

*Sport, Exercise & Health Sciences School
Research Newsletter*

2007 British Association of Sport and Exercise Science
Annual Student Conference Review



After a successful Student Conference last year at Herriot-Watt University in Edinburgh, the spotlight turned to the University of Chichester for this year's Student Conference which was held on the 22nd and 23rd May at the Bishop Otter Campus. Chichester did not let us down and 250 delegates including the students and staff of 47 institutions enjoyed a fantastic conference and some glorious weather as well! With 126 undergraduates and 75 postgraduates plus 48 members of staff from the entire spectrum of sport and exercise science attending it provided some excellent discussions and opportunities to network. A total of 16 Chichester students presented at the conference.

Emeritus Professor Tudor Hale of the University of Chichester opened with an historic overview of the development of sport and exercise science. The presentation was insightful and challenged many in the audience to consider who they are as scientists and what science really is. The following Careers Forum session was split in to Sport and Performance, Physical Activity for Health and Coaching sessions. There were 8 speakers in total who provided a profile of their current job and how they progressed from being a sport and exercise science student to being a sport and exercise scientist. Katie Hopwood from Manchester Metropolitan University reflected on the forum, "It was brilliant to be able to ask questions and interact with leading practitioners to get more information on my chosen career pathway." Katie was definitely not the only one to enjoy the forums, all of the students taking something positive from the sessions.

In addition to the oral and poster research presentation sessions, from which the winners of the 3 postgraduate and 3 undergraduate competitive awards were selected, the conference featured 5 parallel workshops on the second day. In the workshops students were introduced by experts to the 'real-life' issues that they might experience as a sport and exercise scientist. The conference was closed by Dr. Louis Passfield of British Cycling with an excellent overview of his work with British Cycling and how they are leading the hunt for Olympic success not just in Beijing in 2008 but also for London in 2012. Louis formerly worked at Bishop Otter Campus on the cycling sports science support programme in the early 1990's during preparations for the Barcelona and Atlanta Olympic games.

The 2007 conference was regarded as an unqualified success, Dr Claire Hitchings, BASES Executive Officer commented that "The 2007 Student Conference has both built on the successes of previous conferences and has been creative in aspects of its programme. An outstanding event!" Tamsin Frost, Chair of the Student Advisory Group said "the conference was a great success – there were excellent student presentations worthy of an international conference and lots of networking which created a really friendly atmosphere".

Acknowledgements

The Organiser, Dr. Mike Lauder would like to thank the University of Chichester organising and abstract committee, led by John Kelly and the awards committee led by Dr. Marcus Smith. Also to thank Dr. Claire Hitchings and Jane Bairstow of BASES and Laura Farrant, Fran Dobbins, Jenny Bembridge and all the support staff from the University of Chichester.



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Delegates enjoying the Bishop Otter Campus

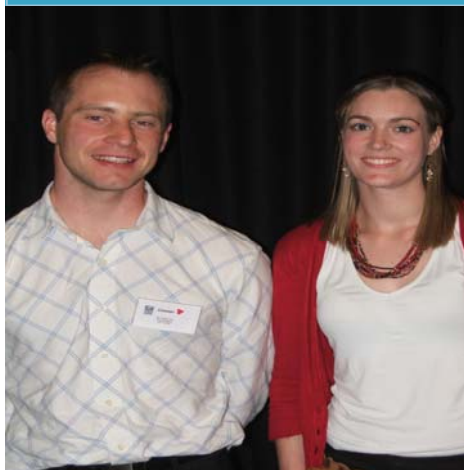


2007 British Association of Sport and Exercise Science Annual Student Conference Award Winners

Research		
	<i>First Place Sponsored by BASES</i>	<i>Runner-up Sponsored by Human Kinetics</i>
Postgraduate Oral Presentation Award	Rebecca Symes, <i>University of Chichester</i>	Dominic Farris, <i>University of Bath</i>
Postgraduate Poster Presentation Award	Emily Warren, <i>Sheffield Hallam University</i>	Matthew Barlow, <i>University of Plymouth</i>
Undergraduate Oral Presentation Award	Christopher Earing, <i>University of Wales, Bangor</i>	Hamish McAndrew, <i>University of Edinburgh</i>
Undergraduate Poster Presentation Award	Claire Bridgman, <i>University of Portsmouth</i>	Jane Campbell, <i>University of Wales, Aberystwyth</i>
Applied Research		
Applied Research Postgraduate Presentation Award	Chester Hill, <i>University of Chichester</i> <i>Sponsored by Sports Coach UK</i>	Chris Rush, <i>University of Teeside.</i> <i>Sponsored by Cranlea</i>
Applied research Undergraduate Presentation Award	Elizabeth Robson, <i>St. Mary's University College</i> <i>Sponsored by Sports Coach UK</i>	Claire Taylor, <i>University of Hull.</i> <i>Sponsored by University of Chichester</i>

Rebecca Symes, a student on the MSc in Sport & Exercise Psychology, received the BASES prize for best postgraduate oral presentation. Rebecca's work, entitled "Reputation biases how athletes perceive the personality characteristics of sport psychology consultants" examined the impact of a sport psychology consultant's reputation on the way in which their consultancy sessions are evaluated by clients. Rebecca, whose project was supervised by Iain Greenlees, found that the information a client receives about a sport psychologist prior to working with them will influence the client's judgments of the personal qualities of the consultant perceptions of the effectiveness of the session.

Postgraduate PhD student Chester Hill and Psychology Masters student Rebecca Symes



2007 BASES Annual Student Conference Award Winners and runners-up



High Altitude Physiology Summer Expedition.



Steve Myers and Mount Everest

Stephen Myers, a Research Associate with the University of Chichester based Engineering and Physical Research Council High Speed Craft Project Team, wearing his other hat as a member of the Birmingham Medical Research Expeditionary Society, participated in the Society's biennial expedition. The focus of these expeditions is to investigate the mechanisms of altitude illness and how the body adapts to high altitude. Such expeditionary studies have underpinned the understanding of the functioning of the human cardiorespiratory system since the 19th Century. The 2005 expedition was to Leh, Ladakh India and had the primary scientific focus to investigate the

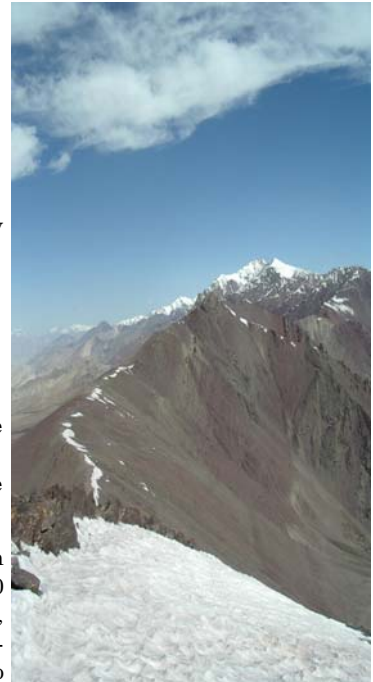
effects of exercise on acute mountain sickness.

Acute mountain sickness (AMS) is a debilitating and potentially deadly condition, which in its mild (benign) form affects most lowland dwellers travelling to high altitudes (3,000 metres (m) or greater). Mild AMS symptoms include headaches, loss of appetite, nausea, lack of energy, disturbed sleep, irritability and photophobia. At high altitude the barometric pressure is reduced (e.g. 440mmHg at 3,489m compared to 760mmHg at sea level), so critically whilst the percentage of oxygen in the air remains the same as at sea-level it is far less concentrated (lower partial pressure). Therefore at high altitudes it is necessary to increase the rate of breathing (hyperventilation) in an attempt to meet the working muscles demand for oxygen. Other physiological changes (including increased heart rate, and red blood cell production), will occur to help humans cope (short term acclimation, longer term acclimatisation) with the low partial pressure but these changes are only effective up to approximately 5,200m and in fact at much lower altitudes (1,600m) aerobic capacity and decreases progressively at around 10% per 1,00m.

The expedition group, some of which acted as experimental subjects as well as scientific investigators, completed a range of sophisticated physiological experimental studies at sea-level before departure from England. These studies were repeated on arrival at Leh the capital of Ladakh an area also known as "little Tibet", which is 3,489m above sea level, and again in Leh following a six-day acclimatisation trek was were a maximum altitude of 5,298m was reached and provided further opportunities for other experimental investigations. The six-day acclimatisation trek was through the stunning Markha Valley which is one of the world's highest inhabited plateaus with spectacular views of the great Himalaya, Ladakh and Zaskar mountain ranges.

The main scientific experiment focussed on the occurrence of right-to-left intrapulmonary shunting following maximal exercise at altitude. To achieve this, a specially developed portable supine ergometer the Alticycle™ was used. The Alticycle™ enabled controlled incremental and maximal exercise testing to be performed and importantly for these experiments, allowed the head to remain still and permit simultaneous measurements of expired gas, cerebral oxygenation and cerebral blood flow. These measures were made at rest and during maximal test along with measurements of beat-to-beat blood pressure and arterial saturation. A right to left intrapulmonary shunt in simple terms is where deoxygenated blood (venous) from the right hand side of the heart passes through to the left hand side without first passing through the lungs to load with oxygen. This often occurs in infants who have a so called "hole in the heart" and results in hypoxemia (an abnormally low partial pressure of oxygen in arterial blood) which, if it occurs at high altitude will exacerbate the effects of the low partial pressure of oxygen in the atmosphere. In order to test for the occurrence of an intrapulmonary shunt a contrast bubble solution (a mixture of the subject's blood and saline agitated in a syringe to form microbubbles) was injected at rest and at maximal oxygen uptake (VO_2 max). If shunting occurs it is then possible to detect gaseous cerebral microembolic signals (bubbles) and count these using the transcranial Doppler machine measuring cerebral blood flow. Other experiments conducted investigated changes in, respiratory ventilatory threshold, arterial stiffness, cardiovascular tone and eye pupillary reactivity, on acute exposure to altitude and following acclimatisation.

Results of some of the research partially sponsored by University Of Chichester have been presented as posters at the 15th International Hypoxia Symposium, 27th February to 4th March 2007 in Lake Louise, Canada. Two of the posters are now on display in H corridor by the science laboratories at University of Chichester entitled: Exercised-induced right to left shunting in healthy humans at high altitude. Improvement in the ventilatory threshold with acclimatisation to high altitude is delayed in untrained humans. Contact s.myers@chi.ac.uk



Highest Point on Everest Trek

Cardiorespiratory Assessments at Altitude.



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THE NINTH GREAT BRITISH RESEARCH AND R & D SHOW!!

Your Notes!



Postgraduate research student, **Chester Hill**, from the University of Chichester was selected to give a poster presentation of his research findings last week at the House of Commons as part of the government's SET for BRITAIN initiative. The main aim of SET for BRITAIN is to encourage and promote younger science researchers by giving them the opportunity to participate in an annual reception at the House of Commons where they are able to present their research to MPs and compete for prestigious national awards and monetary prizes.

Chester Hill, who comes from Fareham in Hampshire, has already completed a BSc and MSc in Sport and Exercise Science, and together with fellow research students **Iain Kendrick** and **Glenys Jones**, is currently working towards a PhD in the field of exercise physiology/biochemistry at Chichester, under the supervision of **Professor Roger Harris**.

Their research is directed towards the enhancement of high intensity exercise performance in athletes through the dietary supplementation of an amino acid called beta-alanine. This is found naturally in meat and particularly in turkey breast meat. The University of Chichester is renowned for its research on diet and performance and in particular into the muscle compounds creatine and carnosine. Studies have shown that supplements of creatine and beta-alanine (which is involved in the production of carnosine) can significantly improve muscle performance in athletes.

The work has already attracted a great deal of international interest and has led to collaborative research with sports universities in South Korea, Vietnam, Australia, Belgium and the US. In addition to this, the work was also featured in the recent TV series called *'The Truth about Food'* that was screened on BBC2 in February. It is hoped that the results of this research will benefit some of our Olympic athletes in Beijing and of course at the London Olympics in 2012.



Summer Breakout!

DUMB RESEARCH ???? SOURCED BY TERRY MCMORRIS

Ice-Cream Preferences – Gender Differences in Taste and Quality

(Perceptual and Motor Skills, 1993: 77, 1097-1098)

J. Kunz

Brigham Young University

Women showed a preference for expensive ice-cream while men preferred the cheap stuff.