

**June 2013**

**ISB *Now***



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2013**

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# President's Blog

By sherriS | June 2013

In most parts of the world, governments are cutting their budgets for research funding. For many of us, government grants are the lifeblood of our career, or so we are told. Faculty evaluations and tenure decisions are increasingly based on funding. Graduate students and postdocs can only get paid if there is funding for the research they do. With less funding available, investigators are submitting more and more grant proposals. We choose our strategies. Some manage to produce more proposals by working extra hours each day and sacrificing family time. Some will aim for quantity and hope that something will be randomly successful. Others write more proposals by reducing the time they spend on research and publications, which is professional suicide if it goes on for too long. All of these grant proposals will need to undergo peer review, and guess what, the peers are the same people who are already too busy writing grant proposals. So now the quality of the peer review is at risk, making the funding process even more unpredictable. This situation is clearly not sustainable. It is important that we talk to our funding agencies and communicate these concerns. I worry that many promising investigators will choose to no longer play in these "hunger games". I also see a worrying trend in funding of "the rich get richer" and this needs to be reversed so that funding becomes more equally shared.

But not all is doom and gloom. As I have mentioned before in this blog, the work we do as biomechanists has great value for society. We just need to find a way to get paid for it. If government does not work right now, I suggest we should look at industry and education. I have done some of my best work in projects with industry. Some of those projects could never have been funded by government grants, they were too risky, not hypothesis-driven, or not well enough developed to justify a multi-year grant proposal. If you do this right, you can keep your basic research going while trying to get that government grant. Real innovation happens when you go outside of established knowledge, and companies are perfectly willing to take that risk. How to make contact with companies who could sponsor your research? Talk to companies who have booths at scientific meetings, talk to clinical colleagues and find out who develops the technologies to which you could contribute.

And let's not forget about education. The knowledge we have is valuable, and if you teach, you earn money for the university and/or perform a service to society. You earn your salary! Yes, research funding is necessary but you may be able to do good work with a small grant from industry or foundation, instead of a million-dollar government grant. Universities where faculty members are required to apply for large grants may not be the best place to work right now. This is something you may want to consider when applying for your first faculty position.

But, whatever research funding you apply for, make sure that the budget allows you to travel to attend the ISB Congress. Even in the days of electronic communication and social networks, there is no better way to stay in touch with the field than a real scientific meeting. The upcoming [ISB Congress in Natal, Brazil](#), promises to be especially exciting and I can't wait to see many of you in the first week of August.

Ton van den Bogert  
Cleveland, June 23, 2013



## Student's Corner

By sherriS | June 2013

Hello ISB Student Members,

First and foremost, I would like to congratulate the elected Student Representative, Kelsey Collins! I am confident that she will be an outstanding member of the Executive Council and continue to improve our student membership experience. On a related note, I'd like to thank the other Student Representative candidates for putting forth ideas to improve student membership and those of you who took time to vote for our Executive Council members. I hope we all remain involved with ISB and participate when our input is requested, so we can help Kelsey represent us!



### **Student Events at ISB2013 Natal**

At the beginning of the congress, there will be a two-part student event (RSVP required). The first part will be a round-table mentoring workshop August 5<sup>th</sup> 10:00-12:00. Attending the first part is mandatory for participation in the second part of the student event, which is a beach excursion August 6<sup>th</sup> 8:00-12:00. I will be emailing you in the near future with finalized details of the events as well as a request for you to sign up for the events. You cannot participate if you do not sign-up for the events. If you would like to assist me in minor logistical matters during the student events, please email me to volunteer!

#### **Part 1: Roundtable Mentoring**

Mentoring roundtables will likely include 4 or 5 of the following topics "explaining your research to others", "creating and managing strong collaborations", "presentation skills", "editing your CV", "writing clearly and effectively", "career transitions and balancing priorities", and "preparing an ISB student grant application". Each student will have a chance to learn about and participate in all of these mini-workshops because students will rotate through all tables. Please bring your CV and questions about each topic. Your participation in this event will give you admission to the social and cultural part of the student event, the beach excursion. I am still accepting your input for roundtable mentoring topics, so please provide your ideas on the ISB social media pages (Facebook, LinkedIn, Twitter) or by emailing me!



## Part 2: Beach Excursion

On August 6<sup>th</sup> between 8:00-12:00 we will embark on an adventurous excursion through the beaches of Northern Natal (Redinha, Santa Rita, Jenipabú, Barra do Rio, Graçandu, and Pitangu). On the way, we will climb the famous dunes of Jenipabú by buggy and will stop at great freshwater lagoons — Genipabu and Jacumã, where we can swim, relax, and/or enjoy activities, such as sand tobogganing (or “Equibunda”) and zip lining into the lagoon (or “Aerobunda”). Bring sunscreen and a bathing suit!

### **Miscellaneous Reminders and Advice**

Please be aware that there are many workshops, symposiums, and tutorials surrounding and embedded in our congress this year. The registration deadline has been extended to June 30<sup>th</sup> for the [11<sup>th</sup> biennial Footwear Biomechanics Symposium](#) taking place July 31<sup>st</sup>-August 2<sup>nd</sup> in Natal. Though the registration deadline has passed, the [XIV International Symposium on Computer Simulation in Biomechanics](#) (TGCS) will feature our president, Ton van den Bogert as a keynote speaker August 1<sup>st</sup>-3<sup>rd</sup>. University of Sao Paulo (LABIMPH-USP) and Novel’s [Dynamic Load Distribution Measurement \(DLDM\) workshop](#) will take place August 3-4<sup>th</sup>, which aims to “address methodological and technical issues” relevant to DLDM. Our Executive Council’s tutorial officer, Scott McLean, has organized 4 [ISB2013 Tutorials](#) (each \$50) taking place on August 4<sup>th</sup>: “Rehabilitation robotics”, “Human movement analysis using inertial sensors”, “Opensim”, and “Grant writing”. On August 5<sup>th</sup>, within the ISB congress, there will be an [ISB-ISEK joint workshop](#) focused on “techniques for assessing the neural drive to muscles and the resulting mechanical function of muscles and joints”. Also on August 5<sup>th</sup> within the ISB congress, there will be a [Measurement of Knee Loading Symposium](#). During the mornings of August 6-8 there will be workshops on [Surface Electromyography](#) with registration required in advance (\$60 for students). Finally, on August 9<sup>th</sup>, there will be a [Satellite Symposium of the VII World Congress of Biomechanics](#) that flaunts an extremely academically diverse program with a student registration fee of \$40.

Additionally, I encourage you to take advantage of the long standing [online mentoring program](#) on our website. You may be able to forge a relationship with a senior researcher who would like to meet you for a discussion during the congress. Also note, in the [Student Forum](#) on our website, I created a posting space for students to discuss potential roommate situations at the congress (member login required).

### **Farewell and Final Reflection!**

This is my final Student’s Corner contribution to ISBNow and I would like to thank everyone for this rewarding and enjoyable opportunity. At ISB2011 in Brussels, I realized what a truly unique and amazing community we are a part of as I experienced the warm interactions between dedicated ISB members who reside on opposite sides of the world. At the Executive Council meeting at ISEK2012 and attending ASB2012, I had wonderful experiences with ISB members as we discussed our research and shared stories. Above all, I am grateful that the Executive Council is devoted to the professional development of and interaction with student members to advance ISB’s mission, made apparent through enthusiastic collaboration with its Student Representative. I look forward to seeing everyone in Natal!



As always, please do not hesitate to email me with any questions or suggestions!

Thank you and farewell,

Antonia Zaferiou  
ISB.StudentRepresentative@gmail.com



## Technical Groups

By sherriS | June 2013

### Update from 3D Analysis of Human Movement

The 3D AHM Group held its 12<sup>th</sup> International Symposium in Bologna (Italy) on 18-20 July 2012 with a general theme of "Technology and Treatment". In addition to the traditional interest in instruments and techniques for motion tracking and analysis, the symposium addressed motion analysis protocols, industrial design, musculo-skeletal modeling, and clinical exploitations of this technology. These topics were discussed also by internationally renowned keynote speakers (K. Aminian, A. Cappozzo, J.J. Trey Crisco, S. Delp, T.W. Lu, A. Mirelman, M. Viceconti). Nine companies contributed to the success of the event, three of which provided a talk from the podium on their most recent research activities. 3DAHM 2012 was a great success with nearly 80 presentations from 18 different countries. The ISB has been supportive in the efforts of its 3DAHM technical group to maintain its success and has offered its assistance, which includes grants to support travelling for students and for the speaker of the 'ISB Keynote Lecture'. This year the Whitaker-Allard Award was given to two speakers Arash Arami and Maria Cristina Bisi. During this biennial Symposium the general assembly of the group was held and new board members and industry representatives were elected. Many thanks are addressed to Alberto Leardini, the chairman of the Symposium and now the past president of this Technical Group, and also to Rita Stagni who is now also a new member of the 3DAHM board; thanks also to Andrea Cutti, Ugo Della Croce and

Vincenzo Parenti-Castelli, for their precious support for the preparation and execution of the meeting in Bologna.

During the past year, the new executive board was confronted with a deep and large discussion about the objectives, identity and specificities of the group, which leads to the edition of the Constitution of the group, approved unanimously by the board in February 2013. The Constitution reflects very well the tradition of this community, which aims at facilitating exchange of opinions, related to 3D approaches in human movement analysis and integrating the knowledge from different fields of biomechanics and those from other fields of study with interests in movement analysis. Another unique aspect of this group is to offer the industry the exceptional opportunity to address the general assembly, rather than just having the typical commercial exhibits. The Constitution has been sent recently to ISB council for approval.

The board also made an international call in September 2012 to host the 2016 Symposium of 3DAHMM and voted for Tung-Wu Lu's proposal to host the 14<sup>th</sup> Symposium in Taipei. Tung-Wu Lu also joined the executive board as the future President of the group.

During the 3DAHMM 2012 Symposium, we also announced the next 3DAHMM Symposium in Lausanne (Switzerland) from 14-17 July 2014 (<http://www.geocities.ws/3d-ahm/>). The 13th symposium will be held in the new Swiss Tech Convention (<http://www.tstcc.ch>), a modular, ultramodern and a truly unique building in Europe, located on the campus of École Polytechnique Fédérale de Lausanne. The general theme of the Symposium is "Sport and Rehabilitation". A first call will be sent soon and we are looking forward to see you in Lausanne, designated the Olympic Capital!

Kamiar Aminian,  
Chairperson, 3-D Analysis of Human Movement



## Affiliated Societies

By sherriS | June 2013

### **5<sup>th</sup> Congress of the Portuguese Society of Biomechanics**

The 5<sup>th</sup> Congress of the Portuguese Society of Biomechanics (SPB) was held last February, 8-9 in Espinho, a small fishing village near Oporto city. The objective of the congress is to disseminate the research in Biomechanics developed in Portugal as well as to promote collaborative research.

The congress had about 160 participants with 153 presentations covering the different areas of Biomechanics: Sport, Rehabilitation, Occupational, Cardiovascular, Musculoskeletal System, Hard and Soft Tissues, Spine and Skull, Orthopaedic, Oral-facial, Tissue Engineering, Mechanobiology and

Biomaterials.

The Portuguese Society of Biomechanics promotes incentive awards for young researchers that are delivered during the congress. This year the Student Paper Award was kindly supported by the International Society of Biomechanics (ISB) and the winner was Frederico Ribeiro a PhD Student in Biomedical Engineering at Instituto Superior Técnico, Technical University of Lisbon with the work “Is the callus shape an optimal response to a mechanobiological stimulus?”. The work presents a numerical study of the response of bone during the healing process to investigate which stimulus rules the callus formation, and it is a collaborative work with the University of Zaragoza in Spain where Frederico is doing part of this PhD work.

The SPB is very grateful to the ISB for supporting this award so important in incentivizing young researchers in the beginning of their research careers.

Paulo R. Fernandes  
President of the Portuguese Society of Biomechanics



## Did You Know? - From the Archives

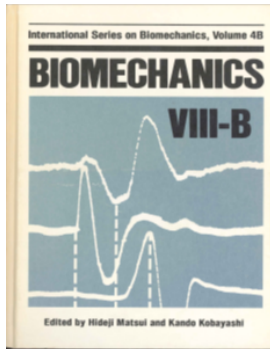
By sherriS | June 2013

The International Society of Biomechanics was officially formed at the 4<sup>th</sup> International Seminar on Biomechanics, which was held at Penn State University in 1973. The constitution was voted on and approved on August 29<sup>th</sup>. Two hundred and fifty of those present became charter members of the society. One of those members is Vladimir Zatsiorsky, who at that conference presented work examining methodological approaches for sports biomechanics.





Vladimir was born in the Soviet Union. He obtained his Ph.D. in Biomechanics from the Central Institute of Physical Culture (Moscow) in 1968. He worked at the institute from 1960 onwards, becoming a Professor and Chair of the Department of Biomechanics at the Central Institute in 1974, holding that position until 1987. In 1987 he became the Director of the All-Union Research Institute of Physical Culture. In 1990 he moved to North America, where he had stints at UCLA, and the University of Calgary before settling at Penn State University. He has published over 400 papers, and authored or coauthored 15 books many of which have been translated into multiple languages.



Vladimir has made some important contributions to biomechanics, but from the ISB's perspective one stands out. The VIII Congress was held in Nagoya, Japan and at this meeting Vladimir presented work based on determining body segment inertial parameters using gamma mass scanning. The proceedings from that conference were published as a book, with one chapter describing his work (Zatsiorsky, V., & Seluyanov, V. (1983) *The mass and inertia characteristics of the main segments of the human body*. In: Biomechanics VIII-B, 1983 -Champaign, IL: Human Kinetics). What is noteworthy about this chapter is that despite not being published in a journal it has been cited nearly 500 times (to date). There are various criteria for citation classics, for example, Classic - cited at least 75 times, Mega Classic - cited at least 150 times, and a Summa Classic - cited at least 300 times. Whatever criterion is used the chapter by Vladimir and colleague has clearly had a large impact.

Vladimir relates some interesting background to this work. There existed in the Soviet Union a government agency for the Protection of Secrets in Media, without permission from this agency publication in a foreign journal was not permitted. A large number of bureaucratic ladders had to be scaled before permission could be obtained for submission. A manuscript was prepared describing the work on the determination of human body segment inertial parameters from gamma mass scanning, and all of the appropriate signatures obtained which culminated in meeting with a vice minister - the final approval stage. The key question was "Is this an important study?", upon the response that yes it was a good study the vice minister response was "If it is such a good study then we must keep it secret.". Vladimir modified his response, describing the study as "not bad but not good", and got permission to submit the manuscript. Unfortunately when the reviewer's comments were received the process had to be repeated prior to resubmission, with many other work demands the decision was made to settle for dissemination of this work predominantly via conferences to avoid having to negotiate the bureaucratic hurdles one more time.

[The ISB has an archive of its important materials, kept at Penn. State University. If you have any materials you think should be in the archive, and you would consider donating them to the archive please contact John Challis ([jhc10@psu.edu](mailto:jhc10@psu.edu)).]



## ISB Executive Council Election Results

By sherris | June 2013

I am delighted to announce the results of the recent elections for the 2013-2015 ISB Executive Council. There were 526 ISB members who completed the voting process, which is nearly double the number of members who have voted in previous elections. The results were: [\(more...\)](#)

## ISB 2013 BRAZIL

By sherris | June 2013



Seven years have passed since we had the idea of organizing the ISB Congress. Although it seems a long time, time went by really fast. We are now only 50 days from our gathering together in Natal. While you prepare your bags and your spirit to go to the Sun City, we would like to give you updated information regarding our Congress and reminding you of a few things that you should remember during your trip preparation. [\(more...\)](#)