Exciting year ahead for Sport & Exercise Scientists!

Welcome to the first Sport & Exercise Science Research group newsletter which will be published 3 times per year and aims to provide an update on research and consultancy activities within the discipline of Sport & Exercise Science.

Many staff are currently involved in a number of interesting research and consultancy activities, both nationally and internationally. This work informs the delivery of the BSc (Hons) Sport & Exercise Science degree and ensures that students benefit from cutting-edge research and the experience of sports science practitioners.

The 2009/2010 academic year is set to be an exciting year for the scientists within the department. It sees the first year of a newly validated undergraduate degree programme, and the continuation of a number of research projects in the areas of biomechanics, psychology, physiology and multi-disciplinary sports science.

The team currently consists of:

Dr. Evelyn Carnegie (Head of Department)
Craig Bridge (Part-time lecturer in Sport & Exercise Physiology)
Emma Duxbury (Senior Lecturer in Sport & Exercise Psychology)
Paul Ellison (Sport & Exercise Science Tutor)
Dr. Matt Greig (Senior Lecturer in Sport & Exercise Biomechanics)
Jennie Killellia (Senior Lecturer in Sport & Exercise Psychology)
Dr. David Marchant (Senior Lecturer in Sport & Exercise Psychology)
Dr. Pascual Marques (Senior Lecturer in Sport & Exercise Biomechanics)
Kelly Marrin (Senior Lecturer in Sport & Exercise Physiology)
Dr. Andy Sparks (Senior Lecturer in Exercise Physiology)

Sport and Exercise students present at national Conference

Dr. Matt Greig and Kelly Marrin accompanied two BSc (Hons) students to the 2009 British Association of Sport & Exercise Sciences (BASES) Annual Student Conference, held at the University of Hull. The conference is an opportunity for students from across the country to present both undergraduate and postgraduate research projects, and network with other budding sports scientists.

James Cobley who was studying the Applied Sports Science pathway presented his dissertation entitled ‘The effect of Vitamin E supplementation on velocity at lactate threshold and the onset of blood lactate accumulation in highly trained distance runners’. Stephanie Dagger who was studying the exercise and health pathway also presented her dissertation entitled ‘affective and physiological responses of inactive women to acute bouts of aerobic exercise’. Both students gave superb oral presentations and confidently answered questions from experts within the field. James’ dissertation was supervised by Kelly Marrin and Stephanie was co-supervised by Dr. David Marchant and Kelly Marrin. Further success came for both James and Stephanie in the Summer when they both graduated with First Class degrees. James is now going on to study a MSc in Sports Physiology whilst Stephanie is pursuing a career as a personal trainer. We wish them well in their future careers! Students with outstanding 3rd year projects will be submitted to the BASES 2010 student conference in April at Aberystwyth University.
Science and soccer success

Dr Matt Greig has recently been engaged in both facets of the sports scientists role, presenting his research in football science at the American College of Sports Medicine annual conference in Seattle, and working as sports scientist with the England U16 squad. Matt presented a paper entitled “balance and strength changes following an injury prevention protocol in female soccer players”, making use of the protocol developed by the Medical and Research Group at FIFA (FMARC). The protocol is called “The 11” and has been shown to reduce injury incidence in young soccer players. Matt’s study specifically looked at the mechanisms behind this reduced risk of injury. This is part of an on-going body of work in football science which has been widely published in international journals. Furthermore, this research is being used on the football field. Matt now using this injury prevention protocol with the England development squads. This summer Matt continued his work with the England U16 team who were unbeaten over the season, winning international tournaments in France (beating Germany on penalties!) and Norway as well as the home nations tournament.

International hockey sports science support in Rome

Kelly Marrin attended the European Hockey Nations Trophy tournament in her capacity of physiologist for the Welsh Senior Women’s National Hockey Squad. Kelly, a BASES accredited Sport & Exercise Scientist (Physiology-Scientific Support) has worked with the Welsh squads for 4 years and her role involves the delivery of training programmes, warm-up and cool downs, together with the implementation of recovery strategies. The event held in Rome in July, saw temperatures rise to beyond 40 degrees C. Thus, the acclimatization and hydration strategies that Dr Matt Greig has recently been engaged in both facets of the sports scientists role, presenting his research in football science at the American College of Sports Medicine annual conference in Seattle, and working as sports scientist with the England U16 squad. Matt presented a paper entitled “balance and strength changes following an injury prevention protocol in female soccer players”, making use of the protocol developed by the Medical and Research Group at FIFA (FMARC). The protocol is called “The 11” and has been shown to reduce injury incidence in young soccer players. Matt’s study specifically looked at the mechanisms behind this reduced risk of injury. This is part of an on-going body of work in football science which has been widely published in international journals. Furthermore, this research is being used on the football field. Matt now using this injury prevention protocol with the England development squads. This summer Matt continued his work with the England U16 team who were unbeaten over the season, winning international tournaments in France (beating Germany on penalties!) and Norway as well as the home nations tournament.

Psychological support to Goalball

The GB women’s goalball team were crowned European Champions in August this year after beating Beijing bronze medallists Denmark in the final. Senior lecturer, BASES probationary sport psychologist and Edge Hill University BSc (Hons) Sport and Exercise Science Graduate Emma Duxbury was on hand in Munich to assist when things got difficult.

The team had to overcome the reigning European Champions Finland in the semi-finals, the only team to have beaten them in the group stage. Determined to put down this 10-3 loss to ‘inappropriate preparation’, the young team showed tremendous spirit, coming back three times from being a goal down before finally winning 7-5. Emma, who is currently working towards BASES accreditation and is supervised by Senior Lecturer Jennie Killilea, found the 10-day competition ‘very demanding and emotional with lots of testing situations to deal with. On the other hand it was one of the most exciting and rewarding events I have ever experienced. The progress of the squad this year is remarkable and we’re all looking forward to the World Championships in Sheffield next year.’
A team of four sports scientists covering all three disciplines of biomechanics, psychology, and physiology, attended the 14th Annual Congress of the European College of Sports Science held in Oslo, Norway. The congress was attended by over 1500 International delegates and is the key event in the European Sports Science calendar.

Dr. David Marchant presented a poster on the study ‘Attentional Focusing Instructions Influence Force Characteristics During Knee Extension Exercise’. This work is part of a growing body of work that he and Dr. Matt Greig have published in various international journals. Consequently, David is leading the way in research that may optimize strength and conditioning coaches’ instruction techniques.

Dr. Pascual Marqués is an expert in the biomechanics of ski-jumping and had two research projects to present in Oslo. He presented a poster on research entitled ‘The use of computer-aided-design (CAD) for the construction of an inertia rigid model of the ski jumper’ and also completed an oral presentation entitled ‘Optimization of aerodynamic stability in ski jumping: the tug-of-war between safety and performance’. The high quality of the research was commented on by the audience, and we look forward to reading the full articles when published.

Dr. Andy Sparks presented an extremely interesting poster entitled ‘The effect of carrying a portable respiratory gas analysis system on energy expenditure during running.’ He also co-authored another piece of research at the conference entitled ‘The acute effect of taurine ingestion on 3k running performance and force in trained distance runners’, which has since been commented upon by Professor Will Hopkins on his sports science website.

Kelly Marrin undertook an oral presentation on her study ‘The melatonin responses to exercise are moderated by time of day’. Questions fielded by the international audience were answered with confidence. This work is part of a wider body of research being conducted in the area of pineal function and thermoregulation, as part of her doctoral studies.

Away from the research, Dr. Marchant and Dr. Sparks were prize winners in the conference’s PowerBar sponsored 5K fun run held at the Norwegian School of Sport Sciences in Oslo on a hot Thursday evening.
**Psychology research update**

Dr. David Marchant presented two papers at the British Psychological Society’s Division of Sport and Exercise Psychology Inaugural Conference in London. The papers were entitled ‘Exercise dependence and recreational exercisers’ behaviour in an exercise and fitness centre setting,’ and ‘Movement speed affects the influence of attentional focusing instructions on force production during isokinetic elbow flexions.’

David has been invited to present at Staffordshire University Sport and Exercise Science research seminar series on 7th October so we will have an update of this in the next newsletter.

David is currently collaborating with University of Nottingham Physiotherapy Researchers on a stroke rehabilitation project, and continues to work closely with the Sporting Edge Exercise Referral Scheme team.

David’s research and consultancy has informed the development and delivery of the recently validated BSc (Hons) Sport and Exercise Psychology. In collaboration with the Department of Social and Psychological Sciences, this degree offers Graduate Basis for Registration (GBR) with the British Psychological Society (BPS) - the first step to becoming a Chartered Sport and Exercise Psychologist (For more information on BPS Chartered Psychologists See: www.bps.org.uk/spex/spex_home.cfm). David programme leader for this course.

**Latest Research on Ski-Jumping**

Check out the very latest research on ski jumping aerodynamics by Dr. Pascual Marqués, in collaboration with Paul Grimshaw from the University of Adelaide. The full article is accessible online via the Edge Hill learning resources. Here is a preview of this article published in an exciting new sports technology journal by Wiley. The article is entitled The mechanics of flight in ski jumping: aerodynamic stability in pitch. In this study, we use computer-aided design (CAD) and mathematical modelling to determine enhanced posture in ski jumping, which represents a compromise between maximum aerodynamic efficiency and utmost flight stability. Mechanisms of aerodynamic stability in pitch are suggested, upon theoretical aerodynamics.

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**Sports Scientists are Silver medalists in Corporate Cup!**

A team from Edge Hill University Sport and Exercise Science Research Group, consisting of Dr. David Marchant (team captain), Dr. Andy Sparks, Dr. Matt Greig and Kelly Marrin competed in the ‘Liverpool Chamber of Commerce 5K team challenge’ on September 22nd. The race was open to corporate teams and attracted over 1000 runners aiming to be the ‘best in the business’. Division one consisted of approximately 90 teams and the Sport & Exercise Research Group team finished in an impressive second position, behind the winners from Mersey internal audit agency. The Sports Scientists from Edge Hill were the top ranked University team.

**Top Teams and Results**

(m.s)

1st. Mersey Internal Audit Agency — 80:57
2nd. Sport & Exercise Research Group, Edge Hill University — 86:03
3rd. Wirral University Teaching Hospital — 87:24
4th. UK Border Agency — 90:02

**New Department Website**

The Department Sport and Physical Activity website is now improved and updated. Check it out for news and updates on staff research and consultancy work.

www.edgehill.ac.uk/sport