



European Society of Biomechanics Newsletter

Winter 2008/09

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WELCOME MESSAGE, Ralph Müller - President of the ESB:

On the next page, you will find a message from Marco Viceconti, our immediate past president. I think that the message nicely reflects the current status of the Society. Please read carefully as I could not agree more with his analysis. I would also like to take the opportunity here to thank him for his enthusiasm, leadership and energy.

With that I could actually stop here and simply continue on that path. I am sure we as a Society would do well. But there is one part in his message where I am not yet sure whether I can agree. Marco states that we are now a bigger society, bigger than ever before and finally concludes that we are about the right size. Are we really at the right size?

When preparing my welcome message I found this quote by Benjamin Franklin: "Without continual growth and progress, such words as improvement, achievement, and success have no meaning." Now you can believe this or not but I think there is some truth in it. I would like to show you how this might be relevant also for the European Society of Biomechanics. As you most likely already know or have experienced yourself, the Society demonstrated an unprecedented growth over the last decade. In 1999 we had roughly 190 members and in early 2009 we will be at 650 members.

I still remember well my first council meeting in 2002, where I was asked to present my vision for the membership committee, which I chaired at the time. I did not have a lot to say but simply put the bold statement that I wanted to double the membership in the next two years. Of course as an engineer this was simply an adaption of Moore's law and the hope that what would be correct for the chip industry would also apply to a society. I had no idea how to do that but already at that time I thought that growth is an important factor in having a successful society and I was able to convince my colleagues that we should at least try. After the two years, we did not quite succeed in doubling the membership but we came close. Today we have nearly tripled this number, and the question is

should we continue on this path or be content with having a larger number than ever before.

The quote by Benjamin Franklin suggests that it would be in our best interest to continue to grow, also to be able to better represent our members in this new and ever growing Europe. A larger organization has more weight in the political decision process, something that is becoming more and more important when talking not only to the European Commission but also national funding agencies about future research programs. A larger organization is also able to provide more professional services to its members, as more revenues can be generated that can then be reinvested in the Society to improve the quality of the various services.

Of course, it is also important to be cautious and to make sure that this growth happens in a sustainable way. Nevertheless, if I look at the roughly 3000 delegates that attended the World Congress of Biomechanics in Munich in 2006, I strongly believe that we could have at least 1000 of these people as members in our Society. Therefore I would like to put this in my mission for the next two years, to continue to grow both with respect to our individual but also our corporate members in an effort to also better reach out to our industry partners.

Barack Obama recently coined this phrase: "Trade has been a cornerstone of our growth and global development. But we will not be able to sustain this growth if it favours the few, and not the many." I think this also holds true for our Society. Yes, we can grow more but we need to know what our membership wants. Therefore, the council has decided to launch a campaign early next year where we would like to survey our members to state the reasons why they have chosen to become a member and how the Society could serve them the best. This questionnaire will be very important for us as a council in deciding how we should continue into the future. I therefore urge you to participate in this questionnaire so that we can do what is best for our membership at large and not only for a few. I am counting on you!

MESSAGE FROM THE OUTGOING PRESIDENT, Marco Viceconti:

Marco Viceconti served as the president of the ESB from 2006 to 2008. Here is the transcript of his farewell address to the General Assembly.

Dear colleagues,

It is tradition of our society that every two years, during the General Assembly, the President gives a speech on the state of the affairs. This speech has been given before me by dozen of colleagues; but I doubt any of them was so lucky as I am today.

I had the chance to serve as President in the last two years, at the culmination of a cycle of eight years that saw our society completely re-organised and re-lunched. Thus, I am very fortunate; fortunate to have the chance to come here today, in front of you all, and inform you that the affairs of our dear society have never been so good before.

We are bigger.

Our active membership to date is more than 500 members, and this is after a consolidation of the membership database we recently completed. Given that this is more or less the size of our biennial congresses, I consider current membership of the right size: now our community attending the congress is most cases also member of society, as it should be.

We are better.

Thanks to some procedural changes, the processing of membership applications has incredibly improved, as newer members can witness. All applications are now processed within two-three weeks.

The Council launched a re-organisation of the entire membership operations; now the membership management is almost totally automated through our web site, and a similar re-organisation process is being undertaken also for the financial operations. This will make possible for future council members to operate the society with a reduced burden, freeing time for more strategic activities.

Today we shall submit to your ratification the revised versions of the statute and of the by-laws. This has been a very complex work, done by all council members, which required significant effort, but that will give to our society a solid basis from which to strive and flourish in the 21st century. We also completed the process of re-incorporation in full compliance of the French law, which ensures that the ESB will be legally established now for the years to come.

In spite of all these activities the financial situation, which will be presented in detail by the Treasurer, is solid. We leave to the next Council not only the resources necessary to ordinary operations, but also some extra funds for new initiatives. We have introduced small and big innovations, including the students and the corporate membership, which are already having a very positive effect.

We are stronger.

Biomechanics research is growing in size, importance, and visibility all over Europe, and ESB is growing with it.

After many years of despair, the Seventh Framework program now has various topics where biomechanics can have a central role; large integrated project and networking actions are allowing many of us to work together on large and visionary projects, enjoying the international team science experience, so natural to a discipline that cut across so many foundational domains of knowledge. Also many national and regional funding programs are recognising the centrality of biomechanics research in many health-related problems. This is not a case: the ESB Council has developed in the last five years, alone and together with the European Alliance for Medical and Biological Engineering and Science, a significant positive lobbying action, which resulted in this positive condition. I want to mention in particular the Virtual Physiological Human action, where biomechanical modelling is playing a vital role. After a first round where €72 million has been assigned over the next four years to 15 new projects, I am glad to announce that the next work programme will include a new VPH call with € 63 million of available budget.

Our visibility has increased significantly. The web site is becoming a primary source of information on conferences and any other event related to our discipline, visited every day by hundreds of members and non-members. The consolidation of the summer workshops, started in 2005 as an experiment, and now a permanent initiative, ensure that every year there is an event promoted by ESB, to which we need to add the dozens of specialised events that we have endorsed in the last few years. The simple fact that the number of endorsement requests is constantly increasing is recognition of the strategic role ESB plays in the European Biomechanics community.

The bidding competition for organising our biennial congress is every year more and more intense. The decision for ESB2008 and ESB2010 were very difficult, and in each case at least another bid was almost as good as the one we selected.

If I have a regret is that we simply did not have time to tackle three other aspects I consider important: students, territorial structure and public communication. Students' activities haven't been conducted with sufficient continuity. We need to do more, we need to do better. In my opinion ESB needs to find a way to establish structural links with national biomechanics organisations, or promote their creations where they do not exist. The problem is complex, also because the scenario is very different from country to country. But if we can find a mechanism, the rooting of ESB would dramatically improve.

Lastly, too frequently I realise that biomechanics is something the public at large does not understand nor appreciate. And this in spite of the fact that most of the healthcare they receive, most of the good they use, contains some biomechanics knowledge. This is important, because it reflects on the importance our

discipline has in the attention of governments, academic bodies, and grant agencies.

This speech practically ends my mandate; tomorrow when the new council that will emerge from today's elections will have its first meeting, I shall chair the election of the new President, and then step down from executive roles. As already my friend Keita Ito did, I shall remain in the council for two more years, to pass experience to the new council members.

I would like to thank the Past President Keita Ito and the Vice President, Ralph Müller for their continuous advice and support; The Secretary General, Damien Lacroix and the Treasurer, Hans van Oosterwyck, for the incredible work they have done in these two years,

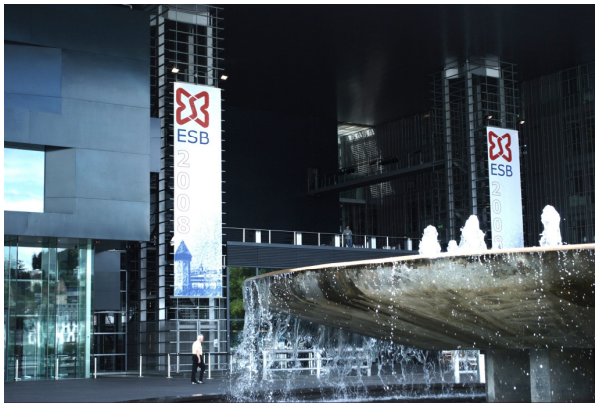
frequently against all odds; and to all of you, Members of the European Society of Biomechanics, for giving me the opportunity to live this wonderful professional and human experience.

It was fun. In a way, I would like to roll back the clock, and start it over again. If 15 years ago one would ask me if I could ever serve as President of the ESB, and enjoying the experience, my answer would have been a clear no. Albert Einstein was quoted to have said: "To punish my contempt for authority, fate made me an authority myself". All you young, contemptuous, smart rebels listen to me: start to take responsibilities; the world needs you.

REPORT ON THE 16TH CONGRESS OF THE ESB, Stephen Ferguson:

The 16th Congress of the European Society of Biomechanics was held from July 6th – 9th in Lucerne, Switzerland. By all accounts it was a resounding success and we look back on four informative and enjoyable summer days on the shores of Lake Lucerne.

The conference was organized by the Institute for Surgical Technology and Biomechanics of the University of Bern and co-chaired by Philippe Büchler, Stephen Ferguson and Lutz-Peter Nolte. The organizers set themselves the goal to build on the success of previous meetings by strengthening the scientific basis of the traditional core topics while diversifying to include emerging interdisciplinary research areas.



The Culture and Congress Centre (KKL), Lucerne

The concept was to provide an event for the ESB members, by the ESB members, and to that end an open call for abstracts was announced without a prior constraint on the core track topics. Response was strong, with 620 abstracts submitted by the deadline. Following an extensive review, made possible by the contribution of an international scientific committee, a total of 370 abstracts were accepted for podium presentation, 55 of which were presented in the form of short talks. The high quality of submissions provided also 155 poster presentations.

The conference was held at the Culture and Congress Center of Lucerne (KKL). The work of renowned architect Jean Nouvel, the lakefront KKL offered modern facilities and a spectacular venue for the scientific sessions and



the accompanying social events, only a short walk from the historic old town of Lucerne.

The conference was preceded on Sunday by a pre-course, with the goal to introduce both young and established investigators to new investigational methods in biomechanical research and also to address the challenging topic of translation research in an increasingly dynamic and competitive research environment. Philippe Büchler (University of Bern), Mauricio Reyes (University of Bern) and Fulvia Taddei, (Istituto Ortopedico Rizzoli) presented "Integration of Statistical Modeling in Biomechanical Simulation". Simulation techniques, proceeding beyond the classical finite element method, using "Meshless and Particle Methods" were presented by Simone Hieber (University of Basel) and Diego Rossinelli (ETH Zürich). The ever-increasing importance of multi-disciplinary research, crossing boundaries between mechanics and biology, was highlighted in "A Primer on Practical Molecular Biology Methods", presented by Gertrud Heimbeck



A rainbow over Lake Lucerne greeted delegates on leaving the welcome reception.

(BioRad Life Sciences Group), Martin Stoddart (AO Research Institute) and Niamh Nowlan (Trinity College Dublin). The course was attended by 40 participants. The pre-course attendees then joined the rest of the conference participants for the Welcome Reception on the open-air Terrace of the KKL. Over a drink and some hors d'oeuvres, with a jazz trio providing background music and the weather improving to provide the atmosphere,



Delegates (including the ESB president!) enjoy a typically well attended session.

everyone was able to resume conversations with old friends and colleagues. With typical Swiss precision, the evening ended with a spontaneous rainbow arcing over the conference center.

Nearly 700 participants had the opportunity to attend lectures in six parallel sessions over the following three days. Traditional focus areas of Joint and Implant Mechanics, Cardiovascular Mechanics and Bone and Dental Mechanics were complemented by a very strong track on Mechanobiology and extensive sessions on Spine Mechanics, Human Motion and Soft Tissue Mechanics. To highlight the advances in modeling techniques, focus sessions on simulation were defined within the main tracks. We were also pleased to have the participation of the TERMIS (Tissue Engineering and Regenerative Medicine International Society) and the European Society for Biomaterials, with focus sessions dedicated to each. Attendance in all sessions was strong, often above expectations, in some cases reaching the limits of the smallest lecture theatres. Discussion, always the highlight of the ESB meeting, was both lively and informative.

Several plenary sessions provided an opportunity for all participants to come together for the many highlights of the conference. Morning keynote lectures were



Delegates are firm friends after a lively debate at the general assembly.

delivered by Prof. Ian Stokes (University of Vermont) on "Spinal Stability – A Lifelong Challenge", Prof. C. Ross Ethier (Imperial College London) on "What Cardiovascular Biomechanics Taught Me About Glaucoma" and Prof. Albert King (Wayne State University) on "Improvement of

Transportation Safety through Computational Biomechanics". Each was attended by a full house. The afternoon was lead off each day by award talks for the Perren Award Lecture, the ESB Student Award Papers and the Clinical Biomechanics Award Papers.

Two extensive evening poster sessions with an accompanying wine and cheese reception had the poster



Time to relax and take an 'appero' by the lake.

halls full with participants and gave the building staff the difficult task of encouraging the final discussions to be continued at one of the many restaurants in Lucerne. The poster session also provided the venue to support the short talks presentations. With the new short talk format, the audience received a focused and information-rich oral presentation, with the possibility to learn further technical details and discuss one-on-one at the subsequent poster session. The feedback of members on this format would be appreciated.

The conference closed with a banquet at the Grand Casino on the opposite side of the lake, with an open-air aperitif followed by a relaxing meal extending well into the night. A walk back to the old town of Lucerne provided a final night-time view of the conference venue, reflecting in the calm lake. The organizers would like to thank first and foremost the participants for making this a very successful meeting. The generous support of more than 30 sponsors, 21 of whom provided an informative central exhibition, is also gratefully acknowledged. It was our pleasure to organize the meeting, we hope that everyone's expectations were met, and we look forward to 2010 in Edinburgh.



Many thanks to the organisers. (Image courtesy of AO Foundation).

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SAVE THE DATE: ESB Congress, 5th-8th July, 2010

The European Society of Biomechanics 17th Congress will be held in Edinburgh, Scotland, UK on 5th to 8th July 2010. Edinburgh is a beautiful historic city and the capital city of Scotland, it is well served by high speed train links from London, it has a small international airport and is 1 hour from the larger international airport of Glasgow. The conference organisers will be Jimmy Cunningham, University of Bath, Mark Taylor, University of Southampton and Amy Zavatsky, University of Oxford.

PRIZES AND HONORS AWARDED at the 16th Congress of the European Society of Biomechanics:

S.M. PERREN RESEARCH AWARD:

Yves Pauchard, C. Mattmann, A. Kuhn, J.A. Gasser and S.K. Boyd (Calgary, Canada) "Using temporal trends of 3D bone micro-architecture to predict bone quality". The award winning paper by Pauchard and coworkers presents a precisely written summary of a combined computational and experimental approach aimed at improving our ability to predict changes in the bone architecture based on time-lapsed microstructural imaging. The authors present truly novel methodology using cutting edge technology to describe in vivo bone dynamics. Furthermore, they provide proof of concept that their predictive routines can be used to estimate the development of bone trabecular architecture over time in an in vivo animal model. The work of Pauchard and coworkers provides one of the first investigations for better monitoring of the development of bone diseases such as osteoporosis and to better describe the response to therapy clearly worthy of the S.M. Perren Award, the most prestigious award of the European Society of Biomechanics."



Presentation of the SM Perren award (Image courtesy of the AO foundation).

The SM Perren award paper has been published in the *Journal of Biomechanics* as: "European Society of Biomechanics S.M. Perren Award 2008: Using temporal trends of 3D bone micro-architecture to predict bone quality" by Yves Pauchard, Corinne Mattmann, Andreas Kuhn, Jürg A. Gasser, Steven K. Boyd. *Journal of Biomechanics* Vol. 41: 2946-2953. DOI: 10.1016/j.jbiomech.2008.07.036.

ESB CLINICAL BIOMECHANICS AWARD:

B. Heinlein, I. Kutzner, F. Graichen, A. Rohlmann, A. Bender, G. Bergmann (Winterthur, Switzerland; Berlin, Germany) "Normative data of TKR loading for level walking and stair climbing measured in vivo"

ESB TRAVEL AWARDS:

Simona Celi, University of Pisa, Pisa, Italy
Dan Rafiroiu, Cluj-Napoca Technical University, Cluj-Napoca, Romania.

ESB STUDENT AWARDS:

Prize	Authors	Title
ESB STUDENT AWARD 1st Prize: From Zürich, Switzerland	P. Schneider R. Voide L.R. Donahue M. Stamparoni R. Müller	The influence of the cortical canal network on murine bone mechanics
Runner up: From Liverpool UK	M. Robinson G. Barton A. Lees P. Sett	Reaching ability of tetraplegics in their 3D workspace after tendon transfer surgery"
Runner up: From Leeds, UK	L. McCann I. Udofia E. Ingham Z. Jin J. Fisher	The importance of contact stress in knee hemiarthroplasty design: a tribological simulation
Runner up: From Delft, The Netherlands	A.A. Nikooyan H.E.J. Veeger F.C.T. van der Helm P. Westerhoff F. Graichen G. Bergmann	Comparing model-predicted GH-joint contact forces by in-vivo measured forces
ESB POSTER AWARD: From Zaragoza, Spain	A. Alonso-Vázquez A. Ramírez, B. Calvo M. Doblaré	Towards a 3D finite element model of skeletal muscle concentric and eccentric contraction

NEW ESB HONORARY MEMBER:



Professor Peter Niederer, Honorary member

At the General Assembly of the ESB, Professor Peter Niederer was elected as an Honorary Member of our Society. Keita Ito, on behalf of the ESB Council, introduced Peter Niederer's biography and accomplishments that can be summed up as following: Peter Niederer obtained his PhD in mechanics from Swiss Federal Institute of Technology (ETH Zurich). He then became a research associate in the Institute for Biomedical Engineering at the University and ETH Zurich under the directorship of Prof. Anliker, where he ascended the academic ladder to become professor and chair of several departments. Although most of his career was spent in Zurich, like most academics, his

career did take him to a few other places, e.g. General Motors in Detroit, Michigan; University of Houston; City College of New York; and Polish Academy of Sciences in Warsaw, Poland. In addition to his work at the University, he also was a co-founder of several start-up companies, the most well known of them being Scanco Medical, the desktop microCT company that he founded with Peter Rügsegger. He was also the editor-in-chief of several journals and served on the editorial board of many more journals in our field. Peter was also a member of the ESB Council. Peter's research spanned such diverse topics as biofluidmechanics, intra- and extravascular transport

dynamics, mechanics of the heart, and traumatology and forensic biomechanics. He also was interested in medical optics & laser applications, conducting research in ophthalmic optics and high definition endoscopy. These interests have resulted in over 160 peer-reviewed publications. Now that Peter has retired he has more time available for his true hobby: Biomechanics of the Jazz piano! The Council of the ESB would like to thank Peter for his support and service to the ESB during many years and to promote the field of biomechanics in Europe and throughout the world.

NEW COUNCIL MEMBERS for the European Society of Biomechanics:

Four new council members were elected at the European Society of Biomechanics Annual General Meeting 2008 and two members were re-elected. The new council unanimously elected Ralph Müller as the new president of the ESB and several members took up new posts within the council. He we introduce the role and background of each council member:



Ralph Müller President

Ralph Müller is an Associate Professor of Biomechanics and the Director of the Institute for Biomechanics at ETH Zürich. He received his Ph.D. degree in Electrical Engineering from ETH in 1994. In 1996, he moved to Boston

where he served as a tenure-track Assistant Professor of Orthopedic Surgery at Harvard Medical School and the Associate Director of the Orthopedic Biomechanics Laboratory. Between 2000 and 2006, he was an SNF Professor of Bioengineering at the Institute for Biomedical Engineering, University and ETH Zürich. His research areas are biomechanical testing and simulation techniques as well as novel bioimaging and visualization strategies for biological tissues.



José Manuel García Vice-President

José Manuel García Aznar is currently Professor at the Department of Mechanical Engineering, University of Zaragoza, Spain. He obtained his PhD in Computational Mechanics at the University of Zaragoza in 1999 and was a post-doctoral fellow at the

Institute of Science and Technology in Medicine (University of Keele, England). He is a member of I3A (Aragón Institute of Engineering Research). His present research mainly focuses on Computational Modelling in Mechanobiology (mainly mechanics of hard tissues, mechanobiology of skeletal tissue regeneration and tissue engineering, tissue growth and development), Non-linear FEA and Multiscale and Multiphysics



Damien Lacroix Secretary-General

Damien Lacroix is an Assistant Professor at the Technical University of Catalonia, Institute of Bioengineering. He received a Mechanical Engineering Degree from the National Institute of Applied

Sciences (INSA) in Lyon, France in 1996. He then moved to Dublin (Ireland) and received a PhD degree from Trinity College in 2001. After working for Smith & Nephew within the Biomechanics Laboratory of Toulouse (Purpan Hospital), France, he was awarded a Marie-Curie TMR EU grant to work at the Technical University of Catalonia, Barcelona. He then received a 'Ramon y Cajal' fellowship from the Minister of Science and Technology of Spain. His main research activities are in the development of computer simulations in tissue engineering, orthopaedic biomechanics, biomaterials and mechanobiology to model implant / cell interactions at the macroscopic and microscopic levels.



Marco Viceconti Past-President

Marco Viceconti has an MS in mechanical engineering from the University of Bologna and a PhD from the University of Florence. He is currently the Technical Director of the Laboratorio di Tecnologia Medica of the Istituti Ortopedici Rizzoli, Bologna Italy,

and the Chief Scientific Advisor of the BioComputing Competence Centre (B3C). His main research interests are related to the development and validation of medical technology for orthopaedics and traumatology. A strong advocate of collaborative science, Marco Viceconti is the promoter and animator of community initiatives such as the Living Human Project, the Biomed Town Internet community, and the EuroPhysiome initiative.

**Hans Van Oosterwyck - Treasurer**

Hans Van Oosterwyck is an associate professor at the Division of Biomechanics and Engineering Design, KU Leuven. He received an MSc in Materials Engineering in 1995 at K.U.Leuven and PhD at the same university in 2000. For part of his research on oral implant biomechanics he was awarded a Young Investigator Award from the IADR (International Association of Dental Research) Implantology Research Group (in 1999). As a postdoc his research focus shifted towards mechanoregulation of skeletal tissue differentiation. During this period he has been a postdoc at the AO Research Institute in 2004. His current research focus is on mechanobiology of bone regeneration and engineering, with an emphasis on mathematical modelling.

**Peter Zioupos - Meetings Chair**

Peter Zioupos is currently a Reader in Biomechanics of Materials in the Centre for Materials Science & Engineering in the Shrivenham campus of Cranfield University in Oxfordshire, UK. He holds a Bachelors degree in Physics from the University Ioannina, Greece and a PhD in Bioengineering from the Bioengineering Unit of Strathclyde University in Glasgow, UK. His research interests are the: biomechanics/structural & material properties of ageing human bone; microcracking and the development of damage in hard tissues; tissue biomechanics in health, disease and other pathophysiological conditions. He is also interested in forensic evidence, impact and trauma biomechanics and is the Academic Leader of the Cranfield 'Forensic Engineering & Science' MSc degree.

**Gwendolen Reilly - Publications Chair**

Gwendolen Reilly is a lecturer in Tissue Engineering at the University of Sheffield, UK. She has a BSc in Biology and Geology from the University of Manchester and a DPhil (PhD) in Biology from the University of York. She has conducted post-doctoral research at the ETH in Switzerland and three US Universities; Penn State, University of Pennsylvania and University of Illinois at Chicago. These studies focused on bone cell mechanotransduction, bone and cartilage differentiation and biomaterials. She currently specialises in mechanical stimulation of tissue engineered bone and cartilage in 3D bioreactor culture.

**Gabriele Dubini - Education Chair**

Gabriele Dubini received his master degree in Mechanical Engineering cum laude in 1988 and his Ph.D. in Bioengineering in 1993 from Politecnico di Milano, Milan, Italy. In 1993 and 1994 he worked as a Research Assistant in the Cardiothoracic Unit, Great Ormond Street Hospital for Children – NHS Trust, London, UK. From 1996 to 2001 he was an Assistant Professor of Thermodynamics and Heat Transfer in the Energy Engineering Department, Politecnico di Milano. From 2001 to 2007 he was an Associate Professor in Biomechanics in the Department of Structural Engineering, Politecnico di Milano, where he is currently a Full Professor. From 2003 to 2007 he was the Director of the Laboratory of Biological Structure Mechanics, Politecnico di Milano. His major research activities have regarded computational and experimental Biomechanics. They have included the microcirculation, the fluid dynamic optimisation of paediatric cardiac surgery procedures, the design of endovascular devices, thermodynamics and fluid dynamics in tissues and medical devices.

**Dominique Pioletti - Membership Chair**

Dominique Pioletti is Assistant Professor at the the Swiss Federal Institute of Technology Lausanne (EPFL) and is currently director of the Laboratory of Biomechanical Orthopedics. He received his Master in Physics from the EPFL in 1992. and his PhD in biomechanics in 1997. Then he spent two years at UCSD as post-doc fellow acquiring know-how in cell and molecular biology. He was interested in particular in gene expression of bone cells in contact with orthopedic implants. His research topics include 1) the understanding of mechano-transduction in bone; 2) the development of orthopedic implants as a drug delivery system; 3) the tissue engineering of intervertebral disc; 4) the tissue engineering of bone.

**William Taylor - Student Chair**

William Taylor is group leader of the team „Musculoskeletal Biomechanics“ at the Julius Wolff Institut, Charité - Universitätsmedizin Berlin, Germany, and is responsible for the kinematic and functional analysis of subjects and patients for research applications. Through looking at particular aspects of human motion, his research focuses on understanding how the interaction of the anatomy and motion of musculoskeletal structures affects the internal muscle and joint contact forces.

MEETING ANNOUNCEMENT

2nd Announcement: European Society of Biomechanics 2009 Workshop Movement Biomechanics and Sport: 7-9 June 2009



Important dates:

- 1. February 2009 Deadline for abstract submission
- 15. March 2009 Notice of acceptance
- 1. April 2009 Deadline for early registration

Abstract submission and registration is **open now**. The workshop focuses on the influence of movement and sport on soft tissues, especially on muscles, ligaments and tendons. From a biomechanical point of view, the workshop welcomes abstracts reporting results from experiments, theoretical modelling, simulation, and new measurement techniques. Multiscale approaches are particularly encouraged.

Possible topics include, but are not limited to:

Material response - mechanical effects of loading

Load cases and boundary conditions

Material characterization and modelling

System response - immediate and short term effects of loading

Load cases during daily activities and sport

Stimulation, injury, pain

Mechanotransduction

System adaptation - long term effects of loading

Mechanobiology, soft tissue adaptation

Influence of health, age and gender

Chronic pain

Exercise

The proceedings of the workshop consist of one or two page long abstracts.

The template can be downloaded from the webpage: www.esb2009.ethz.ch

Confirmed tutorial speakers are:

Prof. Per Aagaard University of Southern Denmark, DK
Dr. Helen Birch University College London, UK
Dr. Jachen Denoth ETH Zurich, CH
Prof. Martin Flück Manchester Metropolitan University, UK
PD Dr. Jörg Goldhahn Schulthess Clinic, Zurich, CH
Prof. Geoffrey Goldspink University College London, UK
Prof. Hans Hoppeler, University of Bern, CH
Dr. Marco Linari, University of Florence, IT
Prof. Marco Narici, Manchester Metropolitan University, UK
Prof. Jess Snedeker, University of Zurich, CH
Dr. Viktor Tiegeman, biotissue technologies, Freiburg, GER

Early registration fees: (includes 2 lunches, 1 buffet reception, conference dinner and coffee):

Student ESB Member: 350 CHF / 225 Euro

Student Non-ESB Member: 450 CHF / 300 Euro

ESB Member: 560 CHF / 375 Euro

Non-ESB Member: 660 CHF / 450 Euro

For registration after 1. April 2009 an additional fee of 80 CHF will be charged.

WORKSHOP CANCELLATION:

Please note that due to unavoidable circumstances the workshop entitled 'Mechanical Characterization of Biomaterials' originally planned for September 2009, in Germany has been cancelled. The ESB and the local organisers apologise for this cancellation and we hope to host another workshop on this popular topic in the near future.

A TRAINING AND RECRUITMENT INITIATIVE, from ENGINSOFT, corporate member:

Computer Aided Engineering Training Program from EnginSoft:

EnginSoft SpA, Corporate Member of the ESB, Partner of various research institutions around the globe, and Italy's largest CAE Service Provider, local Ansys distributor and distributor of modeFRONTIER in Europe, has launched a CAE Training and Recruitment Initiative.

EnginSoft received an overwhelming response from applicants from all over the world for the first Training Course in February 2009. We encourage anyone interested in the initiative, to now register online for the September 2009 Course ! Please visit www.enginsoft.com/academy

The initiative is dedicated to the next generation of simulation engineers - also in Bioengineering as one of the top future sectors - and will help to provide a young and highly skilled expert workforce for EnginSoft and its partners in Europe. This initiative represents a unique opportunity for University Graduates, PhD students and post docs, to acquire knowledge and expertise in the most modern CAE Computer Aided Engineering and VP Virtual Prototyping technologies available on the market today.

The Initiative encompasses:

- A 3 month Intensive Training Course in CAE and VP Virtual Prototyping.
- Next Course: **Start September 2009** in Northern Italy.
- Early online applications are recommended through easy CV submission !
- The Course will be conducted in English by EnginSoft experts and Professors from esteemed universities.

Content: various CAE and VP disciplines, applications, software and a broad range of topics related to the same. Theoretical and hands-on training - project work, also on-site, with industry and research institutions. After the 3 month Course, attendees will be offered project work with an EnginSoft or partner office, in Italy or Europe (various countries).

The Course, accommodation during the Course and travel to and back from Italy will be carried by EnginSoft. For more information, please visit: www.enginsoft.com/academy Or email: b.leich@enginsoft.it

OTHER MEETINGS

ENDORSED BY THE ESB:

IMechE Conference: Knee Arthroplasty - From Early Intervention to Revision

30 April – 2 May 2009, The Royal College of Surgeons of England

imeche.org/events/c683

The next in the series of this popular and truly international event takes place in London from 30 April – 2 May 2009. This event will discuss the latest technology in knee arthroplasty, explore the issues related to the development of radical new designs and innovative new materials, as well as looking at advanced minimal invasive techniques and computer-assisted surgery. This conference will bring together surgeons, engineers and industry to address these issues and to act as a platform for the future development of knee arthroplasty and its alternatives.

OTHER CONFERENCES OF INTEREST

ICCB2009: International Conference on Computational Bioengineering, including the first European Symposium on Biomedical Integrative Research.

16-18 September 2009 Bertinoro, Bologna, Italy.

<http://www.iccb2009.org/>

WC 2009: World Congress on Medical Physics and Biomedical Engineering

September 7 - 12, 2009, Munich, Germany

<http://www.wc2009.org>

PAHCE - Pan American Health Care Exchanges 2009
March 16-20, 2009, Mexico City, Mexico

<http://www.pahce.org/>

TGO Technology and Healthcare Management
in conjunction with AIIC Conference about Diagnostic Imaging

April 2-4, 2009, Cremona, Italy

www.cremonafiere.it/tgo.html

5th International Conference on Ethical Issues in Biomedical Engineering

April 10-12, 2009, Brooklyn, NY, USA

<http://www.downstate.edu/grad/bioethics2009.html>

ECCOMAS European Community on COmputational Methods in Applied Science. International conference on Tissue Engineering.

July 9-11, 2009, Leiria, Portugal.

http://www.cdr-sp.ipleiria.pt/index.php/TE_home.html

2nd TERMIS Word Congress. Tissue Engineering and Regenerative Medicine International Society.

August 31-September 3, 2009, Seoul, Korea.

<http://www.termis.org/wc2009/>

22nd European Conference on Biomaterials.

European Society for Biomaterials.

September 7-11, Lausanne, Switzerland

<http://www.esb2009.org>

SOCIETY NEWS

In Sympathy

The ESB is very sad to announce the untimely death of one of our members: Alex Stacoff who was a lecturer and senior research associate at the Institute for Biomechanics, ETH Zürich. Alex was highly active in the field of foot biomechanics and it had been his intention to chair the summer workshop on Movement Biomechanics and Sport, a role now taken by Dr. Jachen Denoth. On behalf of the ESB we extend our sympathy to Alex's friends, colleagues and family.

2009 ESB Membership Campaign

As 2008 is nearing its end, we want to invite you to renew your membership of the European Society of Biomechanics. Similar to last year, the 2009 membership campaign is organized electronically. Invoices were sent by email to all members on November 25-26, 2008. If you did not receive the invoice, please contact the treasurer at treasurer@esbiomech.org.

Payment must be online (web portal, see <http://www.esbiomech.org/OnlinePayment>), by bank transfer or credit card. In order to keep all administrative overhead as low as possible, we would strongly like to encourage you to use online payment. A valid credit card is needed for the secure transaction. The online payment site can be accessed after login. If you forgot your username and/or password, please consult the FAQ at our website (<http://www.esbiomech.org/Html/15>). Instructions for online payment can be found on the same webpage.

As it is crucial for any viable Society to have an accurate members' database, we would like to ask you to check your personal data (as given on the invoice) and update them if necessary. You can update your personal data easily online under 'Your Account' <http://www.esbiomech.org/Account/modifyYourPersonalData>, (personal login required). We also encourage you to update the 'profile data' <http://www.esbiomech.org/Account/modifyYourProfileData> to enable us to better serve your needs and interests.

The ESB offers reduced subscription to a number of journals (see below). 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 2008.

Journal subscriptions

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.

In addition, 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).

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 2009 (VAT included)	
Journal of Biomechanics (print & online)	93 €
Clinical Biomechanics (print and online)	87 €
The Knee (print only)	87 €
The Foot (print only)	130€
Gait and Posture (print and online)	100€
Journal of Electromyography and Kinesiology (print only)	110€
Computer Methods in Biomechanics and Biomedical Engineering (print and online)	63 €

Free online subscriptions to Journal of Biomechanics or Clinical Biomechanics

The agreement with Elsevier also stipulates that *"During the term of this Agreement, the Society will receive a total of 15 complimentary subscriptions to the online versions of the Journal of Biomechanics or Clinical Biomechanics for charitable purposes. The Society will nominate individuals or institutes in less-developed European countries to which these subscriptions should be made available."* If you believe you are eligible to take advantage of this kind offer made by Elsevier, please contact the treasurer at treasurer@esbiomech.org before January 11, 2009. In 2008, eight applications were found eligible and received a free subscription.

Membership news

Following the huge success of our membership campaign and the well attended ESB congress we are pleased to announce we have accepted 140 new members since the last newsletter. The total membership is now 574.



A warm welcome to the following new ESB members

Depalle, Baptiste; Metzke, Robert; Augat, Peter; Blüthner, Ralph; Bianchi, Elena; Masjedi, Milad; Socci, Laura; Thevenot, Jérôme; Varshney, Gaurav; Krishnamurthi, Gaurav; McCann, Laura; Pauchard, Yves; Rafiroiu, Dan Viorel; Rouhani, Hossein; Heinlein, Bernd; Onder, Ursula; Multon, Franck; Nithiarasu, Perumal; Abouhossein, Alireza; Boyle, Colin; Minnock, Enda; Molla, Md. Mamun; Ren, Lei; Wolf, Peter; Amanat, Negin; Finnilä, Mikko; Goodyear, Simon; Juchem, Sabine; Kelly, Daniel; Mattei, Lorenza; Obrist, Dominik; Schneider, Philipp; Simpson, David; Vanwanseele, Benedicte; Verheghe, , Benedict; Chong, Desmond; Creane, , Arthur; DiCarlo, Antonio; Favre, Philippe; Ploeg, Heidi-Lynn; Schleicher, Philipp; Schmidt, Jill; Stark, Heiko; Vannozzi, Giuseppe; Baleani, Massimiliano; Koenderink, Gijsje; Narracott, Andrew; Puthumanapully, Pramod Kumar; Stauber, Martin; Federico, Salvatore; Hayami, Takashi; Birukov, Konstantin; Birukova, Anna; Cañadas, Patrick; Frere, Julien; Huber, Cora; Ruben, Rui; Torii, Ryo; Chedevergnie, Fany; Kouhi, Esfandiyar; Ortiz Franyuti, Daniela; Persson, Cecilia; Skrzypiec, Daniel; Decker, Leslie; Heller, Markus; Ciardelli, Gianluca; Cole, Michael; Jimenez, Jorge; Plunkett, Niamh; Taylor, William; Ghalichi, Farzan; Hrapko, Matej; Fodé, Pascale; Manders, Catherine; Mokhtari-Dizaji, Manijhe; Tassani, Simone; Wolf, Alon; Öhman, Caroline; Checa, Sara; Hu, XiaoSu; Robinson, Mark; Michalakakis, Konstantinos; aminian, kamiar; Frunza, Mihai; Terrier, Alexandre; Reimann, Susanne; Kahrizi, Sedighe ; Torkaman, giti; Conti, Giorgia; Cory, Corrina; Myers, Sara; Aiyangar, Ameet; Dall'Ara, Enrico; Dopico Gonzalez, Carolina; Goudakos, Ioannis; Schileo, Enrico; Skalli, Wafa; Kurtcuoglu, Vartan; Milton, Felicity; Akalay, Ron; Zervantonakis, Ioannis; Eliades, Theodore; Kuntze, Gregor; Lorenzetti, Silvio; Plumb, Mandy; Remuzzi, Andrea; Russell, Colin; Al-Amri, Mohammad; Tse, Tsz Wing; Dorothy: Asadi Nikooyan, Ali; Biagi, Fabio; Charlebois, Mathieu; Chegini, Salman; Cookson, Andrew; da Silva, Rafaela; Evans, David; Fahlgren, Anna; Friederich, Niklaus F.; List, Renate; Moreau, Megan; Pawaskar, Sainath; Ponzini, Raffaele; Thacher, Tyler; Varga, Peter; Boucher, Florian; Büchler, Philippe; Kosterina, Natalia; Levchuk, Alina; Lovern, Barry; Rehan Youssef, Aliaa; Ruffoni, Davide; Russell, Serena; Sengers, Bram; Stansfield, Ben; Tanck, Esther; Wijayathunga, Vithanage; Bonaretti, Serena; Fonck, Edouard; Grimshaw, Paul; Silva, Paula.

Use your ESB forum

Members have access to the ESB Forum at <http://www.esbiomech.org/Forums/> here you can post and view job opportunities post and view thesis or ask questions about the society or biomechanics in general. Visit the forum and see how useful it can be to you. The ESB council welcomes suggestions for other topics you would like to see discussed in the forum. E-mail the publication committee on g.reilly@sheffield.ac.uk.

ESB Student and New Investigators Corner

Bill Taylor, Student Committee Chair:

Over the coming years, my vision is to revive the student section to provide a range of services and support to young scientists and student members of the Society, including events for student support as committee for discussions, ideas and direct action well as social interaction.

In order to achieve this, I wish to construct a close-knit towards bringing new young members into the Society and supporting them throughout their studies. In so doing the committee will be empowered to voice opinions, organize and carry out society activities for the good of the younger members.

I am keen to ensure that a number of young and fresh faces actively join in, but would certainly not exclude older or more qualified members from sitting on the student committee. If you feel you have a strong and lasting commitment to playing an active role for the society, I would like to discuss the possibilities of you working with me on a newly formed committee. Please



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send a short letter, including a copy of your CV to bill.taylor@esbcouncil.org, or to the address below.

I look forward to working together with you towards supporting student development within the society over the coming years.

ESB Gossip

Congratulations to Prof. Patrick Prendergast (past-President of the ESB) who was elected Vice-Provost of Trinity College Dublin (Ireland).