

EUROPEAN SOCIETY OF BIOMECHANICS

NEWSLETTER NOVEMBER 1989

LETTER FROM THE PRESIDENT, PROF. RIK HUISKES



Our Society is thriving and it seems I have only good news to report. Following an action of Leif Ryd (Membership Committee), many new colleagues have applied for membership of the Society. The preparations of the 7th General

Meeting in Aarhus are in progress, and we understand from the reports of Ivan Hvid and his group that it will be a very interesting meeting indeed. The Danes are known to be efficient and this is certainly reflected in the conference preparations. They can also be somewhat inflexible, so do send your abstracts in time for the deadline! Finally, they are a convivial lot when offered enough beer, which they do not decline as a rule. As you can see, I have been there; Aarhus is a place worth a visit!

But there is more good news. Aurelio Cappozzo has proposed to host the 8th General Meeting of 1992 in Rome (or thereabouts). The proposal is quite promising and we will discuss it at the next Business Meeting. The previous General Meeting by the way, the 6th in Bristol, did not leave a financial loss, or so we were told by the organizers, Alan Goodship and Lance Lanyon; jolly good show, old boys.

Note the news about Awards and Workshops elsewhere in this Issue of the Newsletter. There are also developments outside our Society. Aurelio Cappozzo has become President-Elect of the International Society of Biomechanics. Our congratulations! He is in fact the second ESB-Council member in this position. They do get around!

The preparations for the First World Congress on Biomechanics in San Diego, August 30 - September 4, 1990, are well under way, and appears to become a truly worldly affair with contributions from all continents. We, the ESB, were asked to take the responsibility for three symposium sessions on Bone Biomechanics and Remodelling. There will be many other symposia on a variety of subjects. But of course free sessions are organized as well, and we expect a huge turnout from our Society membership. The deadline for abstracts is December 30. If you need information, please see the Future Conferences information in this Newsletter.

Our collaborations with the ESBiomaterials will continue and intensify in the future, as was the outcome of a meeting with their President, Pascale Christel in Heidelberg. Their conference there showed much promise for future biomaterials and the plans for the future will maintain that; we will keep you informed. Their next meeting will take place in Liverpool, 1991.

Rik Huiskes, Nijmegen, The Netherlands.
October 1989.

THE NEXT ESB MEETING TAKES SHAPE

**THE SEVENTH MEETING OF THE EUROPEAN SOCIETY OF BIOMECHANICS
JULY 8-11, 1990, AARHUS, DENMARK.**

By now, the Final Announcement of the next meeting in Aarhus should have reached everyone who has expressed an interest for the meeting, including of course all members of the Society. The material sent out includes information on the City of Aarhus and its surroundings. We are aware of the fact that many members are having their vacation at the time of the meeting. We had to choose July to be able to have the meeting at the University and to take into consideration other important meetings during 1990. We hope that this shall not keep you away from the meeting. On the contrary, we propose that you consider bringing your family and combine your attendance to the meeting with a family vacation. The possibilities to do this are certainly there. Aarhus is close to many places worth visiting in Jutland. Further information on this is included in the material sent out with the Final Announcement. There are possibilities for family-accommodation not mentioned on the registration forms. If you have special wishes, please contact Aarhus Convention Bureau, Raadhuset, DK-8000 Aarhus C, Tel: 45 86 121177, Fax: 45 86 184346, Telex: 6 46 90 CTHALL DK

The meeting will be preceeded by a workshop arranged by the newly formed European Orthopaedic Research Society, ESB members are invited to join this meeting as well. The four ESB-precourses have been planned on Sunday, July 8, including courses on the cellular basis of bone remodelling, mechanical testing of hard tissues, 3-D analysis of knee joint motion,

and cardiovascular flow dynamics. Included in the scientific programme of the meeting, most of which of course will consist of the original contributions of the participants, are a number of invited lectures given by distinguished researchers in their fields: for details please consult the Final Announcement.

There are a number of awards to be given at the Meeting, the ESB Research Award of USD1000, the Poster Award of UKP100, and the Clinical Biomechanics Award of USD150. The ESB Research Award will be announced in detail in a forthcoming number of The Journal of Biomechanics. The posters presented at the meeting will be reviewed by a jury appointed by the Council of the ESB, and the award given at the banquet or at the end of the meeting. The clinically relevant papers accepted for presentation at the meeting will be reviewed by a jury appointed by the Council, and the best papers will be presented at a special session during the meeting. Based on the scientific merit of the papers and the actual presentation, a winner will be chosen by the jury. The award will be presented to the authors of the winning paper during the banquet.

The Organizing Committee look forward to welcoming you in Aarhus. We hope for a large attendance and for a large number of submissions.

Ivan Hvid
Chairman 7th ESB

KEY DATES AT A GLANCE

The Key Dates for the Aarhus Meeting are:

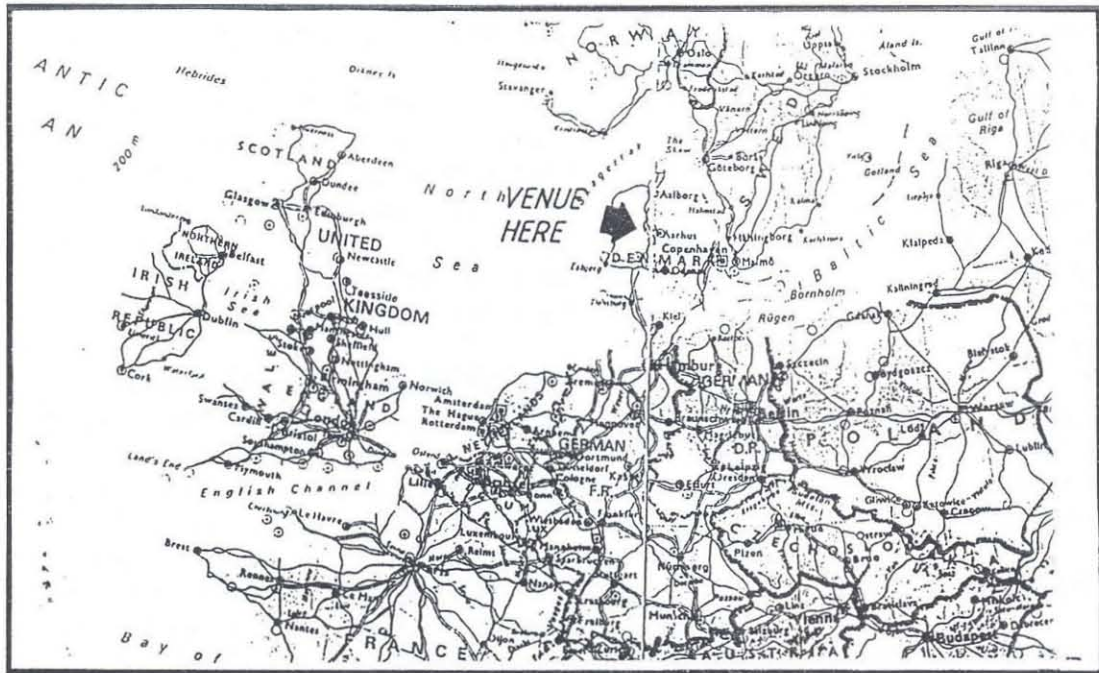
Deadline for abstracts	15th December 1989
Mailing of Decision Letters	1st February 1990
Deadline for Reduced Fee Registration	1st April 1990
Mailing of Final Programme	1st April 1990
Instructional Courses	8th July 1990
7th ESB Meeting	9th-11th July 1990

If you need an Abstract and Information Kit, please write to Scientific Secretariat, Biomechanics Laboratory, Orthopaedic Hospital, Randersvej 1, 8200 Aarhus N, Denmark.

Phone: 45 8616 7500 ext. 4649

Fax 45 8610 7733

BE SURE TO SUBMIT ONE OR MORE ABSTRACTS AND ENCOURAGE YOUR COLLEAGUES, STUDENTS, TEACHERS, FRIENDS, ... TO DO SO AS WELL.



ESB TO MAKE THREE AWARDS

Erich Schneider, Secretary-General of ESB, informs us about the awards that will be made in Aarhus.

No less than three awards will be presented at the ESB Meeting in Aarhus. The first is the ESB Research Award which requires the submission of a full paper. The second and third, the Clinical Biomechanics Award and the Poster Award, will be made during the Aarhus Conference itself. Details are as follows:

RESEARCH AWARD

At the seventh meeting of the European Society of Biomechanics in Aarhus, Denmark (July 8-11th, 1990) the bi-annual ESB award will be given to a research paper. The award consists of (a) a certificate, (b) \$1000 (sponsored by Pergamon Press) and (c) a waiver of the conference registration fee for the first author.

All full length original manuscripts (written in English) in the field of biomechanics, which have not been published before or submitted for publication elsewhere are eligible. The competition is not restricted to the ESB membership. Council and Award Committee members are not eligible for the award.

The manuscript will be submitted as an award paper to the Journal of Biomechanics. A technical presentation of the paper will also be scheduled at the seventh meeting of the ESB in Aarhus.

Manuscripts must be received prior to 31st January 1990.

Three copies of the manuscript along with three copies of all illustrations should be submitted to:

Dr Aurelio Cappozzo
Laboratoria di Biomeccanica
Istituto di Fisiologia Umana
1 Università degli Studi
P. le Aldo Moro
00100 Roma
ITALIE

LEIF RYD REPORTS ON THE CLINICAL BIOMECHANICS AWARD

During the 7th ESB meeting in Aarhus, July 1990, a Clinical Biomechanics Award will be presented to the paper most compatible with the purpose of the Award, namely "to foster the application of Biomechanics to clinically oriented problems". Based on an evaluation of the submitted abstract, a preselection will be made by the scientific committee of the general meeting. Among the selected papers, a specially assigned committee will

select the five papers, which are deemed to best correspond to the purpose of the award. These papers will be presented at a special session during the Aarhus Meeting; the **Clinical Biomechanics Award session** for final selection.

The Award will be given to the presenting author at the banquet. The award consists of a certificate, £100, and a waiver of conference registration fee for the presenting author.

Researchers are hereby encouraged to submit their clinically related work to the 7th ESB meeting with special attention to the **Clinical Biomechanics Award**.

POSTER AWARD

Peter Walker will organise this award and will form a committee at the time of the Aarhus meeting. The committee will study all of the posters and make an award based on a number of criteria including scientific content, clarity of presentation, and the visual quality. The award winner will be announced at the Banquet. The actual award will consist of a certificate and a waiver of the registration fee for the main author.

INCREASED CO-OPERATION BETWEEN BIOMECHANICS AND BIOMATERIALS

During the ESBiomaterials meeting in Heidelberg, discussions were held between the Council of the ESBiomechanics and representatives of the Council of the ESBiomaterials. Pascal Christel from Paris, and David Williams from Liverpool, expressed the hope that the ESBiomechanics would play an expanded role in their next Biomaterials meeting to be held in Liverpool in September 1991. In addition to nominating two keynote speakers, they asked us to organise a half-day session on a topic of mutual interest. In later discussions of our Council, it was decided that Peter Walker should organise a session entitled 'Biomechanics of Implant Interfaces'. While a number of the talks will be by invitation, if anybody felt that they would have an

interesting contribution to make, they should contact Peter Walker directly, Tel. No. UK 01-954-0956. For one of the Keynote Lectures, it was unanimously agreed that Rik Huiskes present a lecture on their innovative work on 'Mechanical Optimisation Methods for Implant Design'. Rik has applied this work so far to the hip, but the method has many other exciting possibilities. Details of the other Keynote lecture will be decided at our next Council meeting in Aarhus.

PROMISING NEW MATERIALS APPLICATIONS IN THE 1990'S

At the ESBiomaterials in Heidelberg this past September, expectations were raised for an increasing use of new materials in clinical applications. Christina Doyle from Department of Materials Science in Queen Mary College, London, reports on the meeting.

Over 300 people gathered together at the old Kongresshaus Stadthalle by the river in Heidelberg for their 8th Meeting of the European Society for Biomaterials. This was a record number and it was particularly notable that there was a large number of Japanese delegates at this meeting but a much smaller number of Americans than seen at previous meetings. The venue was excellent, being an old meeting hall with a superb auditorium with a large balcony plus a number of suitable small meeting rooms, most of which gave the audience a good sight and sound of the speakers. It is fair to say that the organisation ran like clockwork and the parallel sessions were on the whole planned to allow easy movement between papers. Of course it is always a problem at a meeting of this size to satisfy everyone with more diverse interests and there were occasions when I wished I could be in two different places at the same time.

The programme included four sessions on calcium phosphate and three on degradable materials, so it is clear to see where the current activity lies. Other topics were polymers, metals, ligaments and tendons,

vascular materials and, of course, biomechanics.

In many respects the overall quality of the presentations and the content of the papers was disappointing. Much work was repetitive or open to questions. One wonders why people do not seem to refer to the literature more carefully before starting their work. (If they do, there is sometimes little evidence of it in their presentations). It is however worth commenting on the interesting clinical studies of Oonishi and coworkers (Kyoto) where hydroxyapatite is used in a number of ways including as coatings on porous surfaced orthopaedic components and as a bone/cement interlayer. The work was most innovative and interesting. Also, and still with calcium phosphates, Klein and coworkers (Leiden and Amsterdam) demonstrated careful work on the stability of various materials under different physiological conditions. Studies such as this are critical in the light of the increasing use of plasma-deposited hydroxyapatite coatings on prostheses. Cohn et al (Jerusalem) also showed imaginative ideas in a study of a new class of segmented polyurethane amides and Migliaresi (Trento) presented a study of the effect of thermal treatment on the structure and properties of the polyactides and glycolides giving us further insight into the possibility of manipulating these potentially useful biodegradable polymers. A thorough presentation by Soltesz and Baudendistel (Frieburg) demonstrated by the use of simple mechanical analysis how we must be very careful in the interpretation of push-out data for the determination of the strength of the bone/implant interface and his discussion was absolutely convincing. Excellent invited talks were also given by Hvid (Trabecular bone), von Recum (Motion at the Interface) and Claes (Resorbable implants). Space does not allow me to select any of the other papers that were notable and as you can see my discussion is quite personal and idiosyncratic.

In general, and despite my original comments, I enjoyed the meeting. It allowed us space and time to listen, think and be critical and therefore review our own work (as

none of us are perfect). I also felt that we are all increasing our European collaboration and it is good to have the opportunity to meet and discuss with our European colleagues and further engender the goodwill felt in crossing of European research boundaries.

NEW SOCIETY AIMS TO BRING TOGETHER RESEARCH AND ORTHOPAEDIC SURGERY

Rik Huiskes, the elected President of the new Society, reports on its foundation and aims.

The European Orthopaedic Research Society (EORS) was incorporated in April 1989 and registered in Munich FRG. The goals of the Society are to foster and promote research in Orthopaedic Surgery and related sciences in Europe. Hopefully it will grow to fulfill a similar role as the ORS in North America.

A first business meeting was held in Lund in August, where the Council has installed and plans for the future were made. It was decided to organize a Workshop in Aarhus, preceding the ESB 7th General Meeting. Other meetings will take place in Baden in May 1990 (a Symposium during a Conference of the South-German Orthopaedic Association) and, hopefully, in Paris in September 1991 (concurrent with a French Orthopaedic Conference).

It is hoped and expected that the EORS and the ESB, having many common interests, will collaborate intensively in the future. Those interested in applying for membership are asked to address the Secretary General:

Dr. Med. Habil K Draenert
Institut der Hisomorphologischen
Arbeitsgruppe Munchen
Grundlagenforschung in der Chirurgie
des Bewegungsapparates.
Gabriel-Max-Strabe 3
D-8000 Munchen
FRG

FUTURE CONFERENCES

INSTRUCTIONAL COURSE ON EXTERNAL FIXATION

BRUSSELS - Belgium

December 7-8, 1989

Information:

Prof. F Burny

Department of Orthopaedics and
Traumatology

Cliniques Universitaires de Bruxelles

Hopital Erasme

Route de Lennik 808

B-1070 Brussels, Belgium

ORTHOPAEDIC RESEARCH SOCIETY

New Orleans, USA

February 5-8th, 1990

A comprehensive programme covering joint mechanics, bone mechanics and metabolism, cartilage, nerve, muscle, ligaments and tendons, total joints and osteoarthritis. Instructional courses are offered on a variety of subjects. The meeting immediately precedes the American Academy of Orthopaedic Surgery.

Information:

ORS,

222 South Prospect Avenue

Park Ridge

Illinois 60068

USA

Tel No. (312) 6981625

STRAIN MEASUREMENT IN BIOMECHANICS

March 23rd, 1990

This will feature papers and demonstrations of a variety of traditional and newer techniques.

Information:

Dr Elizabeth Tanner

Queen Mary College

London

Tel No. 01-975 5555 ext 4297

or

Mr Tony Miles

University of Bath

UK

Tel No 0225-826826 ext 5463

MEDICAL AND BIOLOGICAL IMPLANT TECHNOLOGY

March 27-29th, 1990

London, UK

A broad - based conference sponsored by a large number of UK biomedical societies.

Details from Mrs Pauline Lindsay, Conf. Sec.
UK Liaison Committee for SAMB,
130 Knollmead, Tolworth, Surbiton, Surrey
FT5 9QW.

A WORKSHOP ON IMPLANTABLE TELEMETRY IN ORTHOPAEDICS

This has been organized by George Bergmann in Berlin (April 26-28, 1990). A limited number of active participants has been invited to contribute to a vivid exchange of knowledge and experience.

24th FIMS WORLD CONGRESS OF SPORTS MEDICINE

27th May - 1st June 1990.

Amsterdam Netherlands.

Information:

XXIV FIMS World Congress of Sports
Medicine

C/o Organisatie Bureau

Amsterdam 6v

Europaplein 12

1078 G7 Amsterdam.

RESNA (Rehab. Engineering Society of North America)

June 15-20th, 1990

Washington DC, USA

Information:

RESNA Assoc. for Advancement of
Rehab. Technology

Suite 700

1101 Connecticut Avenue NW

Washington DC 20036

USA

Tel. No. (202) 8571199

A WORKSHOP ON BIOMECHANICS OF FRACTURE HEALING

This has been organized in Reims by L. Claes as a satellite meeting of the Aarhus congress (July 11 - 14, 1990). The number of participants will also be limited.

Information:

Dr L Claes

Labor Fur Experimentelle Traumatologie
der Abteilung Chirurgie

Universtat ULM, Oberex Eselsberg, D-
79000 ULH.

BIOINTERACTIONS 90 - NEW MATERIALS FOR THE NINETIES

August 21-23, 1990.

Oxford, UK.

Conveners - Prof. Bill Bonfield and Prof. Garth Hastings

Sponsored by the journal Biomaterials.

Information:

Helen Juden

Biointeractions 90

Butterworth Scientific Ltd

PO Box 63

Westbury House

Bury St.

Guildford

Surrey GU2 5BH

UK

For the First World congress of Biomechanics in La Jolla CA

August 30th - September 4th, 1990), three sessions on bone biomechanics with five presentations each are proposed by our society:

- Biomechanics of Cortical Bone (organized by J Currey)
- Biomechanics and Structure of Cancellous Bone (organized by I. Hvid)
- Remodelling Analysis of Bone (organized by R Huiskes)

These suggestions will be sent to the organizers by Rik Huiskes.

In addition, Franz Burny is organising two sessions on the Monitoring of Implants and Peter Walker is putting together a session on the Design of Implants.

Information:

Prof. Savio Woo

Orthopaedic Bioengineering Laboratory

University of California

San Diego, M-030

La Jolla

California 92093

USA

Tel No. (619) 534 2873

Fax No (619) 534 5304

**OPPORTUNITY FOR
ESBIOMECHANICS
MEMBERS.**

There is now an opportunity for all ESBioMechanics to contact all of the membership by writing in the next Newsletter. Peter Walker, Newsletter Secretary will publish all contributions sent by members, in the next Newsletter to be distributed in the Spring of 1990. Phone or

2nd CONFERENCE OF THE INTERNATIONAL SOCIETY FOR FRACTURE REPAIR

(ISFR-90)

Minneapolis (Minnesota) - USA

September 8th, 1990

Topics:

- Bone induction and regeneration, Fracture fixation
- Blood supply in bone
- Spinal fracture and instability
- Osteoporosis and fracture repair
- New implant technology
- Noninvasive assessment techniques

Information:

Mrs Jo Murray

Mayo Clinic/Mayo Foundation

Orthopaedic biomechanics Lab

Guggenheim Building C 053

Rochester

Minnesota 55905, USA

5TH GENERAL MEETING OF SIROT

Montreal - Canada

September 7-10th, 1990

Information:

Prof. Charles H Rivard MD

C/o sorecomm (1985) Inc

16 Eiffel, Mart "E"

CP./PO Box 529

Place Bonaventure

Montreal

Quebec, Canada H5A 1C3

18th WORLD CONFERENCE OF SICOT

September 8-15th, 1990. Montreal, Canada.

A range of topics in orthopaedics, including hand and upper extremity, total joint, current reconstructive techniques, spine, microsurgery and metabolic bone disease.

Information:

Sorelcomm Inc.

16 Eiffel Street, Mart "E"

PO Box 529

Place Bonaventure

Montreal

Quebec, Canada H5A 1C3

Fax UK 01-954-0956). However, space may be limited so you are advised to send in your contributions as soon as possible. What sort of information can be sent? You can write a letter giving your views on ESBioMechanics itself. This is your Society and it should respond to members. Perhaps you have a job opening, or you are looking for a Fellowship. Are you organising a conference? If so, let us know. Have you attended a conference? Send us a brief conference report!