHRG)

Group Research Interests

The Disability, Sport and Health Research Group (DSHRG), based in the School of Health and Bioscience at the University of East London, has been developed as a research centre that focuses on the relationship and experiences of the disabled with sport and related health matters.

A key endeavour of the research group is to broaden awareness and understanding, particularly in local, national and international communities, sport and health sectors of society, regarding the triumphs and challenges of disabled and marginalised individuals and groups in the sphere of sport, in order to effect positive change and to encourage participation.

In developing research for the above aims the DSHRG has fostered strong links with the International Paralympic Committee [IPC], the British Paralympic Association [BPA], the International Council of Sport Science and Physical Education [ICSSPE], the International Federation of Adaptive Physical Activity [IFAPA] the United States Paralympic Division, [U.S. Paralympics] and more recently the medical division of the London Olympic and Paralympic Games Organising Committee [LOCOG]. Among the many projects being undertaken are those which include studies into the ‘Lives of Paralympic Athletes’ and ‘Disabled Athletes and Retirement’.

Impacts, Grants & Collaborations

- Editor in chief - International Journal of Sport and Society, Common ground Publishing, Champaign, Illinois
- Conference Chair: 2nd International Conference on Sport and Society, United School of Business, Kolkata, India. 28th - February - 1st March 2011
- Conference Chair: 3rd International Conference on Sport and Society, Cambridge University, UK. 23rd - 25th July 2012
- Board member, Publications Board, International Council of Sport Science and Physical Education [ICSSPE].
Conference & Invited Talks


Olympic and Paralympics - Sport Program Board, University of East London Docklands Campus. 14th February 2011.


Sport as an important factor in life - Premiership Rugby 'meeting', London. 14th June 2011.

The Paralympic Movement - German Sports University, Koln, Germany. 24th November 2011.

Selected Publications


Applied Sport Sciences Research Group (ASSRG)

Group Research Interests

Group research is grounded in applied sport and exercise sciences with expertise and interest in sport and exercise physiology, sports diagnostics, promoting psychosocial well-being through sport, community sport intervention projects and elite level competitive performance. The group’s research aims to focus on how sport and physical activity impact on social, psychological and physiological outcomes. This will be achieved through the adoption of a range of methodological approaches. The group will expand their investigations in to psychophysiological responses to sport and physical activity in elite and recreational athletes in addition to engaging with local providers to implement and evaluate community-based sport intervention projects.

Impacts, Grants & Collaborations

- Buscombe and Hunt. Evaluation of a community rowing intervention in East London (money to fund student research assistants)
- Buscombe, Hunt and Smith. Evaluation of Try a Sport 365 programme. (Sport England, £10,500)

News Items

Although the research group is still very much in the early stages of development there have been some notable achievements in 2011. In addition to producing a number of peer-reviewed papers and book chapters the group was also visible at two European conferences (Liverpool and Madeira). Group members have consolidated links with academics in institutions in both the UK and overseas which we hope will enable us to diversify our research activities in 2012. Lindsay Bottoms travelled to Australia this winter to complete research at the Australian Institute of Sport.

Conference & Invited Talks


Selected Publications


Group Membership

Dr Richard Buscombe
Lindsay Bottoms
Dr Marcia Wilson
Dr Roger Carpenter
Kim Hastings
Nadia Grubnic
Professor Keith Gilbert
Group Research Interests

The learning and teaching research group engages in pedagogical research and evaluation of learning, teaching and assessment methodologies. The group encompasses members from a diverse background of specialties, and often works in conjunction with learning and teaching research groups in other Schools of the University. Our main focus is the use of e-technologies and particularly virtual world environments in the enhancement of learning and teaching. Recent lines of research include:

- Virtual laboratories and virtual patients
- Text messaging in classroom interaction
- Situated learning and teaching in clinical practise
- Supporting Learner Engagement.

Impacts, Grants & Collaborations

LEO projects 2010-11

- Dr E Westhead and Dr O McKeown (2010) Using an E-portfolio to promote student inclusivity engagement, and experience

News Items

Staff from the PHS Field attended the following conferences in 2010-2011:

- June 2011 World Congress of Physical Therapy. Amsterdam, Netherlands
Conference & Invited Talks


Duguid C, Pendry B. HEA e-learning in Health Building a multi-disciplinary, multi-institutional virtual polyclinic in Second Life


Atkinson KA, Owen Hutchinson JS (2011) Inclusive clinical education: myth or reality? Presented at AHEAD Conference, March 16th, University College, Dublin


Selected Publications


Group Membership

Karen Atkinson – inclusive learning and support for disabled students.
Joy Needham – Student assessment
Julian Hargreaves – Health professional education; student learning in work environments.
Jo Dawes – Second life and virtual learning.
Doctoral Research

**Oghenetega Francisca Umukoro (FT 2011)**

Title: *The effect of alcohol on G-protein gene expression in Drosophila melanogaster*

Director of Studies (Group/Institute/Unit): Dr Stefano Casalotti (MRG)

Supervisor: Dr Olivia Corcoran

Alcohol addiction is a devastating and widespread medical and social problem influenced by both genetic and environmental factors. *Drosophila melanogaster* has been developed as a useful model system to identify genes that regulate behavioural responses to alcohol. Ethanol causes an increase in the extracellular levels of dopamine. These dopamine receptors can act through G-protein coupled receptors to activate adenyl cyclase (AC) and hence cAMP synthesis. G proteins are a family of guanine nucleotide-binding proteins involved in the regulation of intracellular effector systems in response to extracellular signals. How ethanol acts on these G-protein coupled receptors and how these effects relate to ethanol-induced behaviours is poorly understood. This research will aim to investigate in *Drosophila* the changes in G-protein expression as a response to ethanol.

**Jonathan Griffin (FT 2011)**

Title: *The relationship between foot position and muscle strength in the child with Juvenile Dermatomyositis (JDM)*

Director of Studies: Dr. Jill Ferrari (HMPG)

Supervisors: Dr. Wendy Drechsler, Dr. Stewart Morrison

JDM is an idiopathic inflammatory myopathy (IMM), recognised to be a potentially life threatening autoimmune disease characterised by progressive muscle weakness, soft tissue contractures and compensated gait. This work will build upon exploratory research in children with JDM, establishing and combining clinimetric properties of currently used assessment tools to provide enhanced data in examining the relationships between muscle strength, foot posture, joint hypermobility, disease activity and gait.

A further objective for this research is to evaluate the role of foot orthoses in the clinical rehabilitation of children with JDM.

**Ahmad El Cheikh Ibrahim (FT, 2011)**

Title: *High yield expression of human adenosine deaminase from both tobacco eukaryotic and prokaryotic genomes*

Director of studies: Dr David Bringloe

Supervisors: Dr David Bringloe, Dr Andrew Thompsett

Adenosine Deaminase deficiency is a genetically inherited disease causing lymphotoxicity and the halting of lymphocyte growth and function and hence immunodeficiency. It accounts for 10 to 20% of the SCID cases. The proposed research will investigate optimising expression of the human ADA gene in the tobacco plant and in *E. coli*. The expressed ADA enzyme is a potential replacement drug for patients.

**Alexander Lyons (FT, 2011)**

Title: *Developing metabolomic techniques for biomarker identification in exercise performance and recovery*

Director of Studies : Dr Roger Carpenter (HMPG)

Supervisor(s): Dr Olivia Corcoran and Dr Jane Culpan

Recently metabolomics has shown potential to provide a comprehensive assessment of muscle biochemistry in sport and exercise science, which can examine performance differences and the effectiveness of exercise intervention. The proposed work will focus on investigating a range of bioanalytical techniques including GC-MS and NMR spectroscopy to provide an accurate and comprehensive profile of the relative change of biofluid metabolites induced by exercise interventions. The aim is to establish tools to develop new standards for metabolic assessment in exercise. This programme is expected to make a significant contribution to the future design and application of techniques used to determine key biomarkers in sports and clinical settings.
Christopher Morriss (PT, 2008)
Title: *Booted, Suited and Pumped: Masculine Embodiment of Sexuality and Sport*
Director of Studies: Professor Keith Gilbert (School of Health, Sport and Bioscience)
Supervisor(s): Dr Stephen Maddison, Professor Iain Macrury

Masculinity in sport has been sociologically embedded and indoctrinated in our lives since the feminisation of society between World War I and World War II. Gaining insight into men in sport and their identification with their own bodies, and the clothes that cover these bodies (especially footwear in this instance), is a complex process of self-identification and personal analysis.

This PhD aims to interview self identified heterosexual and homosexual men in sport to gain a insight into this inter-subjective relationship utilising an anti-identitarianistic approach through separating and dismantling the binaries found in masculinity, embodiment and sexuality. This will be achieved using Interpretive Phenomenological Analysis with the integration of masculinity theory, which will then be deconstructed through ‘queering’ participants discourses retrieved through the semi-structured individual interview process.

Luke Suckling (FT, 2010)
Title: *Are there changes in muscle function and gait in adolescents with haemophilia?*
Director of studies: Dr Wendy Drechsler (HMPG)
Supervisors: Dr Mary Cramp, Dr David Stephensen

Haemophilia is an inherited bleeding disorder where the blood does not clot normally and is characterised by frequent and spontaneous bleeding into both joints and muscles with approximately 80% of bleeds occurring in the joints. The proposed work aims to establish the biomechanical, muscle function and physical activity abnormalities in adolescents with haemophilia compared to typically developing adolescents. Further objectives of this research are to examine the relationship between muscle function, gait and physical activity levels in adolescents and adults with haemophilia, and to explore muscle function development in haemophilic adolescents in comparison to healthy controls over key stages of sexual maturation.

Gary Doyle (PT, 2011)
Title: *Towards a total body model of efficiency in a rowing motion in Humans*
Director of Studies: Dr Mary Cramp
Supervisor: Dr Hossain Saidpour

Improving the efficiency of human movement can minimise the energy cost or enhance the work accomplished. This can be beneficial for elite athlete, where performance is increased, or for individuals with pathology, where daily living tasks can be enhanced. Measuring efficiency requires calculation of the mechanical work accomplished and the energy expended in doing so. Rowing is an activity that incorporates both the upper and lower body as the same time. Such total body activities have received little research. Using a population of healthy individuals the mechanical work has been calculated using a three-dimensional motion analysis system. The energy expenditure has been evaluated from expired gas analysis. These measures have been modelled along with a number of other parameter to estimate the efficiency of a total body rowing motion.

Carol Resteghini (PT, 2010)
Title: *The impact of trunk restraint on postural control during robot mediated arm reach in healthy and stroke affected adults*
Director of Studies: Professor Duncan Turner
Supervisor(s): Joy Needham

Following Stroke the residual symptoms including neural muscle weakness, paraesthesia, muscle tightness and in-coordination can impact on an individual’s physical function for many months if not indefinitely. Trunk restraint therapy (TRT) forces a patient to use their arm in therapeutic training and can improve upper limb outcome measures. Using a robot arm reaching protocol, the primary aim of this study is to investigate the impact of the trunk restraint on postural control mechanisms when standing for healthy and stroke affected adults. EMG will measure postural responses in lower limb muscles, comparing restrained and unrestrained conditions. Outcome measures to be investigated from the robot include accuracy and trajectory in reaching to the target.
Natalie Campbell (FT, 2010)
Title: *Parralympic Narratives: The elite disabled student athlete*
Director of Studies: Prof. Keith Gilbert
Supervisor(s): Dr. Alan White; Dr. Olive McKweon

The study will examine the narratives of elite level disabled student athletes and use the conceptual framework of Bauman’s concepts of Liquid Modernity to inform and position those narratives within contemporary society. A qualitative study, it employs the phenomenological approach to inductive research and uses Interpretive Phenomenological Analysis and conjunction with methods of grounded theory to analyse the life worlds of a very unique population. The study asks questions regarding the participants perceptions and understandings of their sport, their education, their lifestyle, their freedom, their disability and most importantly their experiences of identity and belonging.

Graham Copnell (PT, 2007)
Title: *Allied health professional’s roles and boundaries in the “new” NHS*
Director of Studies: Gavin Poynter
Supervisor(s): Jacqueline Potter

Reforms in the National Health Service (NHS) are nothing new. Since its conception in 1948, successive Governments have implemented policies aiming to change the structure and the organisation of the health services in the UK. The proposed work aims to investigate the occupational boundaries, professional identities and role negotiations between allied health professionals and other NHS employees in light of the current restructuring of the NHS. An ethnographic research methodology has been adopted in order to address the aims of this work.

Frances Watkins (FT, 2010)
Title: *Ethnomedical approaches to discovering novel antimicrobials from England’s cultural Anglo-Saxon heritage*
Director of Studies: Dr Olivia Corcoran
Supervisors: Dr Alberto Sanchez-Medina, Dr Barbara Pendry

Three of the four major Anglo-Saxon collections reporting medicinal formulations could contain leads and insights into new medicinal uses. Previous pharmacological studies of medicinal plants mentioned in Anglo-Saxon medical texts suggested that some were effective and led to the identification and isolation of natural compounds. The aims of this research are to investigate antimicrobial activity in native British plants of under reported phytochemistry used to treat bacterial infections in Anglo-Saxon England and to better understand the ancient ethno-medical approaches in preparing herbal extracts.

Pritesh Barchha (PT, 2008)
Title: *How does intensity and volume of work affect the response to progressive resistance exercise by stroke survivors?*
Director of studies: Dr Mary Cramp (HMPG)
Supervisors: Dr Mary Cramp, Dr Jane Culpan, Prof Helen Dawes

Muscle weakness is a common presentation in stroke survivors affecting 80% of cases and weakness is an impairment identified as a target component of rehabilitation (RCP, 2008). Progressive resistance exercise is specifically designed to increase muscle strength (ACSM, 2009) and has been shown to be effective in stroke participants (Ada et al, 2006). The effects of intensity and training volume on the effectiveness of progressive resistance exercise cannot be determined by comparing previous studies due the compounding variables which may affect the response to training. The objective of the research is to identify optimal training parameters for strengthening muscles after stroke.
Ryan Mahaffey (FT, 2010)
Title: Does body mass alter the dynamic function of children’s feet?
Director of Studies: Dr Stewart Morrison (HMPG)
Supervisors: Dr Wendy Drechsler, Dr Mary Cramp
Childhood obesity is a growing problem in the UK and primary schoolchildren are particularly at risk. There has been limited research undertaken to look at the impact of excessive body mass (overweight and obesity) on the function of the child’s foot. This study aims to evaluate the influence of excessive body mass on the forces applied to the foot and the motion characteristics of the foot during walking. By recording the 3D motion characteristics of children’s feet, it will be possible to determine variations in foot structure between male children of expected body mass and those with excessive body mass.

Hena Wali Haque (FT, 2010)
Title: Factors influencing women’s and families access to maternity-related health services through early years settings: a mixed methods study in an ethnically diverse urban setting in the UK
Director of Studies: Professor Angela Harden (IHHD)
Supervisors: Dr Adrian Renton, Dr Patrick Tobi (IHHD)
Delivering maternity-related services within early years settings is a relatively new innovation and there has been little research to date which has examined how this is working. The overarching aim of my study is to investigate the use of children’s centres as a setting to deliver maternity-related health services with a particular focus on exploring accessibility and appropriateness of these services for South Asian women and their families living in a deprived urban setting such as the London borough of Newham in the UK. The study will have a public health focus but will aim to draw on theories and concepts from sociology and anthropology to develop new insights into the factors that impact upon people’s interaction with services and interventions designed to promote health.

Oliver Mudyarabikwa (PT, 2008)
Title: Evaluation of the planning and implementation of NHS Local Improvement Finance Trust (LIFT) in East London: A public-private partnership (PPP) model for primary care buildings
Director of studies: Professor Adrian Renton (IHHD)
Supervisor: Dr Rachel Aldred
Public-private partnerships (PPPs) are increasingly becoming popular strategies for delivering public sector physical infrastructure. The Local Improvement Finance Trust (LIFT) is a recent variant of PPPs that is intended to deliver new and upgrade the condition of existing primary care building. The primary concern of this thesis is to evaluate LIFT in order to understand as to whether its processes facilitate the local practitioners in making progress against its intended outcomes. It aims to provide evidence on the relationship between LIFT’s execution processes and primary care outcomes measured along a variety of parameters, including improvements in the quality of buildings; governance issues; and management of associated risks. The thesis argues that some of the processes employed to execute LIFT schemes may transfer higher proportion of risks to the public than the private sector further to generating unexpected and unwanted primary care outcomes.

Olamide Anike Sadare (PT 2006)
Title: Evaluation of Community Engagement in the Design and Delivery of Health Promotion Interventions
Director of Studies: Dr Elena Schmidt (IHHD)
Supervisors: Prof. Adrian Renton and Prof. Angela Harden
Community engagement has become mainstream practice in many sectors, such that many might say that it has become another box to be ticked when planning and delivering projects. There are many potential benefits of community engagement to the residents, local stakeholders and external delivery agencies; however gaps have been identified in the evaluation of impact, barriers and facilitators of community engagement (NICE, 2008). This study prospectively looks at how the process of community engagement under the Well London programme (a five-year health promotion programme which addresses physical activity, diet and mental wellbeing) was delivered in multiple deprived neighbourhoods, and how this process influenced the communities, local community organisations, external delivery partners, and the health promotion projects delivered.


Armstrong PW (2010) One question, two answers: do the two most commonly used methods of sampling describe the length of the prospective wait for admission to hospital? Health Service Management Research. 23(1), 18-24.


O’Mara A, Jamal F, Lehman A. et al. (2010) Delivering better outcomes for young people by increasing the impact of targeted youth support and development. London: C4EO.


Further Information about Health, Sport & Bioscience:

School Website: uel.ac.uk/hsb/

School Research Pages: uel.ac.uk/hsb/research/index.htm

Information for Prospective Postgraduate Students: uel.ac.uk/postgraduate/