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INTERNATIONAL SOCIETY OF



BIOMECHANICS IN SPORT

Newsletter

Volume: 31, Issue 1 - March 2015

Message from the Editor

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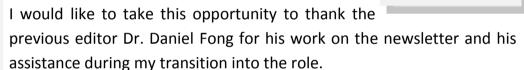
@ISBSOFFICIAL



Sarah Clarke

Dear ISBS members, and newsletter readers,

Welcome to the 31st Volume of the ISBS newsletter. This is my second newsletter since I took up the newsletter role in July 2014.



The October 2014 newsletter received a major facelift with a new layout and colour scheme. In addition, it was disseminated via the ISSUU website which has allowed for advances in viewing and sharing of the newsletter content.

In the current issue, the editorial team have continued those advancements. We are also excited to present some new articles to the newsletter highlighting activity within our membership.

As the editor, I aim to provide the readership with articles on upcoming ISBS conferences and deadlines, on-going research, teaching and applied activities in the area of sport & exercise biomechanics. I would like to encourage all ISBS members to contribute to the newsletter.

The coming issue (Vol 31 Issue 2) will be published in October 2015. The call for articles, reports and news for the October 2015 issue is currently open. Please send your articles and supplementary images to the Sarah by email before the 20th of September 2015. The ISBS Newsletter editorial team values your contribution and we look forward to your continuous support in the coming issue.

Sarah Clarke
ISBS Vice-President (Publications)



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CONTRIBUTORS



Sarah Clarke

ISBS Vice President

(Publications)

Leeds Beckett University



Catherine Tucker

Leeds Beckett University

FLOREN COLLOUD

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GERDA STRUTZENBERGER

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WOLFGANG POTTHAST

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Preview of ISBS 2015

Dr. Floren Colloud Conference host, 2015 ISBS Board of Director (2014-16)



ISBS 2015 is closer than ever. It will take place in less than 3 months for the very first time in France. I will not surprise you if I say that we are

very busy at the moment to bring all the pieces of the puzzle together. Especially since we received more than 400 submissions in February, and yes, this has been a wonderful surprise. A huge thank you to all the authors who demonstrate the vitality of research in sports biomechanics all around the word. This must be emphasized on a time when it has become particularly difficult to obtain funding in this field. We are, not the only ones who are busy at the moment, and I want to take the opportunity of this newsletter to gratefully acknowledge the work done by all the reviewers of the Scientific Committee.

Our ambition for this congress is to share with you cutting-edge science, but we also hope that you will bring home many experiences of French culture, knowledge of our history, and memories of our typical cuisine.

This is a short preview of ISBS 2015 that you can read below, with only the most important information to best prepare your journey to Poitiers. Please visit our website for an exhaustive view of the congress. This website is continuously updated with the latest information that are also systematically shared on our <u>Twitter</u> and <u>Facebook</u>. pages

REGISTRATION

The deadline for early bird rate is Monday the 30th of March at Midnight (GMT +1). Please check your ISBS membership is in a good standing before register as an ISBS Member or an ISBS Student Member. An alternative is to directly register to the conference using the "New ISBS Member" status. Payment will be made using the online secure payment platform of the Université de Poitiers.

We experienced some issues with our platform during the last day of submission due to a heavy traffic. For this reason we encourage you not wait the last couple of hours to register in order to ensure you benefit from the early rate. The registration process takes about 10 minutes. You will have to fill an online form to register for:

- Conference;
- <u>Preconference Workshops</u>: for the seven workshops, only the Cricket workshop has an additional cost;
- Applied sessions: nine applied sessions with demonstrations and a joined applied session with the Société de Biomécanique;
- Social activities: <u>Reception ceremony</u>, Wine & Chese Night, <u>Tour</u> (to choose among five proposals, places will be given on a first come, first serve basis), <u>Conference Banquet</u>;
- Catering: Welcome coffees, Lunches and Coffee breaks;
- On-campus Student dorms (if required);
- Student incentives: <u>Student Mentoring Program</u> and <u>Students Night</u>

It will be also asked your date and hour of arrival, your mode of transport and your accommodation to help us organising the transportations during the conference.

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ISBS Conference 2015

WEBSITE:

http://isbs2015.sciencesconf.org/



TWITTER:

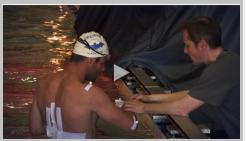
@ISBS 2015

#isbs2015

FACEBOOK:



PROMOTIONAL VIDEO:



MAP

We have created a <u>Google Map</u> dedicated to ISBS 2015 to give you an overview of the main locations where the conference events will take place:

- Conference venue;
- Pre-conference workshops and applied sessions when they are located in another place;
- Tours;
- Accommodations.

TRAVEL

Most of you will experience the Paris-Charles de Gaulle airport enroute to Poitiers. Charles de Gaulle airport is only two and a half hours away from Poitiers by fast train (TGV) thanks to a rail station located in the heart of the airport. TGV timetables will be placed directly on ISBS 2015 website in April. Poitiers rail station, located in the city centre, also offers connections to the main cities of France and of west Europe. Poitiers domestic airport offers direct connections to London Stansted/ Shannon/Edinburgh/Lyon airports.

WELCOME TO POITIERS!

Upon your arrival at the railway station or at the airport of Poitiers, members of the Organising Committee will be waiting for you in the hall at the ISBS 2015 desk to welcome you. They will help you reaching your accommodation or the congress venue smoothly and helping you to solve any problem you may have faced during your travel. Public transports can also take you into the city centre in 10 minutes.

ACCOMODATION

Poitiers offers a rich variety of accommodation options for travellers, from really economical hostels to luxury hotels. For ISBS 2015, we mainly propose you on-campus student dorms and 11 hotels where a special discount has been negotiated. If you have a special requirement such as an accommodation for a family or for a group, please contact <u>Dr Laetitia FRADET</u>.

SOCIAL PROGRAM

We have added two additional tours (Orienteering in the Poitou Marshes and Futuroscope Amusement Park) to the three already scheduled. We are actually working on a program for accompanying persons and kids (cooking course with a chef, daily tour, etc.). If you have a special interest/request, please contact <u>Dr Laetitia FRADET</u>.

Preview of ISBS 2015

SCIENTIFIC PROGRAM

Some new features have been added to the Scientific Program since the last ISBS Newsletter in October:

- On Monday the 29th of June, we have programmed three additional <u>pre-conference</u> workshops to the four already scheduled. They will be organised by <u>AMTI</u>, the <u>Société de Biomécanique</u> (the International Society of Biomechanics which regroups scientists from all over the world for which French is the spoken language) and <u>VICON</u>, respectively. Their access will be free of charge, but you still need to check each pre-conference workshop you wish to attend during your online registration for the conference.
- A joined applied session with the Société de Biomécanique entitled "Sport and Safety" is programmed on Tuesday the 30th of June. Specific risks of injuries and how to prevent them will be undertaken by a duo of a clinician and a biomechanist. Five duos will talk about hip and dancing, lumbar spine and golfing, hand and rock climbing, cervical spine and rugby union and knee and skiing, respectively.

Due to the large number of submissions, four parallel oral sessions will be programmed. The poster session will be, for the very first time, comprised of *poster with an abbreviated oral presentation* to summarise the paper. An extended question and answer session will allow for audience participation.

SPONSORS

Many thanks to the thirteen companies and the two scientific societies illustrated on the following page who support ISBS 2015.

DEADLINES

21st March 2015: Notification to authors

30th March 2015

- Early registration
- Student mentoring program
- Final paper for New Investigator Award

15th April 2015: Final paper

7th May 2015: Regular registration

10th May 2015: Student travel grant

29th June to **03**rd July **2015**: ISBS Conference

I look forward to greeting you all in France for an outstanding conference.

Dr. Floren Colloud ISBS Board of Directors (2014-2016)

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ISBS 2015 Sponsors



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GOLD SPONSOR



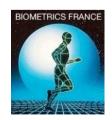








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ISBS Student Mentoring Program 2015

Dr. Gerda Strutzenberger ISBS Vice President (Projects and Research)

Dear ISBS Student members, it is again time to promote the ISBS Student Mentor Program: Use the chance to get in contact with the experts in our field! Simply said, but sometimes barriers of all kinds make it more easily said than done. Therefore, ISBS provides with the Student Mentor



Program at the ISBS Conference a great opportunity for you to get in contact with a well versed scientist. According to students, who already participated, it definitely might be worth trying (e.g. in the October Newsletters 2014 and 2013)



Student Mentor Programme Group 2014

We will have two sessions scheduled at the ISBS Conference in Poitiers, where we will match you with a suitable mentor. Our mentors come from different biomechanic-specific areas and are happy to discuss with you your research, problems you might be confronted with and your career plans or just generally share their experience in a friendly atmosphere.

What do you have to do?

Register for the student Mentor Program during the online registration process of the conference (deadline 30th March – which is the early registration deadline!). Participation in the Student Mentor Program is free of charge.

Students new to this program will be given priority, but depending on the registered numbers of students, we will be happy to also serve those ones, who already participated last year. For further information about the program and registration please visit the conference homepage.

Gerda Strutzenberger

ISBS Vice President (Projects & Research)

Student Mentor Programme Facebook Group

Click the icon below to join the Student Mentor Programme Facebook Group. Here you will find updates in future ISBS student activities as well as pictures and information on past events.

facebook. join our group +

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Call for ISBS Student Mini Research Grant 2015

Dr. Gerda Strutzenberger

Description

The purpose of this funding opportunity is to provide final year undergraduate or graduate students with opportunities to undertake biomechanics research projects with established researchers in an environment that provides strong mentorship. In addition, this opportunity targets the early stage of the student's academic training to encourage the pursuit of research in biomechanics areas.

Funds Available

The funds will be provided by ISBS. The total amount available for this funding opportunity is €2000 for funding 2 awards each year. The maximum amount per award is €1000 for up to one year.

Applications in one or more of the following research areas are encouraged.

- Sports biomechanics Instrumentation and method of biomechanics research
- Exercise biomechanics
 Paediatric and gerontology exercise biomechanics
- Sports engineering
 Fundamental movement biomechanics
- Biomechanics of sports and exercise injury prevention & rehabilitation

Eligibility

The applicant has to be supervised by an established researcher, who is a current ISBS member. The supervisor of the applicant generally administers the fund.

The applicant must enrol in an undergraduate degree program or graduate program at a university at the time of application.

Application Guidelines

Applications should include the following:

- A summary of up to five pages (single space, Arial 12 font) which includes the research background, research purpose and hypotheses, study design, methods, timetable for the measurements, and budget as well as reference to key related literature,
- A CV of the applicant: 2-3 pages in length, including contact information, education, award and honor, and list of publications
- One-page recommendation letter from the supervisor, who must be an ISBS member at the time of application.

Allowable Costs

- Participants compensations (transportation from home to testing venue) and snack food during testing
- Dissemination of research results, poster printing, workshop, paper publication
- Software for data processing
- Consumables for data collection

Call for ISBS Student Mini Research Grant 2015 contin..

Dr. Gerda Strutzenberger

Conditions of Funding

The winners are expected to

- present their work at the upcoming ISBS conference*
- prepare a 1 page report for the ISBS Newsletter 1 year after receiving the grant
- acknowledge the grant if publishing a journal paper.

*Additional information:

For support to attend the upcoming ISBS conference, winners can apply for the ISBS Travel Grant and will be given priority, assuming the submitted paper is of acceptable quality.

Review Process and Evaluation Criteria

The VP for project and research will be responsible for forming the reviewing committee. The top two proposals will be funded.

The following evaluation criteria are specific to this funding opportunity:

- 1. Fit of the research project to research objectives described above;
- 2. Excellence and suitability of the research project and training environment;
- 3. Suitability of the supervisor for the area of research.

How to Apply

Applications need to be submitted to VP for Research and Projects, Dr. Gerda Strutzenberger, (<u>Gerda.strutzenberger@sbg.ac.at</u>) using e-mail by **May 20th, 2014**. The grant announcement will be made at the ISBS conference and also communicated via the ISBS Newsletter and homepage.

Gerda Strutzenberger

ISBS Vice President (Projects & Research)

ISBS Student Development Profile

Dr. Roman Farana



rom my own experience, I think that ISBS is an organization which brings great opportunities for young researchers at start of their academic careers."



Currently, I am a lecturer at University of Ostrava, Czech Republic, and a member Biomechanics Research Group of Human Motion Diagnostics Centre. In 2012 I completed my PhD in Biomechanics at Palacky University Olomouc, Czech Republic (supervisor Professor Frantisek Vaverka). My research has been facilitated by attending ISBS conference, and I attended four ISBS conferences between 2010, 2012, 2013 and 2014. My research aligns closely with the ISBS ethos of bridging the gap between theory and practice with a specific focus on injury prevention of upper limbs in gymnastics.

In 2012 I attended the ISBS conference in Melbourne, and participated in the student mentoring program and applied gymnastics section. During this conference I met Professor Gareth Irwin (Cardiff Metropolitan University) and Professor Patria Hume (Auckland University of Technology), who helped me plan, manage and ultimately undertake my newest research projects. After the 2012 ISBS conference (Melbourne) I started a collaboration with professor Gareth Irwin which turned out to be a very productive time and it was at this point I can say my academic career changed. In 2013, I received the Hans Gros New Investigator Award for the presentation and defense of a paper entitled "The effect of different hand position on impact forces and elbow loading during the round off in female gymnastics". This research project has already resulted in personal invitations to present our findings to the Sport Biomechanics Research Group Seminar (Cardiff, 2013), C-Motion User Group Meeting, and Sport Wales: Welsh Gymnastics Seminar (Wales, 2014). In 2013, we published in the Science of Gymnastics Journal a first paper entitled "Influence of different hand positions on impact forces and elbow loading during the round off in gymnastics: a case study". In 2014, we successfully published in the Sports Biomechanics journal a paper entitled "Musculoskeletal loading during the round-off in female gymnastics: the effect of hand position", most recently we have a paper in press in the Human Movement Science journal entitled "Elbow joint variability for different hand positions of the round off in gymnastics".

From my own experience, I think that ISBS is an organization which brings great opportunities for young researchers at start of their academic careers. As a researcher, teacher and gymnastics coach, I strongly believe in the Society's philosophy of translating theory to practice and I am happy for opportunities which ISBS gave me. Finally, within ISBS I found a lot of really good friends and colleagues such as Gareth Irwin, Joe Hamill, Gerda Strutzenberger, Toshiyuki "Toshi" Fujihara, Tim Exell and Faulk Naundorf.

Call for ISBS Award Nominations 2015

Dr. Elizabeth Bradshaw ISBS Vice President (Awards)

The time has come to nominate candidates for the following awards:

Geoffrey Dyson Lecturer

Life Member of ISBS

Fellow of ISBS

Successful candidates will be announced at the 33rd International Conference on Biomechanics in Sport, Poitiers, France (29th June – 3rd July)

Please forward any nominations you would like to make to me (elizabeth.bradshaw@acu.edu.au) by Thursday 30th April, 2015. Only nominations submitted by this date will be considered by the ISBS Awards Committee for 2015. For guidelines and information on how to apply please go to http://www.isbs.org/



Past Recipients Profile

Juris Terauds

Chair of the founding group of ISBS

First ISBS President

First Conference Chair 1983

First Life Member 1989

Fellow 1997

Canadian National Champion for Javelin (Three times)

Gold Medallist at the 2008 USA Masters in Athletics (Javelin)

Gold Medallist at the 2009 Masters Games in Sydney, Australia (representing the USA)

Started first extensive Biomechanics research projects at the 1976 Olympic Games in Montreal and the 1978 Commonwealth Games in Edmonton

Developed the first prototype for stepping machines in the late 1970's

Hans Gros was one of his PhD students

Has 10 Grandchildren



Hans Gros Emerging Researcher Award

Dr. Elizabeth Bradshaw

It is with great pleasure that we announce that Dr Kimi Sato has been selected to receive the Hans Gros Emerging Researcher Award for 2015. Kimi completed his PhD in 2010 at the University of Northern Colorado and is now an Assistant Professor at East Tennessee State University (ETSU). He provides biomechanics services for athlete monitoring at the US Olympic Training Site located at ETSU. Kimi will be delivering a keynote presentation on "Measuring bilateral asymmetry in a long-term athlete monitoring" at ISBS2015.

Dr Elizabeth Bradshaw ISBS Vice-President (Awards)



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ISBS Practitioner Profile

Dr. Jodi Cossor



Dr Jodi Cossor is a Performance and Technique Analyst at High Performance Sport New Zealand, based in Auckland. Jodi was a member of the Australian Swimming National Squad in the early 1990's, and was a scholarship holder at the Australian Institute of Sport. It was through her pursuit of swimming and during her undergraduate degree in Human Movement that she developed an interest in Biomechanics. Jodi has worked in the area of swimming biomechanics from one side of the Commonwealth to the other. She worked at the Australian Institute of Sport from 1997 to 2002 with Dr Bruce Mason before moving to England to work with British Swimming as the Lead Biomechanist from 2002 to 2013. During her time with British Swimming she also completed her PhD at Loughborough University part-time under the supervision of Professor Andy West and Professor Paul Conway. The title of her thesis was The Use of Technology to Improve Swimming Performance. The three main areas that she examined whilst in England were competition analysis of swimming over time (techniques used and performances at major competitions), start performance using the new OSB11 starting block, and a pressure analysis of foot position on the wall during turn performances. Sports science and, in particular, biomechanics plays a huge role in the success of many national swimming programmes around the world. Jodi is at the forefront of this area of biomechanics.

For more information click <u>here</u> to see an interview about her current role with High Performance Sport New Zealand.

SHORT COMMUNICATIONS

ISBS 2015 Membership

Manfred Vieten ISBS Treasurer

Dear ISBS members,

It is time for a mailing list update of Isbs-membersigs@mailman.uni-konstanz.de. The simplest way to do this is remove everybody from the list and subscribe each member in good standing newly. Therefore, please

do not worry when you get the "un-subscription message". If you are a member in good standing for the year 2015 you will be re-subscribed immediately.

If you have not paid your 2015 dues yet, please do so via http://www.isbs-deduction.de/. All you need is a credit card or a PayPal account. The deduction is handled via PayPal, also if you do not have a PayPal account.



Hermann Schwameder ISBS Vice President (Conference & Meetings)

Dear ISBS members,

It is a great pleasure to launch the first call for hosting the 35th and 36th Conferences of the International Society of Biomechanics in Sports in 2017 (ISBS 2017) and 2018 (ISBS 2018). The Board has decided to call for

bids three years in advance. This is the reason why we launch the call this year for two consecutive conferences.

According to the 'rotation principle' the preferred regions for ISBS 2017 are North and South America, and for ISBS 2018 Europe. In case of your interest in hosting one of these conferences, please prepare your bid according to the 'Policies and Guidelines Manual for the Planning and Preparation of the ISBS Annual Conference' (ISBS Conference Manual 2014 on the ISBS website). This document should contain all relevant information to prepare and organize the ISBS Conference.

Please submit an electronic file of the proposal to hermann.schwameder@sbg.ac.at not later than April 30, 2015.

In case of any further information don't hesitate to contact me.

Kind regards

Prof. Hermann Schwameder
ISBS Vice President (Conferences and Meetings)



Justin Keogh

ISBS Board of Directors (2013-2015)

In September 2011, my family and I returned to Australia where I took up a position in the faculty of Health Sciences and Medicine at Bond University. As sports and exercise biomechanics had not really been a



focus within our faculty up till that time, I was the first full-time time biomechanist in the faculty. Therefore, it is taken some time to accumulate the equipment and infrastructure required to teach and perform research in the area of sports and exercise biomechanics. Over the three and half years I have been here, we have started to develop some infrastructure in biomechanics, examples being a six high-speed Vicon motion capture system, one AMTI sports force plate, a Mega WBA eight channel EMG system and 12 SabelSense inertial sensors. As most of these items were purchased in 2014, this year will be exciting In that we will start to better understand how to utilise these new resources. This new biomechanics equipment has supplemented other instrumentation including a Woodway nonmotorised treadmill, GaitMat II pressure mat, GPS Sports and 2 GymAware units which we also use quite extensively in our teaching and research.

As Bond University Is a relatively small private Australian university that teaches across three semesters per year, teaching has traditionally been emphasised over research. The importance of research and the recruitment of higher degree research (HDR) postgraduate students has however increased over the last 3 to 4 years. This has suited me as I have been involved in many research projects and supervision of HDR students here at Bond University during this time. My HDR students in the sports and exercise biomechanics (or associated) space that I currently supervise include Jesse Griffin, Mico Oliver, Wade Chalker, Samantha Fien, Josie Grigg and Alex Natera.

Wade Chalker has completed all data collection for his Masters thesis entitled "Differences in eccentric hamstring strength and asymmetries across elite, district and school level cricket players". He has used the Nordbord (shown below) which is an instrumented device developed by Dr David Opar and Dr Tony Shield to measure eccentric strength during the Nordic hamstring curl. Wade has presented some of these research findings at the 2015 World Cricket Congress and has attracted much media interest in Australia due to the number of hamstring injuries affecting our best cricketers leading up to and during the 2015 World Cup.



ISBS Lab Profile



WEBSITE:

http://bond.edu.au/

http://bond.edu.au/ about-bond/academia/ faculty-health-sciencesmedicine

http://bond.edu.au/ program/master-sportsscience

TWITTER:

@BondUni HSM



FACEBOOK:

bond.uni.hsm



Justin Keogh

Jesse Griffin has recently submitted his Masters thesis entitled "Performance analysis of the physical and technical demands of elite female rugby sevens pre-tournament training camps". This thesis Involved the use of GPS and notational analysis to examine current training practices in elite Australian women's rugby sevens players with a view to providing some insights into potential strategies to improve training and competition preparation.

Mico Oliver has completed all data collection for his Masters thesis entitled "Physical and technical benefits of physiotherapy musculoskeletal pre-screening and strength and conditioning for skillful golfers". He is close to submitting his first paper to a scientific journal and presented his findings at the 2014 World Scientific Conference of Golf.

Samantha Fien is close to completing her data collection for her Masters thesis entitled "Gait performance in residential aged care and possible benefits of exercise". She is using the Gaitmat II system to characterise the spatiotemporal gait parameters of residential aged care residents and to determine the feasibility of exercise to improve these outcomes.

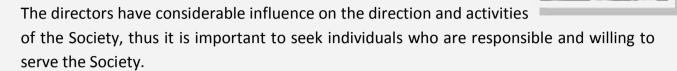
Josie Grigg and Alex Natera has both recently started their part-time PhDs. Their theses are entitled "Biomechanics of the BMX gate start: implications for cycling technique and strength and conditioning" and "Repeat power ability: a trainable physical quality applicable to sport performance", respectively. Both are making good progress in projects that have much potential in their given areas.

Our Department is also starting a new Masters of Sports Science program in May 2015 http://bond.edu.au/program/master-sports-science This exciting four semester program will involve one and a half semesters of coursework followed by a 10 month internship with leading Australian sporting teams and franchises. We feel this long term internship opportunity will provide the students the best experience in terms of developing their practical sports science skills, while also improving their research knowledge and skills as well as their sports science networks.

ISBS Elections 2015

Dr. Randall Jensen ISBS Secretary General

According to recent changes in the ISBS Constitution, the election ten (10) members of the Board of Directors is mandated in the year 2015.



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

http://www.isbs-deduction.de/

The election process is as follows:

Terms of office:

2015-2016 term will begin at the Post Conference meeting in Poitiers, France

Board of Directors to be elected (Two-year terms):

Ten (10) Directors

Nominations:

Self-nomination is permitted.

Current officers and directors may stand for re-election. According to the ISBS Constitution, a maximum of 10 (ten) years of service allowed for each individual (not including as President, President Elect, Past President, Treasurer, or Secretary General).

Before nominating another member, please be certain that the member is willing to serve.

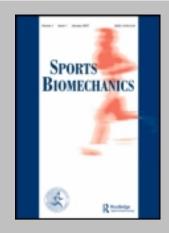
Nomination Period:

10 February 2015 - 23 March 2015.

Submission of Nominations:

Nominations and self-nominations should be submitted to:

Randall Jensen rajensen@nmu.edu



Sports Biomechanics Journal

Sports Biomechanics is the official scientific journal of the International Society of Biomechanics in Sports.

Impact Factor:

ISI Impact Factor 2013: 0.867 (57/81 in Sports Science, 114/154 in Biomedical Engineering)

Editor-in-Chief:

Daniel Fong

Associate Editors:

Jacqueline Alderson Elizabeth Bradshaw Daniel Herman Gerwyn Hughes Hiroyuki Nunome

Journal website

Paper submission

Twitter Page:

@sportsbiomechj

Dr. Randall Jensen

ISBS Secretary General

Candidate Statements:

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

This is not an academic position, so although a statement may include academic achievements, it should also include information relative to the position. A description of each position is provided on the Society webpage http://www.isbs.org/.

Deadline for nominations:

The deadline is Monday 23 March 2015.

Additional Information:

If you need additional information, please contact me:

Email: rajensen@nmu.edu

Telephone: 1-906-227-1184

ISBS Sponsors

Prof. Wolfgang Potthast
ISBS Vice President (Public Relations)

The society would like to thank the corporate sponsors of ISBS: Sensix, Contemplas, Simi and Kistler. These sponsors provide important support to the mission of ISBS thorough their quality products and financial support to the society. Remember to consider these fine vendors of sports



biomechanics research equipment and software when updating your lab. Contact <u>Dr. Wolfgang</u> <u>Potthast</u>, Vice President (Public Relations) for more information about ISBS sponsorship.









Featured Sponsor

SENSIX, its focus and its philosophy

SENSIX designs, manufactures and markets high-precision force-torque sensors and force plates. These scientific measurement tools are very well adapted to the quantitative study of the effort made by a subject. The company is based on the thesis research in the field of biomechanics of its founders. The R&D is our core business. Any sensor we produce is tailor-made according to the requirements of the client to answer the need of accurate measure without altering the studied movement.

Any sensor can be customized in accordance with the needs of its user in terms of measuring range, boundary dimension, mechanical integration solutions, computer interface and electronic processing. These measuring devices provide precise and reliable data available through simple and user-friendly computer interfaces that SENSIX develops.

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SENSIX, its focus and its philosophy

Our force sensors allow measuring weak pressure as well as great effort. This is why, our products are appreciated by sport professionals for the study and the analysis of the force generated during the execution of human body movement.

We believe that in order to improve the performance, we have to understand how it is produced. Indeed the complexity and the heterogeneity of sport movement require a compromise between the measurement accuracy and the respect of the nature of the movement to measure. Thereby SENSIX offers a sensor range allowing to measure with precision the movement strategy producing the performance. Thus, the adjustment, improvement and training program will be specific to each sport and sportsman.

The company offers measuring instruments made for each sport: cyclist, swimming, gymnastics, rowing, paddling ...



EXAMPLE: PADDLING

We instrument sports apparatus like paddle with 6-components force-torque sensor. Integrated into any type of tube and used as a handle, it allows differentiating wrist efforts (abduction/adduction - flexion/extension - pronation/supination) during gripping tasks.

EXAMPLE: BIKING

We developed a specific product which precision and compatibility with standard clipless systems makes it an indispensable cycling evaluation tool. I-CrankSet is a set of pedals instrumented with 6-component force-torque sensors that allows the improvement of a cyclist movement strategy. This



product is the result from researches on pedaling and more particularly the study of high precision instrumentation essential for analysis. Indeed, the measure of force and torque exerted on the pedals has become indispensable in the ergocycle test analysis. This measurement quantifies pedaling technique of the cyclist in terms of effectiveness, efficiency and symmetry of action between the lower right limb and left limb.



Website: www.sensix.fr

Contact: info@sensix.fr

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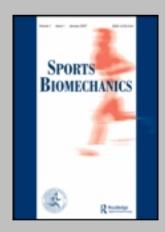
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