

# Peter Harrison Centre for Disability Sport Newsletter Issue 11 Summer 2012

www.peterharrisoncentre.org.uk

Tel: 01509 226387

Email: phc@lboro.ac.uk

Twitter: @PHC\_Lboro



ICSEMIS 2012

## “Pushing to London 2012....”



The home of the Paralympic Games hosts the science of wheelchair sport: Stoke Mandeville Stadium, where the Paralympic Games originated in 1948, was the setting for The Peter Harrison Centre (PHC) to provide the public with a rare insight into the life of a Paralympic athlete.

Over 100 attendees at the Pushing to London 2012 event tried a range of activities including learning wheelchair handling skills, discussions on healthy eating habits, the benefits of physical activity and even tried their hand at wheelchair basketball with GB women's wheelchair basketball player Emily Scrivener.

Other practical elements included a 'Top Gear' style lap time competition to find the fastest male and female to complete a sport specific drill in a wheelchair. Signed GB wheelchair rugby and basketballs were awarded to the 'Top Gear' winners and to the winner of the quiz which was designed to highlight all the research displays and activities.

The event also gave visitors the opportunity to find out about Loughborough's latest research in this area and the sports science supporting Britain's Paralympic athletes. Please go to page 10-11 to read more about this event.

Emily's reflections on the event were summarised as "Scouts, school children, both girls and boys and a few full-time wheelchair users, enjoyed a real life wheelchair basketball experience at the Pushing to London event. We completed pushing races, the caterpillar (with several traffic jams) and shooting practice. We discussed if they found it hard or easy, some said easy, no problem, others laughed and said they couldn't believe how hard it was, I said wait for your arms to be killing tomorrow and see if you've got any blisters!! Personally I thought the event was amazing, so many different activities, all sorts of advice and inspirational people to meet and talk to, even the GB wheelchair rugby team wanted to get involved. I was really proud to be part of such a motivating and educational event, I hope it leaves a great legacy after the London 2012 Games."



Members of the GB Wheelchair Rugby Team meeting the local Scouts.

## “.....and Beyond”

**The PHC is pleased to announce that they have secured funding from the Peter Harrison Foundation to continue their research activities for a further 3 years. Dr Vicky Tolfrey commented 'We are extremely grateful for the support from the foundation which will enable a legacy of disability sport to remain at Loughborough' University beyond London 2012'.**

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**Loughborough  
University**

Peter Harrison Centre for Disability Sport

## New Staff Profiles - PHC Welcomes 3 New Members of Staff

**Terri Graham** (Research Assistant & part-time PhD Student) joined the PHC in January 2012. Her main role is to develop a Fit & Healthy resource designed to increase physical activity in individuals with a disability, helping people to become 'Fit for Life', 'Fit for Sport' and 'Fit for Success'. This work is funded through the Coca-Cola Active Healthy Living Grant which was awarded to the PHC in late 2011 (see next page). She will work closely with experts across a range of disciplines to develop a comprehensive educational toolkit and dedicated website where individuals can find information on where, when, why and most importantly, how to get involved in physical activity and sport.

Terri also started a part-time PhD in April 2012 regarding the nutritional needs of the disabled athlete. Her first study will investigate the nutritional supplement habits and perceptions of elite Paralympic athletes using a questionnaire which will be promoted through the International Paralympic Committee's new research webpage. Future studies will look to explore some of the practical issues related to nutrition for disabled athletes.

Terri completed her BSc in Sport and Exercise Science at the University of Bath, which included a professional placement year with the Lucozade Sport science Academy, before completing her MSc in Sport and Exercise Nutrition at Loughborough University. Prior to joining the PHC Terri spent some time working for the University's Sport Development Services, Powerade and a couple of professional rugby clubs before taking up a Sport Nutrition Manager role for Lucozade in 2011.

### Terri Graham

Terri can be contacted at:  
[T.S.Graham@lboro.ac.uk](mailto:T.S.Graham@lboro.ac.uk)



**Anthony Papathomas** (Research Associate) joined the PHC in early 2012 and is working within the organisation's Health and Well-Being strand under the guidance of Dr Brett Smith. He arrives from London Metropolitan University where he was a Senior Lecturer in Sport Psychology. Anthony's previous research has focused on the traumatic life experiences of athletes with eating disorders. His work is always committed to assisting underrepresented groups, tackling issues of great social importance and delivering practical insights that can be used in the real world.

He is no stranger to Loughborough University having completed both his MSc and PhD studies here and he has expressed his delight at returning: "I'm thrilled to be back. With the Olympics and Paralympics round the corner it's an exciting time to be at the University. It's a great honour to be part of the PHC as there is a real sense of working on research that can make a difference".

As part of Anthony's new role he will form part of an expert, multi-disciplined team of scientists developing an innovative educational resource that will promote fit and healthy living among disabled people. Anthony's specific focus is to understand the social and psychological factors that influence physical activity levels in people with a disability. He is particularly interested in personal accounts of life experiences and how the stories we tell of our lives affect how we feel and how we behave. As part of the new Project INSPIRED (Investigating Narratives and Stories to Promote and Inspire Regular Exercise in the Disabled) he will explore the power of stories to inspire more disabled people to become physically active (see next page).

### Anthony Papathomas

Anthony can be contacted at:  
[A.Papathomas@lboro.ac.uk](mailto:A.Papathomas@lboro.ac.uk)



**Katy Griggs** (Research Assistant & part-time PhD Student) has recently joined the PHC to cover the duties of the Information Officer producing the PHC newsletter and maintaining the website, whilst working alongside the other Sport Science Strand members with applied physiological support and research based activities.

Her PhD will focus on the effects of different cooling strategies on performance in wheelchair games players, in particular spinal cord injured (SCI) athletes. Spinal cord injured athletes have impaired thermoregulatory control putting them at a heightened risk of hyperthermia and heat strain during exercise in a thermal stressful environment. However, implementing effective cooling strategies during athletic performance is a unique challenge. This research programme aims to investigate the thermoregulatory and physiological responses to sport specific strategies in SCI athletes during exercise and thermal stress and will shift the PHC's focus following London 2012 to the subsequent Paralympics in Rio de Janeiro, Brazil. This work will be in collaboration with Dr Mike Price at Coventry University.

Katy's interest in this area began when undertaking her MSc project at the University under the supervision of Dr Vicky Tolfrey and Dr Lettie Bishop examining immune function and infection incidence of Great Britain's Wheelchair Rugby team. During her MSc, she was also involved in testing for other projects at the PHC to gain testing experience within the area of disability sport. She completed a professional placement year working for an Occupational Medicine Research team in the British Army during her BSc in Sport and Exercise Science at the University of Bath, which also gave her an insight into the application of thermoregulation research.

Upon completing her MSc she has been working in the Environmental Ergonomics Research Centre at the University involved in physiological testing for the development of a new smart clothing system to be used by individuals working in a hot environment. This European funded project together with various thermal physiology projects she was involved in at the centre, developed her knowledge of thermoregulation and its wide application to various populations.

### Katy Griggs

Katy can be contacted at:  
[K.Griggs@lboro.ac.uk](mailto:K.Griggs@lboro.ac.uk)



### **Physical Activity Among Older People with Sight Loss: A Qualitative Research Study to Inform Policy & Practice**

Dr's Brett Smith and David Howe, with Dr Cassandra Phoenix from the European Centre for Environment & Human Health in the Peninsula School of Dentistry & Medicine, will be working on a new 12 month project to examine the effects of sight loss on physical activity in older adults. The research award has been given by the Thomas Pocklington Trust, a registered charity that provides housing and support for people with sight loss in the UK.

The project aims to improve our understanding of physical activity in older people with sight loss, and use this information to help guide policies that can promote health and wellbeing in those affected by the condition. Participants will be recruited from Cornwall, the East Midlands and London to provide the study with a nationally relevant context, and give a voice to a group who have so far been largely overlooked in health policy. Stories from participants will be gathered from face-to-face and mobile 'walk and talk' interviews as well as from participant recorded two-week audio diaries.

On the research, Sarah Buchanan, Research Director at The Thomas Pocklington Trust commented:

**"Two million people in the UK have sight loss which affects their everyday lives - most are aged over 65 and everyone in that age group is likely to have reduced vision. Pocklington is committed to research which has practical effects on improving the lives of people with sight loss. By funding this project we aim to increase knowledge and understanding of participation in physical activity among older people with sight loss and influence policy and practice in a way that will support positive experiences and engagement in this important part of people's lives."**

### **FREE project - Football Research in an Enlarged Europe: Identity dynamics, perception patterns and cultural change in Europe's most prominent form of popular culture (2012-2015)**

Led in Loughborough by Dr Borja García, Dr Brett Smith will be part of a joint collaborative effort of nine universities in six different countries that sets out to understand the changing face of football in Europe. The research in Loughborough aims to better understand supporters' perceptions of the game and, in turn, use this knowledge to inform football policy decisions in Europe. Brett is particularly interested in understanding how disabled supporters engage with existing governance structures, and what they think of them. As part of the project, Loughborough University is to host a conference on Transnational European fandom and stakeholder empowerment in October 2014. The project is funded by the European Commission under the 7th Framework Programme for Research (£2.1 million).

### **The Coca-Cola Active Healthy Living Grant: Update**

In the Winter 2011/2012 newsletter we told you of our success in obtaining a Coca-Cola Active Healthy Living Grant. Using these funds, the PHC aim to increase physical activity levels amongst individuals with a disability via a 3 year 'Fit and Healthy Project' led by Dr Vicky Tolfrey. To enable us to promote physical activity in the disabled population, this project will address 2 main themes.

1. **A Fit and Healthy Resource**, which will ultimately become an educational toolkit for individuals at any level of the exercise continuum; **'Fit for Life'**, **'Fit for Sport'** and **'Fit for Success'**. This resource will be prepared in partnership with the British Paralympic Association and compiled by Terri Graham.
2. The second section will be divided into two parts (a & b), with the main emphasis being placed on building narratives from disabled people about the constraints and solutions that enable them to be physically active.
  - a) **'Project INSPIRED'** (Investigating Narratives and Stories to Promote and Inspire Regular Exercise in the Disabled) and will be led by Dr Anthony Papatthomas.
  - b) Feasibility research project exploring physical activity and immune/ inflammatory markers to assess the impact of the educational material and narratives on physical activity behaviour and/or nutritional knowledge in a group of spinal cord injured individuals, which will be led by Dr Lettie Bishop. Recruitment for both of these studies is now underway.

A significant feature of the 'Fit and Healthy Project' is the involvement of an advisory board, with members drawn from a range of relevant backgrounds in both the UK and Internationally. Members do not have any formal responsibility for the project however; their continued support across the 3 years will be invaluable in helping steer the project and also to disseminate the findings and resources.

Tuesday 20th March 2012 saw the first Coca-Cola advisory board meeting take place at the university. Alongside members of the PHC project team (Dr Tolfrey, Dr Smith, Dr Bishop, Dr Papatthomas, Terri Graham and Tom Paulson) it was well attended by members from organisations such as ParalympicsGB, Coca-Cola, ASPIRE, EIS and the English Federation of Disability Sport. We would like to thank all board members for their contributions and would also like to give a special mention to our International members, Dr Claudio Perret from The Swiss Paraplegic Centre and Prof. Thomas Janssen from VU University in Amsterdam, for making the trip.

During the meeting there was an overview of the project, a review of what resources already exist and a general discussion on how to approach the task. Anthony presented his plans regarding **Project INSPIRED**, whilst Lettie and Tom presented an overview of their research into the physiological markers of physical activity and the monitoring of exercise intensity. The findings from both of these research strands will feed into the final Fit and Healthy educational toolkit. Resources developed through this project will be disseminated in various ways and at all levels; as hard copies and on a dedicated website, in gyms, leisure centres, doctors surgeries, spinal injury units, sport clubs and at academic conferences and meetings.

*The Coca-Cola Company*<sup>®</sup>

## Goalball - Sports Science Support

By Dawn Newbery, Mike Hutchinson & Jeanette Crosland

The GB Goalball teams (Men's and Women's) are set to compete at the London 2012 Paralympic Games. The squad have worked hard to prove that they are worthy of that place and behind them has been a team of dedicated support staff including Dawn Newbery (Performance Director), Knut Kursawe (Head Coach), Steffen Lehmann (Assistant Coach), Faith Cripps and Mathew Lawrence (Physiotherapists), Ian Bentley (Strength and Conditioning), Deirdre Angella (Psychology), Jeanette Crosland (Nutritionist) and extra support - in the form of physiological testing - from the PHC at Loughborough University.

Goalball is played by athletes with visual impairments on an indoor court with 9 metre goals at each end. The ball is the size of a basketball but weighing twice as much and has bells inside. It's a game blending strategy and power. To score, players throw the ball at the opposing teams goal and the defending team block the ball with their bodies. The players track the speed and location of the ball on court by listening to where the ball is and defending accordingly. In the men's game, balls have been known to travel in excess of 60 mph, sometimes 80 mph.

Great Britain's Men's and Women's squads have had their home nation slots accepted, but prior to these slots being accepted the squads had to prove to the BPA that they could produce credible performances. With Knut Kursawe as Head Coach and Dawn Newbery coming on board as Performance Director in September 2011, the squad had to work hard to prove their abilities to perform at the required international level. In December 2011 the whole squad embraced an intense programme of testing, education, monitoring and hard work. The testing programme was co-ordinated by the PHC with Christof Leicht working as the co-ordinator and assisted by TeamBath and ParalympicsGB placement students, Jen Bryant and Michael Hutchinson. Alongside the testing and monitoring, the squad took advice on nutrition, psychology and strength and conditioning.

To give you a flavour of what the athletes were involved in during this testing period, we firstly have a report from the students at Bath University, followed by nutrition with Jeanette Crosland.

### Physiological Testing

By Mike Hutchinson

Jen and I are Sport and Exercise Science students from the University of Bath on placement with ParalympicsGB for the year in the build up to and including the Paralympic Games in London. Throughout the year we have been involved in a number of exciting projects that have given us a great insight into what it is like to work in sport and with Paralympic athletes.

Having met Vicky Tolfrey and her team on a few occasions, including the Bath Simulation Camp in August 2011, and due to work with the Goalball squads, we were invited to Loughborough on two occasions to help perform some field tests that were Goalball specific and would be used going forwards into London. Prior to the testing sessions, we had to do some research and find out what we thought would be useful to test, based on the demands of the sport. What came up was that their throwing speed was of vital importance. Putting it simply, the faster they can throw the ball, the less time the opposition have to react to where they think the ball is going and to try and block it. As a result we measured the velocity with which athletes throw the ball over the centre 6m of the court, which is 18m by 9m. Having seen the results and taking into account the mass of the ball (1.25 kg) we would not want to be on the receiving end of one of their shots! We also tested them on a seated and standing medicine ball throw and vertical jump height as these have been shown to relate with ball velocity.

The final test that we performed with the athletes is one that we think they will not forget in a hurry, the now infamous Goalball Modified Bleep Test! This is based on the Multi-Stage Fitness Test (MSFT) and works on the same principle. There are a series of beeps, making up a series of levels and the athletes had to perform a set Goalball defensive movement on hearing a beep, before the next beep. As with the MSFT the beeps got closer together as the levels progressed and athletes stopped when they could not keep up with the beeps. To allow us to perform this, a section of a Goalball court was set up in the lab with tape and string forming the raised lines used in play, so the athletes were able to orientate themselves. The hardest things about the Goalball Bleep Test was that everyone had to watch it in silence and could not offer any verbal encouragement to the athletes, as they were having to listen for the beeps and were concentrating on their orientation. Having completed this a couple of times we, and indeed the athletes, found it a very good, specific test and it is something that they could easily replicate in training if they wanted to monitor their aerobic capacity.

After a well-deserved hour break in which they spoke with their nutritionist, Jeanette Crosland, and Ian Bentley, strength and conditioning, they then performed a bike VO<sub>2</sub> max test with Christof Leicht, to round off their testing.



These tests were first carried out at the start of January and then again at the end of February and on both occasions some great results were collected and it can definitely be said that each athlete pushed themselves to their maximum. They had all clearly worked very hard in the intervening period, which paid off when they were granted their spot at the Paralympic Games in London. The testing not only proved useful for the athletes as we found some potential areas of development for some of the tests and the sport of Goalball, which could prove very exciting.

Finally we would like to say a massive thank you to the PHC at Loughborough University - Vicky, Christof and the rest of the team for inviting us to work with them and for making us feel so welcome. For us to be involved in such events is a massive learning experience for us and is really adding to our placement year, neither of us could have imagined at the beginning how much we have been able to do! We would also like to thank Dawn and Knut for letting us be involved and wish both the squads all the best for London.



## *Nutrition By Jeanette Crosland*

Alongside the physiological testing, the athletes also embraced nutrition and hydration as areas that may enhance their performance. At the start of this testing period, the men's and women's team came together in terms of training and education. This gave a squad with mixed backgrounds in terms of previous nutritional knowledge and input, and the aim of the nutrition intervention was to try to level the playing field and ensure that each individual player knew what their own personal requirements are in terms of eating as well as hydration.

Whilst 3 team members play at any one time during a game, there are also a maximum of 3 reserves. No research has yet been carried out to identify the energy requirements of play, however it became obvious that the energy requirements of each player could vary quite considerably. Play itself can be quite intense – especially for the player at the centre position. However a player could be reserve for the whole game, or play for varying times, depending on the individual game.

Whilst each half is only 12 minutes in duration (the clock counts down only when ball is in play) – complete matches can be 45 minutes long. Over this time a total of 85 to 100 shots will have been taken and defended. International tournaments can involve 3 or 4 games in a day – increasing energy requirement considerably. However, for the Paralympic Games there will not be more than one game per day. This combination of factors meant that each player needed to consider not only their own needs for training but their varying needs for any given competition.

Having ascertained individual needs, it is important to be mindful of some of the potential issues for the visually impaired individual with regard to shopping and preparation of food as well as food provision during travel and competition. By the end of the test period the players had worked hard to focus on their own individual requirements and to work on strategies to ensure that their needs were met.

Considerable monitoring of hydration status was undertaken with the squad, and wide variation in sweat rates amongst players was found, as might be expected with any team. The factors affecting energy requirements also have profound effects on the fluid requirements for each player in each game and training session.

Following considerable work by the squad in the UK, I had the recent opportunity to travel with the ladies team to Malmo in Sweden for an international competition. It was a fantastic opportunity to see the team put into practice at competition many of the principles we had discussed in training. The girls did a great job and the competition gave us the opportunity to highlight a few minor issues that we can tweak before the Games. The girls put in a very credible performance coming 5<sup>th</sup> out of 14 national teams. Great wins were recorded against Sweden and Japan who will both be in London at the Games later this year.

The squad has worked hard as a team and as individuals to understand their own personal requirements and ensure that they have strategies in place to meet them. They have also worked on methods to monitor these requirements and to monitor their own success in achieving them.

All in all our Goalball team have embraced the support offered by the PHC and other support staff and we all wish them well in London!

## *Stop Press*

**In May 2012, a donation of historical disability sport artefacts was kindly given to the Centre by Mr & Mrs Pattison who were active in the British Amputee and Les Autres Sports Association (BALASA). The collection comprises BALASA newsletters and reports from various disability sport competitions held between the early 1980s and early 2000s. These materials will be added to the Centre's existing archive.**

**Congratulations to Mhairi Keil from the English Institute of Sport (see page 8) who successfully defended her MPhil entitled "The body composition of elite wheelchair basketball players". Her supervisory team consisted of Dr Vicky Tolfrey and Dr Susan Shirreffs with technical support from Dr Katherine Brooke-Wavell and Dr Rachel Duckham.**

**Congratulations to Dr Brett Smith who recently accepted an invitation to be an Honorary Research Fellow of the School of Sport and Exercise Sciences at Chichester University. Brett is also an Honorary Research Associate of the highly acclaimed Centre for Interdisciplinary Research on Narrative (CIRN) at St. Thomas University, Canada. Most recently Brett has been appointed as an external examiner at Bath University (BSc in Sport and Social Sciences) for the next three years.**

# Paralympic Programme - Ghana Update

By Susie Daniell, Head of Paralympic Programme & Alexandra Main, Wheelchair Track Coach

In the PHC winter 2011 newsletter we introduced you to the athletes in our Paralympic programme. The progress of the athletes from then until now is very exciting for both the athletes and the Right to Dream Paralympic Programme, Ghana. Para-athletes Charles Narh Teye (power lifter) and Alem Mumuni (para-cyclist) have both qualified for the London 2012 Paralympic Games with Alem making history as the first ever Ghanaian cyclist to qualify for a Paralympic Games. Wheelchair track athletes, Anita Fordjour and Raphael Botsyo Nkegbe have also had recent success securing A standard times, putting them both in very strong positions for qualification also.

Charles and Alem are two of four para-athletes who are currently supported by the Right to Dream Paralympic Programme. Becoming a world-class athlete in Africa is extremely challenging due to a lack of facilities / equipment, limited financial support and minimal opportunities to compete at international competitions. Furthermore, persons with disabilities are still very often seen in a negative light and are ostracised from society. Right to Dream's vision is to assist with the development of para-sports in Ghana, creating world-class athletes who in turn will become role models for society, challenging negative perceptions and inspiring the next generation to believe that they can achieve great things too. The first ever residential youth para-sport Academy in Africa will be established at Right to Dream offering scholarships to the most talented youths from across Ghana.

Both Charles and Alem have come a long way to get to where they are today. Having suffered from a leg infection at an early age, Charles underwent a double trans-tibial amputation. Charles had a difficult and lonely childhood, being ostracised at school as his peers believed they would catch his disability. Alem contracted poliomyelitis at the age of two and crawled for the next eight years of his life. Despite challenges, their strength of character and participation in sport made them both believe that they could excel in life and achieve great things, regardless of their disabilities.

Alem defended his title as African Champion (C2) in December of last year and competed for Ghana on the world stage at the UCI Para-Cycling Road World Championships as one of only two Africans.

## Charles Narthey

**"Qualifying for London 2012 is not easy but sport made me realize I could do everything able people can so I will use this opportunity to help others believe this too."**

## Alem Mumuni

**"The battle has just begun. I will work so hard to make Ghana and Africa proud – it is a great honour to have qualified."**

Loughborough Sport and Exercise Science Graduate, Alexandra Main has been coaching wheelchair track athletes, Anita Fordjour and Raphael Nkegbe Botsyo, since July of last year. Alex has had to be extremely flexible in designing a training programme for the athletes due to a number of prohibitive factors. A typical training week involves three trips to the nearest track, which has holes in and is a 2 hour drive away, training sessions on nearby roads, roller sessions working on technique and strength and conditioning sessions in the gym. The team starts the day early (around 6am) to avoid the 30 degree heat of the day. Alex has overcome cultural and language barriers to build a close relationship with the athletes and has managed to push both Anita and Raphael on considerably. Their recent trip to Switzerland for the Swiss Racing Series was testament to this with both athletes recording A standard times in 100m, with Anita also managing to secure 200m.

## Alexandra Main

**"I am extremely proud of the progress we have made in such a short period of time. It just shows that with hard work and determination the obstacles you can overcome. It has been such a privilege to work with such passionate athletes and to help shape the future of para-sports for the upcoming generations. Let's see what London 2012 has to bring for Ghana!"**



Alexandra pictured with Raphael and Anita.

The long term vision of the Right to Dream Paralympic Programme is to establish the first ever residential youth para-sport programme at our established talent Academy and continue with the success of a senior squad helping Ghana to be at the forefront of the Paralympic Movement in Africa. Right to Dream is therefore seeking partners to help make this vision a reality.

If you need further details about Right to Dream, please contact Susie, email: [Susie.daniell@righttodream.com](mailto:Susie.daniell@righttodream.com) or visit the website at: <http://www.righttodream.com/>

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Twitter: [rtdparalymphians](https://twitter.com/rtdparalymphians)

# Congratulations to TEAM BATTLEBACK

In the Winter 2011 edition of the PHC newsletter you were introduced by Dr Paul Smith to an amazing group of Paracyclists, collectively known as Team Battleback who were preparing to take on the challenge of the Race Across America (RAAM). The event involved the team completing 3,051 miles, riding through 12 different states and, during the route from Oceanside in California to Annapolis in Maryland, required a cumulative ascent of more than 100,00 ft. – higher than three times the height of Mt Everest.

The team that consisted of 8 riders and support staff began the RAAM on the 16<sup>th</sup> June in the hope to complete this epic challenge within 8 days with an average speed of 15mph. However, their Facebook site recently posted some fantastic news that the team completed the race in just 7 days, 7 hours and 59 minutes with an average speed of over 17mph - **They smashed it!!**



*The Team prior to their departure to the States (courtesy of Dr Paul Smith).*

To follow their adventure please visit:

[www.facebook.com/battlebackraam](http://www.facebook.com/battlebackraam) or [www.bmycharity.com/battlebackraam2012](http://www.bmycharity.com/battlebackraam2012)

Members of the PHC would like to congratulate all those involved.

## Conferences

By Dr Vicky Tolfrey

### EUCAPA 2012 - European Congress of Adapted Physical Activity

#### Putting Practice Based Research into Action

The focus of the conference was research and case studies that informed the day-to-day practice in relation to the inclusion and empowerment of people with disabilities. My keynote lecture described my work as an applied sport scientist working with Paralympic athletes. The session was well attended given the fact that it was scheduled the morning after the evenings awards dinner. My first exposure to this conference was back in 1994, at the EUCAPA conference in Leuven as a Post-graduate student, so it was pleasing to see some familiar faces whilst at the same time many new ones. The venue was fantastic and it reminded me of the Miss Marple TV series as the hotel was certainly 5 Star with a room lay-out similar to Cluedo (i.e. The Library, The Reading Room, The Writing Room). The audience was diverse, however, the presentation that I gave on the Paralympics received a lot of positive feedback.



*The expert panel discussion (picture courtesy of the EUCAPA website).*

### ACSM's 59th Annual Meeting and 3rd World Congress on Exercise is Medicine®

At the ACSM conference (May 29 - June 2) in San Francisco, I joined forces with Prof. Thomas Janssen & Dr Laurie Malone to deliver an international symposium entitled 'The journey from rehabilitation to wheelchair sporting excellence'. This conference is one of the most comprehensive sports medicine and exercise science conferences in the world and it was fantastic that the ACSM organising committee accepted and supported our symposium. The symposium brought together experts who each had 15-20 years of experience working within the context of spinal cord injury at a rehabilitation level through to Paralympic sporting performance. The following key areas were discussed: 1) physical activity and exercise training to promote fitness and health during and after rehabilitation, 2) community physical activity, recreation and sport programs at Lakeshore Foundation in the United States, and 3) application of knowledge transfer from the elite wheelchair sporting arena to support the design of physical activity programs at a community level. I am most grateful for the financial support offered to me by ACSM to attend this conference.

# Meet the English Institute of Sport Paralympic Practitioners

By Nik Diaper

EIS Head of Sport Science & Medicine for Paralympic Sports

Nik Diaper is the EIS Head of Sports Science and Sports Medicine for Paralympic Sports. Here he introduces the work of the EIS and some of the team of EIS practitioners who have been supporting British medal hopes for the London 2012 Paralympic Games.

The Games are only a matter of weeks away but for practitioners from the English Institute of Sport this will be the culmination of 4 years of hard work and dedicated support. The EIS currently provides a range of sports science and sports medicine support services to 15 Paralympic sports with an emphasis on integrating practitioners within sports where possible. In addition the EIS is also committed to working in partnership and collaboratively with key institutions and agencies from across the UK Paralympic high performance system including the PHC. EIS is also supporting some aspects of ParalympicsGB's 2012 preparation and performance strategy to ensure that ParalympicsGB is best prepared for the Games.

For full-time practitioners in elite sport, life is never dull but is rarely as glamorous as most people perceive it to be! Long days, unsociable hours, time away from home and a demanding, fast-paced work environment make it a challenging yet exciting role particularly as Games time approaches. Practitioners rarely get the credit that they deserve and often go unnoticed to those outside the profession/sport. Here then, are just some of the EIS practitioners from a range of sports and disciplines that are integral to British Paralympic medal success - not just in London but beyond.



**Name:** Paul Martin

**E-mail:** [Paul.Martin@eis2win.co.uk](mailto:Paul.Martin@eis2win.co.uk)

**Discipline:** Physiotherapy

**Sport/Role:** Disability Swimming / EIS Paralympic Technical Lead (Physio)

**Main focus/interest areas:**

Managing spasticity (spinal or neurological)  
Biomechanics of amputee/limb loss athletes in water  
Application of connective tissue/anatomy trains in the disabled athlete

**What are you most looking forward to about the Games?**

Welcoming the Paralympic family to our home and working with the best our country has to offer.



**Name:** Mhairi Keil

**E-mail:** [Mhairi.Keil@eis2win.co.uk](mailto:Mhairi.Keil@eis2win.co.uk)

**Discipline:** Performance Nutrition

**Sport/Role:** Wheelchair Basketball

**Main focus/interest areas:**

Vitamin D  
Recovery  
Body composition

**What are you most looking forward to about the Games?**

Seeing the players take gold!



**Name:** Dr Nicola Rowley

**E-mail:** [Nicola.Rowley@eis2win.co.uk](mailto:Nicola.Rowley@eis2win.co.uk)

**Discipline:** Physiology

**Sport/Role:** Disability Swimming

**Main focus/interest areas:**

Set designs and training adaptation over a macro-cycle  
Menstrual and pill cycle optimisation of training and competing  
Blood lactate data basing – training sets to recovery

**What are you most looking forward to about the Games?**

The atmosphere and intensity of being amongst athletes from all over the world with one common goal.



**Name:** Neil Lewis

**E-mail:** [Neil.Lewis@eis2win.co.uk](mailto:Neil.Lewis@eis2win.co.uk)

**Discipline:** Strength and Conditioning

**Sport/Role:** Adaptive Rowing

**Main focus/interest areas:**

Optimal loading  
Upper body power development  
Concurrent training

**What are you most looking forward to about the Games?**

The atmosphere of a home games and seeing the athletes I support competing in person.



**Name:** Chris Wagg  
**E-mail:** [Chris.Wagg@eis2win.co.uk](mailto:Chris.Wagg@eis2win.co.uk)  
**Discipline:** Performance Analysis & Skill Acquisition  
**Sport/Role:** Boccia & UK Sport Talent Team (Paralympic)

**Main focus/interest areas:**

Performance & Athlete Profiling  
Motor Learning - a constraints-based approach to instruction  
Practice structure and feedback  
Decision-Making & Tactical Knowledge

**What are you most looking forward to about the Games?**

Going to my first Paralympic Games & contributing to British performances at one of the greatest events ever in British sport.



**Name:** Jayne Ellis  
**E-mail:** [Jayne.Ellis@eis2win.co.uk](mailto:Jayne.Ellis@eis2win.co.uk)  
**Discipline:** Talent Identification  
**Sport/Role:** Paralympic TID Scientist

**Main focus/interest areas:**

Paralympic Talent ID and Development of athletes  
Development and application of talent Profiles  
Formulation of Progression Profiles

**What are you most looking forward to about the Games?**

A once in a lifetime opportunity to show our nation the wealth of Paralympic sporting talent we have in Great Britain and use this to help us reach out to our potential talent pool.



**Name:** Dawn Ibrahim  
**E-mail:** [Dawn.Ibrahim@eis2win.co.uk](mailto:Dawn.Ibrahim@eis2win.co.uk)  
**Discipline:** Physiotherapy  
**Sport/Role:** Boccia

**Main focus/interest areas:**

Addressing seating/wheelchair set-up to maximise performance  
Management of tone/spasticity to optimise function, ROM and sport specific action  
Working closely with S&C to improve health & fitness, develop strength, power and accuracy and minimise risk of injury

**What are you most looking forward to about the Games?**

The challenge of supporting the athletes & coaches at the Paralympic Games, ensuring that the athletes are best prepared to fulfil their medal potential. My career ambition to support the team at the Games and being a Home Games will make it special, exciting, challenging and rewarding!



**Name:** Dr Stuart Miller  
**E-mail:** [Stuart.Miller@eis2win.co.uk](mailto:Stuart.Miller@eis2win.co.uk)  
**Discipline:** Sports Medicine  
**Sport/Role:** EIS Chief Medical Officer, Paralympic Sport

**Main focus/interest areas:**

Developing high quality Paralympic medical care  
Education and support to practitioners  
Injury and illness surveillance

**What are you most looking forward to about the Games?**

Enjoying the spectacle and the elite Paralympic sport.



**Name:** Jill Crompton  
**E-mail:** [Jill.Crompton@eis2win.co.uk](mailto:Jill.Crompton@eis2win.co.uk)  
**Discipline:** Physiotherapy  
**Sport/Role:** Disability Table Tennis

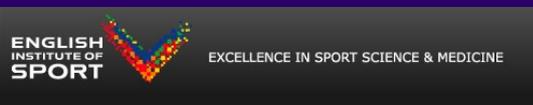
**Main focus/interest areas:**

Injury Management - reactive and prevention  
Management of training loads - establishing the optimum amount of training for individual needs based on disability type  
Classification of players - assessing level of function & playing ability of each athlete to ensure they are competing at the appropriate level / class

**What are you most looking forward to about the Games?**

Seeing our athletes perform and achieve what they and the rest of the team have been working so hard for over the last 4 years.

To find out further information about EIS, please visit there website at: <http://www.eis2win.co.uk>



# “Pushing to London”

The PHC successfully hosted the event “Pushing to London 2012” at the Stoke Mandeville Stadium on Wednesday 13th June 2012. The event was a major success whereby the public were able to experience the scientific services that Paralympic athletes use and participate in the wheelchair sports, fitness and skills tests courtesy of the PHC Sports Science Support and Research Team.



Members of the PHC on the day of the event. Our thanks go to those members who also helped contribute towards this event not shown in the photo.

## Why we ran the event?

Our overall vision was to use the power of the 2012 Games to provide lasting change in disability sport. With an estimated 10 million people with a physical disability in Britain, of whom 5.1 million are over state pension age and 700,000 are children. Recent Sport England figures indicate that only 6.1% of these people are active in sport for 3 x 30 minute sessions a week, versus 18.5% of the able bodied population. This would indicate that there is a significant job to be done to drive participation and explain the benefits of an active lifestyle to people living with a disability. The open day at the ‘Heart of Paralympic sport – Stoke Mandeville’, aimed to leverage the inspiration of the 2012 games within disability sport and raise the awareness of the health benefits associated with sport and activity in those individuals who are living with a disability.

The popularity of wheelchair sport has been growing steadily over the years, since it was first introduced at the Stoke Mandeville games in 1952. This is evident by the increasing number of disciplines and competing athletes. Hand-rim wheelchair propulsion is a common sight at the Paralympic Games, yet in order for practitioners to understand the support needed by people with a disability to increase their physical activity and to support our leading athletes in the UK, there is a need to understand the application of science to wheelchair sport. It is interesting to note that the exercise/ training principles used for able-bodied persons are not directly transferable to the wheelchair athlete and that subtle but significant alterations may need to be made. The Pushing to London 2012 event provided visitors with an insight into the applied sport science research that has been provided to the Great Britain wheelchair athletes over the last decade and recent relevant research.



# 2012...." Open Day!!

"I found this very enjoyable as there were lots of fun exercises to do. I really hope that I can come again. The goodie bag was great!"

"I enjoyed having the experience in a wheelchair! And met a GB player! It was very interesting and enjoyable. Thank you very much"



"This has been very enjoyable and educational"

"Inspirational, I learnt a lot!"



"This is just to say thank you for the seminar at Stoke Mandeville. All of us really appreciated to learn how your organization has made great effort for outreach regarding Paralympic Sports."

Hiromi Nakamura, Department of Sports Information in Japan Institute of Sports Sciences (JISS)



# Mental Toughness: Paralympic Goldmine or Elitist Ideal?

By Nick Caddick

**M**ental toughness is a psychological construct that may have particular relevance in disability or Paralympic sport. There are many instances throughout a Paralympic athlete's career that may require great mental strength in order to cope with the challenges and pressures of elite sport. For example, in addition to pressures related to Paralympic team selection and the stress of international competition, there may of course be physical limitations to negotiate and re-negotiate over the course of one's career. Thus, it may be an athlete's ability to draw upon their psychological strengths that sets them apart from the field.

Mental toughness has recently become a hot topic in sport psychology. But what do we mean by the term 'mental toughness'? Various definitions compete for our attention in the sport psychology literature, but generally speaking, mental toughness refers to a collection of attributes that enable the pursuit of success at the elite level. For example, characteristics such as self confidence, concentration and focus, stress/ anxiety management, motivation and desire, resilience, and control are all thought to be central components of the construct of mental toughness.



Undoubtedly, qualities such as those listed above will play a key role in Paralympic sport. However, the concept of mental toughness as it has been presented in the sport psychology literature (and applied in the media) is not unproblematic. For example, the quality of mental toughness is too often applied only in hindsight (i.e., as a characteristic of successful athletes). Indeed, when mental toughness is heralded as the key to ultimate 'world champion' type success, its use becomes restricted to only a handful of the 'toughest' and most successful athletes. This association of mental toughness with absolute success risks transforming the concept from an expression of the human capacity for resilience, determination, courage (etc.), into an elitist ideal.

In addition, the way in which mental toughness is described in the literature (as a kind of 'psychological grail' that allows one to rise up and overcome anything or anyone in their path) often presents a story of mental toughness that most athletes are unable to live up to. This story has been referred to as the 'Hollywood hero' story of mental toughness (Caddick & Ryall, 2012); a glorified story of arduous struggle and eventual success-against-the-odds (think 'Rocky', for example, and you get the idea). The image of the triumphant Hollywood hero athlete provides an inspirational ideal, but one that is at odds with the experiences of the majority of Paralympic athletes. Described in this way, mental toughness is exclusive, and fails to recognise the considerable mental strengths of athletes who do not achieve ultimate success.

The concept of mental toughness has great potential to influence Paralympic sport in a positive manner. The qualities at the core of the mental toughness construct (e.g., confidence, courage, resilience, determination) are sporting virtues in their own right, and should be celebrated in all athletes who possess them (whether or not possession of these qualities leads to ultimate victory). Coaches and psychologists should attempt to foster these important qualities in their athletes, whilst being mindful not to promote an unattainable Hollywood fantasy of mental toughness.

Caddick, N., & Ryall, E. (in press). The social construction of mental toughness - a Fascistoid ideology? *Journal of the Philosophy of Sport*.

## ***PHC Team at Loughborough University would like to welcome Paul Bibbey***

I took over as Director of the Peter Harrison Foundation from John Ledlie on 1st March 2012. Previously, I ran a company that provided business services to independent schools and I was a school bursar before that. I started my working life in the Army where I served in many parts of the world and did many enjoyable things, including commanding an infantry battalion.

The job of Director gives me a privileged insight into the hard yet often uplifting world of disabled populations. It also allows me to have dealings with the PHC which I have visited twice, and where I have marvelled at the outstanding work the Centre is doing and its increasing stature in the field of disability sport and rehabilitation under the impressive leadership of Dr Vicky Tolfrey.



**"I look forward to a long and happy association with the Centre."**

# Physical Activity and Wheelchair Tennis

Dr Vicky Tolfrey, Paul Sindall and John Lenton



Research team members and 4 University of Alabama wheelchair basketball players, ITF support and lab testing.

As stated in the last newsletter, members of the Sport Science strand had recently returned from a successful research trip to the USA. The purpose of the visit to Lakeshore Foundation in Alabama was to collect physiological and court-based movement data during tennis match-play, using two different types of compression ball. Whilst we continue to analyse the data over the summer we thought it may be of interest to our readers to understand the context to this study.

In comparison to standard tennis balls, low compression balls are believed to move more slowly through the air. For this reason, the International Tennis Federation (ITF) strongly advocate their use, particularly for children, and those who are new to the sport. The thinking is that play with these slow moving balls may hold the key to increasing player participation rates, enhancing enjoyment of the sport, and developing motor skill levels. However, based on the available evidence, the argument for such a notion is limited. Therefore, undertaking a study offering a comparison between low and standard compression balls would allow the PHC to give the ITF meaningful feedback on the impact of tennis ball type on physiological demands and court-movement variables during wheelchair tennis.

To minimise the impact of prior skill in tennis, we were keen to recruit individuals with no experience of tennis play. However, we did require individuals who were proficient in sports wheelchair propulsion and on-court wheelchair skills. With the invaluable support and assistance of ex-Paralympian tennis player, Dr Scott Douglas, the team were able to recruit twelve College-level wheelchair basketball players to take part in the study. Each player took part in a series of competitive matches, whilst the heart rate and court movement variables such as distance and speed were measured.

Prior to tennis match-play, the submaximal and peak physiological profile of each individual were obtained in the laboratory at Lakeshore Foundation. This data will subsequently be used to allow estimations to be made of actual exercise intensity during match-play. We would like to take this opportunity to thank Mark Bullock from the ITF, for supporting this project and for supplying tennis equipment for match-play, Dr Scott Douglas for tennis guidance and player recruitment, Prof Rory Cooper and Shiv Hiremath for their technical input and everyone from the University of Alabama, who agreed to participate in testing. A special thanks also goes to Dr Laurie Malone and her team for providing accommodation, and for making us all feel so welcome.

## Dr Laurie Malone

**"We enjoyed working with the PHC team and we look forward to our growing partnership over time together disseminating our work to a broader audience thereby impacting more people worldwide!"**

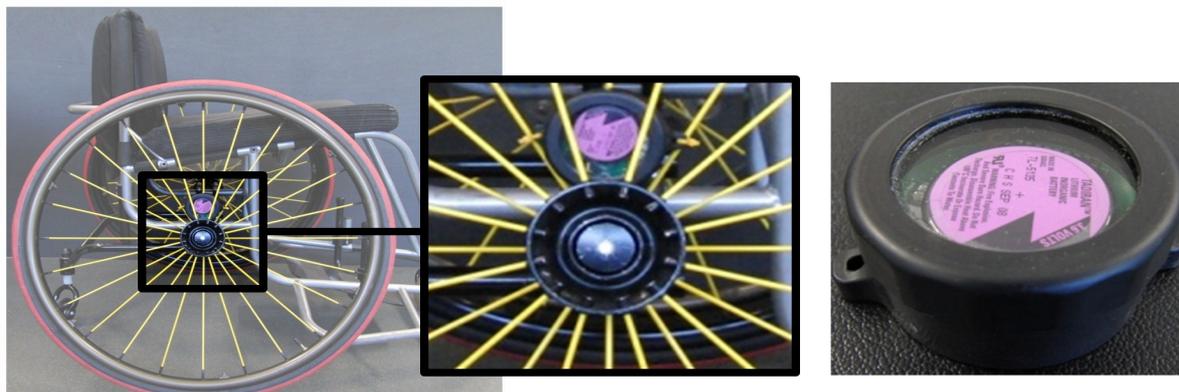


Illustration of one of the data logger devices that was used to collect the speed and distance data (provided by Prof Rory Cooper - University of Pittsburgh).

After an application and interview process I was fortunate enough to be selected to be a Games Maker at the London 2012 Paralympics. Games Makers are all volunteers and play a vital role in both the London 2012 Olympic and Paralympic games with 70,000 people recruited in total for both events. I was selected to work at the Boccia event, which I was first introduced to a couple of years ago when I assisted at a Talent ID day run by UK Sport aimed at discovering new Boccia talent for London 2012. After orientation, role specific and venue specific training it was finally time to put all our training into practice and assist at the test event for Boccia, which was held at the Basketball arena in the Olympic Park (5-7<sup>th</sup> May). Similarly to the majority of the test events in the London Prepare Series, this event was an international event with 11 teams competing in individual, pairs and team events.

My role at the test event and at the Paralympics is as an Athlete Services team member, which is predominantly a 'back of house' role. General duties include meeting and greeting the athletes upon arrival, ensuring welfare of the athletes and support staff, managing all athlete areas and helping with any other duties required by the teams. Although busy at times the role enabled myself and the other Games Makers to interact with the athletes in between games and assist with the field of play.

The event was a great success not only from a management point of view but also for the GB team taking home a number of medals across all disciplines. Both David Smith (BC1) and Nigel Murray (BC2) won gold in the individual events with Jacob Thomas claiming bronze (BC3). In the teams competition, in the BC1/2 section GB took bronze whilst the GB BC3 team took home gold.



Next will be the Paralympics with Boccia taking place at the Excel Arena (2-8<sup>th</sup> September) with a greater number of athletes competing and team GB hoping to defend their team gold from Beijing.

More information about the sport and the event at London 2012 can be found at:

<http://www.london2012.com/paralympics/boccia/>

## Inter-Spinal Unit Games - April 16th-21st Stoke Mandeville Stadium by Dr Anthony Papathomas

The Inter-Spinal Unit Games take place every year at Stoke Mandeville Stadium. Hosted by British wheelchair sport organisation "WheelPower", the Games offer a combination of both have-a-go sessions and competitive tournaments for individuals who have recently (within the last year) acquired a spinal cord injury. Most UK based spinal units partake in the event and incorporate it into their rehabilitation programmes. It is proposed that by sampling and indeed competing in a range of wheelchair based sports, newly injured individuals are encouraged to focus on what they can do rather than what they cannot do; a process that is important for restoring self-esteem.

April saw the 25th Inter-Spinal Unit Games occur and it was an ideal opportunity for me to attend my first disability sport event. Only weeks into my new role within the Peter Harrison Centre, I was eager to get into the thick of things and start talking to the people who matter; those with a spinal cord injury and the professionals who support them. For the three days I was there I spoke to a great number of people from all across the country. Charity workers, coaches, spinal unit staff and patients were all extremely happy to talk about the importance of sport and physical activity post-paralysis. It proved a steep and invaluable learning curve personally and an important insight into real world experiences. I also managed to make some important connections with physiotherapists and occupational therapists eager to learn more about the work of the PHC in terms of physical activity promotion for health and well-being.

The competition itself proved a great success. The vast number of sports available - hand-cycling, fencing, archery, tennis, table-tennis, power-lifting, and wheelchair basketball - ensured there was something to appeal to the interests of all participants. Although Salisbury Spinal Unit ultimately prevailed as victorious, from a psychological perspective all 14 participating teams could be considered winners. Experiencing a spinal cord injury is psychologically traumatic

in many ways, yet the capacity to cope, adapt and flourish is an astounding human feature that continues to intrigue academics. Such "psychological resilience" was on show throughout the Inter-Spinal Unit Games and served as a source of inspiration to all.



The PHC was delighted to be involved in the 4-day Paratriathlon National Training Camp held at Loughborough University. The team provided sport science education for coaches, laboratory testing and nutritional support.

Working closely with the Paratriathlon Performance Manager, Jonathon Riall, Dr Vicky Tolfrey (PHC Director) and Dr Paul Smith (Cardiff Metropolitan University) delivered an educational presentation for the coaches on the first day of the camp. Vicky's section focused on handcycling – the use of RPE and hand crank length and discussions on wheelchair racing mechanical efficiency and cadence, while Paul spoke about his work with Team Battle Back Race Across America 2012 (see page 7). The session sparked some interesting conversations between the sport scientists, coaches and a few athletes who were in attendance.



A paratriathlete being tested by Christof and Paul at Loughborough University.

Athletes were asked to complete a food and training diary prior to the camp, which was then analysed by Terri Graham (PHC Research Assistant). Terri met with each athlete individually throughout the camp to discuss their eating habits and talk about possible adjustments to their diet that could help them achieve their nutritional or body composition goals.

Three TRI 1 athletes who compete in the handcycling discipline attended the PHC laboratory to complete submaximal and maximal handcycling tests with Paul and Christof Leicht (PHC Research Assistant). Bringing their own handcycling meant there was no excuse not to perform at their best! Without giving too much away, the test results were promising and show that the athletes have been working hard in training.

## Leonard Cheshire Disability Tri Together

Tri Together is a sprint distance triathlon for people of all ages and abilities to swim, bike and run together. Participants start with an indoor swim, followed by a cycle through Crystal Palace Park and a run finishing in the iconic Jubilee Stadium.

<b>Where?</b>	Crystal Palace National Sports Centre, South London
<b>When?</b>	Sunday 19 <sup>th</sup> August, 2012
<b>How far?</b>	Adult Race (17yrs+): 400m swim, 15km bike, 5km run Junior Race (13-16yrs): 300m swim, 8km bike, 2.4km run

Take part on your own or in a relay team.



The Tri Together triathlon has won the **220 Triathlon 'Race of the Year'** (<500 entrants) and has achieved British Triathlon Event Quality Mark Level 1 Accreditation. Every effort has been made to ensure Tri Together is a **fully inclusive** and family friendly event with wide closed roads and paths for run and cycle routes, accessible parking and changing, an indoor 25m pool swim, not to mention all manner of hand cycles, sports wheelchairs, and tandem bikes welcomed.

In 2011, a booklet containing information on topics such as training plans, exercise technique, nutrition and kit was also provided to help prepare participants for the event. However, this resource lacked information required for individuals with a disability. Leonard Cheshire Disability therefore decided to approach a variety of organisations including the PHC to help them create a disability specific training guide, 'Get into Sport'. Contributors from the PHC team included Dr Anthony Papatomas (Psychology), Terri Graham and Jeanette Crosland (Nutrition), John Lenton and Christof Leicht (Triathlon Training), and Dr Vicky Tolfrey. Other contributing organisations include Handcycling UK, London Swimming, British Triathlon and EFDS. The guide is also being supported by a number of Paralympic athletes including World Para-triathlon Champion, Jane Egan.

We believe this resource will be useful for novice and experienced participants alike and we hope that it will help each and every one to achieve their triathlon goal, whether it is to beat a PB or simply to finish the race. The guide is available for download online at [www.lcdisability.org/sport](http://www.lcdisability.org/sport) and there will also be accessible formats available in easy read and Braille. To complement the guide, an online hub has also been launched, full of useful information, interactive maps and blog entries from disabled people, athletes and Paralympians.

If you wish to take part as a participant or volunteer, there is still time. To secure a place or simply to find out more information, visit [www.lcdisability.org/tritogogether](http://www.lcdisability.org/tritogogether) or text TRI to 80878\*. A registration fee of £32 for adults and £15 for children and minimum sponsorship apply. \*Standard rates apply

## Research at the Paralympic Games Update

As mentioned in the previous newsletter, members of the PHC will be undertaking research sanctioned by the International Paralympic Committee (IPC), relating to the London 2012 Paralympic Games. Three research teams have developed purpose-built questionnaires in the areas of injury and nutrition and are described below. These questionnaires will be publicised on a designated research page hosted on the IPC website where Paralympians will be able to access them in their own time. The PHC welcomes this support from the IPC and hopes to gain some valuable insight into Paralympians' experience of injury and their use of nutritional supplements.

**Title:** An Investigation of Paralympians' Experiences of Injury

**Research team:** Dr David Howe, Dr David Purdue, Ms Carla Silva and Mr Shane Kerr

**Background:** This project will allow us to learn more about Paralympic athletes' experiences of injury and highlight areas where efforts can be made to lessen this endemic risk within sport. Specifically, it will investigate whether the athletes' needs are being addressed when it comes to the provision of medical services.

**Title:** Investigating the status of wheelchair skills and upper body complaints/injuries in ambulant wheelchair athletes.

**Research team:** Dr Florentina Hettinga, Prof. Lucas van der Woude, Dr Vicky Tolfrey, Dr Barry Mason and Ms Osnat Fliess-Douer

**Background:** To participate in wheelchair sports, optimal training is a necessity, while overuse injuries must be prevented, among others, by adequately developing wheelchair skills. The present study will therefore investigate the status of wheelchair skills and upper body injury prevalence in elite ambulant wheelchair athletes at the Paralympics with the use of questionnaires. The information derived from this study will help determine which specific injuries ambulant wheelchair athletes are experiencing in relation to their technical ability and training background. It is intended that the results will help to develop more comprehensive skills training programs so that injury risk can be minimised in this athlete group.

**Title:** Nutritional supplement habits and perceptions of elite Paralympic athletes.

**Research team:** Dr Vicky Tolfrey, Miss Terri Graham, Mrs Jeanette Crosland, Dr Claudio Perret, Prof. Ron Maughan and Dr Susan Shirreffs.

**Background:** The nutritional needs of Paralympic athletes may differ from those of their Olympic counterparts and yet it is an area which has rarely been investigated. The aim of this questionnaire is therefore to determine what (prevalence and type) and how (frequency and dosage) Paralympic athletes are using nutritional supplements. In addition, the results will determine whether usage is influenced by gender, age, sporting event, disability class, sporting experience and nationality. It will also help us to understand their views of (anti-)doping and supplements.

## Stop Press

The PHC is pleased to announce that they have secured for two years of funding from World Anti-Doping Agency (WADA) to help support the aforementioned study designed to explore the 'nutritional supplement habits and perceptions of athletes with a disability'.

An opportunity has arisen for an MSc student within the School of Sport, Exercise, & Health Sciences to have 50% of their tuition fees paid for. The successful applicant will be required to conduct their final research project in conjunction with the PHC and the International Tennis Federation. For further details please visit the PHC website.

A big congratulation goes to PHC PhD researchers Shane Kerr and Carla Silva who, alongside Paul Bretherton, were awarded first prize in this year's Coubertin Olympic Awards Student Essay Competition. The winning essay was entitled 'Make Them Count! Corporate Social Responsibility as an Expression of the Olympic and Paralympic Values'. The students were presented with their award by Her Royal Highness, The Princess Royal.

## Participants Needed

PhD research student Tom Paulson is starting preliminary testing for a research project comparing the acute physiological responses and immune responses to traditional handcycling exercise and 'hybrid' exercise combining handcycling with functional electrically stimulated (FES) leg cycling exercise. The research will be carried out at Loughborough University and Standing Start, Cambridge, and he is looking to recruit individuals experienced in performing FES training. The Standing Start Charitable Trust has kindly provided £350 to support this project. This work follows the recently completed research into the immune response to wheelchair propulsive exercise completed with Christof Leicht and John Lenton. For further information please contact Tom at [T.Paulson@lboro.ac.uk](mailto:T.Paulson@lboro.ac.uk) or Dr Vicky Tolfrey at [V.L.Tolfrey@lboro.ac.uk](mailto:V.L.Tolfrey@lboro.ac.uk).

## Loughborough Students Athletic Union by Dr David Purdue

Dr David Purdue, Research Associate in Physical Activity, Health and Disability Sport, has been working in partnership with key personnel from Loughborough Students Athletic Union (LSAU) in an attempt to enhance opportunities for students with a disability to develop and sustain physically active lifestyles.

David said "In the build up to the 2012 Paralympic Games much of the attention has been on the elite Paralympic athletes who will be going for gold in London. Inevitably however without grassroots disability sport, individuals with impairments will fail to be aware of and/or be offered the opportunities to benefit from the physical and mental health benefits that being physically active has to offer. Furthermore, at a time when 'Paralympic legacy' is the en vogue term, it is clearly apparent that to find and develop the Paralympians of tomorrow, there needs to be the opportunities for individuals with impairments to participate in recreational and grassroots disability sport today."

As such, David and LSAU have worked to increase awareness of the current opportunities available to students in disability sports during their time at university and back home. A key resource towards achieving this is the Disability Sport webpage contained on the Athletic Union website: <http://www.lufbra.net/au/disabilitysport/>. This signposts basic but essential information about how students with a disability can keep fit and get involved in disability sport. The website received publicity in a recent article highlighting the work between David and the LSAU which appeared in the 'Lufbra WoW' student magazine. David would like to acknowledge the time and energy given by key individuals at the Loughborough Students Athletic Union, Loughborough College and RNIB College Loughborough in the aforementioned endeavour.

## PhD Update & Thanks to the Wheelchair Basketball Community

by Mel Preece

Phew.....I am now into my 3rd year (part-time) of my PhD which focuses on the health and well-being of elite wheelchair athletes. I have been interviewing players and coaches from the Great Britain Wheelchair Basketball Teams as they prepare for the London 2012 Paralympic Games. These interviews have involved discussing the relationship between disability, elite-level sport and psycho-social health and identity. With the players, we have looked back over their lives and how their impairments have played a role in enhancing or impinging upon their health. In addition we have focused on the tightrope these players walk between peak performance and health as London 2012 grows ever closer. It has proven and continues to prove a most interesting piece of research, and questions continue to arise as to whether being an elite wheelchair basketball athlete is indeed healthy or unhealthy.



The next 12 months will see my 2nd set of interviews with players and coaches completed prior to London 2012, and then I am excited to have secured tickets for the final 3 days of the Paralympic Games' Wheelchair Basketball competition at the North Greenwich Arena. My observations have so far focused on training, meetings and downtime, so I am keen to see the players as they compete in what may be for some, the pinnacle of their careers. Following this, I will be interviewing the players and coaches for a final time, to review their Paralympic experiences and health implications, not to mention exploring with some the impact of retirement on their health. In this way it is a longitudinal study and I will have spent over 3 years working alongside this community of players and coaches.

I would like to offer my most sincere thanks to the Great Britain Wheelchair Basketball Community, who have shown great patience and support for my research. Both players and coaches have been immensely co-operative and understanding as I have appeared courtside to do observations, equip the players with cameras to take photos, or try to fit in interviews in training downtime. They have happily engaged in many a debate with me, and I still find myself shocked and surprised by what I hear, with players and coaches providing very honest and frank accounts of their experiences. Without this support my PhD would have proven very challenging, and so I am forever in their debt! Thanks in particular to Haj Bhanja, who must find his email inbox over-brimming with my emails and yet who continues to patiently facilitate my research. To all the players and coaches, many thanks and I look forward to cheering you all on to success in a few months!!!

## PhD Update Health & Well-Being by Nick Caddick

My PhD research exploring the impact of surfing on combat veterans with Post-Traumatic Stress Disorder (PTSD) is progressing well and is currently moving into the data collection phase. The research, supervised by Dr Brett Smith is considering the damaging and disabling impact of PTSD in the lives of combat veterans and how surfing may help towards recovery from the disorder. At the center of the project is recently established military charity Surf Action, based in Cornwall, who are using surfing and the beach environment as an innovative means of psychologically and socially rehabilitating veterans of any conflict.

On my first visit down to Cornwall recently, I was able to meet the team and the veterans at Surf Action and talk to them about the impact of PTSD in their lives and the benefits of surfing. Going surfing with the guys was a great way of seeing for myself the benefits they gain from being in the ocean (and after several spectacular 'wipeouts' I was even able to stand up on the surfboard myself for a short while). Surfing seems to provide veterans with a vital respite from the psychological torment of PTSD, and crucially, it draws them away from the solitary existence that most of them have become used to (i.e., shut away from the world and alone with their thoughts). The trip was also a great chance to build rapport with the team and to arrange further data collection in the near future.

A key aim of the research is to understand in depth and detail the impact that surfing has upon the lives of the veterans. Qualitative methods are therefore a crucial component of the project. In addition to participating in and observing the charitable work of Surf Action, the research design will include in-depth life history interviews and use of visual methods to build up a comprehensive account of the role of surfing in recovery from PTSD. The next stage of the project will be a first round of interviews, after which I will be looking to draw together some of the key insights from the research so far.

Ultimately, the goal of the research is to inform policy makers in the government and Ministry of Defense regarding treatment for combat related PTSD. Whilst a great deal of political and media attention is deservedly directed towards soldiers who have acquired physical disabilities (e.g., amputees from IED blasts in Iraq and Afghanistan), comparable levels of support for rehabilitation and recovery of veterans with invisible war wounds is currently under-developed. Better knowledge surrounding the impact of PTSD, along with more informed ways of supporting veterans are sorely needed. Accordingly, the work of specialist charities such as Surf Action in providing innovative treatment approaches may well provide a key resource for developing such knowledge.

## Sport Science Strand

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## Future Presentations

- Goosey-Tolfrey, V.L. (2012). The Journey to London and Beyond: Research Strategies and Future Priorities. Invited Keynote at the North America Federation of Adapted Physical Activity (NAFAPA) 2012 Conference (Oct 11-13). Birmingham, Alabama, USA. For more information about this conference then please visit [www.nafapa.org](http://www.nafapa.org)
- Dr David Howe has been invited to speak at a panel discussion titled " Why do we hold separate Paralympic and Olympic events." The discussion will take place on the 13th August (18.30-21.00) at Beveridge Hall, London. For more information, please visit: <http://events.ucl.ac.uk/event/event:zcr-gzpcdply-fxc81h/why-do-we-hold-separate-paralympic-and-olympic-events>



## Spot Light on Research

We would like to wish good luck to both John Lenton and Christof Leicht who will soon be defending their PhD research studies and we hope to share the good news with you in the Winter 2012/13 newsletter.

Brett Smith and Joanna Kirkby were named Back-Up volunteers of the month for August 2012 for their research report that documented how quality of life among spinal cord injured people can be enhanced. Back-Up is a UK organisation providing information and support for those affected by spinal cord injury, their families and friends.

## Sport Science by Dr Vicky Tolfrey

Since the last newsletter our research and applied sport science support has gained considerable momentum during the build up to the Paralympic Games this summer. Over the last few months we have tested members of GB women's basketball squad, GB wheelchair rugby squad and the GB Goalball squad. This has been a busy period for us and where possible we have integrated feedback sessions within squad training sessions. With London just on the horizon members of the Sport Science Strand have been eager to see which athletes have been selected. That said, this is always going to be a difficult time for those athletes not selected, consequently new research programmes are already in place to improve our knowledge on Paralympic sport that will have an impact for the next Paralympic Cycle in Rio 2016 (see figure opposite) and we look forward to sharing these with you in future editions of the newsletter.

Louise Croft and Mhairi Keil have both successfully completed their corrections for their PhD and MPhil theses, respectively, and I wish them well for the future. John Lenton and Christof

Leicht have submitted their PhD theses, whilst Tom Paulson, Paul Sindall and Dr Barry Mason have made excellent progress with their research and are all contributing and forming excellent National and International collaborations. Finally, I welcome new staff members Terri Graham and Katy Griggs.



*Mandip Sehmi (GB wheelchair rugby player) being tested in the climatic chamber.*

Dr Vicky Tolfrey can be contacted at:  
[V.L.Tolfrey@lboro.ac.uk](mailto:V.L.Tolfrey@lboro.ac.uk)

## Health and Well-being by Dr Brett Smith

The Health and Wellbeing team has enjoyed another successful six months. We are pleased to welcome Dr Anthony Papathomas. Anthony is leading the 'fit for life' part of the three year funded project, 'Developing a fit and healthy resource for disabled people'. He is a 'rising star' in research on disability, physical activity/sport, and qualitative methods. Anthony is also keen to develop his expertise on eating disorders within elite disability sport.

Nick Caddick, Joanna Kirkby, and Melanie Preece have continued to excel in their PhD studies. All are producing innovative, useful and theoretically insightful work. They have volunteered to work at pre-Paralympic events held at Stoke Mandeville. Also they have generously given their free time to produce a review of the literature on quality of life in spinal injured people for the disability charity Back-Up.

A notable recent success for Brett was having a paper accepted in Health Psychology. This journal is ranked in the 'top ten' of over 120 psychology journals. Brett's paper on disabled people's health is one of only a handful of qualitative papers to be accepted. In addition, Brett recently spent a very anxious weekend preparing an invited talk to be delivered in the Houses of Parliament. Throughout this newsletter the various successes of the Health and Wellbeing team are highlighted in more detail. We hope you enjoy the content.

**Brett Smith, Anthony Papathomas, Nick Caddick, Joanna Kirkby and Melanie Preece.**

Dr Brett Smith can be contacted at:  
[B.M.Smith@lboro.ac.uk](mailto:B.M.Smith@lboro.ac.uk)

## Sport, Culture and Policy Update by Dr David Howe

Carla Silva and David Howe attended the recent European Conference in Adapted Physical Activity in Killarney, Ireland at the beginning of May. They delivered two papers. 'The Wobbly Ethnographer: empowered researcher or vulnerable observer?' was delivered by David. Carla delivered the paper 'This is not a disability ghetto! Assessing capabilities in the 'developing' world of sitting volleyball' which received great acclaim and was mentioned as a study of exceptional quality by one of the conference keynotes – Professor Donna Goodwin of the University of Alberta.

During the month of February Dr David Howe was honoured to take up the role of visiting scholar at the Faculty of Physical Education and Recreation, University of Alberta, Canada where he did some teaching and a number of public lectures. His faculty seminar 'Physical Activity can be a Real Pain: the building of a high performance sporting body' was well attended. This post facilitated a good amount of time for networking across the areas of the sociology of sport and adapted physical activity.

With the Paralympics right around the corner David Howe has given a number of public lectures in the UK. In April David presented a paper entitled 'When I'm Sixty-Four: the Paralympic Spectacle' Given at London – City in Paradox, University of East London

Dr David Howe can be contacted at: [P.d.Howe@lboro.ac.uk](mailto:P.d.Howe@lboro.ac.uk)



**We can now be found on Twitter: @PHC\_Lboro**



# Houses of Parliament Welcomes Dr Brett Smith

Dr Brett Smith was recently invited by Aspire and Mr Speaker, Rt Hon Jon Bercow MP to speak about his research (with Nick Caddick) on the plight of spinal cord injured people who live in elderly care homes at a special event at the Houses of Parliament.

Using qualitative methods, Brett and Nick have been conducting the first research to understand the health and wellbeing of spinal cord injured people living in care homes. Up to one in five of the 1200 people in the UK paralysed each year are moved to a care home following rehabilitation whilst they wait for their existing homes to be renovated for wheelchair use or for suitable accommodation to be found. Around 70% of spinal cord injury patients are men, and many are under 40 years old. People can spend up to 2 years in a care home as a result of inaccessible and unsuitable housing.

In his talk to MP's and Local Authorities, Brett presented evidence that showed how living in a care home resulted in widespread depression, feelings of isolation, a loss of hope, uncertainty of the future, loss of independence, and sedentary behaviour. He also highlighted that people regularly experienced suicidal thoughts when in care homes. Some too attempted suicide.

As Brett explained to MP's and Local Authorities:

"Through extensive rehabilitation, spinal cord patients are given the resources to live independently after their life changing trauma. For the 20% who find themselves moved into care homes the impact on their physical development, health and psychological wellbeing is devastating and can even lead to attempted suicide. Action is needed. What is urgently needed is appropriate housing."

The event was reported in various media. It also had significant impact in that more houses for disabled people and more funding for appropriate homes were assured. Brett will be working with Aspire in the near future to produce a policy document for housing welfare change.

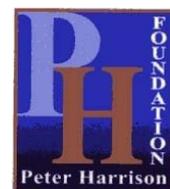
Alex Rankin, Director of Services at Aspire, said:

"The work by Dr Brett Smith and his team at The Peter Harrison Centre for Disability Sport will go a long way in showing the full extent of the damage that is caused by placing people into unsuitable housing. With this evidence, Aspire will be better able to help people with spinal cord injuries get the accommodation they need, giving them the independence and opportunities in life that most of us take for granted."

Brett would like to thank Nick Caddick, Alex Rankin and the team at Aspire, and Mr Speaker, the Rt Hon Jon Bercow MP.

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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