



NEWSLETTER



Winter 1992/93

EUROPEAN SOCIETY OF BIOMECHANICS

New Members

During the year 1992, 45 new members joined the ESB. Many of them were attracted by the high quality of the Meeting in Rome. Thanks again, Aurelio Cappozzo, for the excellent work you did with organizing this meeting ! The new members came from the following different states: Austria, Denmark, France, Germany, Great Britain, Italy, Japan,

Rep. of Ireland, Romania, Sweden, The Netherlands and USA. We welcome all of them, offer them our support for their own work and hope that they may contribute to a successful future of the Society.

Welcome !

Questionnaire about ESB meetings

Please fill out and send back until March 31!

After the Rome meeting of the ESB some discussion took place between the members of our Society and also within the Council if there were possibilities to *further* increase the quality of future meetings. One basic question is and has always been whether or not the number of papers should be limited more strictly or not. The people arranging the meetings are certainly interested in as many participants as possible to minimize the risk of financial losses which are not taken over by the Society. The participants are also interested in getting their papers accepted because many of them get their travel costs refunded only if they present a paper. On the other hand a pure increase of the number of papers and parallel sessions is not desirable if the quality of the contributions cannot be held on a high level. In the long run the growth of the society and the meetings may

well depend on the scientific level of the papers presented. The Council of the ESB therefore decided to question the members about their opinion about the Rome meeting and ask for suggestions for future conferences.

Please fill out the enclosed questionnaire and **send it back to me until March 1993**. Please have in mind that compromises are always required. Long oral presentations and discussion times, a small number of parallel sessions, additional precourses and only two days available for the meetings will certainly not work out. Hopefully as many of you as possible will take the ten minutes required to fill it out and help the Council to take decisions according to the opinions of the ESB members!

Georg Bergmann

2nd World Congress of Biomechanics

Information:

This Congress will take place on July 10 - 15 1994 in Amsterdam. Several different societies are involved in the organisation, among others the Europ. Soc. of Biomechanics. In 1994 no separate meeting of the ESB will be held, as the Amsterdam Congress will be the official 9th meeting of the ESB. Our society will also honour the best scientific papers by the usual prizes, which are the ESB Research Award (1000 ECU plus publication in the *J. Biomechanics*), the Clinical Biomechanics Award (300 ECU plus registration fee plus publication in *Clin. Biomechanics*), Poster Award (300 ECU plus registration fee). A separate ESB banquet will probably be organized at which the awards will be presented.

The programme of the Amsterdam meeting will be divided in two parts: Free communications and various Symposia. Additionally there will be state of the art lectures, tutorials and several plenary conferences. The following list of Symposia with 20-minute talks has been put together by the Programme Chairmen, Michel Jaffrin and Prof. Peter Walker in consultation with the Programme Committee and the Steering Committee (Coordinators in parentheses):

1. Cardiovascular Artificial Organs
(Mackros, Reul)
2. Orthopaedic Implant Design & Material
(Walker, Huiskes, ESB)
3. Bone Trauma & Fracture Fixation
(Chao, Burny, TBC)
4. Biomechanics of Joints and Ligaments
(Woo, Markolf, ESB)
5. Biomechanics of Sports (Nigg, Clarys,
Int. Soc. Biomech., Am. Soc. Biomech.)
6. Blood Flow & Large Vessel Mechanics
(Pedley, Kajiya, ICMMB)
7. Cardiac Mechanics & Function
(Sugawara, Wetserhof, CSDS)
8. Cell Mechanics
(Van Mow, Hochmuth, ESB)

9. Characterisation & Measurement of
Motion (Cappozzo, Cavanagh (Int. Soc.
Biomech.))
10. Microcirculation (Gaethgens, Secomb)
11. Skeletal Muscle mechanics
(Zajac, Alexander, Int. Soc. Biomech.)
12. Respiratory Mechanics
(Rabischong, Eur. Soc. of Eng. in Med.)
13. Biomechanics & Rehabilitation
(Rabischong, Europ. Soc. Engin. Med.)
14. Transport in Connective Tissue
(Weinbaum, Silberberg, ICMMB)
15. Tissue Engineering & Biomaterials
16. Motor Control
(Enoka, Kernell, Am. Soc. Biomech.)
17. Co-ordination of Multi-Joint Movement
(Van Ingen, Schenau, Van Der Gon)
18. Bone Structure & Remodeling
(Weinans, Odgaard, EORS)
19. Biomaterials Considerations for Implants
(Bacquey, ESB)

In order to further advance our good relationships with the Eurp. Soc. of Biomaterials, a major Symposium for Biomaterials will be organized by them with the agreement of their President, Proj. Ulrich Gross. As for all symposia, the papers for these sessions will be mainly chosen by invitation from the Symposia Coordinators. Proceedings of those Symposia arranged by the ESB will be published separately.

Authors wishing to present a free communication must send their abstract to the Congress Office by December 1, 1993. All ESB members are encouraged to do so ! A book of abstracts will be distributed to the participants at the meeting.

All members of the ESB will automatically receive the call for papers. Others should write to:

Second World Congress of Biomechanics
Biomechanics Section, Inst. of Orthopaedics
University of Nijmegen, P.O.Box 9101
NL-6500 HB Nijmegen
The Netherlands

"Clinical Biomechanics"

Subscription of the journal:

The European Society of Biomechanics has been affiliated with the Journal of Biomechanics since the society was founded. This relationship means that a subscription of this Journal is automatically included with the membership fee. The members were always very satisfied with this affiliation, because this journal is an excellent platform for most papers which the members of the ESB like to publish and read. They are encouraged to further submit their work to this Journal because of its excellent reputation and worldwide circulation.

During the last years the Council of the ESB got requests from members which are interested in the *additional* subscription of a journal highlighting the application of biomechanics especially in *clinical* situations. It is a vital interest that the ESB continues to be a forum for discussion and cooperation

between clinicians and engineers. For further keeping all members interested in the ESB, the Council negotiated with 'Clinical Biomechanics' to offer all members a subscription at a greatly reduced rate. This has already been announced at the banquet of the Rome meeting. Those wishing to take out a subscription to Clinical Biomechanics should write to Butterworth Heinemann, Linacre House, Jordan Hill, Oxford, OX28DP, Tel.: 0865-310366. When writing please make clear that you are a member of the Europ. Soc. of Biomechanics. The publisher was supplied with a list of members and they may also contact all of you in due course.

The regulations with the J. Biomechanics will not be changed, so every member will automatically receive this journal by paying the membership fee of the ESB.

Georg Bergmann

"Optical Methods in Biomechanics"

ESB-supported meeting to be held:

This one day symposium will be held in London on Sept. 16, 1993. It is organized by the Bioengineering Measurements Technical Group of the British Society for Strain Measurement. It will comprise keynote lectures, research papers and poster presentations and is focused on techniques rather than on results. The topics will be photoelasticity, holographic interferometry, electronic Speckle pattern interferometry, Moiré fringe

methods and displacement measurements. Deadline for abstracts is June 30, 1993. Further information see the flyer enclosed with the Newsletter or contact:

Dr. John Orr

Dept. Mechan. & Manufact. Engineering
Queen's Univ. of Belfast
Ashby Building, Stranmillis Road
Belfast BT9 5AH, Great Britain
Fax.: - 232-245133, Tel. - 232-661729

"Micromovement in Orthopaedics"

Report on the ESB-supported Int. Meeting:

9-10 April 1992 at the Nuffield Orthopaedic Centre and St. John's College, Oxford.

The musculo-skeletal system undergoes constant micromovement in response to

mechanical influences. Micromovements are thought to have an important influence on the healing of fractures, the development of arthritis and osteoporosis, and the body's response to prosthetic implants. At one magnitude, micromovements has been shown to

healing of fractures, the development of arthritis and osteoporosis, and the body's response to prosthetic implants. At one magnitude, micromovements has been shown to promote the healing of fractures, but at a higher magnitude it inhibits healing. Micromovement of a total joint replacement can lead to bone resorption and subsequent loosening of the prosthesis.

The influence of micromovement on bone formation has excited the interest of orthopaedists and engineers, but no common forum has existed to explore micromovement as a subject in its own right. The Oxford Orthopaedic Engineering Centre has traditionally organised occasional international meetings on topics of orthopaedic concern. This, the fifth, provided that forum to explore the clinical implications of micromovement and to evaluate methods for its measurement. The meeting was supported by Howmedica International and co-sponsored by the European Society of Biomechanics, the Biological Engineering Society, the British Society for Strain Measurement, and the International Society for Fracture Repair.

The two days attracted a distinguished group of ninety clinicians and academics. Thirty-two papers, seven posters and an exhibition were presented. One of the most enjoyable features of the meeting was the discussion after each paper and during the two workshops on the clinical themes of fracture repair and prosthetic joint performance.

Two particular concerns emerged. The first was the extent to which theory, laboratory measurements, and early *in-vivo* measure-

ments relate to each other and to final clinical outcome. For example, the timescale from prosthetic joint design to final clinical judgements is more than ten years, so establishment of these relationships is of enormous importance in improving patient care and reducing costs of health provision. The second concern was the role played by physiological feed-back in the control of load during healing of the musculo-skeletal system. For example, the healing of bone as it adjusts to a loading regime is under the control both of the clinician - through the choice of stabilization of the fracture, instructions for weight-bearing, and the method rehabilitative treatment - and of the patient, through proprioceptive feed-back.

We are only beginning to appreciate the interaction between external control of micromovement, physiological control of micromovement and the influence of micromovement on bone growth. Both bone repair and implant support will benefit when the action of micromovement in these clinical conditions are understood.

A book based on a selection of contributions to the meeting, to include a record of debate as well as papers, is to be published by Oxford University Press. This will represent a review of current thinking about the medical and engineering aspects of micromovement in orthopaedics.

Alan R. Turner-Smith

Oxford Orthopaedic Engineering Centre,
Nuffield Orthopaedic Centre, Headington,
Oxford OX3 7LD

European Symposium on Clinical Gait Analysis

Report on the ESB-supported meeting:

From April 1 to 3, 1992, the Biomechanics Laboratory at the Swiss Federal Institute of Technology (ETH Zürich) organized the

European Symposium on Clinical Gait Analysis.

The aim of the symposium was to provide an European forum for exchange of experiences

and for personal education on clinical gait analysis for medical doctors, physiotherapists, researchers and other people interested in the human locomotion. By means of commercially available tools, today's clinical gait analysis systems allow to analyse the movements of the human body substantially better than by poor observation. With such measuring techniques the movements of the body can be described precisely and disturbances of the locomotor system can be detected very accurately. The medical person therefore receives fundamental information for diagnosis- and treatment.

The organizers succeeded to have some of the world best scientists and opinion leaders on clinical gait analysis as their keynote

speakers and chairmen. As a consequence, the symposium offered an unique overview over the current state of the art. The program included more than 70 presentations on clinical gait analysis in Neurology, Orthopaedics, Physical Medicine and Rehabilitation as well as Physiotherapy and Rheumatology, which have been attended by over 300 participants with high interest (144 Swiss, 166 from 11 other European Countries, and 9 from USA).

Proceedings can be ordered from the following address (Europe sFr. 30.--, others 20 \$US plus 5 \$US postage fee):

E. Stüssi

Biomechanics Laboratory
Swiss Federal Inst. of Technology
Wagistr. 4, CH-8952 Schlieren, Switzerland.

Bioengineering Measurements Technical Group of the British Society of Strain Measurement

Activities:

This group of about ten people, mainly from Great Britain, are very active in organizing workshops which focus on techniques and not just results. The excellent Instructional Course at the Rome meeting on Strain Measurement in Bone Biomechanics was arranged by this group. In Sept. 1993 they will have a Workshop on Optical Measurement Techniques in Biomechanics to be held in London. Possibly they will also arrange a course on Measurements on Soft Tissues at

the Amsterdam meeting in 1994. Tony Miles from this group now proposes the formation of Speciality Groups within the ESB, the discussion about the best way to do this is still going on in the council of the ESB. If you are interested in joining this group or getting further information, please contact

Tony Miles, Senior Lect.

Univ. of Bath, School of Mechanical Eng.
Claverton Down, Bath BA2 7AY, England
Fax.: (0225) 826928

Bulgarian Society of Biomechanics

Founded:

In Sept. 1991, the Bulgarian Society of Biomechanics was constituted. The Board of Managers consists of Dr. Yuli Toshev (President), Dr. Valko Petrov (Vice President) and Rositsa Raikova (Secretary). The society has members working in the fields of

biomechanics, orthopaedics, traumatology, sports, robotics and others. The Society was accepted as an associated member of the ESB in February 1992. A new Department of Biomechanics was founded at the South-West University of Blagoevgrad, whose head became Yuli Toshev. At the moment the Bulgarian Society is preparing an internatio-

possible to assist the Bulgarian Society of Biomechanics in every way. Those who are interested in a cooperation or can give any kind of support, please contact

Dr. Yuli Toshev

Bulgarian Society of Biomechanics
Sofia 1113, P.O. Box 89, Bulgaria, Tel.:
(+2592) 72 52 80

Frederic Schuind - the new ESB treasurer

Information:

At the Rome meeting the ESB members elected Frederic Schuind as the new treasurer of the ESB. Just to let you know who takes care of the society finances, here are some informations about him and his career:

He is an associate professor in the Department of Orthopaedics at the Erasme University of Brussels in Belgium, whose head, Prof. Burny is well known in the ESB. Additionally to his MD he got a PhD degree with an investigation on the biomechanics of the wrist. From 1989 to 1990 he worked as a research fellow in Prof. Chaos Biomechanics Lab. at the Mayo Clinic. He is member of

several national and international societies, among others he serves as Secretary of the Belgian hand group, was director of a NATO Research Workgroup and Secretary General of the First Congress of the Federation of the Europ. Societies of Surgery of the Hand. Together with Franz Burny he is editor of a book about osteosynthesis of the hand. His list of publications goes up to number 79 (at the moment).

Very obviously we have chosen a very experienced man to be treasurer and thank him in advance for taking over this difficult job.

In Memoriam Herman J. Woltring, 1943 - 1992

It is with deep sadness that we have to inform the members of the European Society of Biomechanics of the unexpected and untimely death of Herman J. Woltring. He died on November 3, 1992, in a car accident. On behalf of the Council of the European Society of Biomechanics we express our deep compassion with his family, and in particular with his wife Margriet and his children. Herman Woltring has been an active member of the European Society of Biomechanics since 1979 and he has probably been one of those individuals attending most of the meetings.

Herman Woltring was educated in Electrical Engineering (Eindhoven University of Technology) as well as in Experimental Psychology (Sussex University). He held the degree of Ph.D. in Mathematics and Physics from the University of Nijmegen. His professional

career took him from the Dutch University of Nijmegen and Eindhoven University of Technology to the Canadian University of Waterloo and the US Case Western Reserve University. He was consultant to Dutch, British, Swedish and American companies and he performed research at the Max-Planck-Institute for Psycholinguistic and the Nijmegen Institute for Cognition Research and Information Technology. He was a member in professional organisations spanning the fields of engineering, biophysics, ergonomics, biomechanics, photogrammetry, computers and law. His scientific work and publications were of a largely methodological nature in the area of digital signal processing, 3-D biokinematics and magnetic resonance spectroscopy as well as computer law. The contributions to the numerical analysis of human movement were of particular significance. He has been a prime partner in the

CAMARC project (Computer Aided Movement Analysis in a Rehabilitation Context) under the Advanced Informatics in Medicine action of the European Communities, and more recently, he has been the promoter and indefatigable heart of the BIOMCH-L network and bulletin board, stimulating discussion among biomechanically interested scientists all over the world.

But apart from his many contributions, which will remain as treasures in the field, his most

important contribution was his own personality. He was always ready to enter into a detailed discussion about almost any aspect of biomechanics. Both his intelligence and his warm personality were fertile grounds to develop new ideas or to receive a valuable feedback. During the forthcoming ESB congresses, someone important to all of us will be missing: Herman Woltring.

Erich Schneider, Secretary-General ESB

"Gait & Posture"

A new international journal:

Editor: James R. Gage, M.D.. Associate editors: James C. Wall (USA), John Patrick (USA), David A. Winter (Canada), Steven E. Koop (USA), Yoshihiro Ehara (Japan), James Goh (Singapore). Publication: Quarterly. First issue: January 1993

Aims and Scope: To provide a vehicle for the publication of up-to-date basic and clinical research on all aspects of locomotion

and balance. The topics covered will include:
- techniques for the measurement of gait and posture, - studies of normal and pathological gait, - treatment of gait and postural abnormalities, - biomechanical and theoretical approaches, - mathematical models of joint and muscle mechanics and others.

Information: R. Marley, Butterworth-Heinemann Ltd, Oxford OX2 8BR, UK

Changes of addresses or institutions

In June 1992 the Polytechnic of Huddersfield became the **University of Huddersfield**, thus the address of the Spinal Research Unit becomes:

The Spinal Research Unit, The University of Huddersfield, Huddersfield HD1 3DH, U.K.

Tel.: +44(0)484 422288 Ext. 2657

Fax: +44(0)484 516151

Dr. Kim Burton may also be contacted direct at the Editorial Office of Clinical Biomechanics, Tel.: +44(0)484 42432

Fax: +44(0)484 435744

Upcoming events

1993

Febr. 18-23, Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS), San Francisco, CA. Contact: AAOS (312) 823-7186

March, 18-20, 2nd Internat. Meeting of the Società Italiana di Ortopedia e Traumatologia - S.I.O.T., Bologna/Italy. Organ. Secretariat: CSR Congressi, Casella Postale 1769, I-40100 Bologna BO/Italy, Fax: 051/766060

March 19-20, Biological Response to Orthopaedic

Implants, John Hopkins Med. Institutions, Off. Cont. Education, Turner 20, 720 Rutland Avenue, Baltimore, Maryland 21205-2195, Phone (410) 995-2959, Fax: ...-0807

March 30-April 4, American Academy of Orthotists and Prosthetists (AAOP), Annual Meeting and Scientific Symposium, Las Vegas, NV. Contact: AAOP, 717 Pendleton Street, Alexandria, VA 22314. Phone: (703) 836-7116

April 1-2, International Seminar on Biomechanics and Joint Replacement in the Upper Limb, London, U.K. Contact: Corinne Paine / Julie

- Brown, Conference Services Department C475, Institution of Mechanical Engineers, 1 Birdcage Walk, London SW1H 9JJ, U.K. Fax: 071-222 9881, Phone: 071-973 1318/1316
- April 19-20, 3rd Conference of the European Orthopaedic Research Society, Paris, France.** Contact: "CONVERGENCES-EORS '93", 120, avenue Gambetta, 75020 Paris, France.
- April 22-23, International Biomechanics Seminar, Göteborg, Sweden.** Contact: Gunilla Ekman, Centre for Biomechanics, Chalmers University of Technology, S-41296 Göteborg, Sweden. Fax: +46-31-7723477, Phone: +46-31-7721515
- April 25-29, Europ. Soc. for Engineering and Medicine, Stuttgart/Germany.** Contact: Prof. Dr. Uwe Faust, Institut für Biomedizinische Technik, Seidenstr. 36, D-7000 Stuttgart 1, Fax: 49 - 711-1212371
- April 28 - May 2, 19th Ann. Meeting of the Society for Biomaterials, Birmingham, Alabama, USA.** Contact: Society for Biomaterials, Business Management Office, 6524 Walker Street, Suite 215, Minneapolis, MN 55426-4225, USA.
- May 10-12, American Spinal Injury Association (ASIA), Annual Conference, San Diego, CA.** Contact: ASIA, 2020 Peachtree Road, NM, Atlanta, GA 30309. Phone: (404) 355-9772
- June 24-26, Highlights in Bone Pathophysiology, Orthopaedic Surgery, Endoprosthetic, Orthop. Clinic, Charles Univ. Prague, Intercongress Ltd., Pernerova 11, CS 186 00 Prague 8, Tel./Fax.: 42 2 236 00 69**
- June 25-29, ASME / AICHE / ASCE Summer Bioengineering Conference, Breckenridge, Colorado.** Contact: Morton H. Friedmann, Ph.D., Ohio State University, Biomed. Engin. Center, 270 Bevis Hall, 1080 Carmack Road, Columbus, OH 43210, Fax: 614-292-7301, Phone No. 614-292-7160
- June 25-30, RESNA Rehabilitation Technology, 16th Annual Conference, Las Vegas, NV.** Contact: RESNA, Association for the Advancement of Rehabilitation Technologies, Suite 700, 1101 Connecticut Ave. NW, Washington, DC 20036. Phone: (202) 857-1199
- June 30 - July 2, IVth International Symposium on Computer Simulation in Biomechanics, Paris, France.** Contact: IVth International Symposium on Computer Simulation in Biomechanics, B. Landjerit, Laboratoire de Biomécanique, E.N.S.A.M., 151, Boulevard de l'Hopital, 75013 Paris, France. Phone and Fax: 33.1.44.24.63.65
- July 1 - 4, 2nd. Int. Symposium on 3D Analysis of Human Movement, Sattelite even to the XIV ISB Congress, Inform.: P. Allard, Centre de Rech. Pédiatrique, Hosp. Sainte-Justine, 3175, Cote St.-Catherine, Montreal (Quebec) H3T 1C5, Canada, Fax: -514 345 4801**
- July 4-8, BIOMECHANICS XIV. I.S.B. Congress, Paris, France.** Congress Office: Convergences ISB '93, 120, Avenue Gambetta, 75020 Paris, France. Fax: (33-1) 40.31.01.65
- Aug. 29 - Sept. 1, 4th International Conference BIOINTERACTIONS '93, Noordwijkerhout, The Netherlands.** Contact: John Herriot, Conference Organizer, BIOINTERACTIONS '93, MEETINGS MANAGEMENT, Straight Mile House, Tilford Road, Rushmoor, Farnham, Surrey, GU10 2EP, U.K. Fax: +44 (0) 25 125 2101, Phone: +44 (0) 25 125 5414
- Aug. 29 - Sept. 3, SICOT, Seoul, Korea. Secret.: SICOT, Seoul Nat. Univ. Hosp., 28 Yongon-dong, Chongno-Ku, Seoul 110-744, Korea, Fax: 82 - 2 - 766 - 0339**
- Sept. 1-4, 7th International Conference on Polymers in Medicine and Surgery, Noordwijkerhout, The Netherlands.** Contact: Debbie Schorer, Conference Organizer, The Institute of Materials, 1 Charlton House Terrace, London, SW1Y 5DB, U.K. Fax: 071 839 3576, Phone: 071 976 1339.
- Sept. 1-4, International Symposium on Advanced Bio-Materials and Engineering, Utsunomiya, Japan.** Contact: Sazale Tlavel World, Inc., Hiro Office Bldg., 1-3-18 Hiroo, Shibuyaku, Tokyo 150 Japan. Fax: (03) 3448-1119, Phone: (03) 3448-1111
- Sept. 8-11, 10th European Conference on Biomaterials, Davos/SWITZERLAND.** Contact: B.A. Rahn, Labor. für Experimentelle Chirurgie, Obere Straße 22, CH-7270 Davos/ SWITZERLAND.
- Sept. 16, 1 Day Symposium on "Optical Methods in Biomechanics", London/U.K.** Contact: Dr. Julia Shelton, IRC in Biomedical Materials, Queen Mary & Westfield College, Mile End Road, London E1 4NS, U.K., Fax No. 081 983 1799, Phone No. 071 975 5272.
- Sept. 30 - Oct. 2, 6th International Symposium on Custom Prostheses, Amelia Island, Florida, USA.** Contact: Beverly Hedrick, Symposium Coordinator, Cleveland Center for Joint Reconstruction, Saint Vincent Charity Hospital Medical Office Building, 2322 East 22nd Street, Cleveland, OH 44115-3176, USA.
- Oct. 12-16, American Orthotic and Prosthetic Association (AOPA), Annual National Assembly, Reno, NV.** Contact: Annette Suriani, AOPA, 717 Pendleton Street, Alexandria, VA 22314. Phone: (703) 836-7116
- To be held in 1993, Workshop on Forensic Biomechanics Dealing with Rapid and High Dynamic Loading of the Human Body.** Contact: Prof. Peter Niederer, Inst. of Biomedical Engineering, Swiss Federal Institute of Technology, Moussonstrasse 18, CH-8044 Zurich, Fax: +41-1-261-5187, Phone: +41-1-256-4568

1994

- July 10-15, Second World Congress on Biomechanics in conjunction with 9th Meeting of the European Society of Biomechanics, Amsterdam, The Netherlands.** Contact: Second World Congress of Biomechanics, Biomechanics Section, Institute of Orthopaedics, University of Nijmegen, P.O.Box 9101, NL-6500 HB Nijmegen, The Netherlands.
- Aug. 22 - 26, World Congress on Medical Physics and Biomedical Engineering, Rio de Janeiro/BRASIL.** Contact: Rua do Ouvidor, 60/414 - Rio de Janeiro RJ-BRASIL.
- Sept. 2nd week, 11th European Conference on Biomaterials.** Prof. P. Giusti, Via Diotallevi N 2, 56100 Pisa, Italia

1995

- Sept. 2nd week, 12th European Conference on Biomaterials.** Prof. M.A. Barbosa, INEB - Instituto Nacional de Engenharia Biomédica/FEUP, Rua dos Bragas, 4099 Porto Cedex, Portugal

Name: Ascherl **First Name:** Rudolf **Title:** Priv.-Doz.Dr.med.
Address: Orthopädische Klinik und Poliklinik Ismaningerstr. 22
Arbeitsgruppe Experimentelle Chirurgie W - 8000 München 80
Klinikum rechts der Isar der TU-München
Tel.: 089/4140-2209 od. -4450 **Fax:** 089/4140-4476

Main research areas: artificial ligaments, hip and knee endoprosthesis, tumor endoprosthesis, bone banking, bone transplantation, basic research on pathophysiology of bone

Available research methods: animal experiment, static and dynamic biomechanical testing, computer simulation, radiology, SEM, calcified and uncalcified histology PCM, cell culture, tissue culture

Possible support and cooperation for other researchers: see above

Some publications:

About 80 publications in international and German journals

Working in the lab: permanently: 20 **on funds:** 2 **students:** 20 **others:** --
Funding (percent) univ: 50 **governm.:** 30 **grants:** -- **others:** 20
Educ. programs, student grants: --

Name: Dr S E Clift & Mr A W Miles **First Name:**
Address: School of Mechanical Engineering
University of Bath
BATH BA2 7AY
U.K.
Tel.: 0225 826826 **Fax:** 0225 826928



Main research areas: Biomechanics of articular cartilage
Orthopaedic biomechanics & biomaterials
Dental biomechanics
Stress analysis of heart valves

Available research methods: Experimental & numerical techniques of stress analysis

Possible support and cooperation for other researchers: Applications welcome

Some publications: S.E.Clift et al.: "Frictional response of articular cartilage containing crystals", *Biomaterials* 10 (1989) 329-334. M.B.Watson et al.: "The influence of curing time and environment on the fracture properties of bone cement", *Clinical Materials* 6 (1990) 299-305. S.E.Clift: "Finite elements in cartilage biomechanics", *J.Biomed.Eng.* 14 (1992) 217-221. A.W.Miles/P.B.McNamee: "Strain gauge and photoelastic evaluation of the load transfer in the pelvis in total hip replacement. The effect of the position of the axis of rotation", *J.Eng.Med.* 203 (1989) 103-107

Working in the lab: permanently: 0 **on funds:** 3 **students:** 4 **others:** Orthopaedic Registrars on
Funding (percent) univ: **governm.:** **grants:** 100 **others:** short term projects
Educ. programs, student grants:

Name: FORWOOD

First Name: MARK R.

Title: Dr

Address: Anatomy Department,
Medical Science Bldg 259,
635 Barnhill Drive,
Indiana University Medical Centre

Tel.: Indianapolis IN 46202 Fax: (317) 274 3318
(317) 274 3275



Main research areas: Adaptation of bone to mechanical usage
Role of fatigue microdamage in bone injury and remodelling

Available research methods: Animal Experimentation, Bone histomorphometry (semi automated)
In vivo strain measurement, Mechanical testing (MTS), SPA, QCT, Finite element analysis.

Possible support and cooperation for other researchers:
Histomorphometry, mechanical testing, strain gauge applications

Some publications:

Forwood M, Parker A, (1989) Fatigue microdamage in response to repetitive torsional loading in rat tibiae, *Calcified Tissue Int.* 45(1): 47-53
Forwood M, Parker A, (1991) Repetitive loading in-vivo of tibiae and femora of rats: effects of repeated bouts of treadmill running, *Bone and Mineral* 13: 35-46.

Working in the lab: permanently: 1 on funds: 4 students: 1 others: Dr D.B. Burr Head of LAB
Funding (percent) univ: government: grants: others:

Educational programs, student grants:

Currently hold NH&MRC (Australia) N.H. Fairley Fellowship

Name: ODDOU

First Name: Christian

Title: Professor
Co-director

Address: Laboratoire Mécanique Physique
Université Paris XII Val de Marne
61, avenue du Général de Gaulle
F-94010 - CRETEIL
Tel: (33) 1 42 07 70 62

Fax (33) 1 49 81 99 17



Main research areas: - Mechanics of biological fluids and soft tissues.
- Cardiovascular mechanics.
- Tissue and cellular engineering.
- Instrumentation and Modelisation in Biomechanics.

Available research methods: - Rheological testing machine.
- Ultrasound equipment for tissue characterisation.
- Hydromechanic test bench.
- Work stations and computing lab.

Possible support and cooperation for other researchers:

- Through cooperative program sponsored by INSERM, CNRS, EEC, ...

Some publications:

- *Aspects of hydrodynamics in Cardiovascular Research.*
Quantitative Cardiovascular Studies, Hwang (ed.), University Park Press, 1979, pp 169-182.
- *Collapsible tube model for the dynamics of the closure of mitral valve.*
J. Fluid Mech, 114, 1982, pp 187-211.
- *Theoretical models in mechanics of the left ventricle.*
Biorheology 21, 1984, pp 709-722.
- *Harmonic and impulse rheological test of biomaterials.*
Biorheology, supplement 1, 1984, pp 193-200.
- *Numerical model of fibrous and ovoid structure: Application to the cardiac system.*
Computer in Biomedicine Held (ed.), Computational Mechanics Publications 1991, pp 13-21.

Working in the lab: 11 permanently: 6 on funds: - students: 6 others: -
Funding (percent) univ: 6 government: - grants: 6 others: -

Educational Programs, student grants: Doctoral School of Biomechanics: A four years doctoral program in Mechanics of Biological Fluids and Tissues involving a one year of theoretical studies (DEA) plus a three year PhD program (These)

Name: OKA **First Name:** Masanori **Title:** M.D. Prof
Address: %Research Center for Biomedical Engineering, Kyoto Univ.
 Dept. of Artificial Locomotive Systems
Tel.: 075-751-4133 **Fax:** 075-751-4144

Main research areas: 1) Development of artificial Osteo-chondral composite material.
 2) Development of hybrid type artificial bone (using BMP)
 3) Biomechanics of natural and artificial joints

Available research methods:

- 1) 5 Kinds of Friction and wear testing machines
- 2) Ultra-high speed (40,000/sec) Video camera

Possible support and cooperation for other researchers:

Some publications:

- 1) M. OKa. et. al; Development of an artificial articular cartilage
 Clinical Mat. 6 (1990) 361-381
- 2) P. Kumar and M. OKa. et. al; Low wear rate of UHMWPE against zirconia
 J.B.M.R. 25 (1991) 813-828

Working in the lab: permanently: 2 on funds: 0 students: 8 others: 2

Funding (percent) univ: 10 governm.: 10 grants: 60 others: 20

Educat. programs, student grants:

Name: Turner-Smith **First Name:** Alan **Title:** Dr
Address: Oxford Orthopaedic Engineering Centre, Nuffield Orthopaedic Centre,
 Headington, OXFORD OX3 7LD
Tel.: 0865 227454 **Fax:** 0865 742348



Main research areas: Prosthetic joint loosening. Micromovement in fracture repair.
 "Intelligent" prosthetics and rehabilitation equipment.
 Gait analysis.

Available research methods:

Stereo radiogrammetry. TV movement analysis system ("Vicon").
 Specialised transducer technology.

Possible support and cooperation for other researchers:

Stereo radiogrammetric analysis.

Some publications:

X-ray photogrammetry of artificial joints. The Photogrammetric Record, 13(75),
 347-366, 1990, A R Turner-Smith.
 The measurement of stiffness of fractures treated with external fixation, Engineering
 in Medicine, 16(4), 1987, J L Cunningham, M Evans, J D Harris and J Kenwright.

Working in the lab: permanently: 0 on funds: 5 students: 8 others: 4

Funding (percent) univ: 15% governm.: 30% grants: 35% others: 20%

Educat. programs, student grants: 0

Name: WANG

First Name: Yi-jin

Title: Director Prof.

Address: Shanghai University of Science and Technology
Shanghai, 201800 P.R. China

Tel.: 9530457

Fax: 9529932

Main research areas: Orthopaedic biomechanics, Anisotropic biomaterials,
Bone and joint biomechanics, Biorheology.

Available research methods:

F.E.M. Analysis, Experimental research.

Possible support and cooperation for other researchers:

Skull and brain mechanics, Three-dimensional imaging.

Some publications:

"Orthopaedic biomechanics", Beijing 1989.

"Biomechanics of the Skeletal System", Shanghai 1986.



Staff-members in the lab:	permanently:	on funds:	students:	others:
Funding (percent)	univ:	governm.:	grants:	others:
Educ. programs, student grants: Educat. Teaching SUST, Shanghai, China				

European Society of Biomechanics

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