European Society of Biomechanics
Newsletter
Autumn 2009

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MESSAGE FROM THE PRESIDENT, Ralph Müller

Contents

Dear Members,

Lately I was wondering what exactly it was that drew me to the European Society of Biomechanics in the first place. I did not have to look far to find the answer - it was the meeting. Our biennial meeting where today more than 600 biomechanists from all over the world meet and exchange ideas. I remember my first meeting which was actually the combined meeting with the World Congress of Biomechanics held in Amsterdam in 1994. I had just graduated and was inspired by the interesting sessions and the community in general; lots of discussions in a vibrant place. Of course, this was not the regular ESB meeting but then it was clear to me I had to come back and so I did for the next fourteen years; first as a young postdoc, then as a group leader and now as a director of a relatively large institute devoted to biomechanics. Edinburgh 2010 will actually be special for me as I will go into the meeting as your president and come out as a regular member after eight years of service on the ESB Council. With this I would like to invite you all to join us in Scotland next July and please submit your best work. You have time till the end of this month. I think it will be a thrilling and exciting meeting and I am very much looking forward to that.

This said I am already looking ahead and I am wondering to which conference I should send my students in 2011. Although there will be the biennial meeting of the International Society of Biomechanics in Brussels and we are planning to combine this with the ESB Workshop, it might not present the same opportunity to my students as our own biennial meeting because the ESB Workshops are thematic and therefore by definition only serve a part of our community. I am therefore wondering, with the size of the current society, would it not make sense to move to an annual meeting? This would allow the presentation of new results every year rather than having to save these results for the biennial meeting or then refraining from presenting at all in our community. This is again especially important for our youngest members in the society, the students. Their clock is ticking faster and they typically only have three years to finish their project. Some might have been lucky and had results ready for presentation in even years but others did not get that chance to present their best work at an ESB conference, just because there was no meeting in that year. Nevertheless, if they cannot present, they cannot compete for our awards and distinctions. They miss an opportunity to present their work to potential employers for postdoctoral positions but also to build their own network with their peers and colleagues. I think that we as a society lose out on this potential. These students might instead turn to other societies to present their work and find a home there, just because we as a society did not offer a meeting in that odd year.

This is why I have proposed to the Council to start annual meetings from 2012 onwards. The Council has approved the basic idea and has installed a small committee that will look into the practical implications of such a change and will report back to the Council at its next meeting in January 2010. I am chairing this committee and therefore would be extremely interested in hearing your opinion about such a move. Please e-mail me at: president@esbiomech.org with your points for discussion. I personally feel that this would be a step in the right direction in an ever growing society.

FINAL CALL FOR ABSTRACTS: 17th Congress of the European Society of Biomechanics, 5th-8th July, 2010, Edinburgh, UK

DEADLINE - MONDAY 30th NOVEMBER 2009

www.esbiomech2010.org

The 17th Congress of the European Society of Biomechanics will be hosted by The University of Edinburgh, Scotland, UK. The University's central campus in located in the city's Old Town, at the heart of the capital. Edinburgh is one of the greenest and architecturally most beautiful cities in Northern Europe, with a colourful history based on the nation's political and cultural past. The University was founded in 1558 and features some of the grandest buildings in the city, as well as the most modern academic facilities and services. Lectures will be held amongst the University's George Square with no more than 5 minutes walk in between congress venues.

The 2010 meeting will cover the ESB's traditional core topics while including emerging research areas in which much new and exciting biomechanics research is taking place. A pre-course will draw on the experience of experts in their field to provide state of the art knowledge in an area of general biomechanics interest. Confirmed plenary speakers include Professor Duncan Dowson and Professor Alan Goodship.

Submission of Abstracts:

The highest ranked abstracts will be invited to submit a full manuscript for a special issue of Medical Engineering and Physics. All accepted abstracts will be subject to publication in conference literature.

Abstracts can be submitted for either oral or poster presentation. All abstracts must be submitted through the online system (www.esbiomech2010.org) by Monday 30th November 2009. There will be no extension of this deadline. You will receive automatic confirmation that your abstract has been received. Please note that only fully registered delegates can present at the conference and only abstracts of delegates who are fully registered will be entered into the programme.

All abstracts must be submitted by one of the authors of that abstract. The submitter will provide their details for reference, and include all corresponding authors of the same abstract. All abstracts should be submitted as a single A4 page only, using the downloadable template as a guide. Please use this template to create a PDF file for upload.

The topics for ESB2010 are listed below. Please choose one relevant topic when submitting an abstract as it will aid the scientific committee in grouping presentations within the programme. The list has been designed to cover most areas of biomechanical study.

- Cardiovascular mechanics
- Non-cardiovascular biofluid mechanics
- Biomaterials
- Bone and dental mechanics
- Mechanobiology
- Motion and sports biomechanics
- Implant and joint biomechanics
- Soft Tissue mechanics
- Other topics

Key Dates:

Deadline for abstracts: Monday 30 November 2009
Registration opens: January 2010
Notifications of acceptance: February 2010
Provisional programme available: February 2010
Early registration closes: Friday 30 April 2010
Registration closes: Friday 18 June 2010

Social events:

The conference dinner will be held at the Dynamic Earth science museum (Find out more from: http://www.dynamicearth.co.uk/) overlooking the Scottish Parliament and Holyrood Palace (the Queen's official Scottish residence). Opened in 1999, Dynamic Earth is a strikingly modern building set against the geological backdrop of Arthur's Seat; a vast volcanic formation including the basalt cliffs of Salisbury Crags. Opening with a wine reception and private access to the museum's galleries, guests will be encouraged to explore the various environments and exhibitions. A three-course meal will then be served in the upper Stratosphere. The evening will culminate with a traditional Scottish Ceilidh of celtic music and displays of highland dancing.

In addition, there will be a welcome reception on the first evening, as well as the opportunity for whisky tasting.

Organising committee:
Jimmy Cunningham, University of Bath
Bill Easson, University of Edinburgh
Hamish Simpson, University of Edinburgh
Mark Taylor, University of Southampton
Amy Zavatsky, University of Oxford

Address:
European Society of Biomechanics
Conference Secretariat
Office of Lifelong Learning - CPD Unit
The University of Edinburgh, 11 Buccleuch Place
Edinburgh, EH8 9LW, Scotland, UK
e-mail: esb2010@ed.ac.uk Tel: +44 (0) 131 651 181

Is Biomechanics Making a Scientific Impact?

Damien Lacroix, ESB Secretary-General

On this year of the celebration of the 40th Anniversary of the first foot on the Moon, who could say that mechanical forces are negligible in our life? We are a pulsating machine going at a speed of around 60 pulsations per second. Therefore, mechanical stimuli are always present everywhere in our body. Biomechanical concepts are being used daily by surgeons to restore functional activity to patients and a there is a long list of biomechanical solutions to pathological problems indicating the real impact of biomechanics in our daily life. Nonetheless, we scientists, are constantly evaluated by the output and impact that we make from our research. It is therefore legitimate to wonder if biomechanics is making sufficient impact as a sub-discipline of biomedical engineering.

The ESB participated from a very early stage in the creation and development of the Journal of Biomechanics. Under the first President of the ESB, Prof. John Scales, Prof. Rik Huiskes, who was then Council member of the ESB, was appointed co-Editor of the journal, a position that he served from 1979 up until July 2009. The Journal of Biomechanics has therefore been for a long time the 'official' journal of the society, where our members often publish their results. This mutual collaboration between the ESB and the publishers and editors of the journal has led to considerable development of the journal. Only around 100 articles were published annually in the 80s compared with 474 last year.

In recent years however, it seems that the Journal of Biomechanics has reached its cruising speed and only seems to progress in line with the increase of output of the biomedical engineering field in general. When one looks at the impact factor since 2003, it is increasing slightly but at the same rate as the rest of the journals within the Biomedical Engineering category in ISI (Figure 1). Whereas, other journals such as Biomaterials have managed to profit from the expansion of the 'bio' field by increasing their impact factor dramatically (Fig. 1). That the Journal of Biomechanics has not managed to do so is disappointing, but none of the other journals related to biomechanics has managed either. The progress of related journals such as Clinical Biomechanics, Journal of Biomechanical Engineering, Bone, Journal of Orthopedic Research, Clinical Orthopaedic Related Research or Spine are more substantial than Journal of Biomechanics but are also rather steady (with the possible exception of CORS), see Figure 2. The basic science biomechanics journals are losing grounds to more biology (Bone) and clinical (JOR, CORS, Spine) oriented journals. Biomechanics as a scientific discipline has not managed to establish itself as a discipline whose study is critical for the advancement of science in general.

A top leading journal in biomechanics is necessary for the consideration of biomechanics as a problem solver for life science. Without this journal the top articles in biomechanics are not going to appear in any of the biomechanics related journal but instead in journals focused on specific disciplines or applications (JBMR, European Respiratory Journal, Bone, Biomaterials, Tissue Engineering, etc…), or even better in multidisciplinary journals like Nature, Science, PNAS and Nature materials.

Publication is not the only impact related parameter. However, it is the one that is mostly used in evaluations for grant proposals or institution evaluation. This lack of high impact visibility has been responsible in part for the lack of leading role of biomechanics in Framework Programmes of the

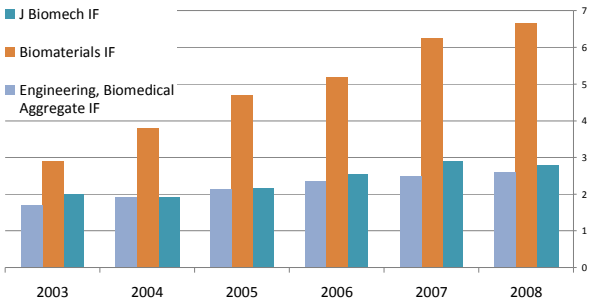


Figure 1. Impact factor of J. Biomechanics, Biomaterials and the Biomedical Engineering field from 2003 to 2008.

European Commission (with the recent exception of the call in Virtual Physiological Human) and in the low success rate of biomechanics applicants at the Starting and Advanced grant of the European Research Council. A lot more effort needs to be done in the development of a leading journal in biomechanics that is able to also attract researchers from other disciplines. This must go hand in hand with the development of an educational system of research in biomechanics able to translate biomechanics graduate students into future scientific leaders able to compete with other leading disciplines.

The Council is currently working on these issues. If you have any suggestions, please send an email to Damien Lacroix secretary.general@esbiomech.org.

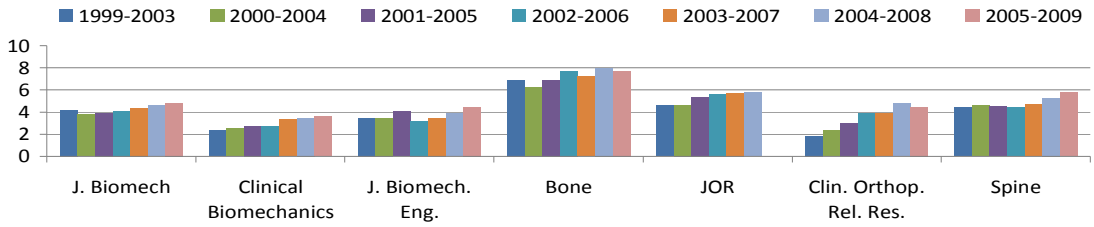


Figure 2. Average citation rate of an article published in J. Biomechanics, Clinical Biomechanics, J. Biomechanical Engineering, Bone, J. Orthopaedic Research, Clinical Orthopaedic Related Research, and Spine in a 5-year period.

ESB 2010 AWARDS - REMINDER: DEADLINES APPROACHING

J.M. García-Aznar, Vice President

Deadlines are approaching for a range of ESB awards, most of which are associated with the 2010 congress. The mission of the European Society of Biomechanics (ESB) is to promote excellence in biomechanics research, to foster integration of clinical and basic science, and to facilitate the translation of that science to health care and clinical practice. One way in which ESB supports its mission and promotes excellence is by recognition of outstanding members with prestigious awards given at the biennial ESB Congress. All ESB members are eligible for the awards below, except as restricted by specific award criteria. The Awards Program of the European Society of Biomechanics includes the following Awards:

S.M. Perren Research Award

The S.M. PERREN RESEARCH AWARD was first presented at the 2002 ESB Congress in Wroclaw, Poland, and was previously named the ESB Research Award. This award, which is the most prestigious award of ESB, will be given to the first author of the best scientific paper submitted to the Chairman of the Award Committee. Papers should be based on original research and be previously unpublished. The scientific merit of the paper will be judged by the ESB Award Committee. Papers should be submitted in the format required for the Journal of Biomechanics. The award is open to all areas of biomechanics research and to both members and non-members. There will also be an award lecture named in Dr. Perren's honour at each biennial ESB Congress. The award includes a honorarium of 10,000 Swiss francs (approx. €6,000) sponsored by the AO Foundation in Davos, Switzerland, and a certificate which is presented after the S.M. Perren Award Lecture at the biennial ESB Congress.

Papers in consideration for the S.M. Perren Research Award should be sent electronically to the Chairmen of the ESB Awards Committee. The deadline for receipt of the paper for the 2010 ESB Congress in Edinburgh is December 1, 2009.

ESB Clinical Biomechanics Award

The ESB CLINICAL BIOMECHANICS AWARD was established by ESB with the purpose of fostering the application of Biomechanics to clinically oriented problems. At every biennial ESB Conference the Award will be given to the most meritorious proceeding abstract. Eligibility includes ESB membership and an indication at the time of abstract submission that you would like to compete for the Award. The deadline for submitting proceeding abstracts to the 17th Conference of the European Society of Biomechanics (http://www.lifelong.ed.ac.uk/esb2010/index.htm) will be November 30, 2009.

The selection is made by an ad hoc Award Committee based both on the quality of the proceeding abstract and the presentation of the four selected award finalists at the Conference, which will be held in 2010 from July 5 to 8 in Edinburgh, Scotland. The first author receives a certificate and an amount of 1000 € donated by Elsevier Science Ltd., the publisher of Clinical Biomechanics. The award winner will be asked to prepare a manuscript which is foreseen to be published in Clinical Biomechanics as the ESB Clinical Biomechanics Award Paper.

ESB Student Awards

The ESB STUDENT AWARDS were instituted by Professor Marie-Christine Ho Ba Tho at the 1998 Congress in Toulouse, France, with the purpose to honour excellence in biomechanics already at a relatively young age. At every biennial ESB Congress one first prize Student Award and three runner up Awards will be given to four students based on the recommendation of the Awards Committee selecting the four best proceeding abstracts for a final presentation at the ESB Congress and on a secret ballot to select the first place, which will be held amongst the meeting delegates attending the award lectures. The award consists of a certificate for each winner and 1000 € for the first place and 250 € for the runners up donated by Elsevier Science Ltd. For consideration, the candidate must submit electronically an abstract to both the conference secretariat and to the Chairman of the Award Committee before or at the abstract submission deadline of the next biennial ESB Congress (November 30, 2009). In addition, a brief curriculum vitae and a statement signed electronically by the student's adviser that the applicant is a deserving candidate and will still be a doctoral student at the time of the biennial Congress should be included in the submission.

ESB Poster Award

The ESB POSTER AWARD is given at each biennial ESB Congress with the purpose of raising the quality of poster presentations at the meeting. The selection is made by an ad hoc Poster Award Committee appointed by the ESB Council and chaired by the ESB Awards Committee Chairman. The award consists of a certificate for the winner and an amount of 300 € donated by Bertec Corporation. For detailed information on eligibility, submission and the selection procedure, please refer to the Awards Regulations or contact the Awards Committee Chairman.

ESB Travel Awards

The purpose of the Travel Awards is to allow young researchers to participate at the ESB Congress. Any ESB member who is undertaking a PhD or has not more than 5 years PostDoc experience and has an accepted paper at the ESB Congress is eligible. The Award consists of a certificate and an amount of 400 €, which are expected to be used for travel, accommodation and living expenses during the ESB meeting. To this purpose funds will be provided by the ESB Treasurer. For consideration, the candidate must submit an electronic application to the Chairman of the Award Committee including the officially submitted paper to the ESB Congress; the applicant's curriculum vitae and list of publications. The deadline for receipt of the travel award application for the 2010 ESB Congress in Edinburgh is March 1, 2010.

To view Past-Awardees visit:
http://www.esbiomech.org/Html/2

More information on the ESB Award Program can be found here:
http://www.esbiomech.org/Section/esb-awards

For detailed information on submissions and nominations, please refer to the Awards Regulations:
http://www.esbiomech.org/Html/16

or contact the Awards Committee Chairman:
Prof. Dr. J.M. García-Aznar
Chair, ESB Awards Committee
Aragón Institute of Engineering Research (I3A)
University of Zaragoza
Campus Río Ebro, Zaragoza 50018, Spain
e-mail: jmgaraz@unizar.es

STUDENT'S CORNER

The Student's Corner in this autumn's newsletter will be taking on a slightly different flavour by including direct contributions from some of the Student Committee's members. Arzu starts by reporting on the ESB summer workshop, as well as discussing plans for the upcoming ESB student evening. This is followed by a short reminder of the Facebook account and a testimony from Lies Geris, who will be leaving us after many years of service to the ESB Student Committee.

Report on the Student Meeting at the ESB Workshop, Zurich, June 2009 (by Arzu Tasci): The ESB summer workshop is always a perfect opportunity for junior researchers to listen to the leading scientists on their specific topic in the tutorial sessions as well as to present their work and receive feedback. After a very successful workshop in Trinity College Dublin, students once again had the chance to attend the special mentoring sessions at this year's workshop in Zurich, and had the chance to discuss their challenges with their chairmen as well as their fellow presenters. Since the workshop was held in the Science City of the ETH Zurich, this workshop also provided a nice opportunity to see the ETH Campus and the labs. Activities for the ESB Student Members occurred on the final day of the workshop, in which Bill gave a short introduction regarding the ESB Student Committee, its members and activities. Then, our ESB President Ralph Müller gave an informative presentation on "The most important aspects of undertaking and completing a PhD" by giving examples from his own studies and his current lab. Following the meeting, all students were invited to lunch, where further fruitful discussions about the presentation and ESB Student Corner took place. In the end, we had several new ESB student members on board and one of them (Alessandra) became an active member in the Student Committee.

The next ESB Student Member's meeting will take place in the 17th ESB Congress in Edinburgh, Scotland. Since there is still a little room for organising the student specific events and activities, we would be most pleased to hear from you on the online forum, where you can add your comments and suggestions. Any ideas for e.g. our student evening event at the ESB would be most welcome, as well as provide you all the opportunity to enjoy an evening planned with you in mind!
We hope to see you all in the Edinburgh meeting and in the Facebook Group. ☺

ESB student Facebook on-line forum (by Alessandra Carriero): We would like to draw your attention on the "European Society of Biomechanics - Student Members" Facebook Group created for all the student members of the ESB to allow active participation to the society and progressive on-line forum. ESB Facebook has been created to be a friendly and open method of exchanging relevant and up-to-date information, as well as contribute with discussion, comments, job and PhD/Post-Doc position adverts etc.
The group is targeted specifically at student members, so I would encourage you all to come on the board and share your topics with the other student members. It would be an interesting and easy way to interact with colleagues, get feedback, comments and advice. If you have information that you would like to share with us, such as your research topic, grant/award, best poster/best paper, images of your work, conference/symposium attended, please feel free to step up and share your news with us. We would really like to hear from you!
There are currently two topics on the ESB Student Facebook board seeking your feedback: the organization of the ESB2010 student night out and the ESB2010 student meeting. We would like to invite you to join our discussions as your opinions are extremely important for us to make the events at the next ESB conference in Edinburgh both successful and memorable.
For those students that wish to be personally involved and use this opportunity to build the ESB social and scientific community network, please log into your Facebook account (www.facebook.com) and simply type "European Society of Biomechanics – Student Members" into your search box and search for it. After sending your request to join the group, your application will be rapidly processed by a member of the student committee. Membership to the ESB Facebook group is of course free!
If you have any questions, issues or suggestions that you would like to discuss or propose to improve the experience of student members within the ESB, please feel free to contact the chair of the Student Committee, Bill Taylor (student.chair@esbiomech.org) or any member of the student committee (student.committee@esbiomech.org). We wish you all an excellent beginning of academic year and look forward to seeing your discussion contributions on Facebook!

Retirement of Lies Geris from the Student Committee: Lies has been a member of the Student committee since its founding. After completing her doctorate and post doctorate years, she is now striding into an associate professorship position in Liège, and hence leaving the student committee. This is her testimony:

5 years ago, the ESB introduced the student membership. Doing my PhD at the time, I did not hesitate and signed up immediately. A year later, the call came for volunteers in the newly erected ESB student committee.
Participating in the ESB student committee seemed like an ideal opportunity to develop some of my personal skills, while at the same time expanding my network. And so it was. During the world conference in biomechanics in 2006 I helped co-ordinate the first ESB mentoring program. Besides the organizational aspects (informing the ESB members, attracting both mentors and mentees, making practical arrangements), also the science part (trying to find the best possible matches between mentors and mentees) was very interesting. Thinking about what makes a good mentor/mentee has helped me in being a better mentor for my master students and also helped me to think about what I need from my own mentor. Of course, there are plenty of other things to do in the student committee, such as the organization of student luncheons, student's night out at each ESB conference or workshop and keeping the Facebook community alive. So take your pick! And - apart from the benefits for your personal and career development - it's just fun to meet new people and make friends from all over the (biomechanics) world. That last reason might very well be the best one why you should sign up for ESB student membership and the student committee today :-) !

Lies

We wish Lies all the very best in her career and thank her most gratefully for her years of service to the committee. People like Lies are a real asset in moving individuals and communities forward. As a result of her departure, we are now accepting applications for a post on the Student Committee – if you are interested, please feel free to send your application and ideas to myself, Bill Taylor on student.chair@esbiomech.org.
I hope that you are all well.

Bill

MEMBERSHIP NEWS

Report Profile Data of ESB Members

In May we encouraged all our members to fill in their profile data on the ESB website 313 of 581 members (53%) had done so by mid-June and here we present a summary analysis of the membership profile, for the full report see the newsletter appendix: http://www.esbiomech.org/content/File/ESB%20Profile%20data_%202009.pdf
The characteristics of the members that have filled out the survey, comparing them with the available data corresponding to all the members is shown in Table 1. Here, the data that we can compare is the status of our members and we can validate our profile data with respect to the status. In fact, we can see how the distribution of all the members in function of the status and the distribution of those that filled out the Profile Data, is very similar. Therefore, we can conclude that these data are representative of all our members with respect to the status of the members.

Survey Values	PD	% PD	ESB	% ESB
1. Status	313		581	
Active	240	76.7%	379	65.3%
Students	64	20.4%	169	29.1%
Senior	6	1.9%	21	3.6%
Honorary	1	0.3%	8	1.2%
Corporate	2	0.6%	3	0.5%

Table 1. Characteristics of the members that have filled out the Profile Data (PD).

The age of the members that have filled out the survey is 42.6±12.3 with the distribution shown in Figure 1. More than 80% of our members belong to Higher Education and Research Institutes (Figure 2) and their main activity is research (Figure 3). If we analyze the distribution of our members taking into account the institution and the activity we can see that the more important activities are R&D and teaching equally and Research and/or development, that is mainly developed in Higher Education, Research Institute and Hospitals. The position that occupies our members in their organizations is quite uniform, (Figure 4), more that 75% of members have a PhD.

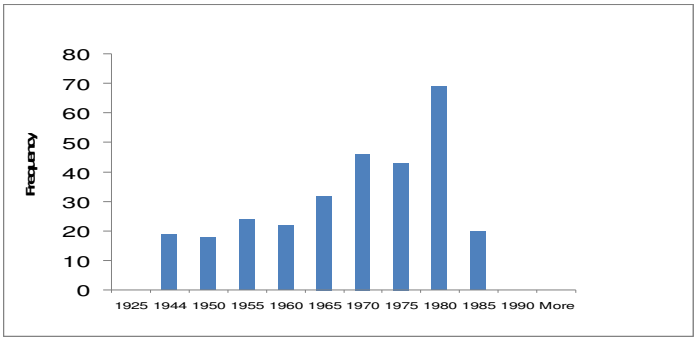


Figure 1. Distribution of birth year of ESB members (all member types).

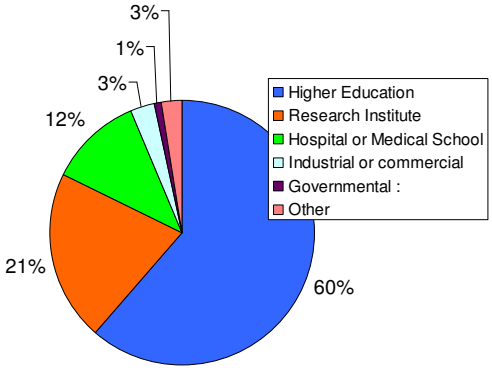


Figure 2. Distribution of the types of organizations in which ESB members are involved.

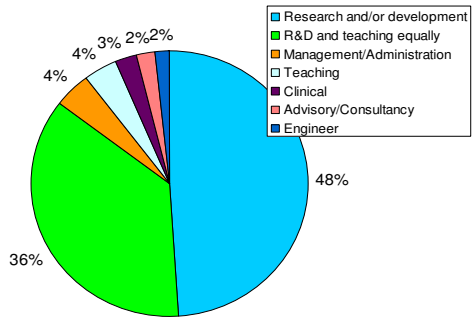


Figure 3. Main activities in which ESB members are involved.

With respect to the main professional career of our members a reduced classification has been developed, distinguishing between Clinicians, 3 types of engineers (Biomedical, Mechanical and others) and the other degrees. With this classification in mind, we can see in Figure 5 that our members are mainly engineers (more than 73%). The ratio of clinicians is very small only the 6%, being 11 Orthopaedics, only 1 Cardiovascular and 6 more in other specialities.

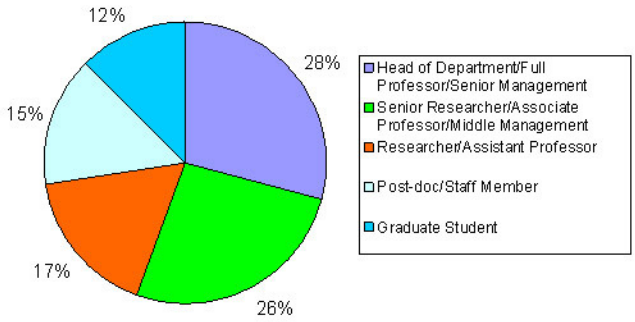


Figure 4. Distribution of positions occupied by ESB members.

The hottest research topics in which our members are currently working are Hard Tissue Mechanics, Soft Tissue Mechanics and Joint Mechanics. The 5 topics that fewer members have an interest in are: Botany, Zoology/ Animal Biomechanics, Pulmonary/ Respiratory/ Lung/ Airway Dynamics, Molecular Mechanics and Anthropometry/ Body Segment Inertial Properties. By performing correlation analysis on the selected research topics, we have grouped the topics where members have selected more than one as in Table 2.

Main research topics			Ratio to the total
Hard Tissue Mechanics (19.1%)		Dental/Tooth Biomechanics (3.9%)	23%
Soft Tissue Mechanics (14.7%)	Cardiovascular Mechanics (7.7%)	Cell Mechanics (6.6%)	29%
Gait/Posture/ Kinesiology/ Locomotion (7.7%)	Joint Mechanics (14.9%)	Sports Biomechanics (6.1%)	28.7%
Spine/Trunk/Neural System (6.8%)			6.8%
Cell Mechanics (6.6%)	Functional Tissue Engineering (6.7)		13.3%

Table 2. Main groups of research topics, indicating the ratio of positive answers with respect to the total.

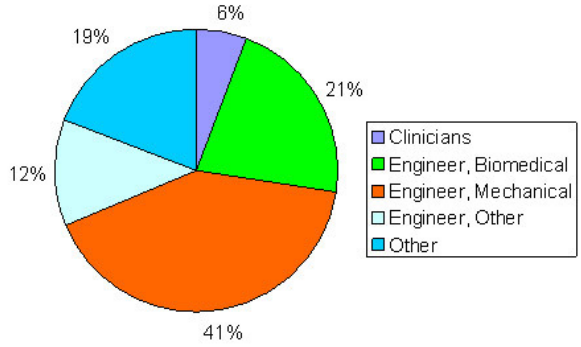


Figure 5. Main degree of ESB Members.

MEETINGS

ENDORSED MEETINGS:

EUROPEAN SOCIETY OF BIOMECHANICS MEMBERS RECEIVE A REGISTRATION DISCOUNT FOR ALL MEETINGS ENDORSED BY THE ESB

BIOSPINE 3: 3rd International Congress of Biotechnologies for Spinal Surgery

The 3rd International Congress of Biotechnologies for Spinal Surgery, BIOSPINE 3 is going to be held, 1–4 September, 2010. BIOSPINE 3 is being organized by STEGA (Skeletal Tissue Engineering Group Amsterdam) on behalf of REGENERATE (Regenerate – European Network for Regenerative Medicine EEIG). Barend J van Royen is the Chair and Hans Jörg Meisel is the Co–Chair of BIOSPINE3. Max Aebi, Cody Bunger, Marinus De Kleuver, Frank Emmrich, Timothy Ganey, Robert Gunzburg, Dietmar Hutmacher, Daisuke Sakai, and Hans-Joachim Wilke have agreed to be on the advisory board of the Congress.

Some of the topics which will be addressed in BIOSPINE3 are cellular therapies, application for growth factors, regeneration and degeneration of intervertebral disc, embryonic, pluripotent and adult stem cells, skeletal application of polymeres, spinal cord repair, and cellular repair strategies. This conference is pointedly broad in scope and designed to include scientists and medical experts as well as manufacturers.

Abstract Submission

The scientific committee invites all participants to submit abstracts for oral or poster presentations online (www.biospine.org) until **31 March 2010**.

Conference Office

Congrex Deutschland GmbH
Potsdamer Platz 11, 10785 Berlin, Germany
Tel.: +49 (0) 30 – 25 89 46 28,
Fax: +49 (0) 30 – 25 89 41 00 e-mail:
biospine@congrex.com
www.congrex.com

Conference Venue

VU University medical center (VUmc)
De Booleaan 1117
1081 HV Amsterdam
The Netherlands

For more information on the BIOSPINE3 visit www.biospine.org.

OTHER CONFERENCES OF INTEREST:

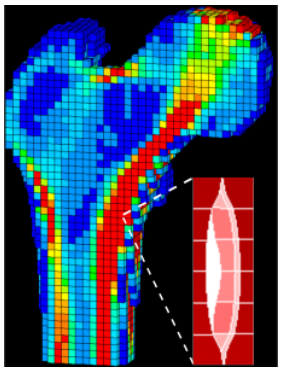
Third International Conference on Mechanics of Biomaterials & Tissues:
December 13-17, 2009, Clearwater Beach, Florida.
http://www.icmobt.elsevier.com/

6th World Congress on Biomechanics:
August 1-6 2010, Singapore
http://www.wcb2010.net/

Annual TERMIS EU Meeting 2010:
13th-17th June 2010, Galway, Ireland
http://www.termis.org/eu2010/

Bone Tissue: Hierarchical Simulations for Clinical Applications
21st - 23rd April, Los Angeles, California
https://www.ipam.ucla.edu/programs/bone2010

Abstract deadline: December 1 2009.
Scholarships will be awarded to the first author of the nine most meritorious abstracts.



BTHSCA1 will be held at the University of California Los Angeles and aims to bring together orthopedic surgeons, clinicians, system biologists, mechanical and software engineers, and applied mathematicians to share the latest findings and formulate a plan to develop the next generation of three-dimensional multi-scale virtual rendering of bone tissue able to address specific clinical issues. The need for this workshop is based on:
1) the increasing evidence that bone shows a plethora of divergent characteristics through a hierarchically-organized heterogeneous structure that varies across nano- micro- , and macro- length scales; and
2) the highly interdisciplinary nature of hierarchical modeling, based on developments that occur independently across multiple scientific disciplines and address phenomena manifested at the different scales.

Workshop topics will include:

- Multiscale approaches to clinical issues
- Scale transition in bone simulation
- Fracture prediction in multiscale systems
- Pattern recognition and/or data mining in collected data
- Interactions between non-biological materials and bone tissue

Advanced Technology for Enhanced Quality of Life:
15th-18th July 2010, Iasi, Romania
http://www.remedis.info/
A revolutionary concept of scientific events.
AT_EQUAL is a multidisciplinary symposium bringing together technical scientists, life scientists, clinicians, for exchanging knowledge and ideas in the field of using advanced science for health care and improving quality of life, equity and equality of chances for elderly, disabled and assisted persons
AT_EQUAL 2010 symposia

- Advanced technology in orthopedic surgery: robotics, navigation and novative implants
- Robotic surgery and endoluminal surgery
- Neuronavigation
- ReMedIs, Regenerative Medicine Iasi
- Battlefield medical robotics
- Robotic summer school

23rd European Conference on Biomaterials
11th-15th September 2010, Tampere, Finland
http://www.esb2010.org
Deadline for oral presentations January 25th, 2010
Deadline for poster presentations March 15th, 2010

Meniscus 2010: The Meniscus: From Cradle to Rocker
4th-6th February 2010, Ghent, Belgium
http://www.meniscus2010.be/

ASME 2010 Summer Bioengineering conference
16th-19th June 2010, Naples, Florida
http://www.asmeconferences.org/sbc2010/

International Society of Biomechanics XXIIIrd congress:
3rd-7th July 2011
http://www.isb2011.org/

Report on the ESB Workshop 2009:

Movement Biomechanics and Sport

June 7-9, 2009 ETH Zurich, Switzerland

The European Society of Biomechanics International Workshop on Movement Biomechanics and Sport was held from the 7th to the 9th of June at the Swiss Federal Institute of Technology, Zurich Switzerland. During the planning phase of the workshop, the designated Chair, Dr. Alex Stacoff, sadly passed away. Dr. Jachen Denoth took his place as the new Chair. Prof. Ralph Müller was the Co-Chair of the workshop.

The workshop was structured into the following themes:

- **Introduction to the movement of the human body:** Movement and loading during activities and the consequences on the musculo-skeletal system, with a focus on soft tissue.
- **Material response – mechanical effects of loading:** The effects of movement and loading on the entire musculo-skeletal system, with a focus on soft tissue. What causes health problems, what can be tolerated?
- **System adaptation – long term effects of loading:** Long-term effects of load, adaptation of material (micro), development of injury, interventions and therapies (macro)

Major outcome of the Workshop

The workshop aimed to educate students, with input from leading researchers, on the response of soft tissue to human movement, and also give them a chance to present their work. The program of the workshop included ten key note lectures (invited speakers are listed below), 22 oral presentations in three sessions, and a guided poster session with 13 short talks. The students had the chance to receive a certificate equivalent to 1 ECTS credit point.

Invited key note speakers were:
Prof. Dr. Per Aagaard - University of Southern Denmark, DK
Dr. Helen Birch - University College London, UK
Dr. Jachen Denoth - ETH Zurich, CH
Prof. Dr. Flück Martin - Manchester Metropolitan University, UK
PD Dr. Jörg Goldhahn - Schulthess Clinic, Zürich, CH
Prof. Dr. Geoffrey Goldspink - University College London, UK
Prof. Dr. Hans Hoppeler - University of Bern, CH
Dr. Marco Linari - University of Florence, IT
Prof. Dr. Marco Narici - Manchester Metropolitan University, UK
Prof. Dr. Jess Snedeker - University of Zurich, CH

Awards were given for the best student talk (10 grams of gold) and for the best poster (1 Gold Vreneli). The Best Student Talk Award was given to Mrs. Katja Oberhofer, University of Auckland, New Zealand, for her talk entitled “Anatomically-based modeling of soft-tissue muscle deformations in the lower limbs during walking”.

The Best Poster Award was given to Mrs. Christine Ebel , Ludwig-Maximilian University Munich, Germany, for her poster entitled “Load-transmission: morphological adaption in tarso-metatatarsal joints”.

The **social events** were the parts of the program for networking and meeting new people. On the first evening, the barbeque at the conference site provided an excellent opportunity for discussions and networking. The banquet on the second evening was held at Zurich Zoo. During a guided walk through the Zoo a lot of information about animals and their biology was given to interested participants. A magician provided funny entertainment during dinner.

The proceedings of the workshop are available for download in PDF format from:
http://www.esb2009.ethz.ch/files/esb2009proceedingsweb.pdf

The organizing committee would like to thank all the participants and sponsors!
Dr. Jachen Denoth (Chair)
Prof. Dr. Ralph Müller (Co-Chair)
Dr. Hans Gerber (Secretary General)
Dr. Gisela Kuhn (Program Chair)
Dr. Silvio Lorenzetti (Chair of Scientific Committee)
Dr. Roland Müller (Local Scientific Committee)
Dr. Peter Wolf (Local Scientific Committee)
Prof. Dr. Jess Snedeker (Local Scientific Committee)

CONGRATULATIONS...

...to members of our biomechanics community in Cardiff, Wales, who were recently awarded a prestigious grant from the Arthritis Research Campaign to support a Biomechanics and Bioengineering Centre (ARCBBC).

The Main Grant holders are:
Prof Vic Duance (Bioscience)
Dr Cathy Holt (Engineering)
Dr Debbie Mason (Biosciences)
Dr Sam Evans (Engineering)

Dr Debbie Mason specialises in biomechanics, inflammation and pain, Dr Cathy Holt in the biomechanics of motion analysis and rehabilitation and Dr Sam Evans in mechanical loading of tissues, cells and materials. The ARC and Cardiff University are committing £10M to apply cutting-edge expertise in engineering, bioscience, genetics and imaging to arthritis research in this new Centre. Along with the 12 grant holders, 11 new research staff and 12 PhD students will be working in the Centre which will actively promote interdisciplinary training using PhD and Discipline Hopping schemes, interdisciplinary workshops and meetings.

The Centre is driving interdisciplinary studies across a team of internationally recognised researchers and clinicians to improve patient care. The team applies a *molecule to man* approach to investigate normal joint biomechanics and determine how this is influenced by pathology to inform clinical intervention and rehabilitation in musculoskeletal disorders. Cardiff University research strengths in biomechanics, bioengineering, mechanotransduction, pain and inflammation are being used to define, identify and target mechanical mechanisms underlying joint disease.
The new centre involves close collaboration between biomedical scientists, engineers, orthopaedic surgeons, rheumatologists and physiotherapists to translate research to patient benefit in the clinic.
You can find out more about the ARCBBC at: http://www.cardiff.ac.uk/arcbbc/

OrthoLoad – the public database of in vivo load measurements with orthopaedic implants:

Over the last 30 years the research group of Georg Bergmann, Friedmar Graichen and Antonius Rohlmann (now at the Julius Wolff Institut of the Charité Berlin) has measured joint loads in vivo, using instrumented implants with telemetric signal transmission. The database **www.OrthoLoad.com** has now been made publically available online and measured data can be downloaded for free. Much of the data from the hip joint are already available. Currently 3 ongoing research projects are investigating the forces in 9 patients with knee implants, in 8 subjects with shoulder prostheses and in 5 patients with vertebral body replacements. First data from these projects is already accessible in OrthoLoad. A new hip project with 10 younger patients will start in 2010. With the completion and publication of the various studies and activities, it is planned that OrthoLoad be complemented in a stepwise manner in the future. Videos showing the patient's activities together with the synchronous load data, presented as line and vector plots, can be downloaded from the website. Additionally, the numerical data can be accessed and directly used for finite element analyses or simulator tests. Data from the hip consist of the tri-axial joint contact forces, while data from the other joints additionally contain the spatial moments acting in the joints. As previously done with data from the hip joint (CD HIP98) it is planned that the complete movement data will additionally be made public in the future. This will allow other research groups to check their analytical models, using complete 6-component load data from several joints, patients and activities as 'gold standard'.

We hope that this way of supplying data to the scientific and medical community will help to improve orthopaedic treatments and thus be valuable for the affected patients. Please therefore feel free to download and use this data. If you think OrthoLoad may also be valuable for others, we would appreciate if you added a link on the homepage of your institution.
With best regards to you all

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http://www.julius-wolff-institute.com
http://jwi.charite.de/en/research/instrumented_implant/


Orthoload
Loading of Orthopaedic Implants

2010 ESB Membership Campaign – change of payment procedure:

By the beginning of November you will be invited to renew your membership. Similar to last year, the 2010 membership campaign is organized electronically, but a new web-based procedure has been implemented. You will receive an email with a weblink that leads you directly to the membership renewal page. While going through the payment procedure you will be requested to check and, if necessary, update your personal and profile data. In this way, we believe it will become easier to keep our membership up to date. After completing the personal and profile data, you will be guided automatically to the payment webpage, where you can opt for either online payment (by credit card, through PayPal) or payment by bank transfer. In case of online payment, you will receive an electronic receipt upon completion of the transaction. In case you opt for payment by bank transfer, an email will be sent to you that contains all necessary bank details. Again, once we have received your payment, you will receive an electronic receipt.

We hope you will appreciate the new payment procedure and that it keeps all administrative overhead as low as possible. Nevertheless, if you have questions or if you would encounter any problems during payment, do not hesitate to contact the ESB treasurer at treasurer@esbiomech.org.

Being an electronic membership campaign, it is of course crucial that ESB has your correct email address. **If your email address has changed, please update it in your personal data**. You can update your personal data online (http://www.esbiomech.org/Account/modifyYourPersonalData) after login. If you forgot your username and/or password, please consult the FAQ at our website (http://www.esbiomech.org/Html/15).

The ESB offers reduced subscription to a number of journals (see below) for all membership categories. In order to ensure continuation of your journal subscriptions we would like to ask you to pay your membership and journal subscription fees before December 18, 2009.

Journal subscriptions – now also including BMM!

ESB is affiliated with the Journal of Biomechanics and Clinical Biomechanics, both published by Elsevier. As part of this affiliation, each member has the option to purchase a personal subscription. The fee for this subscription is a special reduced rate arranged between the ESB and Elsevier. The subscription is for both print and online access.

As for previous years, ESB members are also eligible to receive optional journal subscriptions at special reduced rates, arranged with Elsevier (The Knee, The Foot, Gait and Posture, Journal of Electromyography and Kinesiology) and Taylor & Francis (Computer Methods in Biomechanics and Biomedical Engineering). This year, **we have the pleasure to announce special rates for Biomechanics and Modeling in Mechanobiology (BMM) as well**. The new agreement between Springer and ESB enables our members to subscribe to BMM for 95 €.

Information on online access to Journal of Biomechanics and Clinical Biomechanics can be found on the ESB website www.esbiomech.org/JBM-ESB.pdf and www.esbiomech.org/Clin%20Biomech%20online%20access%20to%20members.pdf respectively). For online access to Gait and Posture and CMBBE subscribers will be contacted directly and individually by the publishers.

Please remember that all journal subscriptions through the ESB must be treated as personal copies and cannot be used in libraries.

Journal of Biomechanics and Clinical Biomechanics are included in the HINARI program (http://www.who.int/hinari/en/).

Journal subscription rate 2010 (VAT included)	
Journal of Biomechanics (print & online)	95 €
Clinical Biomechanics (print and online)	89 €
The Knee (print only)	89 €
The Foot (print only)	134€
Gait and Posture (print and online)	102€
Journal of Electromyography and Kinesiology (print only)	112€
Computer Methods in Biomechanics and Biomedical Engineering (print and online)	69 €
Biomechanics and Modeling in Mechanobiology NEW (print and online)	**95 €**