May 1983 - N.3

ESB newsletter

EUROPEAN SOCIETY OF BIOMECHANICS

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EDITORIAL

Seven years have passed since our Society was founded in Brussels with the aim of encouraging, fostering, promoting and developing research, progress and information concerning all biomechanical problems. Since then, the membership has been continuously increasing and spreading throughout Europe as well as overseas. Three major scientific meetings have been organized with remarkable success both as far as the number of participants and the quality of the papers was concerned. The Society has also sponsored a number of local meetings. This Newsletter is being published every six months to carry out the fundamental task of circulating information among the membership. The members of the Society have an important role in maintaining the high scientific standard of the Journal of Biomechanics. This is done both through representatives on the Editorial and Editorial Consultant Boards and through the submission of high quality papers.

We may well say, therefore, that the ESB is pursuing its institutional aims in a satisfactory fashion. However, there is still a lot to be done to further enhance the vitality of the Society and render its action more effective. The setting-in-motion phase is over: the time has come to undertake bolder and more penetrating enterprises. To this end, the collaboration and commitment of all members is essential! At the moment the entire management of the Society's affairs seems to have been transferred to the Executive Council, which should not be the case. I believe all members will recognize that this has an inhibitory, if not lethal, effect on the vitality of the Society itself.

The aim of the Congress is to report research in the area of biomechanics of human movement: athletic and recreational, normal activity including the work place, and pathological movement.

Specific topics include:

- Biomechanical assessment of athletic performance
- Assessment of protective and functional sporting equipment
- Biomechanical assessment of pathological movement
- Assessment of arthopaedic, prosthetic and rehabilitation devices
- Biomechanical assessments of the work place and occupational movements
- Measurement techniques and equipment
- Computer simulation, synthesis, modeling
- Biofeedback
- Neuromuscular control
- Clinical and kinesiological electromyography
- Biomechanics of muscles and joints
- Tissue biomechanics

The scientific committee is planning specially sponsored seminar and workshop sessions on the following:

- Assessment of Normal and Pathological Gait
- Biomechanics of the Spine
- Biomechanics of Joints & Ligaments: Normal & Pathological
- Occupational Biomechanics
- Safety Assessment of Sports Equipment

The deadline for paper submission has expired.

Registration Fees

Full registration includes attendance at all sessions, copy of Biomechanics IX, reception, outdoor barbeque and banquet, tours are extra: $230.00 CDN or $195 US.

Student Registration

For those who are still a registered student in a university program as of July 1, 1983. Registration fee includes the same events covered by a full registration: $125.00 CDN or $105.00 US.

Accompanying Persons Registration

Program includes opening reception, outdoor barbeque and banquet. Tours are extra. Regular $70.00 CDN, or $60.00 U.S.

ISB members please note the $10.00 discount on above fees.

Cancellation Policy

Those cancelling before July 1,1983 will receive 75% of registration and accommodation fees. Cancellations received after July 1,1983 will receive a 50% refund.

New Investigator's Awards

Two special awards of $500.00 each have been donated. An international team of experts will judge all papers submitted for this competition. To be eligible the investigator must indicate that the paper is based on research from an M.Sc.or Ph.D. degree. The investigator must not have presented this work in a refereed journal or at a major international conference. There is no age limit and the new investigator must be first author and personally present the paper. The award will be judged on the basis of the two page summary, the oral presentation and the final manuscript.

FOURTH EUROPEAN CONFERENCE ON BIOMATERIALS

Katholieke Universiteit
Leuven, Belgium
August 31-September 2, 1983

The European Society for Biomaterials will hold its 1983 meeting at the Katholieke Universiteit Leuven, at Leuven, Belgium. This meeting is being organized with the cooperation of the European Society for Biomechanics.

The meeting will review progress in the area of biomedical materials and mechanics. It will provide a forum for the presentation and discussion of recent results in biomaterials and biomechanics research. It will emphasize recent developments in the use of metals, ceramics, glasses and polymers as biomaterials whilst attempting to identify future trends. It will also discuss the properties of biological tissues, the mechanics of living systems and the relationship between these and the study of the functionality of implants.

The format of the meeting consists of plenary sessions featuring five key note addresses, a round table and a program comprising contributed papers and posters selected from abstracts submitted to the Conference Committee.

From the Conference Chairman

A final program of the Conference will be issued soon. All ES Biomechanics members will receive a copy.

Statistics have not been compiled as yet. Thus we don't know exactly the number of countries and the number of different subjects. But we know that

1. there are 121 papers submitted;
2. all major European countries are represented (from north to south, from west to east);
3. excellent abstracts have come from the U.S.A., Canada, Japan, Israel;
4. the distribution of the subjects shows that the meeting is a truly interdisciplinary one, cardiovascular mechanics, sports biomechanics, orthopaedic biomechanics will be programmed. It appears that mechanics as such, without relationship to materials will be 1/3 of the program. In addition the number of papers that deal with the mechanics of matter and mechanical properties of materials are considerable.

Further information: Dr.Paul DUCHEYNE
Conference Chairman
Department of Metallurgy
K.U.Leuven
de Croylaan 2
B - 3030 Heverlee, BELGIUM

FOURTH GENERAL MEETING OF THE EUROPEAN SOCIETY OF BIOMECHANICS

Davos - Switzerland
September 24 - 26, 1984

The organization of this Conference proceeds according to schedule.

Members will soon receive the first call for papers.

The Conference will be preceded by a one-day instructional course consisting in three parts

- basic biomechanics
- biomechanics applied to fracture treatment
- biomechanics applied to prosthetic replacement of joints.

Conference Chairman:
Prof.S.M. Perren
Labor für experimentelle Chirurgie
Schweizerisches Forschungsinstitut
CH - 7270 DAVOS

SCIENTIFIC MEETING REPORTS

B.Moyen Reports
Second Symposium on Internal Fixation of Fractures
Lyon - France
September 16-18, 1982

This symposium was attended by 212 people and 70 papers were presented. Three main subjects were studied: fracture healing, plate and nail fixation of fractures. The 40% of the attendees were American, 45% Europeans, among which only 10% were French! May be because the official language was English. The scientific lavel was excellent and lots of scientific contacts were established. Proceedings will be published in a 197 page book. This publication can be obtained from
B.Moyen,M.D.
Hopital Edouard Herriot
Place d'Arsouval
69374 Lyo - France
The third Symposium is going to be organized by P.Slatis and L.Stromberg in Stockholm and Helsinki in 1985.

A.Cappozzo reports
International Summer School "Biomechanics in Robotics"
Sofia - Bulgaria
October 1-10, 1982

The Summer School "Biomechanics in Robotics" was organized by the Institute of Mechanics and Biomechanics, Bulgarian Academy of Sciences. Lecturers were from Bulgaria, Italy, the USSR, and Yugoslavia.

There have not been, as yet, very many occasions on which biomechanicians and scientists working in robotics have come together and shared the same lecture theatre for ten days. There have been even fewer occasions on which they have succeeded in tuning themselves into the same frequency to exchange constructive information and thus engender creative thought. This, in my opinion, did occur in Sofia.

Everyone there acknowledged that the interaction between biomechanics and robotics is bound to be most beneficial for both disciplines. However, opinions did not appear to be unanimous concerning the modes through which this interaction should be established and the limits of the results which might be obtained. Biomechanicians were warned not to forget that they deal with biological substrates and robotic workers not to underestimate the fact that they deal with manufactured

devices. This argument may sound trivial, but it is not. This became apparent in Sofia after a number of lectures had been delivered. In some instances the human body was viewed as the hundred year old "machine humain". This assumes a rigidity of behaviour of the human body which often led, and still leads, to erroneous conclusions. A few robotic workers alluded in their lectures to the adoption of a "biomechanical approach" when designing their machines or mechanisms. In this respect, I fear that in most cases their entire grasp of biomechanics consisted of a morphological detail of their machine which resembled some part of a living system. This is neither biomechanics nor even a biomechanical approach.

In fact, a "biomechanical approach" should not exist at all, apart from keeping an attentive and critical eye on Nature, an inexhaustible source of ideas at all levels. This does not mean to refer to particular natural morphological or functional solutions, but rather to the overall principles that govern the choice of these solutions. Only these overall principles have that general character which permits their adaptation to realities as "unnatural" as those made of iron and plastic. As far as biomechanicians are concerned, in dealing with the relevant aspects of natural phenomena, they should supply these overall principles. They have not, as yet, done this in a satisfactory way. Experimental data is abudant regarding human motion and its control, but it lacks rational organization. Through speculation, biomechanicians should try to interpret the phenomena they have been observing and identify the laws that govern them. This approach, since Bernstein, is seen less and less.

Only when the above method is put into practice may we hope that collaboration between Biomechanics and Robotics will lead to concrete results.

A.Cappozzo reports
Third All-Union Conference on the Problems of Biomechanics
Riga - USSR
April 20-22, 1983

The Conference was organized by the Scientific Council of the USSR Academy of Sciences on the Problems of Biomechanics, the Academy of Sciences of the Latvian SSR, the Ministry of Health of the Latvian SSR, the Institute of Polymer Mechanics of the Academy of Sciences of the Latvian SSR, and the Latvian Research Institute for Traumatology and Orthopaedics. Delegates came from all over the Soviet Union. Representatives of the German Democratic Republic, Czechoslovakia, Bulgaria, the United Kingdom, Japan, Italy, Sweden, The Netherlands, and the USA also attended.

The scientific programme comprised five sessions. Session 1 was on the biomechanics of bone tissue and its substitutes. Oral papers were given by I.V.Knets, R.Huiskes, H.A.Jansons, and G.Hastings. Fifty seven posters were exhibited. Session 2 was dedicated to the biomechanical aspects of fracture management and to sport biomechanics. Oral papers were given by V.K.Kalnberz, M.V.Volkov, V.M.Zatsiorsky, A.Cappozzo, and R.Suzuki. Sixty six posters were exhibited. Session 3 was on the mechanics of muscle, myocard, blood vessels, mitral valve and their substitutes, soft tissues, and the influence of physical fields on biological structures. S.S.Grigorian, V.A.Kasianov, and G.G.Avtandilov gave oral presentations. There were 89 poster reports. Session 4 was on the hydrodynamics of biological fluids, blood rheology, hydrodynamics of blood flow in the heart, valves, vessels and their substitutes, and on microcirculation and respiration biomechanics. V.M.Zaiko and A.I.Diatchenko gave oral papers. 85 posters were exhibited on these topics. Session 5 was on robotics and biomechanical system movement control.D.J.Ohotsimsky and K.V.Frolov gave oral papers. There were 72 posters

exhibited. During the sixth session, papers dealing with biomechanical problems in space flight were presented by L.V.Tchaidze, S.V.Petuhov, and L.I.Mitutsova. Demonstrational hip arthroplastic surgeries were carried out during the Conference by Prof.Kalnberz from Riga and by Prof.Rydell from Sweden.

Preprints of the poster reports have been produced in Russian. The proceedings of the oral presentations will be printed in the original languages with abstracts either in English or in Russian.

As can be gathered, it was an enormous Conference. Delegates invited were fortunate to have the opportunity of visiting the different hosting Institutions, including the Biomechanics Unit of the Latvian Research Institute for Traumatology and Orthopaedics, which is directed by Dr.H.A.Jansons. Thirty two researchers work there full-time, of which 14 are engineers, four mathematicians, nine medical doctors, three physiologists, one biologist and one veterinary doctor. Their main research areas are: bone biomechanics, arthroprostheses, gait analysis, biomagnetism, and external fixators. The research work is carried out in close collaboration with the clinical component of the Institute.

I shall not indulge in a detailed description of the social programme: I shall simply say that the hospitality of our Latvian colleagues was exquisite and memorable, to say the least.

RESEARCH AWARDS

We have had notice of three Research Awards which are being initiated this year.

The Borelli Award of the American Society of Biomechanics - for outstanding contribution to biomechanics. For information please refer to
J.M.Mansour, Ph.D.
Dept. of Mechanical and Aerospace Engineering
Case Western Reserve University
Cleveland, OH 44106
U.S.A.

The New Investigator's Awards for the best two papers submitted to the IX Congress of the International Society of Biomechanics. Details are reported in this Congress Announcement at pag.10.

Prix de la Société de Biomécanique. Le prix de la Société de Biomécanique, d'un montant de 3 000 FF., a pour objet d'encourager un jeune bimécanicien, en reconnaissant un travail personnel de quelques années.

Il est attribué par le Conseil d'Administration de la Société après soumission de chaque dossier à deux experts de disciplines complèmentaires.

Les conditions à remplir pour le dépot de candidature sont:
- Age maximum: 31 ans à la date limite de dépot des candidatures (31 mars)
- Avoir communiqué personnellement au moins à un congrès de la Société de Biomécanique
- Avoir effectué un travail de recherche, d'étude ou de réalisation dans les domaines d'intéret de la Société, tels qu'ils sont définis à l'Article 1 des statuts.

Les dossiers de candidature sont à adresser en deux exemplaires au Secrétariat de la Société et doivent comporter:

- Curriculum vitae
- Liste des travaux
- Exemplaires des travaux pour lesquels le candidat sollicite le Prix de la Société.

Pour le cas où le nombre de candidats s'avérerait insuffisant ou si les travaux présentés ne satisfaisaient pas aux critères retenus, le Prix pourrait ne pas etre attribué.

Secrétariat: E.PERTUZON
Laboratoire de Physiologie Neuromusculaire, UER de Biologie
Université des Sciences et Techniques de Lille
59655 VILLENEUVE D'ASCQ Cedex (France)
Tél.: (20) 91 92 22 (Poste 2064)

WHO CAN MEASURE WHAT?

Members are invited to send a report containing a description of their laboratory facilities to the Newsletter Editor for publication.The following information should be included.
Contact person.
Name of the Laboratory.
Institution.
Mailing address.
Telephon number.
Detailed description of the quantities that can be measured, of the instruments and methodologies used, and of the experimental errors.
Relevant references.
Tables and black and white graphs can be included.
While drafting this report, the authors should keep in mind the aim of its publication. As already mentioned in the Editorial, the information conveyed by these reports should permit anyone who needs a particular type of measurement to consider to acquire it in the reporting laboratory. It is evident that this latter laboratory must be willing to collaborate in this direction.

PREPRINT SERVICE

Members are invited to submit the abstracts of ready-to-be-published papers for publication in the Newsletter.
Abstracts should be in English, of about 200 words describing the purpose, methods, results, and conclusions of the study. They should include the article title, authors' names and affiliations, and a mailing address.

COMPRESSIVE LOADS IN THE LUMBAR VERTEBRAL COLUMN DURING NORMAL LEVEL WALKING

A.Cappozzo - Laboratory of Biomechanics - Istituto di Fisiologia Umana - Università degli Studi "La Sapienza" - 00185 Roma - Italy.

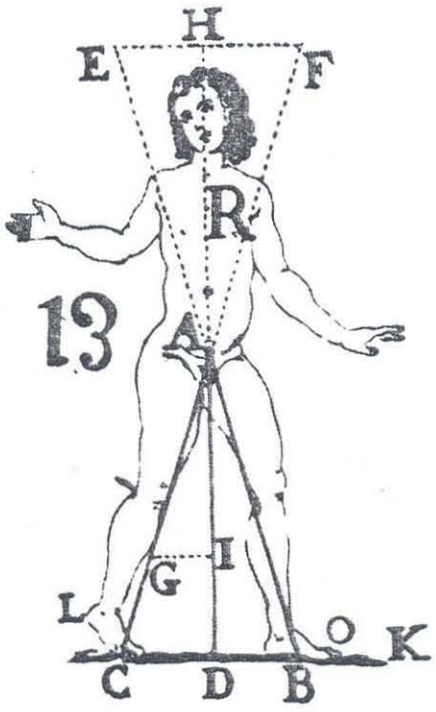
The longitudinal compressive load acting on the L3-L4 spinal motion segment was investigated during normal level walking for a range of speeds of progression. Forces were predicted using experimental data from photogrammetric measurements of upper body segmental motion and inertial properties, and a biomechanical model of

the trunk. A partial validation of the results was obtained using records of the electrical activity of the trunk muscles and intradiscal pressure information available in the literature. Experiments were carried out in five normal young male subjects. Results showed that the L3-L4 motion segment is submitted to a cyclic compressive loading. The maximal and minimal values of this load vary with walking speed approximately from 1.0 to 2.5 and from 0.8 to 0.2 times body weight, respectively.Relevant peaks occur with a frequency ranging approximately from 1.3 to 2.5 c.p.s. Muscular action is mostly concentrated in the trunk extensors which show a burst of activity at the time of ipsilateral toe-off.

LET'S REVISIT BORELLI

Borelli expounds "the way the bulk of the human body moves forward when walking" as:

"When man stands, he is certain that his legs, resting on the floor, form the isosceles triangle ABC (Fig.1.1.1), and, at the same time, nature causes and produces many circular movements from which walking derives.The column or lever of leg BA turns about the centre B of the anterior foot in the perpendicular plane to the horizon and, simultaneously the whole machine R is pushed towards K. Such a forward movement occurs for the following reasons: if the foot LC is stretched and the solei muscles are tightened, the obtuse angle ALC is formed, and since the toes touch the floor at C, the length of the leg and the thigh increase as the length of the foot CL is added; thus, that isosceles triangle transforms itself. Firstly, it becomes rectangular, and this occurs when the leg AB is set perpendicularly on the horizontal plane. I must point out that during this action the entire machine R is supported by both legs, thus it can easily tilt a little so that the leg AB may lean perpendicularly to the underlying plane. Moreover, due to the same extension of the foot and the lengthening of the leg AC, the floor is pushed by the toes C; thus, with a reflex movement, the machine R moves forwards towards K, not unlike the way a small boat, pushed with a pole by the sailors, leaves the shore. Such a push is marvellously facilitated by the slight forward bend towards K of the head and of the upper part of the abdomen, consequently, the centre of gravity of the entire body - since the line of inclination falls beyond the extremity of the foot BO- is made to fall. By its own will, the heavy machine thus moves and at the same time stops itself from falling by lifting the foot LC, taking it rapidly to L beyond the end of the line of inclination. The resting position is thus renewed and the human body machine walks forwards in this ingenious manner". (Translated from "De motu Animalium", 1680, par.156, by A.Cappozzo).



In my capacity as Editor of this Newsletter, I should like to launch a few initiatives which may encourage this collective participation.

It would be very desirable if the Newsletter could become a forum for debates on general matters. How about discussing the problem of language in Biomechanics, or old and new research trends, or are educational problems in the field not worthy of discussion? Historical notes may also interest many of us. With this purpose in mind, in the next issues of the Newsletter there will be space for comments submitted by the members on any general topic they feel like talking about and which they think will raise discussion.

Sometimes Scientific Meetings are held which are unlikely to be attended by many ESB members either because they take place outside Europe or are of a local nature. In order to circulate information about these also, the Newsletter will publish reports of such Meetings. We therefore ask the members, whenever they have the opportunity to attend such Meetings, to kindly let us have a report.

The publication of a paper takes one year if not more. To ensure timely dissemination of information about research being carried out in Europe and on the results being attained, this Newsletter will publish the abstracts of ready-for-publication manuscripts. All members are therefore invited to submit such abstracts.

While working on a research project it often happens that we need a measurement which can not be carried out in our own laboratory. The occasional nature of this requirement may render inadvisable the acquisition of the necessary instrumentation but oblige us to refer to another laboratory which carries out that type of measurement on a routine basis. In order to facilitate this type of collaboration, I suggest that this Newsletter publish a description of the features of the members' Laboratories of Biomechanics. This should be done in such a way that the reader gets a clear idea of what can be measured, and how, in a particular laboratory. Elsewhere in this Newsletter you will find the instructions for submission of such material.

I look forward to receiving your material.

EXECUTIVE NOTES

From the Secretary

Although no Scientific Society Meetings were held since the last Newsletter, Europe has been buzzing with biomechanics activities on the back stage. Important topics were (and are) the organization of the Combined Meeting (with Biomaterials) in Leuven in August/September of this year, and of the 4th General Meeting in Davos, which are well underway.

Another activity concerned the election of "corresponding members". The results of the ballot were published in the last Newsletter. The Council has made additorial selections in countries where no ballot was held or in which the elections failed. The list of the corresponding members is reported elsewhere in this Newsletter.

They will solicite new members in their countries, submit proposal for official functions, coordinate local meeting sponsorships, and (if necessary) represent the members of their countries. No doubt you will hear from the corresponding member in your country soon.

A Council Meeting was held in Enschede (The Netherlands) on January 22nd of this year. Topics discussed included the relations with other Societies (European Biomaterials, Int.Soc.Biomech., U.S. Nat.Committee on Biomechanics), the finances of

the Society (see Treasurer's report), the meetings in Leuven and Davos, corresponding members, collective membership, junior membership (see last Newsletter), new proposals for J.Biomechanics functions (to be made by September of this year) and Newsletter Editorship. Seven new members were approved: M.Lahille (France), E.B.Sabri (Belgium), F.Schlaepfer (Canada/Switzerland), J.Eulenberger, E.Schneider, D.Leu, A.Schaer (Switzerland).

The Agenda for the General Assembly in Leuven was established as follows:

1. Opening by the Chairman.
2. Reports of the Secretary, Treasurer, Meeting Committee, Membership Committee, Newsletter Editor.
3. Report of the representatives on the J.Biomechanics (Van Campen and Perren).
4. Report of the Organizing Committee of the Davos Meeting (1984).
5. Location of the 5th General Meeting.
6. Reports from the Corresponding Members.
7. Elections for new council members.
8. Other Business.
9. Closure.

With respect to points 5 and 7 the members can submit proposals, respectively to the Chairman of the Meeting Committee (Cappozzo) and the Secretary.

Finally, I want to thank A.Cappozzo for taking up the Newsletter Editorship. I think he is already doing very well. I urge you all to send him material for the next Newsletter, and I am looking forward to seeing you again in Leuven.

From the Treasurer

Enclosed you will find the financial report,dated January 1983.

ESB members who did not pay their fee for 1983 are urgently requested to fulfil this duty as soon as possible.

ESB members who have problems with their fee are requested to contact the treasurer urgently. It appears that there are still complaints about the supply of the J.Biomechanics to ESB members and we are now in the process of putting more pressure upon Pergamon Press for a proper supply.

Financial Report Treasurer ESB
January 1983

Cash balance June 1982:	Dfl.	US$
Total amount on Dfl. account	8,413.04	3,174.73
Total amount on US$ account	4,717.--	1,780.--
Incomes:		
Membership fees on Dfl. account	3,646.71	1,376.--
Interest	63.76	24.--
Conference book Nijmegen-meeting	208.44	78.--
Membership fees on US$ account	6,171.85	2,329.--
Expenses:		
Transfer costs bank account	497.96	188.--
Secretarial costs: treasurer	362.08	136.--
secretary	PM	
Invoices Pergamon for 1982 fees J.Biomechanics	6,792.--	1,800.--
Cash balance January 1983:		
Total amount on Dfl. account	11,471.91	4,329.--
Total amount on US$ account	6,118.--	2,309.--

From the Membership Committee

The membership statistics are (January 1983) as follows:

Austria	1	West Germany	8	Switzerland	11
Belgium	24	Greece	11	The Netherlands	28
Brazil	1	Ireland	1	United Kingdom	13
Canada	2	Italy	35	U.S.A.	4
Denmark	7	Spain	8	Yugoslavia	1
France	21	Sweden	2		

Total: 178 Members.
The recruiting campaign continues!

From the Meeting Committee

The functions of the Meeting Committee were outlined in the Newsletter of May 1982.

We strongly encourage members to let us have the details of any local or international Scientific Meeting or Instructional Course which they are organizing on Biomechanics or related topics so that the Awareness Service may operate efficiently.

The existence of a vast demand for Instructional Courses on specific topics related to Biomechanics calls for an effort in this direction. The ESB has an important role to play in the promotion and organization of these educational activities. It has therefore been decided to include Instructional Courses in the programme of our Fourth Meeting to be held in Davos. Relevant details may be found elsewhere in this Newsletter. We also invite all members to make a contribution to this effort by organizing either local or international courses. The ESB Council is willing to give all possible support in this area.

Corresponding Members

The elections for Corresponding Members to represent the countries have been completed. They have been successful in the following countries:

Belgium:	R.Bourgois	Chaire de Resist.des Materiaux Ecole Royale Militaire Avenue de la Renaissance 1040 Bruxelles
France:	P.Christel	Rue des Cloys,7 75018 Paris
West Germany:	R.Kolbel	Alte Landstrasse 258 2000 Hamburg 65
Greece:	G.Papachristou	Moschopoleos 4str. Papagou Athene

Italy:	A.Ascenzi	Via Pereira,21 00131 Roma
Switzerland:	S.Perren	Lab. für Experimentelle Chirurgie Schweizerisches Forschungsinstitut 7270 Davos
United Kingdom:	K.Wright	41,Stowe Crescent Ruislip, Middlesex Ha47SR

The elections failed in Spain (no ballot return) and in Danmark (3 members with equal votes). In the Netherlands the first two candidates (Huiskes and van Campen) declined. No elections were held in countries were we have only one or two members. In these cases the following candidates have been selected.

Spain:	C.Hernandez-Ros	Juan Bravo 41 Madrid 6
Denmark:	A.Viidik	Institute of Anatomy University Park 8000 Aarhus C.
Netherlands:	H.Gootenboer	Kerkedeunen, 48 7521 ED Borne
Austria:	G.Ender	Ferstelgasse, 6-20 1090 Wien
Brazil:	M.D'Angelo	Rua Eng.Pena Chaves, 27 ap.101 Jardin Botanico 20000 Rio de Janeiro, R.J.
Ireland:	P.Lawes	Howmedica International Inc. Raheen Industrial Estate Limerick
Sweden:	H.Olofsson	Klippvagen 5 75252 Uppsala
U.S.A.:	P.S.Walker	Orthopaedic Biomechanics Lab. Brigham and Women's Hospital 75 Francis Street Boston, Mass. 02115
Yugoslavia:	V.Nicolic	Dept.of Anatomy Faculty of Medicine University of Zagreb Zagreb

Announcements on the Journal of Biomechanics

Pergamon Press has given a one page space to the ESB for Announcements.
These may concern:
- ESB Affairs.
- Scientific Meetings.
- Instructional Courses.
- Vacant positions in Biomechanics.
- Other important notice.

Members are required to submit the relevant material to the Newsletter Editor.

Organization of the Fifth Meeting of the European Society of Biomechanics

The Fifth Meeting of our Society is due in 1986. Members willing to organize this Meeting should send their proposal to the Meeting Committee Chairman no later than 24 June 1984, that is, three months prior to the Fourth Meeting which is to be held in Davos from 24 to 26 September 1984.

Proposal should be accompanied by a detailed description of the hosting Institution, other sponsorships, funding, conference and accommodation arrangements, and transport services. An estimate of subsistence expenses and Conference fees should also be included. Applicants may enclose suggestions concerning the scientific programme.

The proposals will be assessed by the Council and presented in a report to the ESB General Assembly at its meeting in Davos, where the final decision will be made.

FORTHCOMING EVENTS

NATO ADVANCED STUDY INSTITUTE ON THE BIOMECHANICS OF NORMAL AND PATHOLOGICAL HUMAN ARTICULATING JOINTS

Will be held in Sintra-Estoril Hotel,
Estoril (near Lisbon), Portugal,
from June 20, through July 1,1983

The theme will be to provide instrunctions on the advances in biomechanics of diarthrodial joints, emphasizing joint modeling, constituent material properties, clinical aspects of normal and pathological joints, and joint replacement, including design, manufacture and testing of endo-prostheses.

Principal lectures will be given by authorities in the above fields. Participant contributions and group studies are scheduled to stimulate discussion and to develop ideas for R & D efforts. Although the meeting will have an engineering bias, the lecturers as well the participants will be drawn from both clinical and engineering fields.

Main lectures:
1. Clinical Aspects of Normal and Pathological Joints (Mulier)
2. Biomechanics of the Connective Tissues of Diarthrodial Joints (Evans)

3. Biomechanics of Cartilage and Bone (Evans)
4. Physiology and Biomechanics of Muscles (da Silva)
5. Lubrication of Joints (Renaudeaux)
6. Significance and Trends in Mathematical Modeling of Joints (Paul)
7. Quasi-Static Joint Models (Berme)
8. Dynamic Modeling of Joints (Engin)
9. Passive and Active Resistive Joint Characteristics (Engin)
10. Biomechanics of Lower Limb Joints (Paul)
11. Biomechanics of Upper Limb Joints (Berme)
12. Experimental Techniques: Data Acquisition and Reduction (Cappozzo)
13. Biomechanics of Joint Replacement (Huiskes)
14. Patient Related Tests and Assessment of Joint Replacement Patients (Andriacchi)
15. Biomaterials (Lawes)
16. Design, Manufacture and Testing of Prosthetic Devices (Lawes)
17. International Standards for Prosthetic Devices (Paul)

Those willing to participate should be resident of NATO countries, who are eligible for travel and boarding-lodging grants.

Those interested to participate in the Institute are requested to send their detailed resumes (professional, academic, educational backgrounds and experience) to Professor Necip Berme (The Ohio State University, 206 West 18th Avenue, Columbus, Ohio 43210, U.S.A.) as early as possible. Inquires may also be addressed to Professor Ali E.Engin at the above address, or Dr.Kelo M.Correia da Silva at Laboratorio de Fisiologia, Instituto Gulbenkian de Ciencia, Apardato 14, 2781 Oeiras, Portugal.

Costs

Approximate cost for a participant for the duration of the institute including accommodation and full board will be $450.00 for a single room and $350.00 for a double room shared with another participant.

SOCIETE DE BIOMECANIQUE
8ème CONGRES - 7 et 8 JUILLET 1983

INSTITUT NATIONAL DES SCIENCES APPLIQUEES
21, avenue A.Einstein - 69100 VILLEURBANNE

Themes

La première journée sera consacrée spécialmente au thème Biomecanique et Transporte et abordera les aspects biomécaniques de l'ergonomie des transports (sécurité, confort, conditions de travail, etc...). Un état de la question ainsi que les problèmes biomécaniques soulevés dans chaque secteur seront présentés par quatre à cinq conférenciers invités. Des communications sous forme de posters commentés présenteront les études et recherches actuelles dans ces domaines.

La deuxième journée abordera, sous forme de communications orales et de posters commentés, les thèmes suivants:

- Biomécanique des tissus et organes (os et articulation, tissu musculaire, coeur et poumons...)
- Biomécanique des systèmes (appareil muscolo-squelettique, circulation, respiration, éducation physique et sportive, prothèses, rééducation, robotique, environnement)
- Techniques, méthodes et instrumentation.

Organisation

J.P.VERRIEST - ONSER - Laboratoire des Chocs et de Biomécanique - BRON
C.RUMELHART - INSA - Laboratoire de Mécanique des Solides - VILLEURBANNE
B.MOYEN - HOPITAL EDOUARD HERRIOT - LYON
J.L.FLORES - IRT - Centre d'Evaluation et de Recherche des Nuisances et de l'Energie - BRON

Reinseignements et Inscriptions

J.P. VERRIEST
ONSER - Laboratoire des Chocs et de Biomécanique
109, Avenue Salvador Allende
69500 BRON
Tél. :(7) 826 14 18 Télex : 370628

Participation aux Frais

Membres de la S.B. : 300 FF.
Non membres de la S.B. : 350 FF. (déjeuners compris)
Etudiants : 100 FF.

Cette participation sera à envoyer, en meme temps que l'inscription définitive, avant le 30 Mai 1983. En cas d'inscription tardive, une majoration de 50 FF. sera appliquée.

THE SEVENTH ANNUAL MEETING OF THE AMERICAN SOCIETY OF BIOMECHANICS

Rochester, Minnesota
From 28-30 September 1983

Biomechanics can be described as the study of the relationship between form and function in the living organism. The Society promotes interaction among those engaged in biomechanical research in many different areas. To foster this interaction, the conference program will include distinguished guest lectures, instructional lectures, multi-disciplinary sessions, and methodology sessions.
Papers will be in the following and related areas:

anthropology	dentistry	respiration
biology	ergonomics	sports biomechanics
biomaterials	orthopaedics	tissue mechanics
biorheology	physical education	zoology
cardiovascular	rehabilitation engineering	

Abstracts: will be reproduced in the proceedings available at the time of the conference.
Abstracts will also be published in the Journal of Biomechanics.

Scientific Paper Award: The Borelli Award, for an outstanding contribution to biomechanics, will be initiated at the seventh meeting of The Society.
The deadline for abstracts and Borelli Award papers has expired.

The local meeting arrangements will be by:

Kai-Nan An, Ph.D.
Biomechanical Research
Dept. of Orthopaedics
Mayo Clinic
Rochester, MN 55905 Phone (507) 284-2511

SYMPOSIUM ON SPORTSHOES AND PLAYING SURFACES
August 4-6,1983
University of Calgary
Calgary, Alberta, Canada

The Symposium on Sports Shoes and Playing Surfaces has been established as a satellite conference to be held prior to the IXth Congress of the International Society of Biomechanics and has received the approval and sponsorship of the I.S.B. Papers which are accepted for presentation and publication will be included in a monograph, which will be available prior to the Symposium.

Registration Fees
Full registration includes attendance at all sessions, a copy of the Proceedings, reception, banquet and refreshments in the morning and afternoon breaks.

Deadlines
Early (received prior to May 1,1983)
$80.00 Can.
Regular (received after May 1,1983)
$100.00 Can.
Students (early) $40.00 Can.
Students (regular) $50.00 Can.
Cancellation Policy
Those cancelling prior to June 15,1983 will receive 75% of registration fees and a 50% refund after that date.

Conference Secretary
Marjorie Foofat
Faculty of Physical Education
The University of Calgary
2500 University Drive N.W.
Calgary, Alberta T2N 1N4

IXth CONGRESS of the
INTERNATIONAL SOCIETY of BIOMECHANICS
Waterloo, Ontario, Canada
August 7-12th,1983

Conference Chairman:
D.A.Winter
Vice-Chairmen:
K.C.Hayes
R.W.Norman
R.P.Wells
Conference Secretary:
Ms.J.Karger
Department of Kinesiology
University of Waterloo
Waterloo, Ontario, Canada N2L 3G1
(519) 885-1211,Ext.2156