School of Health Sciences Newsletter July 2016
Edited by Dr Lucy Walton
## Contents

<table>
<thead>
<tr>
<th>Message from Centre Director</th>
<th>3-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Warm Welcome to our New Staff</td>
<td>5-7</td>
</tr>
<tr>
<td>Sorry You’re Leaving</td>
<td>7</td>
</tr>
<tr>
<td>Vice Chancellor’s Nominations &amp; Awards 2016</td>
<td>8-10</td>
</tr>
<tr>
<td>Research Funding Success</td>
<td>10-14</td>
</tr>
<tr>
<td>PhD News &amp; Awards</td>
<td>14-17</td>
</tr>
<tr>
<td>Current Research News Articles</td>
<td>17-21</td>
</tr>
<tr>
<td>Invited Article: Research Data Sharing and Ethical Considerations</td>
<td>22-23</td>
</tr>
<tr>
<td>Other Research Group News</td>
<td>23</td>
</tr>
</tbody>
</table>

- **Applied Psychology: Social, Physical and Technology-Enabling Environments** | 23-25 |
- **Equality Health & Wellbeing** | 25-26 |
- **Measurement and Quantification of Physical Behaviour Research Group** | 26-27 |
- **Occupational Therapy** | 27 |
- **Physical Activity and Health Research Group** | 28 |
- **Rehabilitation Research Group** | 28-29 |
- **Rehabilitation Technologies and Biomedical Engineering Research Group** | 29-30 |
Message from the Centre Director
Prof Peter Hogg

Much discussion was had about the cat I was holding in our last newsletter. Because of this I felt I should start this edition with an update on his health and wellbeing. Simba, a Maine Coon, has now grown to become large. Since being a kitten he has learnt to search literature in a systematic fashion and critique it constructively. He has also commenced SPSS classes at our university. He is a social, likable and ambitious individual and I am sure he will go far in the research world.

In May we held our Research Centre Open Meeting and almost 1/3 of our school attended. The event comprised two components, first a talk by me and second four talks from several staff within our school. In this editorial I will outline some of the points I made within my talk. It commenced with reminding us of our research strategy and its key aims and it is worth noting that we are progressing well to attaining these. I then outlined several ‘good news stories’ about some key outcome measures which are outlined within the rest of this editorial.

Our four year PhD progression and completion rate is on track (>70%). We need to increase externally funded PhD students and also increase supervision capacity in some areas. Joanne Bragg (J.Bragg@edu.salford.ac.uk) is our PHD student representative and she wanted to let people know about the new student-led forum in Health Sciences / Nursing and she encourages PhD students to email her with suggestions about it. This year we have held 3 PGR supervisor forums, in which good practice was shared and training provided; also these forums served as a voice for PGR supervisors.

Our Research Outputs Monitoring and Evaluation (ROME; http://www.salford.ac.uk/research/health-sciences/research-impact-and-ref) committee has reviewed 145 papers to date, however due to the volume of papers needing to be reviewed there is a backlog. In due course we intend to store information about our journal papers in EndNote on SharePoint so staff can access their own papers and see proposed REF scores easily. Please remember to deposit the last Word version of your paper into USIR -
within 3 months of acceptance for publication. Also when it is published please send a pdf version to HSRC-Research@salford.ac.uk so that it can be scored by our ROME REF panel.

Our School Research and Enterprise committee has held 8 meetings this academic year, and as requested the minutes are now circulated to all school staff. Next academic year we will reduce the frequency of these meetings, perhaps to 4. Also we held two Research Centre Open Meetings this academic year, one focused to research-informed teaching and one focused purely to research. Our two ethics committees reviewed more than 500 applications between them, one Chaired by Dr McAndrew and the other by Dr McMahon.

SciVal is a web-based tool which allows us to assess the productivity of authors anywhere in the world. It enables comparisons to be made between individuals and teams. Over the last three years, using this tool, we established that 7 of the top 11 most prolific authors in the University of Salford are within Health Sciences. Also, 6 of the top 11 most cited authors are from Health Sciences. Fantastic!

Our communication strategy is almost fully implemented and by May 2016 our research web site pages had received 5220 visitors (http://www.salford.ac.uk/research/health-sciences). By May we had published 23 blogs, sent a fair number of tweets AND run 26 research seminars. Most staff have google scholar and ResearchGate accounts. We anticipate that by September 2016 our [physical] research brochure will be published and we will have a number of videos about our research housed on our Centre web pages.

We are on target for external research grant income for this academic year, which is pleasing. Please remember we also have many internal funding opportunities, which could be of great value to our early career researchers. Example internal opportunities include: The Vice-Chancellors Early Career Research Scholarship Scheme; The Vice-Chancellor’s Research Excellence Fund; Research Bidding Support Fund; International Conference Fund; Bridging Fund; Open Access Support Scheme; Commercialisation of Research Fund; Research Capital Investment Funding.

New school-wide work is commencing which seeks to integrate our lower limb biomechanics research into teaching for a range of PG and UG programmes. This is led by Dr Atkins and we anticipate it will take a few years to achieve. New work also includes that led by Dr Norgate— who is leading our [REF] impact work.

The holiday season is fast approaching. I hope you can take time out to relax and enjoy yourselves.

Professor Peter Hogg
Director, Centre for Health Sciences Research Centre
A Warm Welcome to our New Staff

Diagnostic Imaging & Equality, Health and Wellbeing Research Groups

Dr Lucy Walton

I am delighted to introduce myself and as a new member of staff it has been great getting up to speed with what has been happening across the past 6 months within the School of Health Sciences through editing this issue of the Newsletter.

I hold the role of Research Fellow within the Department of Diagnostic Imaging and moved from The University of Manchester in March. My research experience to date is quite broad as I have a background in Sport Science and Exercise Physiology with an MSc from Loughborough University before I moved on to develop a career in Cardiovascular Medicine. My PhD involved an interdisciplinary project characterising the relationship between artery structure and mechanical function during ageing and in diabetes. Some of my most novel work involved the application of MicroCT at the Manchester X-ray Imaging Facility (http://www.mxif.manchester.ac.uk/) to characterise the sub-tissue level structure of loaded (pressurised) arteries (Figure 1). Due to my experience in the field of extracellular matrix research, I have been involved in collaborations with dermatology and tendon research groups. I am keen to develop new collaborative research projects whilst based at Salford, so if you think my research is of interest to you, please do pop across for a coffee! My current research interests include optimising image quality and quantification through an understanding of soft tissue structure and function to improve diagnosis of disease. Within my role I will contribute to PhD supervision, research and grant writing.

![Intimal surface topography](image1)

![Lumen cross-sectional area and volume](image2)

![Elastic lamellae tortuosity/spacing/thickness](image3)

![Adventitial surface topography](image4)

![Media and adventitia thickness, cross-sectional area and volume](image5)
Figure 1. 3D reconstruction of an unpressurised (left) and pressurised (right) carotid artery. Extracted from Walton et al. (2015). Scientific Reports, 5:10074.

Rehabilitation Research Group
We would like to welcome our new Research Assistant, Miss Nazina (Naz) Arafin, employed on a fixed term contract predominantly to assist Dr Yeliz Prior with the management of the NIHR funded A-GLOVES Trial, as well as other studies conducted by the research group. Naz is a recent master’s graduate in Clinical and Health Psychology from the University of Manchester, and has a BSc (Hons) in Psychology. She has experience in mixed methods research, and is planning to study for a PhD to carve a research career in rehabilitation. Naz has already settled in very well within our small research group and has taken charge of the many day-to-day trial management duties, providing much needed help to Yeliz. We are very excited to have her joining us and looking forward to working together to deliver this, and many other projects in the future.

Rehabilitation Technologies and Biomedical Engineering Research Group
Welcome to Cyril Brzenczek, who is spending 3 months with our group as part of his Masters in Biomedical Engineering at the University of Lorraine (France).

Welcome to Dr Tsu-Jui Cheng, who joins the Rehabilitation Technologies and Biomedical Engineering group to work on the EPSRC-funded AART-BC project (http://www.aartbc.org/). Prior to this post Tsu-Jui worked on the same project at University College London after completing his PhD with the UCL Accessibility Research Group, entitled “Use of gaze and gait analysis to assess the effect of footway environmental factors on older pedestrians’ accessibility”. His research interests include assistive technology and the accessible built environment.

Rachael McKittrick joined the University as a Research Support Assistant for Health Sciences in March, taking over from Sarah Starkey, who now looks after NMSWSS and Health Research Ethics.
Rachael’s role involves the provision of support for Health Sciences, from assisting with events and seminars, updating the Research Centre website, servicing meetings to administrating ROME internal peer reviews. Rachael also provides cover for Sarah Starkey with Health Research Ethics and services a number of other meetings including RSIG and Research Governance.

Rachael previously worked at the Natural History Museum as Department Coordinator for the Library and Archives, supporting research and marketing activities across the Science Department.

Rachael says, “I have been warmly welcomed into a new city and team both by my office here in Joule House but also by many of you in Health Sciences. Those of you I haven’t yet met, I look forward to doing so in the future.”

Rachael works part-time and with a regular working pattern of Tuesday-Friday and during that time can be contacted on HSRC-research@salford.ac.uk.

Mrs Rachael McKittrick

Sorry You’re Leaving

We say a fond farewell to John Hudson (PhD student, supervised by Dr Ashley Weinberg, Applied Psychology: Social, Physical and Technology-Enabling Environments) who has been successful in securing a role with a very long job title - ‘Lecturer in Human Resources Management and Organisational Behaviour’ at Staffordshire University, congratulations John, and we wish you all the very best in your new chapter
Vice Chancellor’s Nominations & Awards 2016

The Vice Chancellor’s awards ceremony was held on the 8th June during the ‘University Day’ 2016. The School of Health Sciences claimed several awards for Distinguished Teaching and Research Excellence- a massive congratulations to Andrew Tootell, Jacqui McKenna, Dr Jo Meredith, Dr Anna Cooper, Dr Sarah Norgate, Alex Clarke-Cornwell and Robert Bendall for their achievements.

VC’s Distinguished Teaching Award Winners

Andrew Tootell, Diagnostic Imaging

Jacqui McKenna, Occupational Therapy

Andrew Tootell, Diagnostic Imaging and Jacqui McKenna, Occupational Therapy, were awarded the Vice-Chancellor’s Distinguished Teaching Awards. Andrew teaches on the MSc in Nuclear Medicine Imaging and the BSc in Radiography & Dental X-ray and was nominated by Prof Julie Nightingale. Jacqui is a senior lecturer and programme leader in Occupational Therapy.

They tell us how they feel about winning the award.

Andrew:

“I feel honoured and surprised to have received the award. I am part of an excellent team and I would like to thank them for their support. I have learned so much from them”.

Jacqui:

“I was thrilled to receive a VC’S Distinguished Teaching Award last week in recognition for my work on service user (SU) involvement in our BSc(Hons) Occupational Therapy UG curriculum in the School of Health Sciences at Salford.

In driving forward our University’s vision to “…lead the way in real world experiences preparing students for life,” I have steadily worked for the service user ‘voice’ to be
increasingly integrated into the BSc (Hons) Occupational Therapy programme, so it was very rewarding to have this recognised. Student feedback from the module has been overwhelmingly positive; ‘instrumental in re-motivating and re-engaging me’, ‘innovative’, ‘opportunities to work with service users so closely, it’s a privilege’, special mention for last Thursday, I went home smiling and inspired!”

The Applied Psychology: Social, Physical and Technology-Enabling Environments research group had not one but two nominations for the University Vice Chancellor’s Research Excellence Awards. The first was the ‘fabulous five’ early career researchers - Dr Jo Meredith, Dr Clare Allely, Anna Cooper, Rob Bendall and Alex Clarke-Cornwell. The second was for the psychobiology team involving Dr Simon Cassidy, Dr Adam Galpin, Lynne Marrow, Rob Bendall and undergraduate student Sarah Lambert. The ‘fabulous five’ received the Research Excellence Award runner up!

They commented:

“[We] would like to thank Dr Sarah Norgate for the nomination; as part of the nomination Sarah wrote “People make a research environment, and our early career researchers (ECRs) are our lifeblood”. We are grateful for her continued support, the support we receive within the Directorate and also from the School as we continue to develop as researchers”.

Kay Hack, Dean of Health Sciences, describes their collaboration and important research contributions:

“The work that this group of early career researchers undertakes which addresses the University strategic drivers for research and collaborative working across interdisciplinary boundaries was recognised in this award. As a group they work across three research programmes, Applied Psychology: Social Physical and Technology Enabled Environments; Equality, Health & Wellbeing and Physical Behaviour Monitoring group producing innovative work to improve health outcomes such as:
• Design of screen-capture systems, to get access to participants’ lived experiences of interacting on the internet and conversation analysis, especially police 999 calls with Dr Alexandra Kent (Keele University) - (JM)
• Design of innovative app for use with primary school children to aid mixed-methods data collection - (AC).
• Design of first system to empirically derive a ‘counts per minute’ threshold for sedentary behaviour in the workplace from the ActiGraph, based on the activPAL sedentary classification - (ACL)
• Design of provision for autistic spectrum disorder in prisons - (CA)
• Leadership on contributions to research infrastructure – initiating implementation of SONAR and contributions to RCIF proposals- (RB)

In addition their work with internal and external stakeholders in health and health related areas (transport providers, multi-national companies, breast cancer survivors, local councils and NHS and Public Health organisations, children, schools, prisons, police) as well as their collaborative approach to grant submissions and publications was recognised as excellent practice”.

Follow their research on Twitter @SalfordPsych @SalfordPH @ClareAllely @Robert_Bendall @barmyalex @AMC_83 @JoMeredith82

Research Funding Success

Applied Psychology: Social, Physical and Technology-Enabling Environments Research Group

Dr Catherine Thompson has been awarded a grant by the British Psychological to support her project “The influence of emotion on visual attention: Varying attentional capacity or biasing processing strategy?” This award pays for an undergraduate research assistant, and Ashley Taylor (L5 Psychology and Counselling student) will be working on the project for 8 weeks over the summer. As you may be aware, this is a highly competitive national competition and this success is credit to Catherine using publications to launch her original ideas.

The Equality, Health and Wellbeing Research Group

Alex Clarke-Cornwell, activPAL™

Alex Clarke-Cornwell, a lecturer in Public Health has recently been awarded £17,600 from the University of Salford’s Research Capital Investment Fund 2015/16, in order to purchase a number of physical activity behaviour monitors for future research projects.

Alex’s research interests include the measurement and quantification of sedentary behaviour, physical activity, and workplace health. The technological revolution has seen an increase in computer based occupations, with many workers spending the majority of their work time sitting: this increase in sedentary behaviour is known to be associated with an increased risk
of diabetes, cardiovascular disease and early mortality, independent of physical activity levels. There are currently no UK studies with the primary outcome to investigate the effects of sit-stand desks on reducing sitting time at work and in improving health related outcomes. A study to look at the health/work benefits of sit-stand desks in the workplace, using activity monitors, is currently in the development stage in collaboration with industrial partners.

The activPAL™ is a small, light-weight accelerometer-based device, attached to the thigh, which is used to measure acceleration of the body; it also includes an inclinometer that can distinguish between time spent in different postures. A single dataset from an activPAL™ can be analysed by several researchers, each asking distinct questions, thereby benefitting researchers across disciplines. Alex, alongside, Dr Chris Pickford and Rob Broadley (PhD student) are also working to establish a data sharing repository to enable current and future researchers to share activity monitor data across the university and elsewhere. The purchase of new activPAL™ devices will immediately benefit members of the multidisciplinary Measurement and Quantification of Physical Behaviour Research Group in the School of Health Sciences, which currently includes researchers and postgraduate students from Public Health, the Institute for Dementia, Clinical Rehabilitation, Biomechanics, and Sport, Exercise and Physiotherapy

Follow Alex’s research on Twitter @barmyalex

Prof Penny Cook, GHIA Project

Prof Cook is a co-applicant on a successful bid to the ‘Valuing Nature’ programme for £700K, funded by NERC/ESRC/AHRC (Valuing Nature Programme), entitled ‘Green Infrastructure and the Health and Wellbeing Influences on an Ageing Population’ (GHIA). The project is led by Manchester University, and co-applicants include researchers from Manchester Metropolitan University as well as the University of Salford’s Professor Philip James from the School of Environment and Life Sciences. (See article below).
Sarah Bodell & Angela Hook, *Occubuzz App*

Funding from HEIF has allowed Sarah Bodell and Angela Hook to redevelop their *Occubuzz App*. The App, which helps people take steps towards living a happier, more balanced life, is being further developed to improve its data collection potential. The usability and usefulness of the App is being explored within the cancer survivorship population. It was also featured in the University Mental Health Awareness Week campaign, and will be featured as part of a Macmillan funded website; providing a forum for self-management for cancer survivors, called *PlanBe*. It is also embedded in a Canadian wellbeing framework called ‘*Do Live Well*’.

**Dr Anna Cooper, The Digitising Children’s Data Collection (DCDC) for Health Project**

Dr Cooper has obtained funding in collaboration with Liverpool John Moores University (£20K) to evaluate the use of her App for collecting data on health-related interventions in primary school; this piece of work will allow her to evaluate the method of data collection using the App against using more traditional methods.

The Digitising Children’s Data Collection (DCDC) for Health Project consists of two separate applications. The ‘Supporting Server Application’ (SSA), and the Tablet Application (TA). The SSA is a remotely installed web application that manages and stores data flowing to and from the ‘TA’. The ‘TA’ allows flexible data collection with primary school aged children using four methods. The combined applications provide the functionality to allow ‘Study Groups’, to design and build multi-method research studies that primary school aged children can participate in via tablet devices (currently only android). Within the application it is possible to customise the questions linked to the four research tools that are often used with children of this age. Completed data is sent back to the SSA either immediately (if Wi-Fi is available) or when connected into a CSV (‘Comma Separated Values’) document (with supporting files) which then allows analysis using recognised research packages.
**Figure 1a)** Splash screen at the start of the app and icon for the app. **b)** Example of one of the screens and colours used (children’s questionnaire)

*Rehabilitation Technologies and Biomedical Engineering, Quantification of Physical Behaviour & Occupational Therapy Research Groups*

**Dr Sibylle Thies, Prof David Howard, Prof Laurence Kenney, Prof Malcolm Granat & Jo Webb**, have been awarded a £74,500 Dunhill Trust grant to conduct research into the use of a smart [walking] frame. *(See article below).*

*Rehabilitation Research Group*

**Dr Yeliz Prior** was awarded £1,000 from Santander Travel Bursary to visit Clinical Epidemiology Research & Unit at the Boston Medical School, USA this autumn to support and develop a collaborative research relationship with **Prof Saralynn Allaire** and her research group.

A Santander Universities Award has facilitated **Dr Bent’s** visit to the *Rehabilitation Research Group* to collaborate with **Dr Kris Hollands** in February. Preparations for the study, to begin this summer in Salford and Canada are well underway.

**Dr Kris Hollands** was successful in obtaining the Health and Wellbeing Innovation fund to support the development of community based exercises for people with dementia. Working in partnership with Salford Community Leisure and a private physiotherapy company
‘Intelesant’, a pilot feasibility and acceptability trial of a newly designed exercise programme will start in the summer.

A group of six rheumatology occupational therapy researchers from Norway have received travel funding to visit Yeliz and Prof Alison Hammond in June to learn from their experiences of conducting studies into work rehabilitation in employed people with inflammatory arthritis. They will be attending a study day at Salford to be informed of the existing work rehabilitation assessments and interventions, and shadow Yeliz in the rheumatology clinic to observe the implementation of work rehabilitation interventions within an NHS setting.

PhD News & Awards

Rehabilitation Technologies and Biomedical Engineering
Congratulations to Abdullah Al-ani for passing his interim PhD assessment.

Diagnostic Imaging
Congratulations to Ann Newton-Hughes, lecturer and clinical learning manager in Radiography, who recently submitted her Professional Doctorate. Her thesis was entitled:

“A focussed ethnographic study of Diagnostic Radiographer problem solving in the trauma setting”

Ann tells us more about why she chose to undertake a professional doctorate:

“I chose Professional Doctorate study at the University of Salford as the professional element of the research suited my pragmatic approach to research and the ‘real world’ nature of the study I wanted to undertake. The initial two years taught element provided me with a sound platform on which to build my studies, enhancing both my research and writing skills. The following years allowed me to study my profession from both emic and etic perspectives developing a unique insight into the problem solving behaviour of my clinical colleagues. The part-time study route has allowed me the opportunity to present my work as it progressed and to contribute to the work of others in the directorate, profile raising and further broadening my research training. The findings of the study will impact upon my teaching and will be used to support students as they develop the skills required for clinical practice”.

Congratulations to Maily Alrowily, PhD Student in Diagnostic Imaging on the arrival of his son, Salman! Maily tells us a bit about himself:

“I am a second year PhD student from Saudi Arabia, I received a BSc in Radiological Science in 2000 at King Saud University, Riyadh and I was awarded an MSc in Medical Physics with Merit from University of Surrey, UK in 2012. I am also a member of the European Society of Nuclear Medicine and the Saudi Society for Medical Radiologic Technology. My research is to evaluate and optimize the image quality and absorbed dose when undertaking CT scans of abdomen.
My family have travelled with me from Saudi to live in Salford. I have a new son, called Salman, who was born at St Mary’s Manchester on 30th June 2015”.

Salman Alrowily, born 30/06/15

Sport Science
Congratulations to PhD student, Chris Thomas in being awarded a grant from the National Strength and Conditioning Association to undertake some of his PhD research. Read more about Chris’s studies below. Congratulations to Tom Dos’ Santos who has been successfully awarded a ‘Pathway to Excellence’ PhD studentship, find out more below.

Chris Thomas

Chris is completing his PhD at The University of Salford on: “The Effects of Muscle Strength Asymmetry on Knee Injury Risk Factors during 180-degree Pivoting”. He will submit his thesis by October 2018. He has recently been awarded a Doctoral research grant from the National Strength & Conditioning Association for $2,500 to undertake some of his work. The grant will be used to fund the participation of volunteers in his study and lab consumables. Additionally, the grant will fund him to present his work at a UK National or Regional conference, thus providing an opportunity to network and receive constructive feedback.
His main PhD objectives are to:

1. Investigate the relationship between unilateral muscle strength qualities and 180-degree pivoting.
2. Determine the relationship between unilateral muscle strength qualities and peak knee abduction moments during 180-degree pivoting.
3. Explore the differences in braking strategy (penultimate vs. final foot contact) with regard to the categorization of muscle strength asymmetry, in relation to peak knee abduction moments during 180-degree pivoting.
4. Evaluate the kinetics and kinematics of the penultimate contact during 180-degree pivoting to potentially develop a more comprehensive model of optimal technique for pivoting with regards to performance and injury prevention.

Since starting his PhD in September 2014, Chris has also authored/co-authored seven papers. His first authored papers include:


Tom Dos’Santos

In September we will welcome Tom Dos’Santos back to Salford as he embarks on his PhD project supervised by Dr Paul Jones and Dr Paul Comfort. Tom completed his BSc (Sports Science) and MSc (Strength and Conditioning) at Salford. He tells us a bit about his prior research experience and ambitions:

“During my last six years I have been able to participate in the research and data collection in a diverse range of athletes, with a particular emphasis on strength and power assessment. This experience has allowed me to become technically proficient with a range of equipment including: force plates, Ballistic Measurement System, isokinetic dynamometry and timing gates.”
I have been encouraged to try to publish research, guided by my lecturers and learning from PhD students, namely Chris Thomas. Over the last 18 months, with the support from my supervisors and working closely with Chris, I have been able to contribute to the high quality research. We have been able to publish numerous studies. For example we recently published a journal article entitled ‘Effect of sampling frequency on Isometric Mid-Thigh Pull Kinetics’ in the International Journal of Sports Physiology and Performance’ (2016). This study was inspired by attending the 2014 UKSCA conference where I presented a poster from my undergraduate dissertation’ The effect of Muscle strength Asymmetry on Change of direction speed.’ More recently, my systematic review from MSc research project ‘Mechanical determinants of faster change of direction speed in male athletes’ has been accepted into the Journal of Strength and Conditioning Research.

I believe the way the MSc in Strength and Conditioning is designed enhances your ability to conduct quality research and also improves your ability to write scientifically in preparation for publishing research. Particularly the experience I have had with Chris as a postgraduate mentor has been invaluable; offering me a great insight into the requirements of completing a PhD. Chris has guided me through the publication process, improved my statistical analysis knowledge, improved my ability to write scientifically and taught me how to operate a range of equipment. In the future, I would relish the opportunity to mentor undergraduate and postgraduate students in their preparation for research and further education. I would strongly advise the University of Salford to create and promote more mentoring opportunities for aspirational students.

Being part of this research team has been a great experience and motivated me into pursuing further education at Salford. Subsequently, I have been awarded the ‘Pathway to Excellence’ PhD studentship in ‘Biomechanical determinants of performance and injury during change of directions’ and look forward to utilising the great facilities and contributing further to this department.”

**Current Research News Articles**

**The ‘Green Infrastructure and the Health and Wellbeing Influences on an Ageing Population’ project**
*By Prof Penny Cook*
*Equality, Health & Wellbeing Research Group*

The University of Salford is partnering with the University of Manchester and Manchester Metropolitan University on a £700,000 research project that looks into the benefits and values of green infrastructure on an ageing population.

Green infrastructure (GI), a term used in reference to green and blue spaces (areas of grass, and canals or waterways), has direct and indirect influences on human health and wellbeing. However access to such health and wellbeing benefits isn’t shared equally amongst the population, particularly for those based in urban areas. Additionally with people aged 65 and
over more susceptible to environmental stressors, this age group in particular may also be the least likely to benefit from GI.

The 'Green Infrastructure and the Health and Wellbeing Influences on an Ageing Population' project (GHIA), which has been funded under the Valuing Nature Programme by NERC, ESRC and AHRC, intends to look into the relative benefits and stressors of GI and how GI should be valued in the context of the health and wellbeing of older people. This value might include the monetary value of preventing ill-health but also broader interpretations, such as the historical, heritage or wildlife value which influences whether older people actively seek experiences in green and blue spaces.

The project will involve collaboration with Greater Manchester (GM) health organisations that specialise in improving the health and wellbeing of older people and the design and management of GI across GM – an example of the health ICZ. These organisations will include GM’s Red Rose Forest, Public Health Manchester, Manchester City Council and Manchester Arts and Galleries Partnership.

Penny Cook will be working with Philip James from the School of Environment and Life Sciences on Salford’s contribution to the GHIA project. Salford’s role will be to look for relationships between health outcomes, using hospital data, and the occurrence of green infrastructure across space. Researchers will work with the Salford Institute for Dementia to involve people with early-onset dementia to understand how they appreciate the urban landscape through different sensory perceptions.

Evaluation of a New Image Reconstruction Algorithm in Computed Tomography
By Dr John Thompson
Diagnostic Imaging Research Group
We recently completed a study comparing a traditional computed tomography (CT) image reconstruction algorithm, known as filtered back projection (FBP), to a relatively new iterative reconstruction (IR) algorithm. IR has been available for many years, but until recently it has been beyond typical computer processing power, taking unacceptably long for the process to be completed. This is no longer a problem and the manufacturers of CT scanners are developing new IR algorithms that are proposed to reduce radiation dose while providing superior image quality. There is a substantial body of work evaluating these new IR algorithms, using quantitative and subjective measures of image quality. These previous works are almost unanimous in stating that IR is better but at the time of our study no objective observer study had been completed.

Our observer study compared the performance of 11 participants searching for and localising simulated pulmonary nodules in an anthropomorphic (life-like) chest phantom. For each localisation the participant was required to provide a confidence rating (how likely it is that they believe a nodule is present). This task was completed for images reconstructed with FBP and the newer IR algorithm. We found no statistically significant difference in nodule detection performance between FBP and IR, suggesting that any difference in image quality between IR and FBP is not influential on the task.

The PI, Dr John D. Thompson, has been working at the University of Salford on a service level agreement for two day per week since November 2013. He works as a diagnostic radiographer at Furness General Hospital for the remaining three days.

The Word of Mouth Mammogram e-Network (WoMMeN)

By Dr Leslie Robinson  
Diagnostic Imaging Research Group

The Word of Mouth Mammogram e-Network (WoMMeN) research group is led by early career post doc Dr Leslie Robinson, senior lecturer in Diagnostic Radiography. The WoMMeN research team is diverse. Its core team of 14 comprises of a multi-disciplinary group of academics, clinical radiography practitioners, PhD students and patients. Key academic collaborators from Salford include: Dr Marie Griffiths (Business School), Dr Julie Wray (School of Nursing), Dr Adam Galpin (School of Health Sciences), Dr Jo Meredith (School of Health Sciences) and Alex Fenton (Business School).

WoMMeN is a user-designed information and social media support hub for breast screening. The WoMMeN research group have created the WoMMeN hub, a private Facebook User Research Group with over 100 practitioner and patient research collaborators and have attracted significant international following to their Twitter handle (@wommen3), being amongst the top 5 tweeters worldwide in #mammogram. The network has been used to conduct both qualitative and quantitative research to evaluate breast screening.
The network has supported publications which include a book chapter, two peer reviewed articles, articles in the professional journal Imaging and Therapy Practice and numerous blog posts and has been featured in:

- Royal Society for Public Health’s publication, Healthy Conversations
- Aunt Minnie.com’s (US radiology teaching site)
- The Academy of NHS Fab stuff
- University of Salford featured blogs

The group has presented at 9 national and international conferences and study day presentations (3 invited) in addition to delivering 4 national action research workshops to explore professionals’ use of Social Media. We have attracted £1600 internal (HEIF) and external funding (Cancer Research UK and the College of Radiographers) and reached second round of CRUK’s early diagnosis funding bid for £300,000.

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**Smart Walker Technology: The Salford Walking Aid System “SWAS”**

*By Dr Sibylle Thies*

*Rehabilitation Technologies and Biomedical Engineering, Quantification of Physical Behaviour & Occupational Therapy Research Groups*

Somewhat paradoxically, walking aid use has been associated with falls. The vast majority of biomechanics research concerned with gait stability has been on unassisted walking which differs significantly from walking with a frame in a number of ways. These include the need to coordinate the movements of the device together with body and foot movements, with significant changes to the base of support over the ‘gait cycle’. There is a need to develop robust measures of stability when using a walking aid, to better understand in what way walking aids may or may not benefit the individual in their own environment. It is our longer-term aim to utilise mobile computing and low cost sensing technologies to develop “smart” walking aids and associated software to support the assessment and training of walking aid users and inform device design.
To achieve this ambitious aim we are pursuing a programme of work:

- We have developed a system to characterise walking aid usage patterns (Salford Walking Aid System [SWAS], funded by Dowager Countess Eleanor Peel Trust 2013). The SWAS comprises a novel instrumented walking frame, which records forces through each of the walker’s feet (Figure 1); and also uses a commercial instrumented insole to synchronously record foot pressures in the user’s shoes.

![Figure 1 A) Model of an original and instrumented foot of the pick-up walker. B) Instrumented foot.](image)

- Through a ‘Pathways to Excellence’ PhD studentship (Eleonora Costamagna 2015-18), we are developing custom-written software to characterise walking stability.
- We are researching technologies for remote monitoring of assistive device usage (£1.8 million EPSRC project AART-BC: Assistive, Adaptive and Rehabilitative Technologies Beyond The Clinic (http://www.aartbc.org/)).
- With our newest grant from the Dunhill Medical Trust, we will collect real-world data in a large group of walking frame users utilising our SWAS to establish benchmark data on user stability, and explore how the technology meets end-user needs.
- Longer-term our work can be expected to impact on clinical decision making with regard to device prescription and user training/monitoring, and to improve device design.

In related work, the Rehabilitation Technologies and Biomedical Engineering group are collaborating with Prof Malcolm Granat on his project to develop a wearable falls detection system (funded through the Dowager Countess Eleanor Peel Trust and ‘Pathways To Excellence’ PhD programme). We see exciting potential to combine the SWAS system with the falls monitoring system to better understand, then reduce the number of people over 65 admitted to hospital due to falls (one of the key priorities of Manchester’s new devolved Health and Social Care organisation).
Invited Article
Research Data Sharing and Ethical Considerations
by Hannah Baker
Research Data Manager

Researchers are increasingly making their research data openly available in repositories. There are many drivers for this such as mandates from research funders and journals, but the ethical arguments for sharing data are compelling:

- reduce the burden of over-researched, vulnerable groups
- make best use of hard-to-obtain data (e.g. elites, socially excluded)
- extend the voices of participants
- provide greater research transparency and reproducibility
- speed up the response to global public health emergencies
- enable the fullest ethical use of rich data
- ensure value for money

Within the Health Sciences, openly sharing data can cause concern due to the nature of the data produced, such as personal information. In some cases it would not be appropriate to share data and this is perfectly acceptable; at the forefront of funder data policies are clauses about protecting the identity of research participants. What the funders do want, however, is for research data to be made openly available, with as few restrictions as possible, in a timely and responsible manner. The Medical Research Council state that the potential research benefits to patients and the public should outweigh any identified risks of sharing data. Risks such as inappropriate disclosure of personal information must be managed in a proportionate yet robust manner.

The best approach for sharing research data is to plan ahead. A Data Management Plan (templates available [https://dmponline.dcc.ac.uk/](https://dmponline.dcc.ac.uk/)) prompts you to think about ethical or legal restrictions, and your approach to dealing with them, e.g.

- securely storing sensitive or confidential data
- gaining informed consent for data re-use, sharing and archiving
• protecting identities using anonymisation
• controlling access e.g. through non-disclosure agreements

Informed consent for data sharing can be challenging due to the addition of new terminology and information, but participants can have an opt-in option for data sharing, and the ability to explain the benefits of open research is invaluable. A good rule is to keep complex information for the Participant Information Sheet, and not in the consent form, and, as a minimum, consent forms should not preclude data sharing, such as promising to destroy data unnecessarily.

A case study from the UK Data Archive describes how one researcher asked participants for consent for data sharing: https://www.ukdataservice.ac.uk/deposit-data/stories/gush.

The University offers training, support and guidance on research data management so please get in touch:
• Website: http://www.salford.ac.uk/rdm
• ELearning modules: http://www.salford.ac.uk/research/research-data-management/elearning
• E-mail: researchdata@salford.ac.uk
• Tel: 0161 295 6707
• Twitter: @OpenDataSalford

Other Research Group News

Applied Psychology: Social, Physical and Technology-Enabling Environments
By Dr Sarah Norgate

One hundred years ago on the 1st June 1916, Walter Dill Scott became the world’s first Professor of Applied Psychology at the Carnegie Institute of Technology, USA. These roots underpin our research programme in Applied Psychology at the University of Salford. This story matters because like Carnegie, we also embrace technology in our quest to develop research innovation around how people interact with their social, physical and technological environments. Reflecting these themes, over these last six months our team has had plenty to celebrate, hope you like our stories below. Have a wonderful summer.
Dr Clare Allely hit the headlines with her story about people with autism not more likely to become mass shooters.

Driving change forwards to inclusivity - Dr Sarah Norgate edited her first special issue of a journal with Steve Melia (University west of England), and made a position for multi-professional working: https://www.ice.org.uk/news/knowledge

As part of the RCUK Digital Economy Impact award our Salford goWSB team launched an exciting competition aimed at UK primary schools. Supported by undergraduate ambassador Ryan McGrath we advertised our competition on social media and through Modeshift. Children who used a Walking School Bus UK entered a drawing competition of a positive Walking Bus experience in a cartoon style to be eligible for prizes. The winning entry was by Mason Roberts (age 9) from Yew tree School, Solihull. Robert has won kit for his walking school bus. Discover more about our goWSB service here: http://www.gowsb.com

The competition is supported by funding from RCUK Digital Economy Telling Tales of Things. The competition has the support of the Modeshift STARS, a national awards scheme which recognises schools that have shown excellence in supporting cycling, walking and other forms of sustainable travel (www.modeshiftstars.org). For further information please contact S.H.Norgate@salford.ac.uk or twitter @sarahnorgate

Out and about - Dr Linda Dubrow-Marshall had a poster presentation with Kelly Birtwell at the British Psychological Society Division of Clinical Psychology Annual Conference on “Evaluation of a mindfulness-based intervention for the non-motor symptoms of Parkinson’s Disease.”

There is still much to look forwards to in 2016, Fatemeh Sani Pour (supervised by Dr Eachus and Dr Linda Dubrow Marshall) is one of our Psychology postgraduate research students presenting at Salford Postgraduate Annual Research Conference (SPARC), follow #SPARC on twitter or go and say hello.
Our team wish everyone healthy summer months, our psychology team and our students had fun (as well as wonderful research-informed teaching conversations) at the ‘end of year’ BBQ. Thanks for the idea and organisation by Dr Jo Meredith and Dr Catherine Thompson.

Equality Health & Wellbeing
By Prof Penny Cook

Members of EHW recently organised a very successful Training School on Cancer and Work. The Training School “Managing cancer at the workplace” was delivered by JennyCeolta-Smith, Tamara Brown and Ziv Amir, at Media City. Twenty two researchers from 14 European countries gathered to (1) discuss the importance of the workplace in supporting people affected by cancer (patients and carers) return to or maintain their employment following their diagnosis; (2) identifying the relevant stakeholders exist at the workplace; and (3) critically appraise the relationship and communication between these stakeholders.

There have been developments in EHW’s emotional intelligence research: Jacqui McKenna will have two book chapters published soon (McKenna, 2016; McKenna et al., 2016), both of which discuss emotional intelligence as a key skill within the engagement of service users. In addition, Jacqui, Jo Webb and Ashley Weinberg are preparing their findings from the 1st national survey of Trait Emotional Intelligence in Occupational Therapists for publication later this year.

References
Measurement and Quantification of Physical Behaviour Research Group

By Prof Malcolm Granat

The group meets monthly for an informal update over lunchtime. At these meetings, there is a ‘formal’ research presentation by one of the group members, followed by a discussion about issues of interest to the group such as ethics applications, common data storage issues, grant applications and opportunities etc. Recently, at the suggestion of one of the research group, one member bakes a cake for the meeting (is this the great physical behaviour research bake-off?). The first cake was in the shape of the activPAL™ activity monitor - judge for yourselves!!

One exciting new project that began at the beginning of this year was a Peel Trust funded project, “A novel body-worn falls detection system: development and evaluation in the frail elderly population”. This project aims to develop a new body-worn falls monitor. Our proposed novel solution is that by classifying body postures from an accelerometer-based device attached only to the thigh, one would be able to robustly detect a fall. Specifically, a fall would be characterised by an unexpected change in body posture from, for example, walking or standing to lying without a transition of sitting. Data collection for this project is now underway at ‘Four Season Health Care’ homes. We have been collaborating with the University of Ulm in some of the fall algorithm developments.

Currently, we are starting to develop techniques to better understand how changes in free-living physical behaviour might help understand atypical behaviour in people with dementia and could be used to inform appropriate interventions. Other ongoing projects include: an
analysis to look at associations of sedentary behaviour in the workplace and health-related outcomes, the development of outcomes for a number of clinical populations and the evaluation of the use of assistive devices.

**Occupational Therapy**

*By Dr Tracy Collins*

The team have been busy with various research activities over the last few months. You can keep up to date with our work, including PhD opportunities, on our Occupational Therapy Research webpage:

http://www.salford.ac.uk/research/health-sciences/research-groups/occupational-therapy

The directorate held a free research seminar open to practitioners, students and academics on the 5th May. The seminar outlined current research at Salford related to the three themes of: Later life, Health and wellbeing; Work, Leisure and Occupational Balance; Emotional Intelligence, Service User Engagement and Leadership.

**Dr Deborah Davys** and **Dr Tracy Collins** presented:
“*The experiences of men as caregivers: implications for occupational therapists*”.

**Heather Davidson** presented:
“*Exploring leadership with occupational therapy students using feminist participatory action research*”.

**Jacqui McKenna** presented:
“*Emotional Intelligence (EI) – preliminary analysis of the 1st national survey of EI in UK registered occupational therapists*”.  
And
“*Using neurolinguistics programming to develop communication and support engagement*”.  

http://www.salford.ac.uk/research/health-sciences/research-groups/occupational-therapy
Physical Activity and Health Research Group  
*By Dr Stephen Pearson*

**Dr Steve Pearson** and **Martyn Matthews** have been involved in consultation with Greater Manchester Fire and Rescue Services (GMFRS). We have helped steer and formulate the industrial tender submission guidelines for a wearable physiological monitoring device to monitor body core temperature accurately that is suitable for operational fire fighters. This work has already raised approximately £9K. The tender has gone out, bids returned, and an evaluation process undertaken. We are now at the exciting stage of talks with both GMFRS and the industrial partner chosen. This will involve creating a plan of action for the development and testing of the device alongside the industrial collaborators in order to fulfil the GMFRS remit. Further income will be generated at the initiation stage.

The group has continued to seek international collaborations. **Dr Pearson** is developing collaborations with a group in *Latrobe University*, Australia working on examining interventions to treat individuals with tendinopathies and also exploring the mechanisms of adaptation of the tendon to these interventions. There is also an exciting collaboration developing with a biological systems engineering group in the US (*University of Nebraska*). Here we are utilising novel algorithms to process ultrasound images to explore if we can detect patterns of change in the tendon via the information from the algorithms. This has the potential to be utilised for early tendon injury detection and also rehabilitation.

We have secured sponsorship from a biological equipment systems company (*TOSOH*) to cover the cost of consumables to undertake a research project to examine the effect of exercise mode on blood borne markers of insulin sensitivity. This project is to run over the course of this year.

**Rehabilitation Research Group**  
*By Dr Yeliz Prior*

**Dr Yeliz Prior** recently completed her ‘level 3 Mindfulness Practitioner’ Course delivered by the Mindfulness Association and the Christie Hospital. Yeliz is now qualified to deliver Mindfulness as a trainer, and as a one to one or group intervention at a clinical setting.

**Dr Prior** was invited to meet HRH, Princess Royal, Anne on 23rd May at the Haywood Hospital to discuss the NIHR Research for Patient Benefit funded A-Gloves Trial. Yeliz joined the European League Against Rheumatism (EULAR) Scientific Committee in March, as an invited member. Presently, this committee consist of 23 rheumatology consultants and 3 Health Professionals (HPs), thus being in this committee as an HP is considered a privilege. This will help to raise the University of Salford’s profile in Europe. Yeliz was also elected to the British Health Professionals in Rheumatology (BHPR) Committee as the Deputy Education Officer, with a view to became the Education Officer next year. Similar to her EULAR role, this post is concerned with planning, organisation and delivery of the educational & research activities for health professionals in rheumatology, in the UK. Finally Yeliz joined the BMC
Musculoskeletal Disorders Journal (Biomed Central) as an Associate Editor: Epidemiology of Musculoskeletal Disorders Section in January 2016.

Professor Alison Hammond has celebrated a special birthday in May, marking the occasion with a holiday with her husband John in the West Coast of North America, which included a visit to Yosemite National Park set within California’s Sierra Nevada mountains. Yeliz and Kris were left to celebrate Alison’s birthday without her, but toasted a few martinis in her name at the Alderley Edge’s The Botanics, as the next best thing to the Yosemite Park in Manchester (!).

Dr Yeliz Prior & Dr Kris Hollands

The group’s recent publications include:

Hammond A and Prior Y (2016) A systematic review of the effectiveness of hand exercise interventions in Rheumatoid Arthritis. British Medical Bulletin, Accepted for publication


Theodora P.M. Vliet Vlieland, Cornelia H.M. van den Ende, Francoise Alliot Launoit, Catherine Beauvais, Milena Gobbo, Annamaria Iagnocco, Ingrid Lundberg, Pedro V. Munuera, Christina Opava, Yeliz Prior, Anthony Redmond, Hana Smucrova, Dieter Wiek (2016) Educational needs of health professionals working in rheumatology in Europe. RMD Open, Accepted for Publication


Rehabilitation Technologies and Biomedical Engineering Research Group
By Prof Laurence Kenney

Our group’s functional electrical stimulation work, funded through the NIHR’s Invention for Innovation funding scheme (http://www.nihr.ac.uk/funding/invention-for-innovation.htm)
continues apace. Following a stroke many people are left with upper limb impairments. Evidence suggests that high intensity, challenging and task-specific practice can help drive recovery of arm function. However, in practice, patients typically receive rather low doses of upper limb therapy, due to limited staff availability and a low uptake of technologies which could be used to address the situation.

In collaboration with Odstock Medical we have developed an upper limb rehabilitation system. The system supports the user to perform a given task through delivery of appropriately timed electrical stimulation to weak or paralysed muscles, which they would otherwise be unable to perform unaided. To enable the delivery of appropriately timed stimulation to patients in the clinic, we have developed software to support therapists to quickly and easily set up task- and patient- electrical stimulation controllers. The software also provides users with feedback on their performance. We have spent the first 2 years of the project developing the software and hardware and we are now about to start a Clinical Investigation at 3 clinical sites. At the end of the Investigation we hope to have demonstrated that the system satisfies the requirements of the EU Medical Device Directive, thereby allowing the manufacturers to place the system on the market. The Salford team is Laurence Kenney, Dave Howard, Mingxu Sun, Helen Luckie, Karen Waring, Nick Hardiker and Tracey Williamson.