

# ISBS Newsletter

March 2009  
(Vol. 25, No. 1)



**Table of Contents:**

|  |   |
|--|---|
| Editor's Notes .....                                     | 2 |
| ISBS Awards .....  | 2 |
| ISBS Sponsors .....                                      | 4 |
| Preview of XXVII ISBS Conference Limerick, Ireland ..... | 4 |
| Human Movement Lab, Chinese University of Hong Kong..... | 5 |
| ISBS Elections 2009 .....                                | 6 |
| ISBS Officers .....                                      | 7 |
| ISBS Directors .....                                     | 7 |
| University of Sydney Biomechanics Unit.....              | 8 |

## Editor's Notes

Friends:

Thank you to the ISBS members and officers who have shared information for this newsletter. ISBS has been having outstanding success in our annual conferences, proceedings, and journal *Sports Biomechanics*. Beyond usual announcements about awards and our conference, this issue seems to have taken on a theme of sharing information on research centers in sports biomechanics.

I hope you enjoy these summaries of your colleague's laboratories and research agendas. In the future it would be nice to have features beyond university labs, including collaborations and national sports biomechanics projects in future issues. For example, ABS members have been

collaborating on a large National Science Foundation grant to bring biomechanics lessons into public school science classes. I especially invite ISBS members to share ideas, columns, news, and photos with me for upcoming newsletters. I am sure that some ISBS members have recently received prestigious national awards for their research in sports biomechanics. It would be nice to pass items like this along for our newsletter. Please send any suggestions for content to me at: [dknudson@csuchico.edu](mailto:dknudson@csuchico.edu).

I am looking forward to see you all soon in Limerick.

Duane Knudson, VP for Publications

## ISBS Awards

The ISBS has four major awards: the Geoffrey Dyson Lecturer Award, Life Member, Fellow, and the Hans Gros New Investigator Award. This column will describe these awards and explain how to nominate candidates for these awards.

The time has come to nominate candidates for Fellow of ISBS, Life Member of ISBS, and the Geoffrey Dyson Lecturer (for the 2010 ISBS Conference).

Please read the criteria for selection below and forward any nominations you would like to make to Richard Smith [r.smith@usyd.edu.au](mailto:r.smith@usyd.edu.au). Only

nominations submitted prior to the ISBS conference can be considered by the ISBS Awards Committee. You can check the list of previous recipients at

<http://www.csuchico.edu/isbs/awards.htm>

The criteria for each of the awards follow.

### **GEOFFREY DYSON LECTURER**

The guidelines for selection of this - the most prestigious honour that can be bestowed by ISBS - are:

(1) The candidate must have an international reputation in the field of sports biomechanics in keeping with the reputation of Geoffrey Dyson himself.

(2) The candidate must have an interest in the applied nature of sports biomechanics and an ability to communicate with both the researcher and the practitioner.

(3) A condition of acceptance shall be that the candidate delivers the Geoffrey Dyson Lecture personally.

### **LIFE MEMBER**

This is a special membership category reserved for members who have made outstanding contributions to the Society. Elected by the Executive Council, a life member has all the privileges of membership but does not pay annual dues.

### **FELLOW**

The Fellow award of the International Society of Biomechanics in Sports (ISBS) recognizes substantial scholarly and service contributions to ISBS and sports biomechanics. ISBS members may apply to the Awards Committee for review for Fellow status by showing they meet the minimum requirements for the award using a template available from [r.smith@usyd.edu.au](mailto:r.smith@usyd.edu.au). Members receiving the Fellow Award may use the title Fellow International Society of Biomechanics in Sports (FISBS).

Candidates for FISBS would normally have:

(1) Been an ISBS member for at least 4 consecutive years.

(2) Presented at least one paper each at two ISBS symposia.

(3) Published at least 5 sport biomechanics papers (minimum 3 as first author) in English, peer-reviewed scientific journals.

Papers submitted in support of Fellow nomination should be consistent with the ISBS focus on sport and bridging the gap between science and coach/athlete. Therefore submitted papers should include biomechanical principles applied to a sport or sports, recovery from sports injury, physical activity/exercise that could lead to improved performance. Candidates for Fellow should state why their papers are relevant to sports biomechanics if it is not clear from the title.

### **HANS GROS NEW INVESTIGATOR AWARD**

Candidates should have requested consideration for this award on the submission form ISBS Conference.

## ISBS Sponsors



## Preview of XXVII ISBS Conference Limerick, Ireland

**ISBS 2009**  
**University of Limerick, Ireland**  
**17<sup>th</sup> – 21<sup>st</sup> August 2009**

**Venue:** The 27<sup>th</sup> annual ISBS conference is being held in Limerick, Ireland. Limerick is often referred to as Ireland's 'sporting city.' The University of Limerick is also an ideal venue for the ISBS conference as it is Ireland's foremost university location for sport and sports science education. The Biomechanics Research Unit at the University of Limerick can be considered the leading centre for sports biomechanics teaching and research in Ireland. The unit comprises a largest community of applied sports biomechanics lecturers and postgraduate researchers in Ireland. We look forward to welcoming delegates to the University of Limerick campus which is situated close to the historic city of Limerick on the picturesque banks of the river Shannon.

**Programme:** The conference programme will feature the Dyson Lecture by Albert Golhoffer, six keynote lectures, thematic oral and poster presentations. However, in recognition of the ISBS mission to bridge the gap between practitioners and scientists, we intend to provide a novel and interesting programme of applied sessions which will attract scientists, coaches and practitioners alike. The applied themes include: Swimming biomechanics, Biomechanics in Rowing, Biomechanics, Biomechanics in Strength and Conditioning and Data analysis in

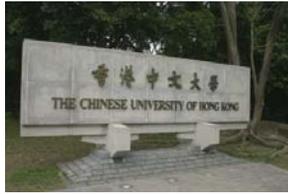
Biomechanics. The conference programme will also include the David Waddell Memorial Keynote Lecture. In addition to the very full scientific schedule, conference will also include an exciting social programme which will allow delegates the chance to enjoy all that is best in Irish culture.

**Accommodation:** Accommodation will be provided on campus for the duration of the conference. Campus accommodation is generally of a very high standard and offers excellent value, therefore we would recommend this to conference delegates. There are also several hotels and B&B's located close to the University campus.

**Travel:** The conference is being hosted at the University of Limerick which is just outside the city of Limerick in the mid-west of Ireland. The most convenient airport to fly into is Shannon Airport which is located approximately 35 minutes from the University campus. There will be a hosted desk at Shannon airport from 9 am to 5 pm on the day prior to the conference to meet all delegates as they arrive. This desk will be located just after baggage collection in the main arrivals area.

**Conference Website:** For further information please visit the conference website at: [www.isbs2009.com](http://www.isbs2009.com)

## Human Movement Lab, Chinese University of Hong Kong



The Human Movement Laboratory at the Chinese University of Hong Kong was established in 1991. The staff include biomechanists, research engineers, sports medicine professionals, graduate students, and administrative officers. The mission of the lab is to "optimize health, performance and prevent injury through understanding human movement." We aim to bridge the gap between research of the musculoskeletal system in human movement and its application in health promotion, ergonomics, industry, and clinical practice.

Equipment in the lab includes: 16 high speed video cameras, Motion Analysis systems, APAS motion analysis systems, 2 Kistler and 2 AMTI force plates, Novel Pedar pressure measurement system, BTS and Delysis EMG systems, FSA Foot Sensitive Application, Infoot Foot Scanner, Cybex Norm Isokinetic Dynamometer, electronic goniometers, accelerometers, treadmills, Cateye Cyclosimulator, human pendulum apparatus, and ankle proprioception measuring system.



The laboratory is involved in research, graduate education, continuing education and consulting. Research is conducted in collaboration with faculty from Orthopedics and Traumatology, Engineering, and Sports Science and Physical Education. The scope of research includes sports and exercise biomechanics, footwear, Orthopaedics and ergonomics. The laboratory also collaborates with local and overseas academic institutes, chemical, testing equipment and manufacturing companies in the research, material and product improvement. Research grant funding has exceeded 2 million US dollars since 1991.

For more information contact Professor Youlian Hong (youlianhong@cuhk.edu.hk) or visit our web site at: <http://www.cuhk.edu.hk/spe/hmlab>

## ISBS Elections 2009

The ISBS Constitution provides for the election of four (4) officers and ten (10) directors in the year 2009. In order to meet the election timelines, it is necessary to begin the nomination process immediately. The officers and directors have considerable influence on the direction and activities of the Society. It is important, therefore, to seek individuals who are responsible and willing to serve the Society.

The By-Laws of the Society states, "Only members in good standing may vote, stand for election or appointment to office." So, it is imperative that your membership dues are current. For membership information and dues payment go to:

<http://www.csuchico.edu/isbs/membership.htm>

The election process is detailed below.

**Terms of office:** 2009-2011

**Officers to be elected (Two-year terms)**

Vice President of Awards

Vice President of Conferences and Meetings

Secretary General

Treasurer

**Directors to be elected (Two-year terms):**

Ten Directors

**Nominations:**

Self-nomination is permitted.

Current officers and directors may stand for re-election.

Before nominating another member, assure that the member is willing to serve.

**Nomination Period:**

30 March 2009 – 26 April 2009.

**Candidate Statements:**

Candidates are encouraged to submit a statement of 100 words or less. (In order to be fair to all candidates, statements longer than 100 words will be truncated.)

Candidates are encouraged to submit a photo to accompany their statement.

**Deadline for nominations:**

The deadline is Sunday 26 April 2009 at 2400 PDT San Francisco, CA.

**Submission of Nominations:**

Nominations and self-nominations should be submitted to: [john.ostarello@csueastbay.edu](mailto:john.ostarello@csueastbay.edu)

**Additional Information:**

If you need additional information, please contact me.

Email: [john.ostarello@csueastbay.edu](mailto:john.ostarello@csueastbay.edu)

Telephone: 1-510-538-4811

## ISBS Officers

- President: Youlian Hong, Chinese University of Hong Kong, Hong Kong ([youlianhong@cuhk.edu.hk](mailto:youlianhong@cuhk.edu.hk))
- President Elect & Treasurer: Manfred Vieten, University of Konstanz, Germany ([manfred.vieten@uni-konstanz.de](mailto:manfred.vieten@uni-konstanz.de))
- VP Awards: Richard Smith, University of Sidney, Australia ([r.smith@usyd.edu.au](mailto:r.smith@usyd.edu.au))
- VP Conferences and Meetings: Mario Lamontagne, University of Ottawa, Canada ([mlamon@uottawa.ca](mailto:mlamon@uottawa.ca))
- VP Publications: Duane Knudson, California State University, Chico, USA ([dknudson@csuchico.edu](mailto:dknudson@csuchico.edu))
- VP Public Relations, Herman Schwameder University of Karlsruhe, Germany ([ej107@sport.uka.de](mailto:ej107@sport.uka.de))
- VP Projects and Research: Ross Sanders, University of Edinburgh, United Kingdom ([r.sanders@ed.ac.uk](mailto:r.sanders@ed.ac.uk))
- Secretary General: John Ostarello, California State University, East Bay ([john.ostarello@csueastbay.edu](mailto:john.ostarello@csueastbay.edu))

## ISBS Directors

### 2007-2009:

- Elizabeth Bradshaw, Australian Catholic University, Australia
- Gareth Irwin, University of Wales Institute, Cardiff, UK
- Justin Keogh, Auckland University of Technology, New Zealand
- Uwe Kersting, University of Auckland, New Zealand
- Hans Joachim-Menzel, Universidade Federal de Minas Gerais, Brazil
- Young-Tae Lim, Konkuk University, Korea
- Spiros Prassas, California State University-Hayward, USA
- Pamela Russell, Bridgewater State College, USA
- Lothar Thorwesten, University of Muenster, Germany
- Qing Wang, China Society of Sports Biomechanics, Beijing, China

### 2008-20010:

- Kevin Ball, Victoria University, Australia
- Chenfu Huang, National Taiwan Normal University, Taiwan
- Randall Jensen, Northern Michigan University, USA
- Young-Hoo Kwon, Texas Woman's University, USA
- Jian Xian Li, University of Ottawa, Canada
- Wolfgang Potthast, German Sport University, Cologne, Germany
- Karen Roemer, Michigan Tech, USA
- Antonio Veloso, Technical University of Lisbon, Portugal
- Mark Walsh, Miami University, USA
- Cassie Wilson, University of Bath, UK

## University of Sydney Biomechanics Unit

### Research Focus

The biomechanics team is dedicated to high quality biomechanical research in the area of sports performance, footwear development, acute and chronic injury prevention and treatment strategies. Our team is equipped with enthusiasm, talent, experience and state of the art equipment. The research activities are carried out in a world class biomechanics laboratory equipped with 14 cameras (Motion Analysis Corporation), 7 force-plates (Kistler), and a 16 channel telemetric EMG system (Noraxon). In addition to that the team has developed several innovative measurement systems for specific applications such as on - water measurements and rear foot motion measurements.



The 40 m acceleration track, large garage doors and Olympic specification sand pit facilitate the analysis of a number of athletic events.

### Current Research Topics

**Children's footwear:** Projects include the production of footwear based on a completely new design concept for children arising from recently developed knowledge of the natural patterns of anatomical flexing and propulsion.

<http://www.usyd.edu.au/research/opportunities/opportunities/527>

**Rowing:** Projects combine expert boat and oar design and manufacture with advanced biomechanical analysis to match the rower's power generation characteristics with boat propulsion requirements to produce optimally configured boat, oar and rigging designs that combine properties that will maximise rower's performance.

<http://www.usyd.edu.au/research/opportunities/opportunities/526>



**Sports Performance and Injury Biomechanics:** This project is a cluster of studies on sports biomechanics with particular emphasis on three dimensional analysis of kinematics and kinetics and advanced biomechanical analysis of techniques to optimise performance and minimise injury. All projects are supported by international, national or state organisations such as the Australian and NSW Institutes of Sport, and Cricket Australia, and involve the participation of elite subjects. There is also a heavy emphasis on identifying injury mechanisms in

sport and using biomechanical interventions to remediate faulty technique (cricket , golf, soccer, rugby, netball, swimming, gymnastics)..

<http://www.usyd.edu.au/research/opportunities/opportunities/87>

**Mechanical intervention for musculoskeletal injuries:** Many of the principles from sports performance and injury biomechanics are applied in clinical settings. This area entails a series of studies to identify the efficacy of mechanical intervention programs for patients with chronic joint diseases such as osteoarthritis.

<http://www.usyd.edu.au/research/opportunities/opportunities/524>

**Spinal cord injury:** Research studies in this area investigate health benefits and functional outcomes using Functional Electrical Stimulation (FES) for standing, walking, rowing and leg exercise in spinal cord injury, stroke, head injury and other neurological conditions.

<http://www.usyd.edu.au/research/opportunities/opportunities/90>

#### National and international collaborations

Collaborations exist with the Australian Institute of Sport, NSW Institute of Sport, Cricket Australia, Cricket New Zealand, Cricket New South Wales, Australian PGA, New South Wales PGA, Australian Rugby Union, National Rowing Centre of Excellence, ETH Zurich, University of Poitiers, Free University of Amsterdam, other universities, and numerous hospitals and industry partners.

## Teaching Focus

### Undergraduate

The Biomechanics team teaches into both undergraduate and postgraduate courses across a number of programs within the Faculty of Health Sciences. Our first year unit, Biomechanics of Human Movement, is core to all students studying Exercise and Sport Science, Exercise and Sport Science and Nutrition, or Physiotherapy. In addition, it is a compulsory elective for students within the



Bachelor of Health Science degree that wish to go on and study the faculty's Graduate Entry Masters degrees in Exercise Physiology and Physiotherapy. This unit teaches the fundamental principles of biomechanics; kinematics and kinetics, with an emphasis on developing mathematical skills and analytical problem solving techniques.

After first year, all undergraduate students studying Exercise and Sport Science or Exercise and Sport Science and Nutrition go on to complete a unit titled

Biomechanical Analysis of Movement. This unit focuses on the development of analytical skills, with

all students completing a 2D video analysis project and learning the principles of inverse dynamics calculations.

Third year students in Exercise and Sport Science must take either Biomechanics of Sports Techniques or Ergonomics as an elective. The Sport Biomechanics unit takes examples from a variety of sporting activities, developing skills for those students wishing to work with athletes in a sports testing environment. The Ergonomics unit teaches principles of matching environmental and task related parameters to human characteristics, with application to occupational health and safety, sport safety and the development of accessible environments for those with functional impairments.

### Postgraduate

All postgraduate coursework students in Exercise Science must complete the unit Human Mechanics. This unit combines elements of introductory Biomechanics with Functional Anatomy to investigate how the musculoskeletal properties of the human body affect performance of exercise, sport and functional activity.



Students in the Clinical Exercise Science stream will go on to study Clinical Biomechanics. The unit offers an introduction to some of the issues in clinical biomechanics, including gait, work related tasks, musculoskeletal and injury biomechanics. Material properties of tissues and the influence of exercise and rehabilitation on tissue development are related to injury occurrence and prevention.

Those students not in the Clinical Exercise Science stream focus on Sports Performance. These students take a unit titled Sports Biomechanics, where they apply principles of biomechanics to the assessment

and optimisation of sporting skill and the prevention of injury. Students undertake a review of topics in kinetics, work, power and efficiency, before studying a range of sports as case studies.