

**June 2015**

**ISB *Now***



**June  
2015**

# Table of Contents

<b>President's Blog, June 2015</b> .....	1
<b>Students' Corner</b> .....	2
<b>ISB Council Election Results</b> .....	5
<b>Eight years as Secretary General</b> .....	6
<b>International Travel Grant Reports</b> .....	7
<b>List of new members, June 2015</b> .....	9
<b>Fellowship of the International Society of Biomechanics</b> .....	9
<b>2nd ISB Symposium on Motor Control in Biomechanics</b> .....	10
<b>XV International Symposium on Computer Simulation in Biomechanics</b> .....	11

# President's Blog, June 2015

By Ed Chadwick | June 2015

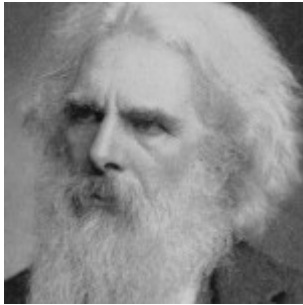
The XXV Congress of the International Society of Biomechanics is just around the corner (20 days away as I write). This congress marks a milestone for the ISB as this is our 25<sup>th</sup> congress, a Silver Anniversary. Our congress is biennial which means we have been holding congresses since 1967, which is a bit confusing as the society was not formed until 1973. The society arose from a series of biomechanics conferences held in Zurich (1967), Eindhoven (1969), and Rome (1971). By the time this conference was held in State College in 1973 there was sufficient impetus to form a society, and the ISB was formed but we started counting congresses from that initial meeting in Zurich.



*Delegates at the 1973 Congress*

As a society we have a number of membership categories: full member, student member, emeritus member, and honorary members. Our student membership has grown over the last five years, from 180 in 2011, to 275 in 2015. This encouraging growth suggests that the students of biomechanics appreciate what the ISB is trying to do for them, and also speaks to the vibrancy of biomechanics as an area of graduate study. The task for the society is to retain as many of these students as full members as possible. When the ISB was formed in 1973 those that joined the society were designated as charter members, so our full membership category has a subgroup. We have 15 charter members who are still members of the ISB. Of those 15, five are retired and another five have had their contributions recognized by being appointed as honorary members. This group of honorary members have made outstanding contributions to the ISB and to the field of biomechanics. Many of our current set of honorary members are still actively working on behalf of the society in various roles.

At the upcoming congress we will be appointing our first set of fellows. Julie Steele in this issue of ISB Now outlines the selection procedure for these fellows. The purpose of the fellows is in part to recognize distinguished achievement in biomechanics, and to encourage their continued contributions to the various functions of the society. The expectation is that applicants will only accept a Fellowship if they are willing to remain active within the ISB upon receipt of their Fellowship. These fellows will provide a useful resource for the ISB as we work to fulfill our various remits.



*Eadweard Muybridge  
(1830-1904)*

Congress organizers will also try and highlight “*heroes of biomechanics*” at the upcoming meeting. A hero can take many forms, we would not equate the acts of a war hero with those of an academic hero. Indeed one person’s hero might be another person’s antihero. Even in the field of biomechanics the identification of heroes is hard, and unanimous agreement might be difficult.

Some might consider Eadweard Muybridge (1830-1904, pictured to the left) a good choice of a biomechanical hero, and his efforts to record animal and human movement are to be lauded but he also doctored some of his records and was tried for murder! At the upcoming congress the identification of “*heroes of biomechanics*” may not correspond with your heroes in biomechanics, but it should make us all pause to think about those people who have impacted our careers, possibly without even knowing. Felix Adler (1851-1933) was a professor of social and political ethics who wrote,

*“The hero is one who kindles a great light in the world, who sets up blazing torches in the dark streets of life for men to see by.”*

This definition seems to work well in biomechanics, our heroes are those who have illuminated biomechanics for us; their original work has provided insight. Clearly for many of us our mentors and teachers have provided such insight but there are also those who have perhaps done so without necessarily realizing it. When I was a graduate student I spent a long time working through various papers published by Herman Woltring (1943-1992). These papers were dense with math and deep insights; he was an academic hero to me. At the 1991 ISB Congress we were in the same dormitory at the University of Western Australia and I greatly enjoyed our conversations over breakfast. I was also relieved that my hero could not do everything as the toaster seemed a complete mystery to him!

This is my last blog as the ISB President, and while the duties have kept me busy it has also been a rewarding experience. I would like to express my gratitude to those who have assisted me over the last two years. As I step down I will have new duties as the Past-President, and I look forward to continuing to participate in the activities of the ISB.

*Regards,*

*John.*

*John Challis*

*Penn State University*

*([jhc10@psu.edu](mailto:jhc10@psu.edu))*

## **Students’ Corner**

By Ed Chadwick | June 2015

Congratulations to our 2015-2017 student representative, Kirsty McDonald, from University of Western Australia. Kirsty is supervised by Dr. Jonas Rubenson (Pennsylvania State University/UWA), Dr. Brendan Lay (UWA) and Dr. Cyril Donnelly (UWA). She loves the collaborative and translational nature of the field of Biomechanics, and is excited to contribute to the council. I am confident that Kirsty will bring lots of enthusiasm and exciting ideas!



**We are approaching the XXV Congress of the ISB in Glasgow, and I wanted to remind you that the following sessions are being offered:**

**Outreach Session** - Monday 13<sup>th</sup> July - 10:20-11:10 - *still open for registration!*

Are you interested in engaging the public with your work? Unsure how to write a lay abstract? Struggling with engaging industry? Want to maximize the impact of your findings? This lunch and learn provide tips to increase outreach and translation of your work.

Speakers:

- Mary Rogers (National Institutes of Health, University of Maryland, USA)
- Eric Rohr (Brooks Running, USA)
- Darren Stefanyshyn (Human Performance Laboratory, University of Calgary)
- Jill McNitt-Gray (Biomechanics Research Laboratory, Director, University of Southern California, USA)

**Mentoring Session** - Monday 13<sup>th</sup> July - 12:40 - 13:30 - *still open for registration!*

Over lunch, get a chance to chat with experts in our field about student-suggested topics. If you are a student and wish to attend the student excursion you must attend this session. This session is open to all ISB Student members.

Topics for Discussion:

1. Preparing for life after graduate school - Discussed by Walter Herzog (Human Performance Laboratory, University of Calgary, Canada) and Paul DeVita (East Carolina University, USA)
2. Data issues and technology advancement in Biomechanics - Discussed by Brian Davis (University of Akron, USA) and Julie Steele (University of Wollongong, Australia)
3. Sports biomechanics and performance - Discussed by Darren Stefanyshyn (Human Performance Laboratory, University of Calgary, Canada) and Joe Hamill (University of Massachusetts, Amherst, USA)
4. Cultivating international collaborations in Biomechanics - Veronique Feipel (Université libre de Bruxelles, Belgium) and Felipe Carpes (UNIPAMPA - Federal University of Pampa, Brazil)

**Mock Academic Interview** - Tuesday 14<sup>th</sup> July - 12:40 - 13:30 - *still open for registration!*

Interested in pursuing a career in academic? Curious about the Academic Interview Process? Come watch a mock academic interview with a keen Post Doc (played by Prof. Phil Rowe). The audience will have the chance to quiz the candidate, and at the end of the session, decide if he gets the job! Open to ISB student members.

Organized by Enrica Papi (Imperial College, London, UK)

Interview Panel:

- Walter Herzog (Human Performance Laboratory, University of Calgary, Canada)
- Alison McGregor (Imperial College, London, UK)

**Cool Under Pressure** - *still open for registration!*

*Monday 13<sup>th</sup> July - 10:20-11:10*

Stress is the adverse reaction that people have to excessive pressure or other types of demand placed upon them'. Do you feel stressed? Come to this lunch and we will provide you with few tips and tools on how to manage stress, keep calm and stay positive. You will also get the chance to experience a few minutes of relaxation techniques to boost your attention for the next conference session!

Organized by Enrica Papi (Imperial College, London, UK)

Speakers:

- Professor Ilse Jonkers (Katholieke Universiteit Leuven, Belgium)
- Professor Phillip Rowe (University of Strathclyde, Scotland)

**Inaugural Women in Science Lunch** - *still open for registration for ISB members - Thursday 16<sup>th</sup> July - 12:15 - 13:00*

Open to ISB members - A Networking and conversation forum to celebrate contributions from the women of ISB over lunch. Short talks from some super-star women in biomechanics! You don't want to miss this!

**Monday July 13th - ISB GoApe Aberfoyle Student Event** - Registration is Full! Look for pictures on our Facebook and twitter pages. Contact [isb.studentrepresentative@gmail.com](mailto:isb.studentrepresentative@gmail.com) to be added to the waitlist.





*Go Ape! - image from tripadvisor.co.uk*

I look forward to seeing you in Glasgow! As this is my last official Student's Corner post as ISB Student Representative, I would like to thank all of you for your ideas and participation. Our strong sense of community sets the ISB apart as a professional group, and it has been a pleasure to be part of the Executive.

As always, feel free to contact myself or Kirsty with any questions or suggestions. Don't forget to follow @ISBiomechanics (twitter), International Society of Biomechanics (Facebook), International Society of Biomechanics Student Group, and the International Society of Biomechanics members LinkedIn page.

See you in Glasgow,

*Kelsey Collins*

isb.studentrepresentative@gmail.com

## **ISB Council Election Results**

By Ed Chadwick | June 2015

The elections for ISB president and executive council were held online this spring. I hope you had a chance to vote, and if not, please do so in 2017. 499 ballots were received and the results are:

### **President-Elect:**

Joseph Hamill (USA)

### **Council members:**

Daniel Benoit (Canada)

Thor Besier (New Zealand)

Felipe Carpes (Brazil)

Ed Chadwick (United Kingdom)  
Catherine Disselhorst-Klug (Germany)  
Taija Finni (Finland)  
Bart Koopman (Netherlands)  
Alberto Leardini (Italy)  
Glen Lichtwark (Australia)  
António Veloso (Portugal)

**Student representative:**

Kirsty McDonald (Australia)

Andy Cresswell will serve as President of ISB during the 2015-2017 term, and John Challis will serve as Past President.

I am excited and grateful that these candidates were willing to serve ISB for the next two years. They are an exceptionally qualified group and the future of the society is in good hands.

This year I conclude my six years on the council as President-Elect, President, and Past President. It was a privilege to serve the society. I hope to see many of you in Glasgow in a few weeks time.

*Ton van den Bogert*

## **Eight years as Secretary General**

By Ed Chadwick | June 2015

Despite having been prompted to be an ISB member by Julie Steele already as a postgraduate student in Wollongong and attending ISB conferences from 1993, I had never really considered actively participating as a Council member. However, in 2008 the then Secretary General Alex Stacoff unfortunately died at a far too young age. I had known Alex through previous congresses and some collaborative research projects and was hit quite hard by this sad news. When Julie asked me if I would be prepared to take his position I felt this was a fitting way of showing respect.

This was just prior to the 2008 ISB Council Meeting in Ann Arbor, USA, and I had no possibility of travelling there at such short notice and am very thankful to Krystyna Gielo-Percak for agreeing to take the minutes of that meeting. I met Julie shortly after in Wollongong, Australia and got quite daunted by the responsibilities involved as Secretary General and what an amazing organizational capacity she has. I was quite star-struck how she nonchalantly sent diverse emails to all the big names in the ISB... The most important information she conveyed was the importance of the ISB Codes and Constitution for a smooth running of the society.

My first Council Meeting as SG was at the ISB conference in Cape Town, South Africa 2009. I had now also been elected onto Council so this was the start of my first term. I was pretty nervous sitting there with Brian Davis as Past President, Walter Herzog as President and Julie as President Elect! Writing minutes and contributing to the discussion was however, stimulating and fun. Although I wasn't sure how often I should put on paper that Julie talked about "passion" for the ISB! The subsequent ISB conference was also successful and the highlight must have been the ostrich bar-b-que party we organized in the house we had rented. Council duties combined with scientific activity however, meant that little time was left over and I didn't even manage an excursion up Table Mountain which I regret.

The next Council Meeting at the World Congress of Biomechanics in Singapore 2010, was my first time involved with bids for future ISB conferences. After having "passively" participated in so many ISB



conferences all over the world, I realized what a major responsibility this was! The bids were impressive but in the end the decision was to hold ISB 2013 in Natal Brazil.

I was now growing into my role and thoroughly enjoyed my position at following meetings in Brussels, 2011, Brisbane 2012, Natal 2013, Boston 2014. With a continuing transition of Presidents from Ton van den Bogert, John Challis and soon Andrew Cresswell. It was a pleasure working with all of them. My three terms as elected member are over this year and I will act as SG for the last time at the upcoming ISB in Glasgow. I hope I have made a positive contribution to the ISB and am very proud to have been involved over this exciting time!

I will now take a break from official ISB duties for a while. I would like to thank all the fantastic people that I have been involved with on the ISB Council. Of course I also wish new Council members and especially Rob Herbert as new SG after Glasgow all the best!

*Toni Arndt*

## **International Travel Grant Reports**

By Ed Chadwick | June 2015

### **Hemakumar Devan**

I have received an International Travel Grant from the International Society of Biomechanics (ISB) in May 2014. The ISB travel grant enabled me to visit Dr Michael Dillon, Senior Lecturer at La Trobe University, Melbourne, Australia in March 2015. The purpose of the visit was to analyse the 3D gait data collected for my PhD in people with transfemoral and transtibial amputation with and without low back pain. My sincere thanks to ISB for providing me a great learning opportunity to explore and interpret 3D amputee gait data.

During my 2 weeks in Melbourne, I have learnt the systematic approach involved in data reduction and processing of 3D amputee gait data. Dr Dillon helped me to self-learn the steps involved in data verification prior to data analysis. The experience helped me to understand the importance of meticulous data verification prior to calculating ensemble averages in 3D gait analysis. The discussions and debates on clinical interpretation of gait data with Dr Dillon and other colleagues at the Department of Prosthetics and Orthotics in La Trobe University were one of the main learning experiences from the visit. I have visited the gait analysis centres in La Trobe University, Royal Children's Hospital, Melbourne, and University of Melbourne. The clinical gait analysis weekly meeting at the Royal Children's Hospital was an excellent learning opportunity to understand the importance of clinical gait analysis in children with cerebral palsy. The clinical case discussions among rehabilitation professionals made me realize the importance of clinical gait analysis to inform the type of management (i.e. surgical or conservative) for children with cerebral palsy. The knowledge gained from the visit can be translated to clinical gait analysis of other populations such people with lower limb amputation, stroke and osteoarthritis.

Being a final year PhD student the visit provided an opportunity to network with experienced researchers and clinicians involved in clinical gait analysis in Melbourne. The discussions with Dr Dillon on career planning after PhD and suggestions on writing competitive grant applications were invaluable. I have met Mr. Tim Wrigley, Manager, Biomechanics Laboratory at the Centre for Health, Exercise and Sports Medicine (CHESM), University of Melbourne. CHESM is one of the main multidisciplinary

research centres in Australia investigating the role of biomechanical factors in prevention and management of musculoskeletal conditions such as osteoarthritis. The meeting with Mr. Wrigley helped me to develop an interest on prospective studies investigating the lower extremity kinematic and kinetic variables during gait as a precursor for osteoarthritis. During my visit to Royal Children's Hospital, Melbourne, I have met Ms Pam Thomason (Manager, Hugh Williamson Gait Laboratory) and Dr Paulo Selber (Orthopaedic Surgeon). They were quite fascinated with my current research in lower limb amputees and I was asked to attend the 'Melbourne Clinical Gait Analysis Course' to be held in August 2015.



### **Key outcomes**

1. I am writing a manuscript titled 'Spinal kinematics in people with lower limb amputation during walking- An exploratory study' for submission to 'Clinical Biomechanics' journal by July 2015.
2. I have submitted a funding application to attend the 'Melbourne Clinical Gait Analysis Course' in August 2015.

Acknowledgements: A special thanks to Dr Michael Dillon for his mentorship throughout the visit and my PhD supervisors Prof Leigh Hale and Dr Daniel Cury Ribeiro for their support and encouragement.

## **Karine Stoelben**

My name is Karine Josibel Velasques Stoelben, ISB membership number 2615. I received the student travel grant for travelling to Sydney (Australia) in February and March 2015. I visited the knee research group supervised by Evangelos Pappas at the University of Sydney. I stayed for 5 weeks.

My activities during this time were:

- Participation in weekly meetings of the Arthritis and Musculoskeletal Research Group, learning about back pain, respiratory diseases, musculoskeletal compensations;
- Work with my data from my project in Brazil with Evangelos, did statistical analysis to our paper and submitted abstract for Brazilian Congress of Biomechanics;
- Participation in data collection of project "Is varus alignment associated with higher knee adduction moment and varus thrust in ACL-deficient patients? Implications for the development of osteoarthritis" by Shiek Abdullah;
- Learned about ongoing projects, "The prevalence and clinical features of patellofemoral osteoarthritis", "1000 norms project";
- Assisted in protocol of data collection for the twin plus festival;
- Participated in workshop about the ViMove kinematic analysis equipment.

# List of new members, June 2015

By Ed Chadwick | June 2015

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## Fellowship of the International Society of Biomechanics

By Ed Chadwick | June 2015

In 2013 the Council agreed to establish a Fellowship of the International Society of Biomechanics (FISB). The purpose of awarding Fellowships of the ISB is to recognize distinguished professional achievement in biomechanics. Fellows of the ISB are encouraged to provide continued professional service and leadership to the Society, particularly to foster the activities of Early Career Researchers within the Society.

### FELLOWSHIP REQUIREMENTS

Fellowship will be awarded to members of the International Society of Biomechanics (ISB) who, as of 1 January in an ISB Congress year, have fulfilled the requirements for Fellowship. The minimum requirements for an application to be reviewed are listed below.

- Full membership in good standing of the ISB for at least 10 consecutive years, at the time of nomination, and for the duration of the Fellowship.
- Attended at least 3 of the 5 preceding ISB Congresses
- Published at least 20 manuscripts relating to biomechanics in international peer-reviewed journals of high repute
- Presented at least one paper or poster at an ISB Congress within 3 years of application
- Demonstrated high standards of service to the ISB by being an active:
  - member of the ISB Council,
  - member of an ISB working party,
  - member of the organizing committee for an ISB Congress, or
  - member of a scientific committee for an ISB Congress
- Evidence of having advanced the biomechanics profession in definitive ways (e.g. awards; attainment of research grants; publishing book chapters etc.)
- Be endorsed by two ISB Fellows or ISB Council members, who will confirm in writing the applicant's high level of competence and ethical conduct within the discipline of biomechanics.

### FIRST ROUND OF FELLOWSHIP

For the first round of Fellows, the ISB President, John Challis, has appointed Past-President, Professor Julie Steele, as Censor of the Fellows. The Censor, together with the current ISB President, is in the process of drafting a list of recommended candidates for the first round of ISB Fellows. This list of recommended candidates will then be presented to the ISB Executive Council at their pre-Congress meeting in Glasgow. The Fellowships, which must be approved by two-thirds vote of the ISB Executive

Council, will then be awarded at the General Assembly held during ISB2015.

Following the awarding of the first round of Fellowships, all current full members with a minimum of 10 years membership of the International Society of Biomechanics will be encouraged to consider applying to become a Fellow of the ISB.

We look forward to presenting the first round of Fellowships in Glasgow.

## 2nd ISB Symposium on Motor Control in Biomechanics

By Ed Chadwick | June 2015

Prof. Carlo J. De Luca and the [Motor Control Group](#) are pleased to announce the **2nd ISB Symposium on Motor Control in Biomechanics** in Glasgow (UK) on July 12th 2015, on the opening day of the XXV Congress of the International Society of Biomechanics (ISB).

The Symposium will open with a Keynote Lecture by Prof. Paavo Komi from the University of Jyväskylä (Finland) and will feature internationally renowned speakers presenting their work at the intersection of Motor Control and Biomechanics (see the [flyer](#) for details).

**When:** July 12<sup>th</sup> 2015, 10:00 AM - 4:00 PM

**Keynote Speaker:** Prof. Paavo Komi (University of Jyväskylä, Finland)

### Invited Speakers:

- **Prof. Benno Nigg; Prof. Vinzenz Von Tscherner** (University of Calgary, Canada)
- **Prof. Joseph McIntyre** (Tecnalia Research and Innovation - Health Division, Spain)
- **Prof. Aurelio Cappozzo** (University of Rome "Foro Italico", Italy)
- **Prof. Carlo J. De Luca** (Boston University, USA)
- **Dr. Madeleine Lowery** (University College Dublin, Ireland)
- **Prof. Patrick van der Smagt** (Technische Universität München, Germany)
- **Prof. Marco Knäflitz** (Politecnico di Torino, Italy)
- **Prof. Katherine Steele** (University of Washington, USA)

**Dr. Maria Cristina Bisi** (Università di Bologna, Italy)

**Who Should Attend:** Researchers and students with an interest in Biomechanics and Motor Control should attend. Participants will have the opportunity to discover the latest developments in these fields and discuss with experienced investigators.

**Registration and Fee:** Attendance is free and lunch will be provided. If you would like to attend, please register [here](#).

We look forward to seeing you at the next ISB Congress in Glasgow!

Sincerely,

Symposium Organizers

*Carlo J. De Luca, Professor, Boston University (USA)*

*Philip Rowe, Professor, University of Strathclyde (UK)*

*Paola Contessa, Research Scientist, Delsys Inc. (USA)*

# XV International Symposium on Computer Simulation in Biomechanics

By Ed Chadwick | June 2015

The *International Symposium on Computer Simulation in Biomechanics* (ISCSB) is the biennial meeting of the Technical Group on Computer Simulation (TGCS) (<http://iscsb2015.lboro.ac.uk/>). The conference this year will be held from the 9th-11th July at Paterson's Land, University of Edinburgh. Sam Allen, Mike Hiley (Loughborough University), and Simon Coleman (University of Edinburgh) are the conference organisers.

On the first day Anil Rao and B.J. Fregly (both University of Florida) are holding an Optimal Control workshop which has proved very popular with delegates. Over the next two days we have a full programme including 27 oral presentations with presenting authors from 11 countries (Belgium, Denmark, Germany, Japan, Italy, Netherlands, South Africa, South Korea, Spain, UK, USA). Among the presenting authors, there are 13 candidates for the Andrzej Komor Young Investigator Award. On the second day we are staging a round table discussion on the future of computer simulation in biomechanics involving four leaders in the field: Ton van den Bogert (Cleveland State University), Fred Yeadon (Loughborough University), B.J. Fregly (University of Florida), and Maarten Bobbert (VU University Amsterdam). On day three Mont Hubbard (Professor Emeritus at the University of California, Davis) will give the ISB keynote lecture entitled 'Making snow park jumps safer: controlling equivalent fall height'. We would like to acknowledge the support of the ISB for the keynote lecture, and the Komor award.