

March 2015

ISB *Now*



**March
2015**

Table of Contents

President's Blog	1
Students' Corner	2
ISB Council Elections	4
2015 Candidates for President-Elect	5
2015 Candidates for Executive Council	7
2015 Candidates for Student Representatives	14
2015 Muybridge Award Winner: Kai-Nan An	16
List of New Members, March 2015	18
ISB Grant Reports	18
ISB Student Awards	21
Interview with Julie Steele, ISB President (2009-2011)	22

President's Blog

By Ed Chadwick | March 2015

As I write this there are 136 days left until the ISB Congress in Glasgow. Of course much hard work has already gone into preparing for our twenty fifth congress. The most recent flurry of activity was the reviewing of abstracts. I reviewed 40 abstracts, and am looking forward to hearing more detailed dispositions on the work contained in those abstracts. The peer review process is considerably older than the ISB. Henry Oldenburg (1619-1677) was the founding editor of the Philosophical Transactions of the Royal Society. These transactions were first published in 1655 and were the first scientific journal published, more importantly it also initiated peer review process. Oldenburg sent submitted manuscripts to experts to judge before potential publication. Peer review and the Philosophical Transactions of the Royal Society both persist to the current day.

Peer review is the corner stone of modern science. The British politician Winston Churchill (1874-1965) claimed,

"Democracy is the worst form of government, except for all the others."

Churchill can be paraphrased to described most scientists feelings about peer review,

"Peer review is the worst form of academic quality control, except for all the others."

So most scientists have a love-hate relationship with peer review, although in recent years the nature of peer review has changed. For example, the on-line journal PLOS ONE (<http://www.plosone.org/>) has changed the peer review paradigm. They "will rigorously peer-review your submissions and publish all papers that are judged to be technically sound", therefore their review does not assess the importance or potential impact of the work - that is left for the on-line community. In a similar fashion the relatively new on-line journal PeerJ (<https://peerj.com/>) "...judges content only on scientific and methodological soundness. It does not, for example, reject articles based on lack of novelty, interest or impact". These on-line journals have different peer review criteria compared with traditional journals, and have already changed the 360 year nature of the peer review process.

The journal Environmental Microbiology annually publishes a selection of reviewers comments, many of their selection indicate the frustrations some reviewers experience,

"This is a very poor paper. I am sorry I read it. I will try to purge it from my mind."

"This is an interesting manuscript, not because of its results, but because of its complete ignorance of the scientific process."

"I would recommend rejecting this paper as quickly as possible."

"This is depressing! So much work with so little science."

"I'm not convinced that they know what they're talking about."

"Lots of work, effort, but no real science."

"The peaceful atmosphere between Christmas and New Year was transiently disrupted by reading this manuscript."

Of course not all impressions of reviewed manuscripts are bad ones,

"I nearly said reject. But then I recalled that I have a hangover and am feeling grumpy."

"Beautiful manuscript, important, relevant and entertaining topic."

Publishing costs money irrespective of whether it is a traditional journal or in the newer on-line versions. In the past journals were available either from libraries or due to a personal subscription to the journal. So in this case, traditional journal publishing, most people read papers due to the subscription of their institution's library. In this case the cost of publishing was predominantly borne by institutional subscriptions. The new on-line journals are freely available to people with internet access, but in this case it is the authors who pay for the cost of publishing. So these new on-line journals have a different peer review process and payment structure; their long term impact on science is open for discussion. A hybrid model does exist where for a fee papers published in a traditional journal can be available as open access. Authors should carefully consider the implications of selecting one publishing type over another.

The nature of scientific publishing is undergoing some of the largest changes in its 360 year history. It could be argued that who pays for the publishing of work in journals is influencing the nature of the peer review process. A counter case could be made that the market place has provided different methods of getting work published, with the nature of the research dictating where the work should be published. As the nature of scientific publishing undergoes these changes one thing which remains is the importance of the peer review in the scientific process. All reviewers should be thanked for their efforts, even if they sometimes become a bit frustrated.

Regards,

John.

John Challis
Penn State University
(jhc10@psu.edu)

Students' Corner

By Ed Chadwick | March 2015

Hi Trainees,

As you may know, [ISB elections](#) are approaching. I am pleased to announce four candidates for the 2015-2017 ISB Student Representative Position from Canada, Brazil, Australia and Germany. You can find their profiles on the [Student Candidates page](#).

Don't forget to vote for your favorite candidate! Instructions for voting will be sent via email shortly.

ISB Glasgow Student Events

We are excited to announce several exciting student sessions this year! Postdocs are welcome to join many of these events as well. The events are being offered on a first come, first served basis - make sure to register for the congress soon to secure your spot! Learn more at: <http://www.isbglasgow.com/index.php/scientific-information/student-sessions>

Our **Student Excursion** will be held Monday, July 13th at GoApe! Aberfoyle, located just outside of Glasgow. This Tarzan-like treetop adventure is free of charge, and restricted to MSc or PhD student ISB members. In order to join the Student Excursion, ***you must also register for the mentoring session***, offered Monday July 13th from 12:40- 13:30. Register soon - space is limited!

As always, feel free to contact me 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.

Ten Tips for Success

A student perspective

Ten tips for success, paraphrased from our [interview with Julie Steele](#):

1. To make an impact, you have to be prepared to do something different. If you are repeating what has been done before, it will be difficult for you to stand out. If you have a great idea, don't let a lack of equipment stop you. Within the biomechanics community, there are opportunities for collaborations and the benefits when your ideas become reality are incredibly rewarding.
2. Follow your passion. After my Honours, I applied for positions all over Australia, but only received one interview, at the University of Wollongong. They interviewed me for two reasons: Who was this girl (with only an Honours degree) who was applying for a Senior Lecturer position? Despite my inexperience, my reference letters were very strong and were from very respected academics. My passion and strong references afforded me this opportunity.
3. Luck comes to those who work for it. You can be in the right place at the right time, but you have to be ready. *What's the worst that can happen?* Be ready to put yourself out. Let your work, and the professionalism of your work, stand for itself.
4. There is no perfect solution to work-life balance. Take the uniqueness of your situation and make the most of it.
5. Select mentors who encourage you to go beyond your comfort zone. Professor Bruce Elliot, one of my first mentors, encouraged me to convert my passion for netball into an Honours thesis, which started my career in biomechanics.
6. Look for opportunity in unconventional places. I was on several 1-year contracts after being hired at the University at Wollongong. I saw this as an opportunity, as one year of security is not common in many other jobs. BUT - Be judicious about opportunities. It's ok to say no to "opportunities" that may not be in your best interests!
7. Academia is a career of rejection. **Be resilient** - be prepared to challenge yourself, but accept that rejection is a part of our job. When you miss out on that grant application or publication, look for Plan B and submit them again!
8. Rejection does not give you permission to repeat the same pattern. Learn from mistakes and integrate rejection in a meaningful way.
9. Leading by example can be one of the best sources of motivation. Passion and professionalism go a very long way.
10. Learning what the ISB does, giving back, and making a difference is incredibly rewarding. Leveraging the ISB network has helped me in so many ways. I encourage my students to use the ISB Congress as an opportunity to build confidence, network with other students, and I feel privileged to be involved. "I owe so much of my career to ISB." - Being from Australia, you have to be careful about which conferences you attend because of the long travel distances and high costs. I was advised to target a relevant conference where I could present my work, and keep some sort of continuity. As ISB is only every two years (and not annually) and caters for a broad spectrum of biomechanics, the ISB was the perfect international network for me and my students.

Kelsey Collins

ISB Student Representative

PhD Candidate, University of Calgary

All the best,

Kelsey Collins

isb.studentrepresentative@gmail.com

ISB Council Elections

By Ed Chadwick | March 2015

Every two years, ISB members elect a new Executive Council and a President-Elect. The Executive Council members are elected for a 2-year term, with a maximum of three terms, and represent countries from throughout the world and various scientific areas within biomechanics. The Executive Council meets every year and provides leadership for the continued development of the Society and oversees the many on-going activities that are performed by Council appointed sub-committees, including activities in Economically Developing Countries, student grants and communication via ISB NOW. The President-Elect is responsible for coordinating the proposals for the 2019 ISB Congress and will become President in 2017. Student members of ISB elect a student representative to the Executive Council.

Detailed information about the duties of the various officers can be found in the [Operating Codes of the ISB](#), which I recommend for browsing. You will be surprised by the complexity of what goes on behind the scenes at ISB.

Candidates for President-Elect for the 2015-2017 term are, in alphabetical order:

1. [Joseph Hamill](#), USA
2. [António Veloso](#), Portugal

Candidates for Executive Council Member for the 2015-2017 term are, in alphabetical order:

1. [Daniel Benoit](#), Canada
2. [Thor Besier](#), New Zealand
3. [Felipe Carpes](#), Brazil
4. [Ed Chadwick](#), United Kingdom
5. [Catherine Disselhorst-Klug](#), Germany
6. [Taija Finni](#), Finland
7. [Kenton Kaufman](#), USA
8. [Bart Koopman](#), Netherlands
9. [Art Kuo](#), USA
10. [Alberto Leardini](#), Italy
11. [Zong-Ming Li](#), USA
12. [Glen Lichtwark](#), Australia
13. [António Veloso](#), Portugal

This issue of ISB NOW contains a brief profile of the candidates. The online voting procedure will be

conducted during the next month. You will receive email notification that voting has started, together with detailed instructions related to the voting process. You will be asked to vote for one President-Elect and nine Executive Council Members. Dr. Veloso is a candidate for both President-Elect and Council Member and you may vote for him in both places.

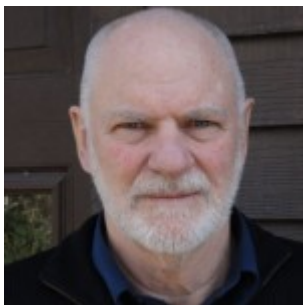
Please vote! We want to make sure that the ISB Council represents the interests of all members.

Ton van den Bogert, Past President

2015 Candidates for President-Elect

By Ed Chadwick | March 2015

Joseph Hamill, United States



Joseph Hamill is a Professor in the Department of Kinesiology at the University of Massachusetts Amherst where he is currently Associate Dean for Research in the School of Public Health and Health Sciences. He has served as Chair of the Footwear Biomechanics Group of ISB, as Chair of the Biomechanics Interest Group in the American College of Sports Medicine and as Past-President of the International Society of Biomechanics in Sports as well as on the Executive Boards of several other professional societies. Professor Hamill obtained his PhD in Biomechanics from the University of Oregon. He has extensive international experience in biomechanics holding Adjunct

Professorial positions at the Universities of Edinburgh, Limerick, Staffordshire, Ostrava and Republic Polytechnic. He is a Fellow of the Research Consortium, the American College of Sports Medicine, the International Society of Biomechanics in Sports, the Canadian Society of Biomechanics and the National Academy of Kinesiology. He has been awarded the James G. Hay Award from the American Society of Biomechanics, the Ruth Glassow Award from the Biomechanics Group of the Research Consortium and a Career Achievement Award from the Biomechanics Interest Group of the American College of Sports Medicine. Professor Hamill's research interests are focused on lower extremity biomechanics during normal and pathological locomotion. His current projects include studies on coordination variability in the determination of cumulative micro-trauma injuries and the interaction of biomechanical and anatomical factors in overuse injuries.

Professor Hamill has been a member of the International Society of Biomechanics since 1983 and served as an ISB Council member from 2003-2009. He also is a member of other professional societies including the American College of Sports Medicine, the International Society of Biomechanics in Sports, the Canadian Society of Biomechanics and the American Society of Biomechanics. If elected to this position, Professor Hamill has indicated his interest in: 1) maintaining ISB as the pre-eminent professional society for researchers and teachers in biomechanics; and 2) continuing to strengthening the Society's outreach into economically and educationally developing countries through internships, scholarships and awards.

António Veloso, Portugal



BIOGRAPHICAL NOTE

António Veloso is a Professor at the Faculty of Human Kinetics, University of Lisbon. He is the director of the Biomechanics and Functional Morphology Laboratory and of the Research Group in Neuromechanics of Human Movement, where he coordinates 10 PhD staff members and 25 PhD Students. António Veloso is responsible for 6 main projects, which have been funded by the Portuguese Science Foundation (FCT) over the past 5 years. His main research interests relate to musculoskeletal modeling, 3D movement analysis and the use of induced acceleration analysis to study human locomotion. António has published over 250 papers, book chapters and conference papers, including over 50 papers published in impact factor journals.

António Veloso has substantial experience in Academic Administration procedures. He was Vice Dean of the Faculty of Human Kinetics of the University of Lisbon from 2005 to 2010, where he was member of the executive board responsible for the Faculty's management and financial administration. António is currently President of the Council of the Sports and Health Department of the Faculty of Human Kinetics of the University of Lisbon and Executive President of the Department.

Regarding participation in International Scientific Societies, António served as President of the Portuguese Society of Biomechanics (PSB) from 2005 to 2009, and was involved in the reestablishment of the PSB as a major scientific society in Portugal, with over 250 active members; he was also responsible for the affiliation of PSB in to the ISB in 2009. António was a member of the board of directors of the International Society of Biomechanics in Sports from 2006 to 2011. António has organized and chaired several major scientific meetings, namely the 2008 Congress of European Colleague of Sports Sciences in Estoril and the International Congress of ISBS in 2011 in Oporto. Lastly, António has been serving as council member of ISB since 2011, and is currently responsible for the Affiliated Societies Program.

NOTE OF INTENTIONS

This notable challenge, launched by our Past President, of standing for the President Elect position is both stimulating and humbling. Stimulating considering ISB's present: the privilege of working on the grounded visions for International Biomechanics. Humbling considering ISB's past: the laudable stream of ISB President's names and their achievements.

If elected, my main concern will be to persevere in the ISB's active quest of enlarging Biomechanics as scientific area. I would particularly like to maintain the strong student support, namely in form of travel and congress grants, that characterize ISB. Further perseverance is due to ISB's effective commitment regarding the progress of Biomechanics in the EDC countries. The reinforcement of links with the ISB Technical Groups and Affiliated Societies will also take precedence, in order to strengthen the position of ISB as the bond of the different Biomechanics' fields.

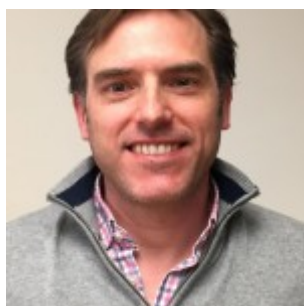
The biannual Congresses have been the soaring highlights of the ISB energy. However, beyond the unwavering success of these summits, I believe it is important to purposefully strengthen ISB activity between these events. I believe that the ISB must overtly design a structure that enables members to continue consulting, debating and exchanging thoughts through the ISB network. A resourceful network

communication strategy which involves: moving ahead with the development of our webpage; pursuing the inclusion of new capabilities and increasing communication with ISB members. To assure these objectives ISB should discuss the establishment of a permanent administrative structure to support the work of the board members, following the clearly successful EDC program example.

2015 Candidates for Executive Council

By Ed Chadwick | March 2015

Daniel Benoit (Canada)



Dr. Daniel Benoit is an Associate professor in the Faculty of Health Sciences at the University of Ottawa, is cross-appointed to the Department of Human Kinetics and Faculty of Engineering, and is a member of the Ottawa-Carleton Institute for Biomedical Engineering. After obtaining his Master's degree in Biomechanics from McMaster University (1997) in Canada, he became the laboratory director of the Let People Move clinical biomechanics laboratory in Perugia-Italy (1998-2001) during which time he held both clinical and research responsibilities, including helping organise the 4th, 5th and 6th International Course in Orthopaedics, Sports Rehabilitation and Biomechanics (Assisi, Italy).

Dr. Benoit then returned to academia and was awarded a PhD in Sports Medicine from the Karolinska Institutet in Stockholm Sweden (2005), and completed a postdoctoral fellowship in Biomedical Engineering at the University of Delaware in the USA (2006). In 2007 he returned to Canada and joined the University of Ottawa. Dr. Benoit's research focuses on human movement biomechanics and neuromuscular control, in particular in knee joint motions, knee injuries and the contribution of muscles to the stabilisation of the lower limb. He is a founding member of a new international endeavour to reduce soft tissue artifact propagation during human movement analysis. Dr. Benoit works closely with clinicians and engineers, combining in vivo, in silico and in vitro techniques. His research goals include developing the scientific foundation for evidence-based prophylactic and rehabilitation interventions to reduce knee injuries and delay the onset of osteoarthritis.

Dr. Benoit attended his first ISB in 1999 and has been an active member ever since. He speaks English, French, Italian and Swedish. Having lived and worked in five countries he understands the challenges and benefits of international training, he regularly supervises international students from around the world while sending his students abroad for research experience. Despite the increased awareness of the benefits of international research, and many universities putting structures in place to facilitate these exchanges, significant practical challenges still exist. Dr. Benoit hopes to use his international experience and a position within the ISB to, among other things, focus on increased international collaboration initiatives at the student and post-doctoral level to foster the career development of the next generation of biomechanists.

Thor Besier, New Zealand



Thor Besier is an Associate Professor at the Auckland Bioengineering Institute and has a joint appointment with the Department of Engineering Science at the University of Auckland. He completed his PhD at The University of Western Australia in 2000 and was a postdoctoral fellow in the Bioengineering Department at Stanford University from 2003 to 2006. Thor was a faculty member in the Department of Orthopaedics at Stanford from 2006 to 2010, before returning home to New Zealand in 2011. Thor's research combines medical imaging with computational modelling to understand mechanisms of musculoskeletal injury and disease. Thor leads an open source software initiative called the Musculoskeletal Atlas Project (MAP) to facilitate the rapid generation of musculoskeletal models as well as being a repository for models and associated data.

Thor has been a member of the ISB since 1996 and has enjoyed the ISB meetings since attending his first ISB meeting in 1999. He is on the local organising committee for the 2017 ISB Congress in Brisbane and is active in strengthening the ties between Australian and New Zealand researchers. By being elected to the executive council, Thor hopes to promote a culture of open exchange of models and data within the biomechanics community, to improve collaboration, validation and advancement of musculoskeletal modelling.

Felipe Carpes, Brazil



Felipe P. Carpes is a professor at the Center for Health Sciences of the Federal University of Pampa, in Brazil. He is responsible for research projects funded by Brazilian science agencies within the research group on applied neuromechanics, and collaborates in a number of projects with national and international partners. His research focuses on developing a basic understanding of the production and regulation of movements with studies in humans and other animal models, and applying this information to training and rehabilitation. He has been involved in programs for popularization of science and development of biomechanics in the EDC regions, especially Latin America, by organizing online webinars, congresses, and advertising the opportunities promoted by the ISB for members. He is currently the vice-president of Brazilian Society of Biomechanics and will be running for the presidency in the next elections on May 2015.

He says: "In the last years I have gained much by being a member of the ISB, and I want to give something back to the Society. As a member of the ISB council I will work to help affiliated societies being active in the ISB, contribute to the development of EDC projects aiming at development of biomechanics in remote places, and try to help the establishment of partnerships between young groups and those already well established. I will use experience of activities developed in Brazil to make innovative activities available for members of the society across the world, trying to make long distances shorter, promoting interactive/online symposia, to motivate young researchers and students to request help in the mentoring program, and incentive people to join the society and experience all the benefits of being a member. It will be a pleasure for me to voluntarily serve the ISB as an Executive Council member."

Ed Chadwick, United Kingdom



Ed Chadwick is Lecturer in Biomedical Engineering in the Institute for Science and Technology in Medicine at Keele University (UK). He graduated with a PhD in Bioengineering from Strathclyde University in 1999 and has enjoyed an international career, holding post-doc positions in The Netherlands (Delft University of Technology) and the USA (Case Western Reserve University, Cleveland), before returning to the UK in 2008. Ed's research interests are in the application of musculoskeletal modelling and simulation to rehabilitation engineering. He has a particular interest in neuro-musculoskeletal disorders including spinal cord injury, stroke and limb loss. He served on the committee of the International Shoulder Group (an ISB Technical Group) for several years and was Chair of the group from 2011-2014.

An ISB member since 1996, Ed attended his first ISB congress in 1999, and has only missed one since. He has always learned a lot from the exchange of ideas from around the world that the ISB does so well to foster, and has developed and maintained many fruitful collaborations and friendships through ISB meetings. He has edited the ISB Newsletter for the last two years, and would be delighted to continue to serve the Council in that way.

Catherine Disselhorst-Klug, Germany



Catherine Disselhorst-Klug is Professor at the RWTH Aachen University, Germany, where she is the Head of the Department of Rehabilitation & Prevention Engineering. This unit is within the Faculty of Medicine and affiliated to the Institute of Applied Medical Engineering. She graduated with a Master degree in Physics in 1990 and received her PhD in Natural Science from the Faculty of Electrical Engineering in 1996. Until 2009 she has been a research associate at the Helmholtz-Institute for Biomedical Engineering Aachen, Germany, where she was already interested in understanding muscular control mechanisms. The strong background in engineering science in combination with her expertise in movement physiology forms the basis for her present research activities, which focus on kinematic and kinetic analyses and modelling of physiological and pathological movements based on biomechanics and on neuromuscular performance. Her particular research interests are focused on the development of methods for improving diagnosis, prevention and rehabilitation of musculoskeletal dysfunction. Catherine has served as a Council Member of the International Society of Electrophysiology and Kinesiology (ISEK) for eight terms and has been the President of ISEK from 2004 to 2006. She has been with the International Society of Biomechanics since 1995 and has attended several ISB conferences. During the last years she has organised the ISB-ISEK-joint-sessions, which are now institutionalized during the conferences of both societies.

Catherine has been the Awards Officer in the Executive Council since 2013 and would be delighted to serve another term. She says: "ISB has demonstrated in the past that it is an outstanding community of colleagues and friends with passion for biomechanics. It offers a unique platform to a large variety of disciplines to discuss the most recent advances in this steadily growing field. Since science transport through education and training means transporting science to the next generation, young investigators should be encouraged to join the scientific community of ISB. This is the basis for the creative atmosphere of ISB which gives rise to creative ideas and innovative approaches."

Taija Finni, Finland

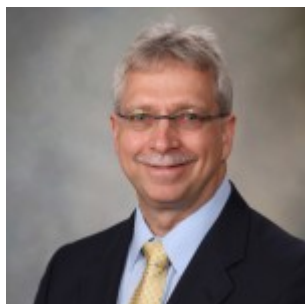


Taija Finni is a Professor of Kinesiology at the University of Jyväskylä in Finland. After obtaining her PhD in Jyväskylä in 2001 under the supervision of Professor Paavo Komi, she spent 2 years as a post doc in the lab of Professor V. Reggie Edgerton, UCLA. Professor Finni's research is divided along two main lines. The first involves the study of mechanical properties of human muscle and tendinous tissues, and their interaction in vivo. Her second research line concerns physical activity and inactivity paradigm which she has studied in different interventions involving sedentary adult office workers and school children.

Professor Finni has been a long-term member of the ISB. She attended her first ISB congress in 1997 in Tokyo, and has recently given keynote speeches at the ISB conference in Brussels (2011), the ISBS conference in Melbourne (2012) and the annual meeting of the American Society of Biomechanics in Omaha (2013). She is active promoter of biomechanics among the students at her home university but also in other forums such as in European College of Sport Science where she is a member of the scientific council. She serves as a biomechanics section editor in the Scandinavian Journal of Medicine and Science in Sports and belongs to editorial board of Clinical Biomechanics.

If elected, Professor Finni will work to improve the participation of young scientists in the ISB. "I was fortunate to participate in ISB congresses very early in my research career and the passion and belonging of the biomechanics community inspired me", she says. She is also keen to promote talented female researchers, who are traditionally under-represented in major scientific societies like the ISB, and to facilitate international collaborative multi-disciplinary research.

Kenton Kaufman, USA



Kenton Kaufman is the W Hall Wendel Jr Musculoskeletal Research Professor, Director of the Biomechanics and Motion Analysis Laboratory, Professor of Bioengineering, and Consultant in the Departments of Orthopedic Surgery, Physiology and Biomedical Engineering at the Mayo Clinic. He is a registered professional engineer. His research focuses on improving the mobility of disabled individuals. He has published over 200 scientific papers, 38 book chapters, and holds 6 patents. He is a Fellow in the American Society of Biomechanics, American Institute of Medical and Biological Engineers, and the American Society of Mechanical Engineers.

Dr. Kaufman has served the biomechanics profession in a number of ways. He is a Past-President of the American Society of Biomechanics (ASB) and the Gait and Clinical Movement Analysis Society. He currently serves or has served on the editorial boards of Gait and Posture, Prosthetics and Orthotics International, European Journal of Experimental Musculoskeletal Research, and the Journal of Applied Biomechanics.

Kenton is an enthusiastic supporter of ISB. He feels that the ISB Congress is the premier meeting to learn the latest developments presented by leading researchers from all over the world, listen to diverse scientific topics within the biomechanics profession, network with friends and colleagues, and get the opportunity to travel to varied venues throughout the world. He attended his first ISB Congress in 1989 and has attended and presented at most of the ISB meetings since then. He strongly believes that nurturing students to attend and present at the ISB meeting is the key to future growth of the society. While the ASB President, he led an effort to develop a Strategic Plan for the society, which has helped the society to expand and grow. If elected to serve on the ISB Executive Council, he would bring his acumen for innovative planning and leadership to ISB.

Bart Koopman, Netherlands



Professor Bart Koopman graduated with a degree in mechanical engineering, specialising in fluid dynamics, and then received his PhD at the end of 1989 from the University of Twente, the Netherlands, on the biomechanics of movement. When the Laboratory of Biomechanical Engineering was founded in 1990, he started working there as a Faculty Member on topics related to the co-ordination of movement. Although his research and publications have involved areas as diverse as biomechatronics, robotics and implant mechanics, these have predominantly focussed on applications in the medical fields of rehabilitation, orthopaedics and neurology. Professor Koopman had supervised more than 300 higher degree research students (MSc or PhD) in Biomedical

Engineering. Since 2005 he has served as Chair of the Biomechanical Engineering Department which, during this time, has developed into one of the largest Faculty groups. All research is embedded in the Institute for Biomedical Technology and Technical Medicine (MIRA) of the University of Twente and facilitated by a strong cooperation and collaboration with various technological and clinical partners.

Bart has served in the Executive Council as the Officer for Economically Developing Countries. He says: "Biomechanics is characterized by a multi-disciplinary approach, with inputs from different technological, biological and medical research areas. It is essential to teach our students to look across the borders of their specialization. The ISB provides the platform to exchange knowledge and learn from each other, on a world-wide level. We should try to improve and extend this exchange of expertise, for example by exploring the possibilities of new technologies".

Art Kuo, USA



Art Kuo is a Professor of Mechanical Engineering and Biomedical Engineering at University of Michigan. His laboratory, the Human Biomechanics & Controls Laboratory, studies human balance, locomotion, and other movements from the perspective of multi-body dynamics and feedback control systems. The laboratory uses simple models of the body to develop predictions for stability, energetics, or control strategies. These models are then tested with biomechanical or physiological experiments to measure mechanical work or metabolic energy expenditure. The laboratory also develops devices and methods for rehabilitation applications, such as improved lower-limb prostheses and orthotics that use computer-controlled, but low-power

actuation to redirect energy between or across joints. Sample topics of study include variability of foot placement during locomotion, sensory integration from physiological sensors for state estimation, and energetics and economy of walking.

Dr. Kuo has been an active participant in meetings of the International Society of Biomechanics and American Society of Biomechanics. As a meeting organizer, he was a founder of the annual Dynamic Walking meeting, which is an international forum for biomechanists, roboticists, and biologists to discuss dynamic movements. He also organized a 2008 meeting for the Mathematical Biosciences Institute, entitled "Muscle, Limb, Brain" to cross disciplinary boundaries and address common themes of human movement for biomechanists, neuroscientists, and engineers. As a candidate for ISB council, he is interested in similar goal for crossing disciplinary boundaries, and to facilitate activities and workshops to extend the reach of ISB.

Alberto Leardini, Italy



Alberto Leardini is the Technical and Scientific Coordinator of the Movement Analysis Laboratory at the Istituto Ortopedico Rizzoli located in Bologna, Italy, and the Coordinator for the Institute of the Special Reference Centre on biomechanics of the foot and ankle. He has worked at the Institute since 1990 and concurrently studied at Oxford University with Professor John O'Connor, receiving a Doctor of Philosophy (DPhil) in Orthopaedic Engineering in 2001. His initial biomechanics research focused on methodological issues and clinical applications of three-dimensional optical motion capture for analysing human movement. His methodological focus has evolved to encompass three-dimensional videofluoroscopy, radiostereometry, and surgical navigation.

Professor Leardini has also focused his research on mechanical modeling and prosthesis design of the lower limb joints, particularly for understanding and restoring mobility of the knee and the foot-ankle complex. His total ankle replacement has been implanted in thousands of patients.

He has served on several national and international scientific communities, including being among the founding members, and is the current President, of the Società Italiana di Analisi del Movimento in Clinica (SIAMOC) and has hosted one of the congresses. Professor Leardini is also a member of the Steering Group of the International Foot & Ankle Biomechanics community (i-FAB) and hosted its first congress. He has been a member of the Technical Group of 3-D Analysis of Human Movement since the early nineties, having hosted its 2012 congress, and he is the most recent Past-President of the Technical Group.

Professor Leardini has been the Student Grants officer in the Executive council since 2013. It has been hard work but very rewarding and he would like to continue in this capacity. Professor Leardini strongly believes in the fundamental role of scientific communities not only for uniting efforts and promoting the discipline, but primarily for providing education and opportunities for younger and emerging researchers.

Zong-Ming Li, USA



Dr. Zong-Ming Li the Director of the Hand Research Laboratory at the Cleveland Clinic, where he is an Associate Staff in the Departments of Biomedical Engineering, Orthopaedic Surgery, and Physical Medicine & Rehabilitation. He is an Associate Professor at the Cleveland Clinic Lerner College of Medicine affiliated with Case Western Reserve University. Additionally, Dr. Li is a Research Scientist at the Louis Stokes Cleveland VA Medical Center of Department of Veterans Affairs, and an affiliated faculty member at the Cleveland State University and the University of Akron.

Dr. Li has broad research interests in musculoskeletal biomechanics, with a particular focus on the hand and upper extremity. He has published more than 95 peer-reviewed articles and is currently a Deputy Editor-in-Chief for the Journal of Medical and Biological Engineering, and an Associate Editor-in-Chief for the Chinese Journal of Biomedical Engineering. He also serves as an Associate Editor for Journal of Biomechanical Engineering, IEEE Transactions on Biomedical Engineering, Journal of NeuroEngineering and Rehabilitation, Journal of Mechanics in Medicine and Biology, and Journal of Wrist Surgery. Recently, Dr. Li was elected as a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). Dr. Li was a member of the Executive Board of the American Society of Biomechanics (ASB, 2009-2012), and was the Co-Chair of the Upper Extremity Topic Committee of the Orthopaedic Research Society (ORS, 2007-2009). He currently serves as the President of the World Association for Chinese Biomedical

Engineers (WACBE, 2013-2015), Member of the Research Management Committee of the American Society for Surgery of the Hand (ASSH, 2014-). Dr. Li is also the Chairman of the Board of Directors for Hand and Wrist Biomechanics International (HWBI), which is a Working Group affiliated with ISB.

Dr. Li is eager to expand his service for the ISB, including promotion of scientific excellence of biomechanics, emphasis on translational value in solving clinical problems, and facilitation of collaborative activities among biomechanists worldwide.

Glen Lichtwark, Australia



Dr Glen Lichtwark is a Senior Lecturer in the School of Human Movement and Nutrition Sciences at The University of Queensland, Australia. He received his PhD from University College London in 2005 and has subsequently worked as a postdoctoral fellow at the Royal Veterinary College, Imperial College London and Griffith University (Australia), before taking on a faculty position at The University of Queensland. His research is primarily focused on muscle mechanics and energetics, with a particular focus on the role that tendon elasticity plays in enhancing muscle function. His research includes both experimental and simulation approaches to understanding human and animal muscle function and, in some clinical cases, dysfunction. He is currently an

Opensim Fellow, has served on scientific committees for the International Society of Electromyography and Kinesiology, the International Society of Biomechanics in Sports and organised symposiums at both the 2010 and 2014 World Congress of Biomechanics.

Dr Lichtwark has been a member of the ISB since 2003, when he attended his first ISB congress in Dunedin, New Zealand. He has since attended multiple meetings on different continents and regularly has his graduate students make the biennial trip from Australia to present their work. In attending the ISB congresses, he has developed many important international collaborations that have enabled him to develop broad skills that are applicable across different fields of research. He believes in the role that the ISB plays in fostering new and innovative research approaches and values the diverse range of work undertaken across the society. If elected to the council, he would like to focus on enabling members, particular student members, with opportunities and resources to develop new skills, foster collaborations and undertake cutting-edge research in biomechanics.

António Veloso, Portugal



António Veloso is a Professor at the Faculty of Human Kinetics, University of Lisbon. He is the director of the Biomechanics and Functional Morphology Laboratory and of the Research Group in Neuromechanics of Human Movement, where he coordinates 10 PhD staff members and 25 PhD Students. His main research interests relate to musculoskeletal modeling, 3D movement analysis and the use of induced acceleration analysis to study human locomotion. António has published over 250 papers, book chapters and conference papers, including over 50 papers published in impact factor journals. He was Vice Dean of the Faculty of Human Kinetics of the University of Lisbon from 2005 to 2010, where he was member of the executive board

responsible for the Faculty's management and financial administration. António is currently President of the Council of the Sports and Health Department of the Faculty of Human Kinetics of the University of Lisbon and Executive President of the Department.

António served as President of the Portuguese Society of Biomechanics (PSB) from 2005 to 2009, and was

involved in the reestablishment of the PSB as a major scientific society in Portugal, with over 250 active members; he was also responsible for the affiliation of PSB in to the ISB in 2009. António was a member of the board of directors of the International Society of Biomechanics in Sports from 2006 to 2011. António organized and chaired the 2008 Congress of European Colleague of Sports Sciences in Estoril and the International Congress of ISBS in 2011 in Oporto. Lastly, António has been serving as council member of ISB since 2011, and is currently responsible for the Affiliated Societies Program.

If elected, my main concern will be to persevere in the ISB's active quest of enlarging Biomechanics as scientific area. I would particularly like to maintain the strong student support, namely in form of travel and congress grants, that characterize ISB. Perseverance is needed in ISB's commitment regarding the progress of Biomechanics in Economically Developing Countries. Strong connections with the ISB Technical Groups and Affiliated Societies will strengthen the role of ISB to connect the various specialties in biomechanics. In addition to the biannual meetings, I believe that the ISB must design a structure that enables members to continue consulting, debating and exchanging thoughts through the ISB network. This will require investment in web-based tools and the establishment of a permanent administrative structure to support the work of the board members.

2015 Candidates for Student Representatives

By Ed Chadwick | March 2015

Maurice Mohr, Canada



I obtained a B.Sc. in "Sports and Technology" from the Otto-von-Guericke University of Magdeburg, Germany in 2012. Following a year of internships in research and industry, I started a M.Sc. in Kinesiology with specialization in Biomechanics at the Human Performance Laboratory within the University of Calgary in 2014. During the current term, I am going to transfer into the PhD program to pursue a doctoral degree in Biomechanics under the direction of Dr. Benno Nigg and Carolyn Emery. I expect to graduate in 2017. My research is on human lower extremity biomechanics and motor control. Specifically, to understand long-term consequences of a previous knee injury on knee joint biomechanics and lower-extremity muscle activation patterns and how they

relate to the development of post-traumatic osteoarthritis. I am currently holding a position as the VP Academic of the Graduate Student Association within my department. I would like build up on the experience in organizing academic student events that I have gained from this position and serve as the new student representative on the next ISB Executive Council.

The mandate of the ISB is to promote the study of all areas of biomechanics at an international level. As the next ISB student representative, my aim is to strengthen this mandate within the community of biomechanics students worldwide. As an international student from Europe, I noticed that while the ISB is greatly represented among students in North America, there is the opportunity to expand the community by trying to attract new ISB student members from Europe, Asia-Australia and economically developing countries. In biomechanics research institutions, particularly outside of North America, student funding and mentorship are often difficult to obtain. The ISB and previous ISB student representatives have established excellent programs, from travel and thesis grants to online mentorship and career development workshops at ISB congresses. My goal is to build on these successful programs by increasing the exposure of biomechanics students worldwide to the opportunities offered by the ISB. Being a student at the Human Performance Laboratory in Calgary puts me in a unique position to achieve this goal. As a great number of ISB researchers have worked in or with the HPL in Calgary at some point, I have access to a unique academic network that I can use to directly contact ISB members and students

worldwide.

Emmanuel Souza da Rocha, Brazil

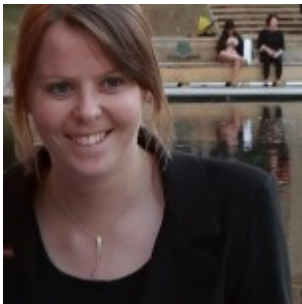


My name is Emmanuel Souza da Rocha. I am Master student in Physical Education under supervision of Dr Felipe Carpes at the Federal University of Santa Maria in Brazil. My intended graduation date is March 2016 and I want to continue my research in a Ph.D. program right after. My background is Physiotherapy, with special interesting in the acute effects of exercise on biomechanics of locomotion. Since 2010 I am involved in research projects related to biomechanics of human movement in Dr Carpes' lab, and in 2012 I received an ISB travel grant that allowed me to visit Dr Darren Stefanyshyn's group in the Human Performance Lab at University of Calgary. In the last two years I have been serving as the student representative in the Board of

Directors of the Brazilian Society of Biomechanics.

As your representative in the executive council of ISB I will work to engage more students in the society, establish academic relationships between students from different places of the world, create strategies for divulgation of professional opportunities for students, like online courses and webinar (in which I have already been involved), congresses, grants opportunities and make my best to be your voice in the ISB Executive Council meetings.

Kirsty McDonald, Australia

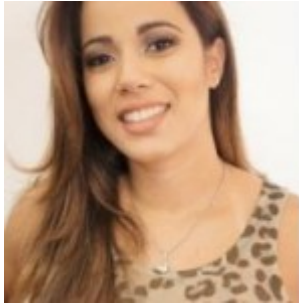


Kirsty McDonald is a PhD Candidate in the School of Sport Science, Exercise and Health at the University of Western Australia (UWA). She completed a Bachelor of Science degree at UWA in 2011, following which she was offered a Postgraduate Scholar position with the Australian Institute of Sport Biomechanics Department. Relocating to Canberra, Ms McDonald spent the following year assisting in the provision of biomechanical support to Australian Olympic, Paralympic and junior/developing athletes. In 2013, she returned to Perth to complete a BSc (Honours) investigating the role of arch compression and metatarsophalangeal joint dynamics in modulating plantar fascia strain in running. She commenced her PhD the following year, under the supervision of

Dr. Jonas Rubenson, Dr. Brendan Lay and Dr. Cyril Donnelly. With a keen interest in human locomotor biomechanics, the overarching aim of her project is to explore and refine energetic, cost-based hypotheses of neuromuscular function in walking to encompass the adapted, goal-directed, locomotor behaviour of adults in both stable and unstable environments. Ms McDonald is the recipient of the Rod Fry Prize and the inaugural Frank Pyke Memorial Scholarship, was invited to perform the Valedictory address at her Graduation Ceremony, and her current PhD candidature is being financially supported by an Australian Postgraduate Award and UWA Safety Net Top-Up Scholarship. Ms McDonald is also employed by the University as a casual teaching assistant.

Ms McDonald says "If given the opportunity to serve as the ISB Student Representative I would, first and foremost, aim to continue to foster the strong supportive environment provided to students by the Society. It would also be my goal to further enhance the visibility of the ISB student support network and available resources and to expand the ISB student community to incorporate a broad range of relevant postgraduate fields. In addition, I would hope to facilitate a good social culture among ISB student members at international events."

Ligia Cristiane Santos Fonseca, Germany



Ligia Cristiane Santos Fonseca is a research assistant at the Department of Rehabilitation & Prevention Engineering, Institute of Applied Medical Engineering at the Helmholtz Institute, RWTH Aachen University, Germany. She graduated with a Bachelor degree in Physiotherapy in 2009, received her Master in Human Development and Technologies in 2012, both from UNESP Univ Estadual Paulista “Júlio de Mesquita Filho”, Brazil. After finishing her studies, she had a scholarship as a technical laboratory assistant at UNSEP, focusing on the balance of elderly. In this occupation her focus lied on the understanding of muscular control mechanism of balance on elderly fallers and non-fallers. From 2012 to 2013, she worked as a temporary professor at UFMS

Federal University of Mato Grosso do Sul, Campo Grande/MS, Brazil. During this Profession she was responsible for the lectures: public health, kinesiology, kinesiotherapy and ethics. In 2013 she applied for a scholarship of Science Without Borders/CAPES and was accepted as a PhD Student at RWTH Aachen University, by supervision of Prof. Dr. Catherine Disselhorst-Klug, to start in April 2014 and intends to finish March 2018. Her particular research interests are focused on kinematic and kinetic analyses based on biomechanics and on neuromuscular performance to improve diagnosis, prevention and rehabilitation of musculoskeletal dysfunction. Ligia has published 3 articles and 2 book chapters.

She expects to contribute to ISB Student Representative with her expertise of four years as a student representative at the Academic Advising during her bachelor studies and to be as helpful as possible to students starting their first steps in the biomechanics field.

2015 Muybridge Award Winner: Kai-Nan An

By Ed Chadwick | March 2015



As Past-President of ISB, one of my more enjoyable duties this year was to chair the selection committee for the 2015 Muybridge Award. I was assisted by two former Muybridge Award winners, Peter Cavanagh and Benno Nigg, and by John Challis, the current President of ISB.

The Muybridge Award is the most prestigious award given by the International Society of Biomechanics and is given for career achievements in the field of biomechanics. Eadweard Muybridge (1830-1904) was the first to capture motion using high-speed photography, thus laying the foundation for the development of modern biomechanics. Previous winners of the award are listed [here](#).

The committee considered a shortlist of 8 nominees. **Dr. Kai-Nan An** was unanimously selected because of his exceptional impact on the field of biomechanics. A quantitative measure of this impact is the staggering amount of more than 20,000 citations of his published work. It was also noted that this impact occurred across a broad area in biomechanics, ranging from fundamentals of musculoskeletal modeling to very specialized and applied questions in orthopedics of the lower and upper extremity. His work has not only impacted biomechanics, but also the clinical practice of orthopedics.

Kai-Nan An received his Ph.D. in mechanical engineering and applied mechanics in 1975 from Lehigh University in Bethlehem, PA. He is the Director (1993-present) of the Orthopedic Biomechanics Laboratory at the Mayo Clinic in Rochester, MN, and Professor of Bioengineering, Mayo Medical School. He was named the John and Posy Krehbiel Professor of Orthopedics, Mayo Medical School, in 1993. He has co-authored more than 800 scientific articles and book chapters, most appearing in peer-reviewed journals.

Dr. An's research interests include biomechanics, biomaterials, imaging, wheelchair propulsion, orthopedics and rehabilitation. He has been awarded numerous grants from NIH and industry, and his collaboration with other institutions stretches across the globe, most recently to Asia and Europe.

Dr. An has received several awards from various societies, including the You-Li Chou Medal from the Taiwanese Society of Biomechanics, the Borelli Award from the ASB, the Distinguished Alumnus Award

from National Cheng-Kung University, the Neer Award from ASES, the Kappa Delta Award from AAOS, and was named as a Fellow of the ASME in 2007. He is a founding member of the American Institute for Medical and Biological Engineering, and actively serves as a mentor and advisor to graduate students and research fellows, as well as various medical and engineering organizations.

We congratulate Dr. An on winning the 2015 Muybridge Award and look forward to his Muybridge Award lecture during the 2015 Congress of the ISB.

Ton van den Bogert

Past President, ISB

List of New Members, March 2015

By Ed Chadwick | March 2015

[table id=26 /]

ISB Grant Reports

By Ed Chadwick | March 2015

International Travel Grant - Kenneth Smale

Having the opportunity to travel abroad for an international research stay is a high priority for many graduate students. I am a PhD student under the supervision of Dr. Benoit at the University of Ottawa in Canada and thanks to the ISB, I was able to accept an invitation to study in Denmark. In June, I received an International Travel Grant from ISB and with this funding, I spent my time studying at the University of Copenhagen under the direction of Drs. Tine Alkjaer and Erik Simonsen. During my time in Denmark, I had many experiences and began collaborations that would have been able to take advantage of here in Canada. The biomechanics research unit at the University of Copenhagen has developed a unique relationship with the chief orthopedic surgeon Dr. Michael Krogsgaard at the nearby Bispebjerg hospital. Through this collaboration, I had a lot of access to patients who are having ACL reconstruction surgery, which allowed me to collect data on 39 participants throughout my time abroad.

On top of my data collections, I also traveled to Aalborg University to attend a musculoskeletal modeling course led by Drs. John Rasmussen and Michael Skipper Andersen. After returning from Aalborg, I attended a seminar held by the Nordic Muscle Tendon Network where I was invited to present my PhD thesis to the committee members. Finally, I also travelled to Rome in order to present at the International Society of Electromyography and Kinesiology conference. All of these opportunities enabled me to meet new people, exchange ideas and interpretations, and acquire solutions to some of my own research-related issues. For all of the above reasons and many more, I cannot express enough thanks to the ISB and their International Travel Grant program. Without their gracious support, myself and many other students would not be able to take advantage of these international research stays.

-Kenneth Smale, University of Ottawa

Matching Dissertation Grant - Dustyn Roberts

The International Society of Biomechanics Matching Dissertation Grant (MDG) gave me the opportunity to finish my PhD at New York University after giving birth to my daughter. She was born in January 2014, and although I had planned to graduate in May 2014, there were just too many loose ends to tie up with a newborn around to make that feasible. With the help of the MDG, I was able to work through the summer and graduate in September 2014.

The work that the MDG allowed me to finish up was presented at the World Congress of Biomechanics [1], the Dynamic Walking Conference [2], and ASME's International Design Engineering Technical Conferences [3], where the submitted work won the 2014 Best Paper Award, Advanced Modeling and Simulation Technical Committee, ASME Computers and Information in Engineering Division. The MDG also funded the work directly related to a journal article that has been submitted and two others that are in preparation.

I will be forever grateful to ISB for providing the funding that was necessary to bridge the gap between my NSF Graduate Research Fellowship and my actual graduation date, and for the matching funds my advisor provided. I am now an Assistant Professor of Instruction at the University of Delaware, and the transition from student to professor would not have been nearly as smooth without the help of this grant.

References

- [1] D. Roberts and J. H. Kim, "Joint-space metabolic energy expenditure model with maximum cocontraction bounds," in *Proc. World Congress of Biomechanics*, Boston, MA, 2014.
- [2] D. Roberts, J. H. Kim, and H. Hillstrom, "Joint-space dynamic model for metabolic cost of walking," in *Proc. Dynamic Walking Conference*, Zurich, Switzerland, 2014.
- [3] D. Roberts, H. Hillstrom, and J. H. Kim, "Joint-space dynamic model of metabolic cost with subject-specific energetic parameters," in *Proc. ASME Int. Design Engineering Technical Conf. and Computers and Information in Engineering Conf. (IDETC/CIE)*, Buffalo, NY, 2014.

Matching Dissertation Grant - Ramya Namani

The effect of variations in the morphology of the hip joint on Femoro-Acetabular Interference patterns during motion.

Femoro-Acetabular Impingement (FAI) is a clinical condition characterized by limited range of motion due to early abnormal bone-to-bone interference and is often associated with labrum and cartilage damage often leading to osteoarthritis [1]. Previous studies [2, 3] suggest that the early interference at the hip joint and FAI are due to abnormal morphology of the bones. The surgical treatment of FAI [1] attempts to restore normal femoral morphology by removing bone regions in the femoral neck and/or the acetabular rim that are believed to produce early interference. Clinical experience of this procedure indicates less than favorable post-surgical results such as persistent pain or cartilage damage often leading to Total Hip Replacements [4]. This suggests that other morphological abnormalities, in addition to the ones addressed by the surgery may be contributing to early interference. The main goals of this project are 1. To find the difference in morphological parameters and Interference patterns at the hip in normal and FAI patients and 2. To study the effect of abnormal morphological variations of the hip joint on FAI. These goals are achieved through the following methods.

Computerized Tomography (CT) images (resolution: 0.8mm*0.8mm*2mm) from seven healthy, non-symptomatic subjects and ten age-matched FAI patients were acquired. The CT images were processed

through segmentation in ANALYZETM software to produce 3D numerical models of the femur and the acetabulum. Twenty seven morphological parameters representing common clinical parameters for the acetabulum, femur, and acetabulum-femur relations were measured from the 3D bone models and these morphological parameters were compared between the healthy and FAI subjects using statistical analysis based on t-test. For each subject, a 3D hip model was produced in which the assumed center of rotation of the hip was taken as the average location between the femoral head center and acetabular center. Motion of the hip model was produced and analyzed in a software environment ADAMSTM. For the simulation, boundary conditions consisted of a fixed acetabulum and a free femur to which moments were applied in various anatomical directions to simulate clinical tests of FAI [1] consisting of Flexion (100°) followed by adduction (20°) followed by internal rotation (30°-40°). An Interference Detection Algorithm (RAPIDTM) was used to detect when and where during the simulated motion contact between the proximal end of the femur and the acetabulum occurred. The interference patterns were calculated using distance maps and were compared within the subjects and between the normal and FAI subjects at each simulated position. The geometry of the 3D model was virtually changed to produce a change in each morphological parameter such as femoral shaft angle, femoral anteversion/retroversion, alpha angle and pistol grip deformity from a normal to abnormal value [2, 3]. Previously developed dynamic models were used to simulate hip motion reproducing a clinical tests for FAI [1] consisting of Flexion (100°) followed by adduction (20°) followed by internal rotation (30°). The interference patterns were calculated using distance maps and were compared before and after the morphological change were introduced.

The results indicate that common morphological parameters such as acetabular diameter, acetabular width, peak-edge distance, femoral neck length, femoral head diameter, alpha angle, and distance between two tear drops differ significantly between healthy and FAI subjects. Earlier interference is observed in the FAI subjects than in the normal subjects. This finding supports earlier studies documenting restricted range of motion in FAI. Abnormal values of morphological parameters such as femoral shaft angle, femoral retroversion, alpha angle and pistol grip deformity produced early interference. These results suggest that these parameters should be considered and evaluated as part of the individualized pre-planning of the FAI surgery.

I sincerely thank ISB for their generous support and I very much look forward to presenting my preliminary results in XXV congress of International Society of Biomechanics in Glasgow

REFERENCES:

1. Ganz, R., et al., CORR, 417:112-20, 2003.
2. Beck, M., et al., JBJS, 87:1012-8, 2005
3. Tannast, M., et al., AJR, 188:1540-52, 2007
4. Ilizalitturi, V., et al., CORR, 467:760-8, 2009

Matching Dissertation Grant - Marcos Kunzler

ACTIVITIES

The travel was realized from November 03 to December 06 in Valencia, Spain. During the course of the grant, the activities I developed included:

1. Attendance of the routine of the laboratory of biomechanics of the physical activity and sport faculty, at the University of Valencia, under supervision of Professor Pedro Soriano.
2. Attendance of different lectures of Prof Soriano, a congress organized by his research group (GIBD) and serving as a member of the scientific committee.
3. Visit to different laboratories in the faculty.
4. Participation in a research developed by the GIBD, in which the purpose was to determine

the differences between running wearing regular, heating and cooling socks considering temperature parameters, plantar pressure and lower extremity kinematics.

5. Participation in a research project developed by the doctoral student Jose Priego, under supervision of Professor Rosa Cibrián, where the main purpose is to verify the correlation between temperature parameters, topography of the back and postural control in tennis players.

RESULTS

The main result of the travel grant was the opportunity to travel aboard, learn new things, see different cultures, and know new people, new researchers and scientific possibilities. From the participation in the scientific activities in the University of Valencia, we are now working to achieve the following results:

1. To continue collaboration with GIBD. This grant has helped to know other research group, which has been good for strengthening our ties for future collaborations.
2. To publish a paper addressing the differences between running using different socks considering temperature, plantar pressure and lower extremity kinematics.
3. To publish a paper with results of postural control and postural assessment in tennis players.
4. To submit abstracts for congress in the field of biomechanics area congress.

Finally, I would like to thank the ISB for providing me with this grant, the host professors Rosa Cibrián and Pedro Soriano for receiving me in the University of Valencia, and for giving me all the support necessary during my short stay. This experience helped me to increase my academic and also personal life. It is also important a special thanks Jose Priego for his friendship and support, for hosting me at your home and helped me to solve any problems and explaining me everything I did not know during the period I was in Valencia. Many thanks for the International Society of Biomechanics for giving this unique life experience in which I learned a lot in many different ways.

Marcos Roberto Kunzler

Federal University of Santa Maria, Center for Physical Education and Sports Applied Neuromechanics Group (GNAP)
Uruguaiiana, RS, Brazil

(Felipe P Carpes, PhD)

ISB Student Awards

By Ed Chadwick | March 2015

In February 2015 notifications were sent out for the ISB Student Awards as planned for the last Calls in 2014 (<http://isbweb.org/student-section/student-grants>). The overall planning and evaluation of these applications is complicated, because of the global budget to be spread over the two year activities, with a number of Calls to be addressed, and because of the large number of applications. This year we had to face also the weakening of the AUD - very challenging for ISB's ambitions to support many student applications!

In the last December 2014 Call, applications were received for either MDG, ITG, CTG or IADG Awards.

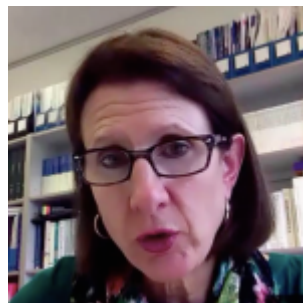
These arrived to me from many countries, from all continents, and I shall say from very good students. Nearly all applications were very robust, with relevant background and great potentials for the research reported. These applications were scored by an international panel of biomechanists with various expertise, and ranked from top to bottom. Eventually it has been very sad to be forced to draw a line between the funded and the not funded in each of these categories. Overall, according to the budget, nearly half of these have been awarded. But the fact that the application has not been successful does not mean bad quality of the research, and we really look forward to hearing again from these in the many future opportunities, i.e. other calls, at the Congresses, and even from journal papers.

Keep your eyes on the Student Awards, other International Travel Grant applications are due soon!

Alberto Leardini

Interview with Julie Steele, ISB President (2009-2011)

By Ed Chadwick | March 2015



Recently, Kelsey Collins and I chatted (via web-conference) with former ISB President, Julie Steele, as part of an initiative to promote women in biomechanics and to highlight related history within the ISB. Despite being at different stages of our careers, our discussion illuminated a shared understanding of a number topics, three of which I would like to reflect on here from my perspective as an early/mid-career researcher.

Mentorship

“That’s what girls aspired to...”

Hearing Julie’s story of overcoming such stereotypes to become not only the first member of her family to attend university (and in a male-dominated field at that), but also the first to even finish high school was very inspiring. Having completed my own degrees in engineering, a faculty with rather dismal gender ratios in Canada, I understand the importance of role models and how easily influenced girls — all of us,

in fact — are from a very early age with regards to what we “should” or “shouldn’t” do professionally.

How did Julie overcome these barriers to achieve such success in her career, including full professorship, President of an international organisation, and numerous awards such as the New South Wales Telstra Business Woman of the Year? She created her own “luck” and tuned into encouragement and advice from trusted sources when it was most needed.

“Mentorship from someone who’s been there, done that is just so invaluable.”

Julie referred to her early career mentors before we even had a chance to ask. The mentorship she received from people like Professor Bruce Elliott, her Honours Advisor at the University of Western Australia, and Helen Parker a younger faculty member at the same university, was clearly valued and a source of inspiration for Julie when she launched her own career at the University of Wollongong over 30 years ago. These and other mentors acted as her career champions, nominating her for professional roles or offering the all-important advice of when to say “no” and to instead look for better learning opportunities.

She later learned that these mentors viewed her achievements as their own and understood the personal value of giving back, to which she referred again when discussing her own students and her time on ISB Council.

At the current stage of my career I find myself still seeking mentorship, but at the same time having advice to offer those who may be grappling with conflicts that I experienced during my transition from student to “professional.” In other words, I find myself in the roles of both mentee and mentor. Julie’s observations on this subject very much substantiated my own recent insights into the importance of continuously receiving - and providing - mentorship as our careers progress, especially with women in non-traditional fields.

Diversifying your career path: having the courage to step into the unknown

“As females in biomechanics there is a whole world of opportunities that haven’t been done very well. Either they’ve been irrelevant to men or it’s just not appropriate for men to be doing that kind of research.”

Julie’s research spans a variety of topics. Earlier in her career, she focussed on lower limb biomechanics, investigating ACL rupture in netball athletes to obesity in children, and later began studying breast health and intelligent textiles with biomechanical applications. The connecting theme is injury prevention; however, an additional theme is that she ceaselessly delves into truly unique research areas.

While many may not consider this a feat - after all, research is supposed to be “novel” - I myself have been told that my own research questions are “too far outside [one’s] research scope.” So I understand the challenges around garnering support from potential collaborators outside your own discipline and also from within your own professional community.

Julie gave several examples of narrow-minded reactions that she’d received from within the biomechanics community when she and her students began researching breast biomechanics. She was told the work was not relevant, that “breast” could not be included in the title of a conference presentation. (It was considered “rude.”) Yet, at that same conference work was presented on the biomechanics of penile erection. Similarly, she compared the quantification of breasts in bras to feet in shoes in order to point out the contradictory judgements about her research in the biomechanics domain.

Despite this, the importance of her work was vindicated through the overwhelming public endorsement she received from her early publications. By describing the medical implications of the research, such as nerve damage that can arise from bra straps compressing the brachial plexus, she was furthermore able to prove its legitimacy to her peers in biomechanics.

To me, this juxtaposition around “innovative research” can be misleading: sometimes it seems as though we are encouraged to be creative... as long as our ideas fit inside the box that is familiar to our peers. What inspired me about Julie’s approach was her courage to seek out those collaborators who recognized the value of her vision while simultaneously creating awareness amongst those who may have at first doubted her.

Our future within the ISB community: challenges and opportunities

“In hindsight, I owe so much of my career to ISB.”

Julie’s initial grounds for zeroing in on the ISB congresses were quite practical: given the financial cost of attending such events from Australia, she was advised to choose an organization with a broad enough scope for her to present all or most of her work, and where she could cultivate a global network of collaborators. She soon recognized the “personal feel” that is fostered within this community, that those of us who’ve had the privilege of attending a congress can surely appreciate.

In looking back at her time involved with the ISB, including her 16 years on Council, Julie noted that one of the strengths of the ISB is how well organized it is, especially in comparison to other similar organizations. She noted that the underpinning structure and institutional knowledge have set the stage for facilitated learning and network-building initiatives, such as student programming and Economically Developing Countries (EDC) support. These, in turn, amplify the family feel that welcomes new members to the organisation.

“The thing that makes a lab really strong is the people and the ideas.”

“Don’t let limited [resources] stop you from doing something quite profound!”

Although we were discussing Julie’s Biomechanics Research Lab at the University of Wollongong when she stated the above, I feel that our discussion could equally have been applied to the ISB as a kind of “Living Lab.” Julie’s emphasis with her students and collaborators on thinking through ideas in order to use the limited equipment and facilities as effectively as possible is something that I believe is - and will be to a greater degree in future - emphasized within the ISB community. She noted that increasingly, there are high expectations and demands set on Council members who are volunteering their time to the organization. By shifting the emphasis to our involvement as a wider community and connecting with other organizations who do not have the benefits of our infrastructure (e.g. World Council of Biomechanics) we can generate more meaningful action and greater impact in our work.

So what was Julie’s take home message? *Believe in yourself and never stop learning.*

This gives rise to one more question for you, Julie: What’s next for you?

I look forward to your answer at the Inaugural Women in Science lunch at the ISB2015 Congress.

Andrea Hemmerich, PhD

ISB-EDC Project Officer