

# Revolutions

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 Loughborough  
University

Peter Harrison Centre for Disability Sport

## Director's Foreword by Prof. Vicky Tolfrey



As a research centre we are striving for a world-leading position in the areas of disability sport and physical activity. In 2013 we set ourselves ambitious targets with many new projects being developed whilst at the same time accepting overseas visitors from Canada, Holland and Japan to work with us. In the month of May, the Peter Harrison Centre for Disability Sport (PHC) staffing structure of core staff/students, affiliated members and interns/visiting academics had grown to 33 persons. We are grateful that the Peter Harrison Foundation continues to support our work on a '5 year rolling contract.' This partnership is a reflection of the confidence that PHC members will deliver and disseminate information that is to the benefit to persons with a disability to engage in physical activity and excel in sport. I have already travelled to Brazil this year as an invited speaker at the Fifth Congress of Sport Science in Campinas and return in November as a keynote speaker with Dr. Brett Smith at the National Brazilian Committee's 4<sup>th</sup> Sport Science Conference. I travelled with 5 team members from both the Sport Science and Psycho-social Health and Wellbeing strands to the 5<sup>th</sup> International State of Art Congress for

Rehabilitation in Groningen where we clearly demonstrated our international status in the field with many citations within other speakers' presentations (pg 5). This is a credit to the energetic and passionate commitment to excellence that all the PHC members have shown over the last year. I am looking forward to also attending a Japanese symposium later this year (organised by the PHC and Prof. Fumihiro Tajima) with Dr. Christof Leicht and our collaborators from Canada (Dr. Chris West) and Holland (Prof. Thomas Janssen). There are exciting times ahead for us with possibilities of new collaborations at McMaster University/ University of Miami Miller School of Medicine and a book launch by Dr. Anthony Papatomas. Finally, I would like to thank Prof. Maureen MacDonald for an outstanding job developing our Performance Health strand agenda and supporting many of our staff members.

Vicky Tolfrey

Prof. Vicky Tolfrey (Director)

## Farewell to the PHC by Prof. Maureen Macdonald



As July 2014 approaches, it is hard to believe that one year has passed since my arrival at Loughborough University. On 1st July 2013 I arrived in the UK with my husband and 3 children for a yearlong research leave from my position in the Department of Kinesiology at McMaster University in Canada. We have had a wonderful year and I would like to extend a special thank you to Prof. Vicky Tolfrey and her family for the exceptional hospitality they have shown us. I only hope that we will have the opportunity to return the favour in the future.

During the past year, I have been serving as the lead of the Performance Health Strand of the PHC. In advance of my arrival on campus I was aware of the international reputation of the PHC, however upon my arrival on campus, I was struck by the diverse nature of the high quality scientific activities being conducted by PHC team members. This past year I have observed the immense physical and mental capacity of disabled athletes, the enthusiasm of young scientists to advance their area of science, the passion of senior staff to support the PHC and the commitment of Loughborough University and the Peter Harrison Foundation to have a lasting impact in the lives of individuals living with a

disability. In particular, I have thoroughly enjoyed working with Prof. Vicky Tolfrey and Dr. Brett Smith to evaluate the activities of the PHC and help refine a vision for the future of the centre. I will take with me many wonderful memories and attempt to incorporate many of your research and team-building practices in my research and career in Canada.

I believe the Performance Health strand is now ideally positioned to act as a 'virtual' link between the more developed Sports Science and Psycho-social Health and Wellbeing strands of the PHC. As knowledge is developed in these two more established strands, it can be translated into advances and applications that should impact on the health of many people living with a disability, regardless of their involvement in organized sport. Some recent developments in this area include planned projects extending previous findings on the short-term impact of exercise and hot water immersion on immune function to longer-term treatments and planned collaborations with my research lab in Canada to incorporate some cardiovascular health outcome assessments in future projects. I am hopeful that the links we have established in the last year will become the foundation for productive collaborations for many years to come.

## New Staff and Student Profiles



### Dr. Tamae Yoda

Visiting Academic  
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I graduated from Nara Women's University in the Department of Physical Education, Japan in 1997. For my PhD I investigated the 'Effects of food deprivation on daily changes in body temperature and behavioral thermoregulation in rats' at Osaka University in Japan. In 2006, I got a chance to assist with a research project studying disability sports; video recording and analysing games of Wheelchair Basketball. This was my first experience working in the field of disability sports.

I currently work as an Associate Professor in the Department of Interdisciplinary studies at Dokkyo University. I joined the PHC in April 2014 as an academic visitor visiting for one year. Currently, I am interested in thermal comfort and sensation in individuals with disabilities, especially in individuals with a spinal cord injury. I am looking forward to my year at the PHC and the opportunity to broaden my research experiences and gain new skills.

## Balfour Beatty Golf Day by Dr. Barry Mason



Photos courtesy of Christopher Terry

On Wednesday 28<sup>th</sup> May Dr. Keith Tolfrey and myself represented the PHC at the Balfour Beatty Golf Day 2014 at Stanton on the Wolds golf club. Balfour Beatty are currently constructing the impressive National Centre for Sport and Exercise Medicine on campus, which we are looking forward to moving into in the near future. The building will house our new state of the art laboratory and office space for our team members

The day itself had not started particularly well, with incredibly heavy rain pouring down all morning. Not ideal conditions for golf! However we were warmly welcomed by organisers Clare Lee and Sarah Wake on arrival and introduced to members of our playing team. After a short while the rain had eased off and we managed to have a thoroughly enjoyable round of golf on a fantastic course with great company. The standard of the golf must not have been too bad either, as at the presentation meal which followed, our group received a prize for leading the event at the half way stage. I am still not sure where it all went wrong in the second half of the round! To top of a thoroughly enjoyable day, Balfour Beatty Managing Director for the East Midlands, Ian Taylor presented Keith and the PHC with a cheque for £2396.



## SportsFest by Terri Graham

Sportcity in Manchester played host to the 4th ParalympicsGB Sports Fest. Attendees were once again able to try as many disability sports as they wanted. Rowing races, a mechanical horse and games of wheelchair basketball were just a few of the things on offer. We once again used this opportunity to promote our Fit for Life and Sport guides developed in conjunction with The British Paralympic Association, and funded by the Coca-Cola Foundation. There were approximately 500 attendees who were also able to meet Dame Sarah Storey (Cycling) and friend of the PHC Kelly Gallagher (Para-Alpine Ski) during their visit.



## Stop Press

- Congratulations to PHC member, Nick Caddick on his recent marriage to Kristy and his new Research Associate job at Loughborough University.
- Congratulations to PHC member Paul Sindall and his wife Julie, on the birth of their daughter Petra, born on the 3rd July. We wish him and his family all the best.



## 'Identifying Champions' by Dr. Anthony Papathomas

In April 2014 I was awarded a Young Academic Travel Grant to present my work at the inaugural Talent ID Conference: 'Identifying Champions.' The event was hosted by the Aspire Academy in Qatar and I was one of 5 researchers worldwide to receive the award.

I delivered a presentation to an audience of over 100 conference delegates within the plush surrounds of the Aspire Academy facilities. My talk, entitled 'From Tank to Track: Identifying Paralympic Talent from Injured Members of the Armed Forces', outlined my collaborative research with PHC colleagues Dr. Brett Smith and Prof. Vicky Tolfrey and external collaborators the English Institute of Sport.

The central message of this work concerned the psychological challenges associated with the transition from becoming injured as a member of the military to competing in Paralympic competition. Despite military personnel often displaying great mental strength, high physical fitness and a capacity to cope with pressure; the move into elite sport can still be a difficult one.



## IPC Invitational Forum by Dr. Andrea Bundon



The International Paralympic Committee (IPC) in collaboration with the University of British Columbia's Centre for Sport and Sustainability held an invitational forum in Bonn, Germany on May 5<sup>th</sup> and 6<sup>th</sup> to discuss 'Paralympic Impacts and Legacies'. The event included academics from Australia, Brazil, Canada, China, and the UK and representatives from the organising committees of past and future Games (Beijing 2008, Vancouver 2010, London 2012, Sochi 2014, Rio 2016, PyeongChang 2018, Tokyo 2020). Also in attendance were staff from the IPC and the International Olympic Committee.

The purpose of the event was to discuss the Olympic and Paralympic Games Impact report (OGI/PGI) that all host societies are required to produce before and after delivering the Games. Included in the report are various indicators pertaining to disability-related issues such as the accessibility of the host region's infrastructure (transportation networks, hotel accommodation, Games venues, etc.). The report also comments on changes in 'perceptions of disability' and 'attitudes towards people with disabilities' by measuring, for example, rates of employment of disabled people pre and post Games. The manual for the OGI/PGI is revised every four years. The purpose of the forum was to engage with academics working in the area of disability studies and hosting mega-events plus groups who have been involved in producing the OGI/PGI reports to discuss possible revisions. It was also intended to more

broadly stimulate conversation about how the Paralympic Movement thinks about the potential impacts and legacies of the Paralympic Games.

I was asked to make two presentations at the forum. The first talk, entitled 'Whose Side Are You On? A Critical Disabilities Perspective on Paralympic Impacts and Legacies' discussed how research from the field of critical disability studies could be used to shape the questions asked in the OGI/PGI report and make them more reflexive. For example, though the report currently asks about 'accessibility', it does not address the issue of 'inclusion' – rather the manual makes the assumption that structural barriers such as transportation or non-accessible seating are the only barriers that disabled people face in terms of participating in the Games (as athletes, volunteers, or spectators). Disability scholars and activists would be quick to point out that accessibility is a step towards inclusion but that barriers could also take the form of negative stereotypes and unwelcoming environments. In the second talk, 'Mobilising Youth with Mobile Methods: Digital Stories by Young People About Sport and Disability,' I presented on the research that I am currently doing at the PHC (pg 19). In this talk, I discussed how digital storytelling can be used to engage with young disabled people in the UK and hear their stories of how their sport and physical activity experiences have been shaped by the para-sport initiatives established as part of the legacy of London 2012.

You can read more about the Invitation Forum at:

<http://www.paralympic.org/news/ipc-hosts-paralympic-legacy-forum-bonn>

## 5<sup>th</sup> International State of the Art Congress for Rehabilitation



**Emma Richardson and Toni Williams:** “Toni presented her research investigating narratives of activity based rehabilitation for people with spinal cord injuries while Emma presented her research on the psychosocial impact of wheelchair tennis on participants in developing countries.

Such an intimate conference (~ 200 delegates) provided an excellent opportunity for scholars to meet and discuss their research in a friendly and encouraging environment. Oral and poster presentations provided a wide and diverse range of health and wellbeing research being conducted. Although the number of presentations regarding health and wellbeing were somewhat few compared to other areas, it was both encouraging and inspiring to witness the impacts that these projects were having on both the participants involved and the academics themselves. We left the conference with hopes of future collaborations and projects which will hopefully increase the number of studies regarding health and wellbeing”.

**Dr. Barry Mason:** “Once again the RehabMove conference proved to be an insightful few days. Having attended the previous conference 5 years ago it was great to catch up with a number of colleagues from the previous edition. The conference provided a valuable platform to discuss a number of future research collaborations with new research groups. It was great to meet individuals who shared a real interest in some of the work we are currently doing at the PHC and identifying ways in which we could work together in the future to further knowledge in disability sport. In addition to the excellent networking opportunities available the research on show was of a particularly high standard. I am already looking forward to the next instalment of this conference”.

**Terri Graham:** “The congress in Groningen was my first opportunity to present some of my research on caffeine and upper body exercise. It was also a great opportunity to meet other researchers in the field of disability rehabilitation, exercise and sport, and also to catch up with my Swiss PhD advisor Dr. Claudio Perret. Working predominantly at the performance sport end of the spectrum, it was great to also hear the research that is happening at a rehabilitation and grassroots level”.

**Dr. Christof Leicht:** “I first attended this conference in 2009 when I had just started working for the PHC. Being a relatively small conference it provided a perfect environment to catch up with the people I have met during these last 5 years and also to meet new people that are making an impact in our field of work. It was a particular pleasure to welcome Prof. Fumihito Tajima who came all the way from Japan to listen to my presentation of the results that we collected during our collaboration last year. I have left Groningen with many ideas for potential future projects and collaborations, and I am grateful to our Dutch colleagues for organising such a great event”.

## European College of Sport Science by Prof. Vicky Tolfrey



It was a pleasure to be involved as both an invited speaker and co-chair at the recent 19th Annual Congress of the European College of Sport Science. To start, I presented with Profs Lucas van der Woude and Dirkjan Veeger on the thematic topic of 'Maximizing wheeling performance'. Prof. Thomas Janssen did a fantastic job with ensuring that Paralympic sports was on the programme as one of the four plenary sessions. So to draw these sessions to a close Profs Yves Vanlandewijck and Mike McNamee provided a thought provoking session around the 'Challenges for the Paralympic Games: fairness and identity'. Compared to the conference in Groningen which was focused purely on adapted sports and rehabilitation, this was a huge conference yet it was pleasing to see so many people attend this last session.

## 5<sup>th</sup> Brazilian Congress of Sports Sciences by Prof. Vicky Tolfrey

In April I was invited to speak at the 5th Brazilian Congress of Sports Sciences in Campinas with Prof. José Irineu Gorla. The session was entitled Evaluation in Paralympic Sport which was well attended. Although this was a short trip the hospitality of the student helpers was exceptional with ensuring that I was at the right place. I am looking forward to seeing familiar faces later in the year when I return to Brazil (Florianopolis).



## Disability Football Masterclass by Craig Boyd



**Craig Boyd is a Bases Accredited Sport Scientist based at Sheffield Hallam University and his research interests lie in football for athletes with cerebral palsy and acclimation to hot and humid climates. Craig has been working in professional and Paralympic football for over 14 years and continues to collaborate with Prof. Vicky Tolfrey and the staff at the PHC.**



Late in 2013, Dr. Osman Ahmed, Dr. Richard Weiler, Dr. Ayser Hussain and I established the FA Centre for Disability Football Research. It was an ambition we have had for some time borne out of our extensive science and medical support work with a range of disability national teams managed by the FA.

In April this year, the FA and Sir Trevor Brooking officially opened the centre and to celebrate, we delivered a day of applied research presentations and practical activities to over 70 delegates as part of the FA Medicine and Science Masterclass Series.

Our delegates came from a broad spectrum of backgrounds in disability sport. Coaches, sport scientists, medics, physiotherapists and researchers gathered at St George's Park to listen to a range of expert speakers in sport science and medicine.

Dr. Richard Weiler and Dr. Osman Ahmed chaired the event and we were honoured to have Dr. Evert Verhagen deliver a session on the applications of health and safety for disability athletes which complimented our own Dr. Aileen Taylor's update on the FA Injury Surveillance Study of all national team players. Medical support for disabled players was also discussed with excellent presentations by Prof. Tony Ward and Dr. Jonathon Lavelle, focusing upon the use of Botox and considerations for ACL surgery, respectively.

Our own in-house research, my work in cerebral palsy (CP) football and Dave Sims' work in visually impaired football brought together the scientific analysis of movements and demands of the game with implications for training and coaching of these very special athletes. In addition, Chris Salvery discussed the role sports massage has played as part of the support service we provide to the national teams. The sessions were well received by the enthusiastic audience who were keen to learn more about the populations they were working with at all levels of participation.

The day culminated in an interactive session with the England National CP squad. The delegates were treated to some match play, then experienced aspects of Paralympic classification of athlete assessments. Delegates were able to work with the players, learning about practical tests while manipulation of body segments sought to provide greater awareness of the symptoms and severity of impairments seen across the classification spectrum.

The open forum question and answer session was a great opportunity for the players to talk about their disability and how they respond to training and performance.

The day was a great success and hopefully, they will become an integral part of the FA's Masterclass series. More importantly, the recognition of our work will lead to more interest and research in the ever growing area of disability football.

MSc student Mike Hutchinson commented: "The masterclass was a really enjoyable day. The speakers gave a great insight into the sport from the perspective of their area of expertise, whilst the practical session was a chance to see some of the things spoken about during the day up close and in action."

For more information on our work please contact:

Dr. Osman Ahmed email: [osman.hassan.ahmed@gmail.com](mailto:osman.hassan.ahmed@gmail.com) or Craig Boyd email: [c.boyd@shu.ac.uk](mailto:c.boyd@shu.ac.uk)



This photography exhibition displayed visual methods data collected by the PHC, as part of a Coca Cola funded research programme. 15 spinal cord injured individuals were invited to take personal photographs representing their experiences of being physically active or inactive. Drawing on contemporary styles of display, the viewer is taken on a visual journey through the trials and triumphs associated with trying to be active following a spinal cord injury. The biographical photography shows us why an active life can be so great; but also why it can be so difficult.



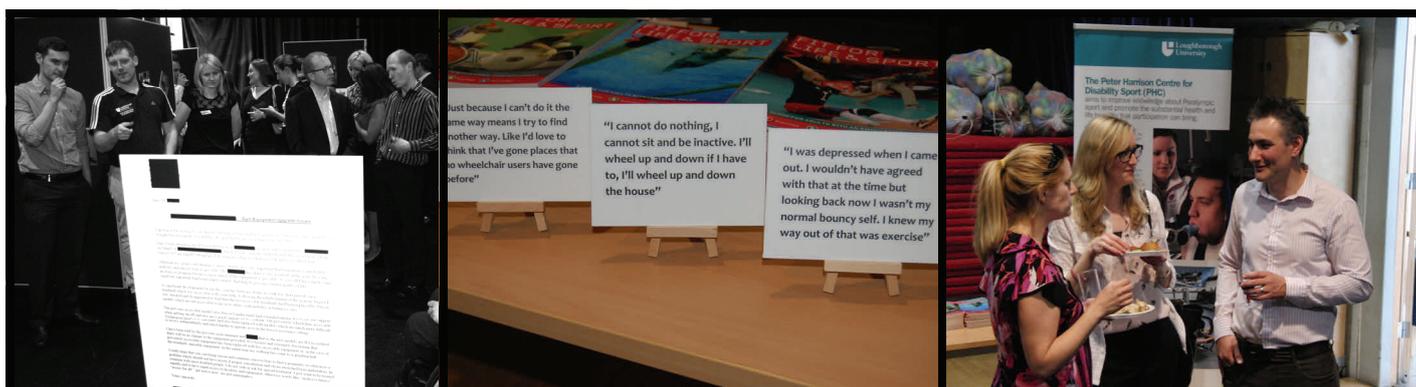
As Dr. John Lenton and I circled the Watford ring road for a third successive time, desperately seeking a car park that could fit a transit van through its entrance, it occurred to me that the job of an academic was changing. Having spent the previous 6 hours transporting, unloading and carefully assembling our not unsubstantial cargo; we were hungry, tired and in need of a speedy hotel check in and the location of the nearest eating establishment. Yet still no appropriately gated car park. Soon enough, hunger took over and we dumped the van rental in a town centre pay and display under the proviso one of us (John) would have to be up at 6am to top up the meter. Challenging times.

Translating scientific research into something accessible to the general public is becoming an increasingly important role. Most academics accept that very few people outside of the research community will read a journal publication and so we must look for innovative ways to make our work known to those who will benefit most from it. Fortunately, this type of work, often referred to as 'knowledge translation', is a priority within the PHC and an area we have significant experience in. We are committed to making sure our work has an impact on the lives of people with a physical disability.

John and I began the day refreshed. We returned to the Aspire National Training Centre – the primary HQ for the spinal injury charity. There lay our cargo; a collection of more than 50 large foam board photographic prints of spinal injured people's experiences of sport and physical activity. The images formed the basis to one of our most ambitious knowledge translation projects to date – an invite-only Photography Exhibition. The exhibition was entitled 'The Reluctant Heroes,' a reflection of participants often heroic efforts to maintain an active lifestyle but an acknowledgement that such heroism was unwanted and unnecessary – why should it require such an effort to do something as fundamental as exercise?

The photographs on display were taken from visual methods data collected by myself and Dr. Brett Smith as part of a Coca-Cola funded project into the physical activity experiences of people with a spinal cord injury. Segments of interview data were also used to add context to the images. Those in attendance included disability charity personnel, government organisation executives and spinal injury medical professionals. Most importantly, several spinal cord injured people were also in attendance. Guest speaker Andy Barrow, the former Team GB Paralympian (Wheelchair Rugby captain at Beijing 2008), delivered an inspiring speech to round up a hugely successful day. In total, more than 80 people attended; the majority of whom have a direct role in disability health and wellbeing. Given the average number of people to read a journal article is said to be as low as 5, we were extremely pleased.

The impact does not stop here. We have had expressions of interest to hold the exhibition at venues across the UK and on the 1<sup>st</sup>-3<sup>rd</sup> September the Exhibition will be hosted at Loughborough University as part of the 4<sup>th</sup> International Conference of Qualitative Research in Sport and Exercise. Once again I'll be calling on John. His personal interest in photography and eye for detail on assembling the exhibition proved invaluable and ensured a truly professional outcome. Fortunately, Loughborough doesn't have a ring road.



The England and Wales Cricket Board (ECB) offers pathways to international representation for four disability impairment groups: Blind, Deaf, Physical Disability, and Learning Disability. Players who are selected for these squads have traditionally been identified in domestic Disability Cricket or by chance whilst playing mainstream club Cricket. 2013 saw a step change in the way that ECB conducted its talent identification and development of its disabled players.

The ECB launched 3 Regional Disability Cricket Talent Development Centres (PHCDS) across the country. Each centre is headed up by a Level 3 Cricket Coach who is supported by an impairment specific coach for each of the pathway groups. The centres are not just about developing cricket skills. The purpose of the centres is to develop the most talented players and prepare them to go on to play for England in the years to come. Equally as important as developing and honing the technical cricket skills of the players is educating the players about leading a performance lifestyle and giving them the supplementary skills and knowledge that will support their development as elite level cricketers.



*“Loughborough University has played an integral role in supporting this aim by providing 4 MSc students and their mentors to work with both the Regional Centres and the national disability squads. Benefits are already being seen with players much more aware of how diet and lifestyle impact on performance. The majority of players are demonstrating increased levels of fitness and stamina and changed body shape. On the field these improvements were demonstrated in South Africa last autumn when the England Deaf side completed a 6-0 whitewash against their hosts and in Dubai in March by the England Physical Disability team who delivered a much improved performance all be it in a losing series against Pakistan. Both series’ were pleasing from a fitness perspective where coaches were able to choose from fully fit squads for each game. The England sides clearly showing enhanced levels of fitness and preparation when compared to their opposition. The impact of Terri Graham’s team on the performance end of the disability cricket pathway is clear and all at ECB are looking forward to seeing the fruits of this initiative well into the future”. Ian Martin (Head of Disability Cricket).*

How better to hear about what has been happening than from the nutrition advisors themselves....

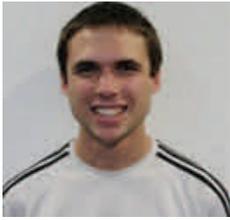
## George Homewood (Manchester)



“In my time working with the Regional Talent Development Disability Cricket Programme I have met some wonderful people and learned so much about both nutrition and disability sport. This is the first group of disability athletes I have worked with, so I was excited about the challenge. From day one the players demonstrated an eagerness to develop their cricket skills and nutritional practices. Everyone approached the topics of snacks, match day nutrition and hydration with great attitude and put maximum effort into their food diaries and one-on-one sessions. I felt the players appreciated an introduction to ideas that would make a real difference to their performance. The biggest challenge was on the spot adaptation of communicating topics to suit each player’s disability. Tailoring my work to the needs of each player under pressure felt like a personal achievement. It’s a challenge I am proud to have overcome. I look forward to the future sessions with these players and hope to see even more progression”.

George is investigating the effects of carbohydrate mouth rinse on intermittent exercise performance over 20 m (similar distance to a 22 yard wicket) for his MSc project.

### Mike Hutchinson (National Blind squad)



“Since before Christmas I have had the pleasure of working as a nutrition advisor to the Visually Impaired squad, and what a pleasure it has been. From the very first day I have been warmly welcomed by all the players, coaches and members of the support staff. The head coach is relatively new to the team and is trying to build a strong new team philosophy for everyone to buy in to. A key aspect of this has been for people to always want to better themselves, which has been great for me in my role. It has meant the players challenging themselves to become better informed about their nutrition, but also challenging me to widen my knowledge base so that I can meet their expectations. This has been hard at time but has allowed me to gain a lot from the experience. Planning and preparing nutritional education sessions for visually impaired players has been a test but one that I overcame by developing sessions that involve a lot of group discussion and tasks. I think this has been successful and has helped them all develop. I have enjoyed my time with the team and it is hard to pick out a single “favourite moment”. However, for me it has to be going bowling with the team on a Saturday night of a training weekend, even though they were far better than me! It was great to be able to spend some time with the players away from the cricket environment and get to know them in more of a social context. It has been a great experience for me and I would like to thank all those involved from the ECB and the PHC, especially Terri Graham, for their help and support throughout”.

For his MSc project, Mike is investigating the effects of dehydration in visually impaired cricketers on performance and the validation of an thirst questionnaire as a measure of hydration in this population.

### James Smallcombe (Whitgift School)

“The players and coaches at the Whitgift development centre have been very busy since the initiation of the programme in September. Group nutrition seminars have equipped all the cricketers with an understanding of the basic principles of sport and exercise nutrition. The group now has good knowledge of key macronutrients, hydration status, energy balance, fuelling during competition and recovery, as well as an appreciation of the importance of healthy dietary practices. These foundations have been built upon during one to one consultations which have been particularly enjoyable and have enabled significant progress to be made. Many of the players were seeking effective weight management strategies whilst others aimed to optimise their conditioning programmes through dietary manipulation. I believe all players can head into the summer season with confidence that they are well prepared to perform to the best of their ability. A common desire to develop as cricketers coupled with an enthusiasm to learn has meant that the Whitgift squad has been a pleasure to work with”.



### Andrew Shear (Northampton)



“When I introduced myself for the very first time back in October there were nervous looks amongst some of the faces staring back at me. Since then every one of the players that I have come across has grown in confidence and there is now a real togetherness among the group. A range of topics and learning methods have been utilised, such as short presentations, one-to-ones, workshops and fun games. This variety has kept the players fully engaged and some of the sessions have stimulated great discussions regarding their sports nutrition and cricket performance. Seeing all of this come to fruition during their first match together at the end of May provided me with a great sense of achievement and satisfaction”.

For his MSc project Andrew is examining the effects of caffeine on performance of the ECB battery of fitness tests.

### Terri Graham (Physical disability, Learning disability and Deaf squads)

“I have been working with 3 National squads since Jan/Feb and have so far focused on basic nutrition education. The aim has been to improve the individual’s nutritional knowledge and their daily eating habits before concentrating on their performance diet. Up until recently the majority of the sessions have been delivered in a group format but as is the nature of elite sport, support must be focused on the individual. With this in mind, I attended the Deaf squad’s Devon tour (May 2014) during which I conducted one-to-one sessions and body composition analysis. The team was successful against a Paignton Select squad on day 1 but lost to a Devon Select squad on day 2. I also attended a weekend camp at Malvern College (July 2014) to start this process with the Physical and Learning disability squad members. The weekend offered a select number of regional development players the opportunity to train and play with their England colleagues and the end result was 1-1 (40 overs).



It has been fantastic to spend so much time with the players and staff on both a group and one-to-one basis. I now have a better understanding of the demands of the game and the individual needs of the players. I look forward to working with them further and hopefully seeing many of the players achieve their nutritional goals”.

# Paratriathlon – MSc Student Experience



Rhianne Griffiths and Alexandra Shill, both MSc Sport Science students at Loughborough University, had the exciting opportunity to work in collaboration with British Paratriathlon and the PHC at the world triathlon series race in London on 31st May-1st June. As part of their MSc project, under the supervision of Prof. Vicky Tolfrey, Rhianne and Alex chose this particular event to familiarise themselves with the sport and the athletes. In addition to this, Rhianne and Alex had the rare opportunity of gaining access into the athlete, coach and medical area and also the transition zone to gather essential video footage during transition and during the bike and run phases.

The girls, primarily attending the world triathlon series in London for their project purposes, were also selected to be part of the International Triathlon Union (ITU) classification process for Paratriathlon. As the ITU classification process has recently been modified, Rhianne and Alex played a vital part in clarifying the use of the new system through offering general support and video footage of athletes over the three days of the classification process and during race day.

**Rhianne** *“It opened my eyes to the importance of the classification process to Paratriathlon, the need to get it exactly right and indeed the demands of the sport”.*

**Alex** *“Although interesting, it was a tough experience as athletes competitive status was in our hands. Generally, athletes praised and abided by the new system as it aims to ensure a fairer playing field however, the changes did mean disappointment for some”.*



**Alex** *“Race day was an incredible experience, shadowing the Paratriathletes in the athlete lounge offering well wishes, cheering them all on from privileged locations on the course, and of course feeling proud during the medal ceremonies with GB taking away 11 medals and 4 golds”.*

**Rhianne** *“Our status as classifiers gave us access into restricted areas and to the best spectator locations imaginable. Not only could we support our GB Paratriathletes but we became within touching distance to some of my triathlon racing heroes during the GB elite men and women races that followed”.*



After a full few days supporting the GB Paratriathletes and watching hundreds take to the closed roads of London to race, the girls took part in some exercise themselves, of relatively less intensity, in the 5 km Colour run raising money for charity. A thoroughly great, full packed weekend of enjoyment was seen to be had by all and again well done to all GB Paratriathletes that competed.

Prof. Vicky Tolfrey commented: “This was a great opportunity to integrate Alex and Rhianne into the sporting arena and has provided valuable experiences leading into the their data collection in the laboratory as part of our applied support programme for British Paratriathlon”.





Shaun is the Lead Strength and Conditioning Coach (S&C) for the GB Para-Rowing Team and is the newly appointed S&C Technical Lead for Paralympic Sport with the EIS. Shaun started at the EIS in 2010 as a work placement, which led to his first role working with the England and GB Men's and Women's Hockey teams during the London 2012 cycle. He has been with the Para-Rowing Squad since September 2012. He completed an MSc in Strength and Conditioning at the University of Edinburgh and a BSc (Hons) in Sport and Coaching Science at Bucks New University.



## **Statement from Alex Wolf - EIS Strength and Conditioning (S&C) National Lead.**

*With the goal of achieving 121 medals in Rio, there is a need to effectively coordinate S&C services with Paralympic Sports. Since London, the number of Paralympic S&C roles has increased and the diversity in athletes and sports requires practitioners to have good problem solving skills. The Paralympic S&C Technical Lead role is crucial to capture the knowledge and experience of these coaches by creating a network of peer support and develop world leading practices across the discipline and those working within GB Paralympic Sports.*

With the increasing standards in performance in Paralympic sport, S&C is rapidly becoming an integral part of the Paralympic athlete's physical preparation. Since London 2012 there has been a substantial increase in investment of S&C services into the EIS from Paralympic Sports. With Paralympics GB's success in London 2012 the investment in Paralympic Sport for the Rio 2016 Cycle has increased with 13 of the 17 funded Paralympic sports having appointed Lead S&C Coaches from the EIS. Of the 13 sports, 7 are working exclusively with a Paralympic Sport (Para-Rowing, Para-Canoe, Disability Swimming, Wheelchair Basketball, Wheelchair Rugby, Disability Table-tennis, and Wheelchair Tennis) and another 5 are working across both Paralympic and Olympic Programmes (Para-Cycling, Disability Archery, Disability Sailing, Disability Athletics & Paratriathlon).

Strength and Conditioning in Paralympic Sport is still in its infancy and this recent increase in S&C Coaches working within the Paralympic discipline is not without its challenges. Despite there being a substantial increase in the number of S&C coaches working in Paralympic Sport, there are only a handful of practitioners with extensive Paralympic specific experience within the network. Given the complexity and unique nature of some disabilities, it is difficult to understand what impact we as S&C Coaches can have on performance. It is therefore essential that as a network we collaborate and share information in order to identify how we can optimize our impact on performance.

My role as S&C Technical Lead for Paralympic Sport is to enhance the impact of Coaches within the EIS S&C Team delivering to Paralympic sport and align all Paralympic sports with EIS S&C National Strategy of understanding the performance problem, having creativity in our delivery and delivering best practice in the 3 pillars of strength (1. Planning & Programming, 2. Coaching and 3. Diagnostics). In order to achieve this outcome we need to identify all the potential barriers which limit us achieving this outcome. This will involve going through a process of reviewing current S&C delivery within Paralympic sport and working alongside practitioners to establish key Paralympic specific themes and topics which limit the delivery of S&C within their sport. Having identified these areas, we will help facilitate and create opportunities for practitioners to develop in the necessary areas by collaborating as a network and addressing these areas through one-to-one communication with our 'in-house' expert practitioners, themed focus groups and national CPD events.

July 2014 will see the first EIS Paralympic S&C Workshop with the theme of 'Paralympic Problem Solving'. We will have S&C Coaches from most of the 17 UK Sport funded Paralympic sports, plus a number of non-EIS practitioners including physiotherapists working with Paralympic athletes. This workshop objective is to create a network to share information in case study format by demonstrating how practitioners have addressed the limitations of a disability on performance and how they have utilized different strategies within S&C to optimize performance. This will be the first of what we plan to be a number of workshops in which we will share and disseminate information within the network so that we can continue to challenge and refine our practice as S&C Coaches and ultimately develop a network of Paralympic specialist Strength and Conditioning Coaches.

## **Stop Press**

- The PHC team wish good luck to Prof. Stuart Biddle who is leaving Loughborough University to start a new adventure at Victoria University, Australia. Stuart was involved in setting up the PHC, so we would like to say thank you for his help and support over the years.



The future appears to be bright for winter Paralympic sport in Great Britain after the team's display at the Sochi Winter Games. The Para-Alpine ski team came away from Russia with five medals, eclipsing their target of two to help Great Britain secure a top-10 finish in the medal table. Visually impaired skier Jade Etherington and her guide Caroline Powell became the most decorated women in British Winter Paralympic history after claiming four medals - three silvers and a bronze. In the same category, Kelly Gallagher and guide Charlotte Evans ended Britain's 38-year wait for a first ever gold at the Games. However they finished disappointed after crashing out of their subsequent three races.

While Etherington and Gallagher could both compete at the next Paralympics in Pyeongchang, 15-year-old Millie Knight's two top-five finishes demonstrated her potential for future success and there were also encouraging performances from standing skier James Whitley, 16, and both Ben Sneesby, 19, and Mick Brennan, 34 who competes in the sit-ski division. Anna Turney in the women's sit ski division narrowly missed out on a medal in the Super-G finishing agonisingly in 4<sup>th</sup> place. Strong performances across the whole team were witnessed ending with 13 top 10 finishes and 4 top 15 finishes.

In May 2014 the PHC welcomed back members of the Para-Alpine ski team into the laboratory for physiological profile testing. Back into the swing of things, preparing for the new season ahead which will begin in September, they look to build on their Paralympic success. Importantly the process, whereby the first steps towards a four year journey to Pyeongchang, South Korea has begun. The physiological testing is geared towards monitoring the athletes' fitness throughout the year and allows support staff to tailor their training programmes to ensure they are best prepared for the demands that lie ahead in the ski season.

Paralympic Gold Medallist Charlotte Evans commented: *"My job is really to build the trust and communication. It's making sure that Kelly has full trust in my ability in what I'm doing and for me to relay back to her. It's quite a tough job. It can be draining mentally because you can't switch off. You are constantly thinking Kelly's behind me, and I have to make sure I'm commanding the right things back to her. It's a team effort. It's never an individual medal or a single win. There's a lot of people involved in getting you there and the PHC has been a major part in letting us be able to see how good and fit we are throughout the season".*



Photos courtesy of Phil Wilson

Up until now skiing has been supported by Disability SnowSport UK (DSUK). DSUK runs the administration side of the team outside of major events and has provided extensive funding in recent years to help contribute towards the success of the athletes, in particular Sochi 2014. Prior to the Sochi Games the funding from UK Sport had seen the sport receive £405,500. With the unprecedented success in Sochi 2014 the calls for more support has recently been acknowledged by UK Sport with the announcement of an indicative four year funding of £2,749,000 through to Pyeongchang 2018, which is fantastic news and more than a six-fold increase. The PHC would like to congratulate Para-Alpine Skiing in successfully obtaining increased funding which provides them with an excellent opportunity to build upon the success of Sochi 2014, a future that is looking very promising for the sport moving forward.



Photo courtesy of Phil Wilson

Dr. John Lenton said: *"This funding recognises the hard work put in by the Para-Alpine Skiing athletes who delivered success on the biggest stage of all with a record haul of medals. We must not forget head coach Tony McAllister's and his back room staff efforts in helping the athlete's deliver this kind of success, in particular his passion and determination to create a successful team. The funding places the sport in a great place to build on previous success, break more records and win more medals come PyeongChang 2018".*

Head Coach Tony McAllister commented: *"The investment reflects the belief that UK Sport has in the potential for our athletes to make us proud again in four years' time in PyeongChang, with yet more medal success. This funding allows us to target our resources towards athlete pathways in the sport whereby we can improve in all aspects and the potential for future success. With this we see the opportunity for our best athletes to do better, support those developing and recruit future potential which will see the growth of the sport and its programme, creating competitiveness, as well as strength and depth within the team".*



Photo courtesy of Scott Grant/ Canadian Paralympic Committee

It was seven o'clock in the morning when I opened the door for a morning jog and found a doping control officer waiting for me: "Are you Andrea? I am here for an unannounced out-of-competition test". Though athletes often have mixed feelings about being drug tested (it's at best inconvenient and at worst invasive), this time I was cheering inside. There was only one reason someone would be sent to test me, a Canadian recently arrived in Loughborough – somewhere halfway around the world the decision had just been made that I was going to Sochi. Shortly after, I received an email saying that I had been selected as a guide for the Canadian Para-Nordic team.

Sochi was my second Paralympic Games and my first guiding Margarita Gorbounova, a skier with a visual impairment who immigrated to Canada from Russia as a teenager. Though it was a bit of a struggle to coordinate our training with her based in Ottawa and

my research keeping me in Vancouver (and now Loughborough), we managed to make it work and had some strong races together in the lead up to Games.

Heading to Sochi, my expectations were modest. I knew we were ready to race but was concerned about the 'tropical' climate of the Black Sea region (I had watched many of the Olympic cross country skiers 'crash out' because of wet slushy conditions). I was also deeply aware that in 1980, when the former Soviet Union hosted the Moscow Olympics, they declined the opportunity to hold the Paralympic Games stating that there were no disabled sportspersons in the Soviet Union. (Note: In all fairness there were many nations in that era that declined to host the Paralympic Games. It is only recently that the International Olympic Committee and the International Paralympic Committee signed a 'one bid, one city' agreement requiring potential hosts to bid on both Games).

Conditions when we arrived were indeed challenging. Our first race was a 15km event and it was 15 degrees Celsius by race time. I realise that Nordic skiing is not a very popular sport in the UK so let me explain – ideal cross-country skiing conditions are about minus 5 to 10 degrees below zero. Finding a ski wax that provides the grip needed to climb hills when the snow is melting under you is near impossible (unlike other skiers we go both up and down!). The downhill also become treacherous because skinny cross-country skis are not designed to 'push' heavy wet snow with the consistency of mashed potatoes. Many athletes decided to save their energy for later in the week but Margarita and I love the longer classic events and wanted to race. We ended up 4<sup>th</sup> in a field of four but were proud of how we skied and happy to have the first race under our belts. Conditions did improve as the Games progressed. We competed in a total of five events and our best race came on the last day – a 5 km skate race in near ideal conditions in front of a sold out crowd.

It was the spectators that made the event special. The grandstands were packed for every event and the crowds were energetic, friendly and enthusiastic. They also quickly realised that Margarita was 'one of theirs' and the cheers every time we entered the finish stretch were out of this world. What impressed me (and Margarita) the most was their eagerness to learn about the Paralympic Movement and disability sport. At the Vancouver Games, spectators and journalists wanted to talk about the 'inspirational' aspects of the event. In contrast, the emphasis in Sochi was on understanding the events and how the athletes are able to do what they do. Spectators were 'inspired' but they were also inquisitive – wanting to know, for example, how guides and athletes communicate on the trails or what qualities make for a good partnership. As a researcher of the socio-cultural aspects of disability sport, I was really encouraged by this shift; I believe that curiosity leads to appreciation and appreciation is an essential step towards a truly inclusive sport system. I returned to Loughborough slightly nostalgic to think my own career as a Paralympic guide was ending, but also invigorated and excited by what I saw in Sochi.



Photo courtesy of Matthew Murnaghan/ Canadian Paralympic Committee

Read more about my experience at the Paralympic Games and how being a Paralympic guide has also 'guided' my research into disability sport:

<http://ubyssey.ca/sports/thunderbird-alum-andrea-bundon-leads-the-way-for-paralympians-325/>



## Marrit Lemstra

In the autumn of 2013, I was about to start my final assignment of my MSc in Human Movement Sciences at Groningen (the Netherlands). For the previous few months I had been helping Jan van der Scheer (PhD student) with a low-intensity training intervention where we measured inactive people with a spinal cord injury using an OptiPush measurement wheel and oxygen consumption with an Oxycon in different rehabilitation centres. Although this was my first experience of working in this area, I really enjoyed it and wanted to continue in this field for my MSc thesis. I was also keen to undertake this project abroad, so Prof. Lucas van der Woude introduced me to Prof. Vicky Tolfrey and Dr. Barry Mason at the PHC. I was excited about the prospect of conducting my project at the PHC investigating “the influence of wheel stiffness on wheelchair basketball performance.”



For the project, RGK wheelchairs provided us with three types of wheels currently used by athletes, in two conditions (brand new and used) with various levels of wheel stiffness. In addition, two pairs of wheels with high pressure TUFO tyres were added to the study to investigate the influence of high pressure tubular tyres on performance. One of which was called the Dutch concept wheel, which I obviously had high expectations for!! In summary, there were eight pairs of wheels that had to be investigated.

The project consisted of three parts where we firstly explored the stiffness properties of each wheel type. Following this, each wheel was investigated in both a laboratory and field based environment to determine the extent to which stiffer wheels might influence an athlete’s mobility performance. In summary, the high pressure TUFO tyres had a favourable effect on physiological demand; however wheel stiffness did not appear to have a meaningful effect on wheelchair performance.



From day one, the PHC team made me feel very welcome in Loughborough and I was very grateful to be part of the team. The lunchtime basketball games, team lunches and pub skittles were all epic! Studying at the PHC, playing volleyball for a Loughborough university team, together with the trips around England with my partner-in-crime Annika made these five months in Loughborough unforgettable!

## Annika Willems

Last June I finished my MSc in Human Movement Sciences at the Free University in Amsterdam. Supervised by Prof. Thomas Janssen, my MSc thesis was on the effects of a 16 week hybrid or handcycle training intervention on body composition and bone mineral density for spinal cord injured people. Inspired by this project, I developed the desire to do an internship abroad. Thanks to Thomas Janssen’s contacts with the PHC and Prof. Vicky Tolfrey, I was given the opportunity of doing a 6 month internship at the centre starting in January.



During the past few months in Loughborough I have been involved in two studies involving the Great Britain Wheelchair Rugby squad (GBWR). My main project was investigating the body composition of wheelchair athletes. This project involved the GBWR squad attending the University to have DXA scans and anthropometric measures taken, which was organised by Dr. Tom Paulson. Following data collection I was able to write up the findings on assessment of body fat in wheelchair dependent and ambulant disabled wheelchair game players. In addition, I assisted Katy Griggs with testing for one of her PhD studies investigating the effects of cooling strategies on the performance and thermoregulation of Wheelchair Rugby players. Working with the Wheelchair Rugby players has been a fantastic experience. It was great to see how professional these guys are and I wish them all the best for qualifying for the Paralympics in Rio!



I was also able to visit the photo exhibition ‘The Reluctant Heroes’ hosted by Dr. Anthony Papatomas at Aspire. The photo exhibition gave a great visual insight into the problems that spinal cord injured people face when they try to exercise but also showed the benefits of physical activity for spinal cord injured people. Another event that I was able to attend was SportsFest hosted by the British Paralympic Association and held in Manchester. This event is a great initiative and a very good opportunity for disabled children and adults to try out different sports and become active!



**Phil Zealey is currently employed by Great Britain Wheelchair Rugby (GBWR) as a Performance Scientist for the elite squad and the Lead Talent Development Coach. He has worked as a practitioner within elite sport for approximately 7 years. During this time he has graduated from Southampton Solent University (2012) with a degree in Applied Sports Science, and has worked with a variety of different sports, specifically professional football with Southampton Football Club and MK Dons.**

## 1. Explain what your job entails.

I currently provide several different roles within my job as Performance Scientist, specifically leading on video analysis, classification and talent identification. The performance analysis role includes filming all GBWR and opposition games at competitive tournaments as well as training. From the video footage I then provide statistical and subjective feedback to the coaches to help them make informed technical and tactical decisions. Within classification, it is my role to prepare functional classification portfolios for our athletes to allow us to go into classification testing with as much informed knowledge about our athletes as possible. This information is also used to prepare any cases for potential protests where we feel athletes may have been incorrectly classified. It is also my role to go into classification with the athletes and guide them through this process ensuring competition guidelines are adhered to.

## 2. How did you get involved in Wheelchair Rugby and when did you start working for GBWR?

I first became involved in Wheelchair Rugby in April 2011. I was an intern at Southampton Football Club at the time, and one of the GBWR athletes was training at my University with one of my lecturers and GBWR had no analyst. A trial was offered to the University and fortunately I was selected to spearhead the project with support from staff at my University. We put together a sample DVD showing what we could offer and following this I was asked to attend a camp with two volunteers working underneath me. This camp turned out to be a mini tournament with the Finnish team and following this camp I was asked to attend more camps more frequently and within the space of a few weeks I was pretty much full time!

## 3. How has your role changed over the last year?

After the Paralympics in 2012 I moved back into football to work with MK Dons for a season as the Lead Academy Analyst. I learnt a lot during this time from the backroom staff I was working with and for that I am grateful. After Paul Shaw and Lorraine Brown were announced as the new Head Coach and Performance Director for GBWR in 2013, they approached me with an offer to rejoin the team within my analysis role and to lead on talent identification and classification. This was an offer I couldn't refuse and thus left MK Dons to assume the role of Performance Scientist. The role is ever changing, mainly due to the fact that I am trying to improve my knowledge on all aspects of performance to ensure that we are doing as much as possible to challenge for medals at World and European Championships and the 2016 Paralympic Games. In February 2014 I applied for and took the role as Lead Talent Development Coach. We are yet to really kick off having only had one camp but myself and ex-player Ross Morrison (Assistant Coach) are really excited to start in August with the team and start to make some gains. Having all of the information and support we get from the performance team for the elite squad will really allow us to give the players in the development squad an opportunity to challenge for a place in the elite squad in years to come.

## 4. While leading the development squad, what are you looking forward to over the next year?



It's definitely an exciting prospect, we've got a few players that are progressing very quickly that could potentially challenge for a place in the elite squad for the 2016 cycle. We have a succession of camps from the end of August until mid November where Ross and I will be able to implement our playing philosophy and performance culture, but most of the work is done behind the scenes by the club coaches. Without these coaches the players wouldn't be where they are and it's the opportunity for continual improvement that really excites me. We've got quite a mixed squad but each member adds something quite different and at the same time we're always looking to add players to give us a different dimension. We've got a European tournament called 'Rugbymania' at the end of November which will give these players an opportunity to show they can implement the things we're trying to teach, which is definitely something I'm looking forward to.

## Diary from the 2014 Canada Cup, Vancouver



Following 9 months of hard training and two international training camps in Canada and the USA, GBWR travelled to the 2014 Canada Cup for the first international competition of the summer. The GB squad headed to Vancouver looking for a podium finish that would secure vital world ranking points leading up to the World Championships in Denmark this August and take them into the top 4 teams in the world. With 7 of the top 8 teams in the world present, the Canada Cup provides a critical benchmark for the progress made by the squad during 2014. Applied Sport Scientist and PHC staff member Dr. Tom Paulson provides an insider's view from the trip.

### Day 1: Travelling day

With the 8 hour time difference and long haul flight, preparation prior to travel was vital to ensure the squad were ready for their opening game against Sweden in just 3 days. Loading a squad of 14 wheelchair users on and off the plane always adds some time to the process and, therefore, all players were asked to prepare themselves to travel as well they would for a game. Following a delayed exit from Heathrow, the squad finally arrived in Vancouver at 7.30pm local time where we were met by a team of Canada Cup volunteers who helped load the bus and transport all the game chairs to the venue for the next day's training. The key for the players was to get some food into the system and then try to adjust their body clock to local time as quickly as possible.



### Day 2: Training day



Following the late arrival the previous evening, we were up early for breakfast. My first role of the trip was to perform hydration tests on the whole squad before breakfast to check everyone had recovered from the flight and was in the best possible shape to start training. After breakfast the squad went out for a team push to get some daylight which is crucial for the acclimation of the body clock to local time. Before the tournament started, all players were required to have their game chairs rigorously checked to ensure they conformed to regulations. Therefore, after lunch all the squad made the short journey down to the Richmond Olympic Oval, the venue for the 2014 Canada Cup, which was built to host the long-track speed skating at the 2010 Winter Olympics. There was a flurry of hammering and crow-bar activity from the mechanic who ensures every chair is inch perfect.

Classification is also a major part of any international competition, with each player requiring 3 international classifications during their career before having their classification made permanent. This was the first major competition for some of our younger squad members and therefore we had 6 players being classified. The day finished with a short sharp training session which gave the players the opportunity to blow the cob-webs out from the travel and the staff the opportunity to familiarise ourselves with the venue.

### Day 3: Warm-up game & final preparation

Day 3 was another early start with all the players hydration tested before playing a practice game against Denmark. Training matches gave a perfect opportunity for the coaches to run different line-ups in a competitive environment to see how the squad was performing. There was still some jet-lag in both the players and staff but the match provided the perfect opportunity to get into the rhythm of the tournament week. GB ran-out comfortable winners with the whole squad showing they had dealt with the travel well. Next up was a well-deserved lunch followed by a stretching and theraband session outside by the hotel pool to ensure all the players had recovered from the mornings match and were primed for the start of the tournament. Dinner was preceded by a tactical team meeting in preparation for the first tournament matches against Sweden and Paralympic champions Australia. All the players then had the evening off to rest for the following morning.

#### Day 4: Pool matches vs Sweden & Australia

Needing to finish in the top 2 teams of Pool A to ensure a semi-final spot, the first match of the day against Sweden was a must win match for GB. Reigning European Champions Sweden boast an experienced squad, however, having beaten them in 2 training matches earlier in the year, GB were confident they could get the tournament off to a positive start. All the hard training and lessons learned from a tough 2 week camp with the USA looked to have paid off as GB ran out comfortable 49-39 winners, with the whole squad making a positive contribution.

Focus then shifted to rest and recovery as the tournament schedule only allowed 4 hours break in the afternoon between games. With such a short turn around, food and hydration were the key elements of recovery, with players needing to replenish their energy stores as quickly as possible before getting ready to go against the reigning Paralympic champions at 5.30pm. GB ended up losing 63-46 to our friends from down-under. However, the coaches knew it was an uphill task from the beginning and chose to give some of the players as much rest as possible to ensure they were fresh the following day. From an experience view point it was invaluable for younger members to play against Australia for the first time and get up close and personal with one of the strongest and most powerful players in the world, Ryley Batt. It is a different kettle of fish matching up with these players in the flesh compared to watching video clips and I am sure the whole squad and staff took a lot from the match. Minds quickly turned to Day 5 and future progress in the tournament.

#### Day 5: Pool match vs Switzerland & Semi-final vs. Canada

With the win against Sweden under our belt from day four, GB knew a victory against the lowest ranked team of the tournament Switzerland would set-up a mouth-watering semi-final against the Canadians. There was no room for any slip-ups and GB put in a confident display to beat the Swiss team 50-29. Again the coaches were able to rotate their lines and help some of the squad conserve energy for the semi-final. The players were using their time off to recover well during the day for the later 7.00pm start against the Canadians.



GB played Canada 3 times in a Tri-Nations tournament hosted in London, Ontario in January 2014. Despite losing the 3 encounters, we were confident that the players had taken large strides both physically and tactically in the last 6 months. The squad went into the game with great intent and focus and put huge pressure on the home team in the first two quarters, with GB forcing regular turnovers to lead by 5 points at half-time. Led by Jim Roberts and Ayaz Bhuta, GB showed no nerves or regard for the Canadians no. 3 ranking in the World and continued to pressure the home side bringing a silence to the watching home fans. With GB still up by 5 points heading into the last 5 minutes, the Canadians used all their international experience to put pressure on their younger rivals. With a few turnovers and referee's decisions going against us, the game came down to the last play with the score tied at 49-49 and Canada eventually scoring the winning goal with only 2 seconds left on the clock. The defeat was a bitter pill to swallow for the young players who had dominated their more experienced rivals for 3 quarters of the match. There were many positives to take out of the match which acted as a real signal to the rest of the world about the progress we've made in 2014! Next up plenty of food for recovery and a good sleep followed by the 3<sup>rd</sup>/4<sup>th</sup> play-off against Japan.

#### Day 6: 3<sup>rd</sup>/4<sup>th</sup> Play-off vs Japan

The final day of the tournament saw a 12.00pm match against the current no.4 ranked team in the World. Like Australia two days previously, this was the first time many of the younger squad members had matched up against Japan and the morning started with tactical meetings about how to control the two dominant Japanese players, Yukinobu Ike and Daisuke Ikezaki. Many of the players had already played 4 matches during the week and the hardest part of any competition is to be able to bring your best performance when fatigue and tiredness may have started to kick-in. GB started well against Japan and showed a huge amount of composure to be level 25-25 at half-time, despite the huge pressure from the physical Japanese defence. Again Jim Roberts, Ayaz Bhuta and Coral Batey proved to be GB's players of the week, supported by captain Mike Kerr, veteran Alan Ash and vice-captain Chris Ryan. Despite all GB's determination and effort, the power of Japan's high pointers took its toll in the 4<sup>th</sup> quarter with GB losing out 52-48 in a tightly fought match.

**The whole squad have a great deal to be proud of from their efforts in Vancouver. Experience of top international competition is invaluable in ensuring the team continue to progress towards the targets of being crowned European Champions in 2015 and competing for a medal at the 2016 Paralympics. The future looks bright with Coral Batey and Ayaz Bhuta coming home with Most Valuable Player awards for their classifications, the former in her first International tournament. Although not quite achieving the target of a podium finish, the GB performances this week have certainly got the international community talking and there are still huge gains to be made before the World Championships in Denmark in August.**

## ***“Football is my life, in my heart, that will always stay there” The role of football in the lives of disabled fans.***

Whilst there is a great deal of research into the benefits of participating in sport and physical activity for the disabled, little is known about if and how being involved in sport as a supporter can benefit their lives. A group of disabled football fans from clubs across the country took part in the FREE (Football Research in an Enlarged Europe) project, a pan-European study into the role of football in the lives of fans, to show us what life is like as a disabled football supporter. FREE is a research project bringing together nine universities in eight European countries, coordinated in the UK by Loughborough University. It is funded by the European Commission’s 7<sup>th</sup> Framework Program for Research.

Fans were asked to take photographs and keep diaries for an eight week period to give the research team an insight into their football-supporting life. They could use the images to show their involvement in football and what football meant to their lives. From what this group of fans told us, two things were clear: supporting football can be of great benefit to their lives, but at times is a considerable challenge.

Football is a social activity, and fans stressed the importance of this to them. It provides structure to their lives, and allows them to meet like-minded people. Most professional football clubs have a Disabled Supporters Association (DSA). As well as providing vital logistical information and support, DSAs can be an important social site. Fans told us how they put time and effort into attracting new disabled fans to the club and the DSA, stressing some of the benefits to them and others:



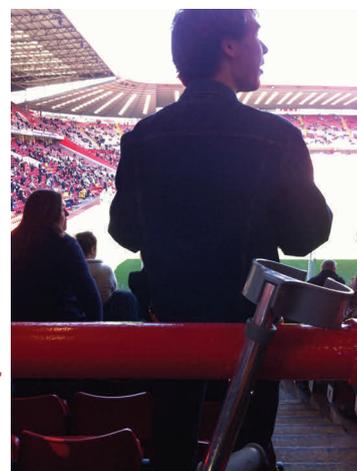
Photos courtesy of Lin Corbett

***“Rather than coming to football everyone’s probably just sat at home, like myself, I’d be just sat at home doing nothing, getting bored, just watching TV or whatever. Football gets you out and about doesn’t it? It allows you to meet people, so it’s a social thing as well” (Exeter City fan)***

***“It’s been great to meet with the other disabled fans. There’s a lovely social element to it going on, which I think is great” (Wolverhampton Wanderers fan)***

DSAs are social hubs for these supporters. However, there are also numerous challenges facing the disabled football fan. Although there are guidelines from the Premier League, the Football League and the Football Association regarding accessibility at grounds, these are not enforced. Fans took the opportunity to include pictures of their view at matches, often blocked by fans or stewards standing in front of them, barriers, or being in a section of the ground with restricted sight lines. Problems can also start before they get to the ground, with difficulties reported in obtaining tickets, planning away trips and transportation.

***“Everybody else had to go upstairs, and when I asked if I could use the lift, I was told there wasn’t a lift, well I knew there was because I’d been there before, and the steward actually said well if you go slowly and take one stair at a time, I’m sure you’ll make it!” (Wolverhampton Wanderers fan)***



Perhaps more concerning than accessibility issues however were the reports of negative treatment fans experienced at grounds. Although these remained rare, at some grounds disabled seating areas are situated within the opposition fans’ stand, which can create tension and anxiety. Disabled fans felt that at times they were perceived as inferior, and combined with accessibility and other practical barriers this created a feeling of inequality:

***“At the end of the day we’re the same, as any other supporters, but we seem to have to go through, such ignorance from certain clubs, and jump through hoops” (Leicester City fan)***

These findings are being reported to Level Playing Field and the Centre for Access to Football in Europe, who campaign to improve life for the disabled football fan.



The 'Are We Inspired Yet?: Digital Stories by Young People about Sport and Disability' is underway. Headed by Dr. Andrea Bundon, a postdoctoral researcher working at the PHC and funded by a fellowship from the Social Sciences and Humanities Research Council of Canada, this project uses digital storytelling to explore the sport and physical activity experiences of young disabled people in the UK.

There have been many developments since the project launched in March. Working with local and national organizations, Andrea has held a series of digital storytelling workshops (or 'Digital Storytelling Circles') to teach digital storytelling techniques to young people (and in some cases to educators, coaches and parents). The first of the workshops was held in conjunction with the Youth Sport Trust's Step into Sport Camp here at Loughborough University. Since then, Andrea has run workshops at numerous schools,

sports clubs and para-sport events. She was also asked to present the project at the Waverley Para Games where one of the digital stories was shown in the Opening Ceremony to an audience of nearly 200 students, dozens of teachers and coaches, and local VIPs.

The stories that are created in the workshops follow a model pioneered by the Digital Storytelling Centre in California. They are short (1- 4 minutes), use multiple media including photos, illustrations and videos and generally include captions or voice over narration. The topics of the stories are incredibly diverse but to date include stories about how individuals became involved in para-sport, what barriers or facilitators shape their sport participation, or what initiatives individuals or groups are involved in to promote para-sport opportunities in their communities. The first stories, created by athletes in the Leicestershire Football Association's Inclusive Football program, are available on the project's YouTube channel and more stories will be added over the coming months.

Please visit [https://www.youtube.com/channel/UC5k2R0yFWOGVuYh\\_I6IWw3Q](https://www.youtube.com/channel/UC5k2R0yFWOGVuYh_I6IWw3Q) or contact Andrea at [a.bundon@lboro.ac.uk](mailto:a.bundon@lboro.ac.uk) to find out more about the 'Are We Inspired Yet?' project.

## Resilience – Top Ten Tips by Jo Kirby

Resilience is important as it impacts positively upon a person's health and well-being. The following top ten tips provide practical ways in which resilience can be fostered:

1. The first top tip sounds so simple, but you need to make the decision to be resilient in order to overcome loss.
2. That said, life is very likely to be a struggle without any social support - This may be from family, a partner or friends and can include anything from physical support to emotional support.
3. Be the eternal optimist - Believe that everything is always going to be okay, whatever happens!
4. Stay Busy - Filling your life with activities you enjoy doing will give your life purpose and may help distract you from any pain or discomfort you may be experiencing.
5. Live for the 'now' - Don't dwell on how life once was, live day by day trying not to think too much about the past or the future.
6. Social comparison - Pick a peer who you can look up to for guidance, and someone who you can push yourself to try and emulate.
7. Simple things - appreciate the simple things in life such as being out in the sun or going out for a meal, concentrate on what you have got rather than what you don't.
8. Peer Support - Make the most of the peer support available to you, ask questions and learn from those who have lived with disability.
9. Give back to others - Whether its peer support, working for charities, disability awareness groups or creating an informative website these can provide a purpose in life. Furthermore, you will feel great about helping others in a similar situation to yourself.
10. Be open-minded - Open your mind to see the multitude possibilities around you and the positives that can be gained from disability.

## Stop Press

- Dr. Brett Smith has been invited to give a keynote talk at the Applied Association of Sport Psychology (AASA) in October in Las Vegas.
- Dr. Brett Smith and Prof. Vicky Tolfrey have been invited by the Brazilian Paralympic Committee to present at the 4th International Parasports Congress in Florianopolis, Brazil in November.
- Dr. Brett Smith has recently been invited to be on the journal editorial board of Adapted Physical Activity Quarterly.
- Prof. Vicky Tolfrey, Dr. Brett Smith and Dr. Christof Leicht have been invited to present at the '2014 Wakayama Symposium for persons with spinal cord injuries', taking place on 23-24th November.



Wellbeing is an important part of psychological health for adults living with a disability, just as it is for all people in general. But disabled adults often encounter challenges or barriers that make living 'the good life' rather difficult at times. The following is a short, practical guide to promoting wellbeing in disabled adults - including some key 'top tips' - based on research conducted in the PHC.

First, though, it is important to clarify what is meant by 'wellbeing.' There are two schools of thought on this in the academic literature.

**Subjective wellbeing (SWB)** refers to the balance of positive and negative emotions (pleasure over pain) that someone feels over time, along with their general satisfaction with life.

**Psychological wellbeing (PWB)** refers to experiences of personal growth and development, and the fulfilment of human potential.

Whilst the two types are often discussed separately, they tend to overlap in people's everyday lives and both are important for maintaining good psychological health.

So, what can be done to promote wellbeing? The following 'top tips' highlight some of the main factors to consider when working to improve the health of disabled adults:

- **Bolster social support networks.** Quality relationships with others are consistently identified by research as one of the most fundamental contributors to SWB and PWB. One way of ensuring close relationships is to consider the social support that people have available to them in their circle of family/friends and the wider community. In particular, research by members of the PHC has found that connecting with other disabled people can strongly benefit PWB (Caddick & Smith, 2014). For example, connecting with others can foster acceptance, belonging and camaraderie, and lead people to engage in the telling of 'collective stories'; that is, shared stories that groups tell about experiences they have in common, allowing them to overcome some of the isolation and alienation of contemporary life. An example would be the shared stories about disabled life circulated by the Disabled People's Movement.
- **Increase leisure time physical activity.** Engaging in light, moderate, or vigorous physical activity (to suit one's capabilities and current fitness) can boost many aspects of SWB and PWB. For example, research led by PHC members Toni Williams (Williams et al., 2014) and Nick Caddick (Caddick & Smith, 2014) indicates that participating in sport and physical activity can help reduce feelings of depression and embarrassment, boost positive emotions and self-esteem, and work as a form of 'active coping' with the everyday challenges of disability – all of which benefit SWB. In turn, sport and physical activity can result in feelings of accomplishment and facilitate a renewed sense of purpose in life, thereby helping to nurture psychological growth and development in PWB.
- **Appropriate living environment.** Research conducted by Dr. Brett Smith and Nick Caddick (Smith & Caddick, 2013) for spinal injury charity Aspire highlights the crucial role of the home in the wellbeing of disabled adults. An inappropriate living environment (i.e., un-adapted housing or even a care home) can have serious consequences for wellbeing including prolonged periods of boredom, depression, and suicidal feelings caused by an inability to manoeuvre round the home, loss of independence and physical capabilities, and feeling trapped in the home because of access problems. Conversely, adapted housing can enable disabled adults to maintain their independence, something which comes across in our research as vitally important for PWB.
- **Identify stories of disability and rehabilitation.** The type of story a person tells about their life has consequences for the way they live their life, and for their wellbeing. What story a person tells about rehabilitation and their life as a disabled person therefore matters in terms of their wellbeing. For example, is the person telling a story about wanting to walk again and getting back 'what was lost' through becoming disabled or are they seeking new possibilities and pathways in their life. Both stories will have consequences both for and on their wellbeing. Also, what stories does a person tell about their health? Are they actively caring about health in response to disability, or do they feel that attending to their health is not their role (e.g., Smith, 2013). Becoming aware of the story a person is telling about their life and disability can help them to figure out where they are going and with what possible effects on their wellbeing.

Our ongoing research at the PHC is exploring how the wellbeing of disabled adults can be actively promoted in policy and practice, and how people understand health and care for health through the stories that they tell.

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Photo courtesy of Dr. Steve Faulkner

This synthesis of qualitative research in leisure time physical activity (LTPA) and spinal cord injury (SCI) was recently published by the journal *Health Psychology Review*. The aim of the paper was to identify and synthesise the knowledge from existing research on the barriers, benefits and facilitators of LTPA for people with SCI. This research is important because whilst there are multiple benefits for people with a SCI of being physically active, this population remains inactive. Therefore we wanted to use this knowledge to propose improvements to LTPA promotion for healthcare professionals.

We reviewed 18 studies that contributed to knowledge on participation in LTPA for community-dwelling people with SCI. The raw data from each study was extracted, summarised into themes, and finally compared and synthesised into new concepts. Overall there were eight overarching concepts that acted as barriers, benefits or facilitators of LTPA participation for people with SCI:

- **Wellbeing:** An individual's wellbeing impacted upon their engagement in LTPA. For example, when people felt depressed or lacked self-confidence this acted as a barrier to being physically active. On the other hand, participating in LTPA was shown to heighten wellbeing, and benefits such as improving independence facilitated future engagement. Social wellbeing was also enriched through LTPA with indicators of improved social participation and integration.
- **Environmental influences:** The material, geographical and social environment of individuals with SCI substantially impacted upon their LTPA participation. Factors such as a lack of personal and communal resources and the high cost of participating in wheelchair sport prevented people from being physically active. With these barriers removed, it was social support from friends, family, peers, disability groups and activity centres which were crucial in facilitating LTPA.
- **Physical body:** Biological impairments including loss of bodily control, fatigue and secondary health conditions all contributed to a lack of LTPA. Importantly, many of the biological impairments that deterred people from being physically active were improved through regular LTPA. These physical health benefits included increased strength, mobility, fitness and balance, reducing the effort required for activities of daily living.
- **Body-self relationship:** A disruption in people's relationship with their body post-injury prevented them from being physically active. This uncertainty regarding the body was reflected through both frustration and disappointment with current abilities, and a fear of LTPA causing more bodily damage. A benefit of being physically active was that it provided an opportunity to re-establish a body-self relationship and develop self-compassion.
- **Physically active identity:** Developing and embodying a physically active identity, either through sport or exercise, was both a benefit and a facilitator of LTPA. Sport, competition and athletic performance became central to some participants' lives. This was especially evident if people were heavily involved in sport and exercise before their injury.
- **Knowledge on LTPA:** Lack of knowledge on how and where to exercise was a barrier to being physically active in the community. Information on LTPA, specifically for people with a SCI, was difficult to find and many healthcare professionals were unaware of suitable LTPA opportunities. Information on LTPA was gained through exposure to activities, media resources and interaction with peers.
- **Hope for recovery:** Engaging in locomotor training and exercises involving standing and walking represented normative and desirable activities that people wished to recover. Another aim of keeping physically active was to be prepared for treatment in case of a cure. Additionally, symptoms from exercise such as discomfort, soreness, spasms and muscle cramps were seen as signs of nerve regeneration and recovery from SCI.
- **Perceived absences:** There were a collection of perceived absences that acted as a barrier to being physically active including a lack of time, energy and motivation. The perceived limited return, compared to the physical investment required to exercise, also contributed to a lack of LTPA.

This is the first synthesis of qualitative research on LTPA and SCI and contributes original knowledge by revealing a deeper understanding of the complexities within the factors that impact LTPA participation.

**But what are the implications of this research for healthcare professionals?** Healthcare professionals need to appreciate the barriers, benefits and facilitators of LTPA in order to successfully promote a physically active lifestyle. An important finding from the research was that many of the barriers to LTPA were actually reduced as a result of being engaged in regular sport and exercise. Furthermore, the benefits from LTPA participation provided the motivation to continue to be physically active.

**So how can healthcare professionals improve LTPA promotion?** Healthcare professionals need to identify credible messengers to effectively communicate the benefits of LTPA, combined with information on where and how to exercise. Due to the difficulties of disseminating LTPA guidelines for people with SCI, providing opportunities for peers as credible messengers to share stories may be one way to more effectively promote healthcare messages to the wider SCI community.

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## Sport Science

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## Performance Health

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## Psycho-Social Health and WellBeing

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## Sport Science by Prof. Vicky Tolfrey

Contact: V.L.Tolfrey@lboro.ac.uk

Led by Prof. Vicky Tolfrey, the Sport Science team recently saw members of the British Para-Alpine ski team, who competed at the Winter Paralympics, return to the laboratory for physiological profiling and the start of a new exciting project with British Paratriathlon. It's a busy summer for the strand with nine MSc students currently working with team members on projects relating to; Wheelchair Rugby, Paratriathlon, Disability Cricket and the application of caffeine supplementation on upper and lower body exercise. Sadly we saw our two Dutch visitors return to Holland last month. Marrit has been busy working on an RGK funded wheelchair configuration project, whilst Annika has been working on several Wheelchair Rugby related projects. While we say our 'goodbyes', we also welcome Dr. Tamae Yoda who is currently on a research sabbatical from Japan until the end of March 2015.

## Performance Health by Prof. Maureen Macdonald

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The focus of recent work in the Performance Health research strand has been on identifying opportunities to capitalize on knowledge developed in the Sport Science and Psycho-Social Health and Wellbeing strands to maximize health of sports performers at all levels of participation, as well as health of rehabilitation and wider disability populations. We are currently conducting research to determine the optimal exercise prescription for improving immune function in individuals with a spinal cord injury. International, national and local collaborations have been established to answer questions about the impact of sport performance and physical activity on health. Prof. Maureen MacDonald has been coordinating this strand during her sabbatical year at the University.

## Psycho-Social Health and WellBeing by Dr. Brett Smith

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Led by Dr. Brett Smith, the aim of the Psycho-Social Health and Wellbeing research strand is to develop and transfer knowledge on how health and wellbeing can be promoted among disabled people. Over the last six months, the research conducted by the team of nine people has ranged from developing knowledge about how active rehabilitation for spinal cord injured people can be improved, how the wellbeing or sporting success of military veterans can be enhanced, how knowledge can be successfully transferred through innovative means, such as, visual images, digital storytelling, and evidence-based narratives. Expertise in the group has been used to help inform new NHS clinical rehabilitation guidelines. Thanks to the team and all those who have supported recent events - from a photographic research exhibition at Aspire to digital disability storytelling workshops within the community, to current research with NHS physiotherapists and their perceptions of sport and physical activity as medicine for disabled people.

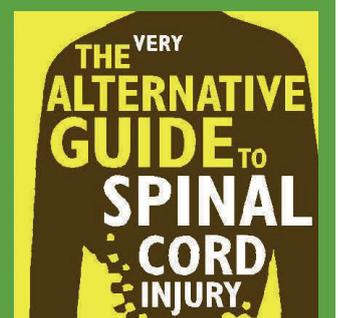


On the 7th July, an evening game of ten pin bowling was held for members of the PHC (and families) to say farewell to Prof. Maureen Macdonald and family. Similar to most sporting events at the PHC, competitiveness was rife and we congratulate Dr. Barry Mason and Dr. Keith Tolfrey on their bowling prowess. We wish Maureen and her family a safe trip home and thank her for all her work for the PHC in the past year.

### The "Very" Alternative Guide to Spinal Cord Injury

How are rabbits, t-shirts and tube maps all a part of the spinal cord injury experience? Well you can find all the answers and more within a new and beautifully illustrated book - The "Very" Alternative Guide to Spinal Cord Injury. Launched this Autumn, it will be a unique, humorous and informative guide for those adjusting to a new life with a spinal cord injury.

To find out more or reserve a copy contact Anthony at [a.papathomas@lboro.ac.uk](mailto:a.papathomas@lboro.ac.uk).



# Save the Date

## UK High Performance Conference for Paralympic Sport Science and Sport Medicine

**'Ready for Rio'**

**St George's Park, Burton Upon Trent**

**12<sup>th</sup> - 13<sup>th</sup> March 2015**



**Supported by**



*Produced by Katy Griggs and Vicky Tolfrey*

*Thanks to all the contributors*

We hope you enjoy learning about the Centre and find the links to the website and other resources useful. If you have any feedback or would like to contact the Centre please email: [phc@lboro.ac.uk](mailto:phc@lboro.ac.uk) or contact the PHC Director at [V.L.Tolfrey@lboro.ac.uk](mailto:V.L.Tolfrey@lboro.ac.uk)

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