



NEWSLETTER

Nov. 1991



EUROPEAN SOCIETY OF BIOMECHANICS

LETTER FROM THE PRESIDENT

The expanding role of biomechanics

We have two major events to look forward to: The first is the meeting of our Society in Rome next June. This promises to be the best ever meeting of the European Society of Biomechanics, and that is saying a great deal considering the successes of our previous meetings. Nobody will contest that the location of Rome will greatly contribute by its magnificent historical setting, with but one of the new attractions being the restoration of the ceiling of the Sistine Chapel. Rome, and Italy as a whole, cannot fail to be a breathtaking experience and an inspiration to us all. Such inspiration has evidently led Aurelio Cappozzo to put together a magnificent announcement booklet for the meeting, containing an array of lectures, courses and seminars featuring the best researchers and teachers in our field. In addition, the peripheral arrangements and activities will undoubtedly smooth our way and attract numerous accompanying persons to this major event. I am sure that all of us who are members of the Society, as well as many others who are interested in participating, will have already marked the event in their calendars, and will plan to submit one or more abstracts.

The second event is the World Congress of Biomechanics to be held in Amsterdam in 1994. This seems to be a long way ahead, but it will in fact incorporate our own European Society of Biomechanics meeting which is scheduled to occur in that year. We can thank Rik Huiskes, Colin Caro, and Michel Jaffrin for having had the vision to conceive of the next World Congress to be held in Europe and for putting forward such an attractive proposal to the Steering Committee of the First World Congress held in San Diego in 1990.

The decision of our own council to amalgamate our meeting followed as a matter of course. How could we fail to take the opportunity for sharing our own work with that of the rest of the world. This is a golden opportunity for us all to participate in the best that the world has to offer in the field of Biomechanics. Needless to say, the identity of our Society will

be apparent within the meeting in various ways, the most obvious being the holding of our Banquet, when the usual awards will be made, and our general Assembly, an important official occasion to all of us.

These two events will provide the occasions for us to present our own work, reflect on the work of others, discuss and debate among ourselves, and leave with renewed impetus to set even higher goals for ourselves than previously. The fact that Biomechanics is applied to such a wide range of subjects, underlines the fact that it is an important Discipline. As such, it is subject to the scientific method, to an ordered set of techniques and methodologies. It is recognised by the application of engineering mechanics to biological systems. It can reach solutions by itself, such as in the determination of the forces in human joints; or it can be part of an overall problem such as the design of artificial joints where surgery, biology and biomaterials, must all play a role.

In attending numerous conferences over the past few years, the expanding role of biomechanics has become apparent. Of course, in our own Society, the number of papers and general activity level at the bi-annual meetings has continuously increased. But at meetings dealing with specific topics, the contribution of biomechanics has become more and more apparent, to the point where its absence is seen as a glaring omission. For example, in surgical meetings dealing with artificial joints, without participation from biomechanical engineers, the rationale, and mechanical evaluation of designs can scarcely be debated thoroughly. Furthermore, interdependence between disciplines is now seen as essential in reaching the best solutions. That is why our Society must maintain its impetus and strength, in order to provide the environment and atmosphere for us to maintain and continue to elevate our technical standards.

Peter S. Walker, PhD
28th October 1991

EIGHTH MEETING OF THE EUROPEAN SOCIETY OF BIOMECHANICS JUNE 21 - 24, 1992, ROME, ITALY

Dear Friends,

I have the great pleasure of inviting you to participate in the Eighth Meeting of the European Society of Biomechanics which will be held in Rome in June 1992. We look forward to welcoming you and your families in this magnificent city.

The Meeting site is located in a large green area which, associated with the expected good weather, we hope will make your sojourn here very pleasant and profitable.

In the tradition of the ESB Meetings, we are confident that this gathering in Rome will bring new ideas and renovated momentum to the further advancement of Biomechanics. But, in order to accomplish this objective, we need your active participation.

Many outstanding colleagues will give their contribution with their lectures and chairing the sessions.

The Meeting will be preceded by the following Instructional Course:

- 1) Optimization of sports performance: measurement and mathematical modelling
- 2) Cardiac mechanics and vascular system
- 3) Strain measurement techniques in bone biomechanics
- 4) Nervous control of movement

During the Meeting the following awards will be given:

- 1) ESB Research Award
- 2) Clinical Biomechanics Award
- 3) Poster Award.

Time Schedule:

December 1st, 91

Deadline for submission of manuscripts for the ESB Research Award

January 31st, 92

Deadline for submission of both long and short abstracts

January 31st, 92

Guest Studentship application

March 10th, 92

Notification of paper acceptance

June 21st, 92

Instructional courses

June 22nd - 24th, 92

Eighth Meeting.

For further information, please contact the CONFERENCE SECRETARIAT: ESB92, Scuola dello Sport - Coni, Divisione Ricerca e Sperimentazione, Via dei Campi Sportivi, 48, I-00197 Rome, Italy; Telephone: +39 6 36859124 / 36859178; Telefax: +39 6 36859242

See you in Roma in June 1992

Aurelio Cappozzo
(Meeting Chairman)

PS: If the need arises, please do not hesitate to contact me at these numbers: telephone: +39 6 49910839, telefax: +39 6 4452303.

RESEARCH FUNDING BY THE EUROPEAN COMMUNITY

As announced in the Newsletter of December 1990, the 4th Medical and Health Research Programme will end by the end of 1991. Likewise, its administrative structure will no longer exist as such. It will be followed by a new programme, BIOMED 1, with new supervising bodies whose composition as of now has not yet been finally determined. Four areas are to be addressed under BIOMED 1, in particular,

Area 1: *Development of Coordinated Research on Prevention, Care and Health Systems*
- Precompetitive Drug Testing and Research

- Risk Factors Relating to Occupational Health
- Biomedical Technology
- Health Services Research

Area 2: *Major Health Problems and Diseases of Great Socioeconomical Impact*

- AIDS
- Cancer
- Cardiovascular Disease
- Mental Illness and Neurological Disease
- Aging and Age Related Health Problems and Handicaps

Area 3: Human Genome Analysis

- Genetic and Physical Maps; Genetic Basis for Biological Functions
- Medical Applications to Wellbeing of Patients
- Ethical; Social; Legal Aspects

Area 4: Research on Biomedical Ethics

A call for proposals is issued at the beginning of October 1991. Deadline for submissions in the form of Declarations of Intent is January 31, 1992, 5 p.m. Further information together with the Information Package can be obtained through

Dr. Viviane Thévenin, Commission of the European Communities, DG XII/F/6, rue de la Loi 200, B-1049 Brussels (FAX +322 235 5365).

A new programme on Industrial and Materials Technologies (BRITE/EURAM II) will be initiated in the fall of 1991. Again, four areas are covered, i.e.,

Area 1: Materials - Raw Materials

Area 2: Design and Manufacturing

Area 3: Aeronautics

Area 4: Targeted Projects

Thereby, one of the topics addressed in Area 1 is related to Biomaterials. International Information Days are announced to be held in Milan, Madrid, Stockholm and Brussels, during which prospective proposers are informed about the scope of the programme, the benefits of participation, how to form a research consortium and how to submit a proposal. Information can be obtained through:

BRITE/EURAM Programme, Commission of the European Communities, DG XII-C-2, rue de la Loi 200, B-1049 Brussels (FAX +322 235 8046).

It might furthermore be useful to be reminded that the European Committee for Standardisation (CEN) is among other areas concerned with Biological Safety - Biocompatibility under TC 206. A publication entitled "Health care Info Pack", issued in July 1991, provides an overall presentation of the relevant CEN activities. The secretariat is:

European Committee for Standardisation (CEN), Central Secretariate, rue de Stassart 36, B-1050 Brussels (FAX +322 519 6819).

As a result of the various Concerted Actions conducted during the Medical and Health Research Programmes a great number of active and scientifically productive networks of European scientists and research centers emerged. In order to provide a further forum for collaboration the European Society for Engineering and Medicine was founded during the 1st European Conference on Biomedical Engineering in Nice, February 1991. One of the goals of this Society consists of relating News on a European level, in particular from the EC directly to its members. A regular Newsletter will be issued, furthermore, it is planned to create a new scientific journal. The 2nd European Conference on Biomedical Engineering, to be organised by the Society, will be held in Stuttgart on April 25 - 8, 1993. President of the new Society is Prof. Jan E.W. Beneken, Technical University of Eindhoven, while the secretariate which provides further information and also welcomes applications for membership is located with:

Prof. Dr.-Ing. U. Faust, Inst. of Biomedical Engineering, University of Stuttgart, Seidenstr. 36, D-7000 Stuttgart 1 (FAX +49 711 121 2371).

A RETROSPECTIVE VIEW

37th Annual Meeting of the Orthopaedic Research Society

The 37th annual meeting of the Orthopaedic Research Society was held in Anaheim, California in the Disneyland Hotel from March 4 through the 7th. The venue was superb. The hotel offered every comfort that a hard working conference participant needed. The weather was cooperative - perhaps a bit on the cool side for an early morning outdoor swim. And, Disneyland, which was only a five minute monorail ride from the hotel was an excellent change of pace for those who did not mind mixing business with pleasure.

The conference was organized in its usual format, with four parallel sessions dominating the meeting. Sessions were typically one and a half hours long, separated by coffee breaks in the mornings and afternoons, and one and a half hour lunch break at noon. During the first day there was a wine and cheese reception after the parallel sessions. As usual, the reception was held in the hall that housed the poster presentations. This not only gave the opportunity to the participants to see whom they have not yet met, but also allowed them to have a quick glance at the posters, and decide for which ones they want to come back for a detailed study. Before the formal sessions, on the second and third days of the meeting, there was educational programs and work-

shops on seven different subjects, including topics such as physical control of cellular response, and techniques in quantifying blood flow, together with more traditional subjects such as upper extremity biomechanics. A not so traditional theme was chosen for the plenary session, which was held during the third day - "Ethics in Orthopaedics Research".

The quality of presentations, both oral and poster, was as usual - excellent. There were 296 oral presentations, distributed over 48 sessions, and a total of 394 poster presentations. Close to 2,000 authors were listed in the proceedings. The attendance also approached that figure, breaking a new record. There were more papers in areas which may be grouped as

biochemistry, then those in biomechanics. A sampling on these include sessions on proteoglycans, collagen, bone cell biology, cartilage metabolism, growth factors, and cytokines. There were several sessions on the anterior cruciate ligament, two sessions on the total hip, one on joint mechanics, and one on gait, as examples of biomechanics oriented presentations.

On the whole the meeting was a typical ORS annual meeting - a lot of sessions to attend, a lot of information to absorb, a lot of people to meet, and a pleasure to participate.

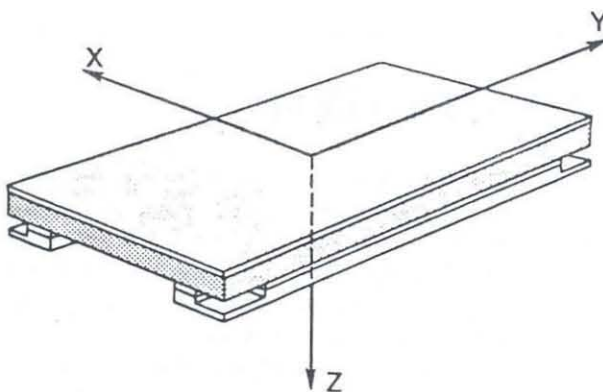
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UPCOMING EVENTS

Micro-movement in Orthopaedics

9th/10th April 1992

A conference organised by the Oxford Orthopaedic Engineering Centre to be held at The Nuffield Orthopaedic Centre and St. John's College, Oxford.

The musculo-skeletal system is undergoing constant fine structural changes in response to mechanical and biological influences. The meeting will identify these changes, explore their clinical implications, and evaluate new and existing methods for their measurement. Specific topics to be included are fracture repair and prosthetic joint replacement.

This is the fifth in a series of international meeting on topics of orthopaedic interest organised by the Oxford Orthopaedic Engineering Centre in one of the world's most beautiful academic cities. Meetings are restricted to 120 delegates and so provide a friendly forum for exchange between clinicians and scientists. Co-sponsors are the European Society of Biomechanics, the International Society for Fracture Repair, The Biological Engineering Society, and the British Society for Strain Measurement, and Howmedica International are providing support.

Address for abstracts and further information:
Micro-Movement 92, Oxford Orthopaedic Engineering Centre, Nuffield Orthopaedic Centre, Headington, Oxford, United Kingdom (FAX +44 865 742348).

European Society for Engineering and Medicine

During the FIRST EUROPEAN CONFERENCE ON BIOMEDICAL ENGINEERING in February 1991 a new scientific society has been founded.

Objective of the new society

The purpose of the society is to create the opportunities for both the researchers from the various disciplines and the industry to meet and exchange methods and approaches, research results and produce ideas.

Regular European meetings will be organised with contributions from specialists in medical and biological disciplines, engineers, physicists and information scientists from universities, hospitals, research centres and from industry, in such a way that cross-disciplinary exchanges will be stimulated.

A further means for scientific communication is foreseen by establishing a European journal.

A Second European Conference on Biomedical Engineering will be held probably in April 1993 in Stuttgart. Inbetween we may have one or two topical workshops.

The Secretary General of this Societies is: Prof. Dr.-Ing. U. Faust, Seidenstr. 36, D-7000 Stuttgart 1; telephone (+49-711) 121-2370, telefax (+49-711) 121-2371

Sub-Commission on Biomechanics and Physiology of the IOC Medical Commission.

In 1982 the IOC Medical Commission founded a subcommission "Biomechanics and Physiology". The aim of this subcommission is to build up a scientific film archive of the Olympic games and to develop instructional high speed videos of selected competitions. A brochure of general nature can be obtained from Prof. J. Mc Gregor, Biomech. Lab., Dept. of Kinesiology, 2854 Slichter Hall, UCLA, Los Angeles, CA 90024-1568. This subcommission also intends to establish up to four scientific prizes 'to be presented to leading world scientists in sport research'.

Newsletter editor:

Georg Bergmann, Oskar-Helene-Heim, Biomechanics. Lab., Orthop. Dept. of the Free University of Berlin, Clayallee 229, D- 1000 Berlin 33, Germany. Tel.: (030) 81004-373, Fax.: (030) 81004-428

CALENDAR OF MEETINGS AND COURSES

1991

November 11-12

1st Conference of the European Orthopaedic Research Society (EORS), Paris/France. 1st EORS Conference Secretariat, Laboratoire de Recherches Orthopédiques, Faculté de Médecine Lariboisière Saint-Louis, 10, avenue de Verdun, F-75010 Paris/France

November 29

One day seminar: "The Future of Orthopaedic Implants", London, U.K. Div. Admin Office, The Institute of Mechanical Engineers, 1 Birdcage Walk, Westminster, London SW1H 9JJ, U.K.

December 6-7

Internationales Symposium "Die zementlose Hüftprothese", München/Germany. Contact: Priv.-Doz. Dr. R. Ascherl, Klinikum rechts der Isar der TU München, Ismaninger Str. 22, W-8000 München 80/Germany

December 9-13

XIIIth International Conference on Biomechanics, Biennial Congress of the International Society of Biomechanics, The University of Western Australia, Perth, Western Australia. Contact: XIIIth ISB Congress Secretariat, Dept. of Human Movement Studies, The University of Western Australia, Nedlands, W.A., 6009 Australia.

December 26-28

1st International Conference on Computer Applications in Science, Technology, and Medicine in Iran, Isfahan/IRAN. Conference Secretariat: University of Isfahan, Computer Engineering Dept., P.O. Box 81745/195, Isfahan/Iran

1992

January 23-25

1st Congress of the European Bioelectromagnetic Association, Brussels/BELGIUM. Dr. M. Hinsenkamp, E.B.E.A. Congress, Department of Orthopaedic Surgery and Traumatology, Hospital Erasme - Université Libre de Bruxelles, Route de Lennik 808, B-1070 Brussels, Belgium

February 14-15

XIV. Münchner Symposium für experimentelle Orthopädie, München/Germany. PD Dr. Dr. W. Plitz, Labor für Biomechanik, Staatl. Orthop. Klinik, Harlachingerstr. 51, W-8000 München 90/Germany

February 17-20

Orthopaedic Research Society Meeting, Washington, D.C./USA. Contact: Orthopaedic Research Society, 222 South Prospect Avenue, Park Ridge, Illinois 60068-4058, USA

March 6-8

5th Symposium on Biomaterial "The implant/bone interface", Göttingen/Germany. Dipl.-Ing. G.H. Buchhorn, Dept. for Biomaterials, Orthopedic University Hospital, Robert-Koch-Str. 40, W-3400 Göttingen/Germany

April 1-4

Clinical Engineering Conference, Fontevraud/France. Contact: Marie-José Rouquette, Alliance pour le G.B.M., 10, av. de Verdun, 75010 Paris, France.

April 9-10

A conference on "Micro-movement in Orthopaedics", Oxford/England. Contact: Micro-Movement 92, Oxford Orthopaedic Engineering Centre, Nuffield Orthopaedic Centre, Headington, Oxford OX3 7LD/England

April 24-28

4th World Biomaterial Congress, Berlin/GERMANY. U.M. Gross, Institute of Pathology, Steglitz Clinic, Free University of Berlin, Hindenburgdamm 30, D-1000 Berlin 45, Germany

April 24-28

IUPAC Working Conference, Berlin/GERMANY. M. Jozefowicz, Université Paris Nord, LRM-CSP, Av. J.-B. Clément, F-93430 Villetaneuse/France

May 5-7

International Symposium on Computer Methods in Biomechanics & Biomedical Engineering, Swansea, U.K. Mr. J. Middleton, Dep. of Civil Engineering, Univ. College of Swansea, Swansea SA2 8PP, U.K.

May 7-8

International Biomechanics Seminar, Göteborg/Sweden. Centre for Biomechanics, Chalmers Univ. of Technology, S-41296 Göteborg/Sweden

May 22-23

NATO Advanced Research Workshop "Advances in the Biomechanics of the Hand and Wrist", Brussels/Belgium. Secretariat: F. Schuind, Dept. of Orthopedics, Erasme Univ. Hospital, Route de Lennik 808, B-1070 Brussels

June 8-13

European Intensive Course on Digital Image Processing Applied to Orthopaedic and Dental Implants, Portugal. Contact: Prof. M.A. Barbosa, Dept. of Metallurgy, Faculty of Engineering, University of Porto, R. dos Bragas, 4099 Porto Codex, Portugal.

June 15-19

X. International Symposium of Biomechanics in Sports, Milano/Italy. ISBS'92 Symposium Secretariat, Centro di bioingegneria, Fondazione Pro Juventute I.R.C.C.S.-Politecnico di Milano, Via Capocelatro 66, I-20148 Milano/Italy.

June 21-24

8th Meeting European Society of Biomechanics, Rome/ITALY. Congress Secretariat: ESB92, Istituto di Fisiologia Umana, Università "La Sapienza" Piazzale Aldo Moro, 5, I-00815 Rome, Italy

August 31 - September 5

XII International Symposium on Biotelemetry, Ancona/Italy. Dr. ing. Sandro Fioretti, Secretary General XII ISOB-1992, Dipartimento di Elettronica ed Automatica, via Brecce Bianche, I-60131 Ancona/Italy

September 4-5

International Conference on Experimental Mechanics "TECHNOLOGY TRANSFER between HIGH TECH ENGINEERING and BIOMECHANICS", Limerick/Ireland. The Conference Secretariat (BSSM '92), Dept. of Mechanical & Production Engineering, Uni. of Limerick, Plassey Technological Park, Limerick/Ireland

September 29 - October 4

Bone Morphometry 1992 - The 6th International Congress, Lexington, KY. Contact: H.H. Malluche, M.D., MN 572, University of Kentucky Medical Center, Lexington, KY 40536 - 0084, U S A.

October 1-3

5th Annual International Symposium on Custom Prosthesis, Windsor/England. Contact: Jessie Smart, Dept. of Biomedical Engineering, Institute of Orthopaedics, RNOH Trust, Brockley Hill, Stanmore, Middlesex HA7 4LP/England

1993

April 25-29

European Society for Engineering and Medicine, Stuttgart/Germany. Contact: Prof. Dr. Uwe Faust, Institut für Biomedizinische Technik, Seidenstr. 36, D-7000 Stuttgart 1

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 No. +41-1-261-5187, Phone No. +41-1-256-4568

1994

Second World Congress on Biomechanics, Amsterdam, The Netherlands. Contact: M.Y. Jaffrin, Dept. de Genie Biologique Univ. de Technol. de Compiègne, B.P. 649, F-60206 Compiègne Cedex, France.

PRIVATE EYE

Peter Walker, 50 years.

During the AAOS/ORS meeting in Anaheim, California, our president Peter Walker celebrated his becoming of mature age. In one of the ball rooms at Disneyland Hotel, Peter had gathered around him a number of friends with whom he had worked on different aspects of joint replacement surgery. With these individuals, who collectively constitute a rather complete representation of the Hall of Fame in his field, he had a merry evening with excellent fulfillment of both bodily and spiritual needs.

In his celebrating address, our previous president Rik Huiskes, emphasised the very superlative contributions of Peter Walker to biomechanics and orthopaedic surgery but also the fact that, after such achievements and at this age, one has the right to retire to more leisure-like activities. Peter Walker was therefore presented with the means of such activities (Fig. 1) and it is our hope that he will enjoy them with the same dexterity as he has, previously, enjoyed biomechanics.



The European Society of Biomechanics extends its most profound congratulations to its president Peter Walker. It is our hope that we will enjoy his leadership for many years to come in order for our society to prosper.

At the records

Leif Ryd



How to get your work published

Peter Walker sent me a copy of 'Woman' (published in Great Britain, of course) and urged me five (or six ?) times to reveal the methods how we get our work published in such a broad and easily understandable way (see clipping above). However I decided to stay firm and keep this a secret for not encouraging competitors in that art !


Georg Bergmann

OUR MEMBERS

In research we all occasionally have very special problems which we cannot solve because they either exceed our knowledge or the available equipment does not allow us to answer them by ourself. Support from other members would then be greatly appreciated and could be given on a small scale and informal basis, but often we do not know whom we could ask. In this new section of the newsletters members of the ESB will be presented and basic information about their main fields of interest and their institution will be given. The pages should be kept to obtain a complete collection. Photographs are included and this could help to answer questions like this: "Who, the hell, was it who told me on this conference in Miami Beach that the bones of sharks have a 12 times larger Poisson's ratio than those of sheep ? I know exactly how he looked but can't remember his name !"

It would take 45.33 years if three members were presented in every issue of the newsletters (I calculated this on a 33 MHz AT 486 !). This time could drastically be reduced, by expanding this section. But I would like to hear from the members (I mean **you** and not the other ones !) whether this section should be continued in the future. No respond - No information ! Please use the Fax and let me know: (030) 81004-428.

Georg Bergmann

| | | | | | | | | | | | | | | | | | | |
|---|---|---|--|---------------------|--------------|-----------|-----------|-----------|-------------------|-------|-----------|---------|-----------|-----------------------------------|--|---|--|--|
| Name: B a u m g a r t Address: In den Büelen 53, CH-7260 Davos Dorf Switzerland Tel.: 0041/81/46 50 91 | First Name: Frank Fax: | Title: Prof. Dr. |  | | | | | | | | | | | | | | | |
| Main research areas: Biomechanics of Osteosynthesis, Implants Bone mechanics, Continuum mechanics | | | | | | | | | | | | | | | | | | |
| Available research methods: Analysis and testing | | | | | | | | | | | | | | | | | | |
| Possible support and cooperation for other researchers: | | | | | | | | | | | | | | | | | | |
| Some publications: - Intramedullary nailing - Mechanical properties of porous coated surfaces - "Mixing" of implants | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Working in the lab:</td> <td style="width: 25%;">permanently:</td> <td style="width: 25%;">on funds:</td> <td style="width: 25%;">students:</td> <td style="width: 20%;">others: X</td> </tr> <tr> <td>Funding (percent)</td> <td>univ:</td> <td>governm.:</td> <td>grants:</td> <td>others: X</td> </tr> <tr> <td colspan="2">Educat. programs, student grants:</td> <td colspan="3">teaching Ruhr-University Bochum, Germany.</td> </tr> </table> | | | | Working in the lab: | permanently: | on funds: | students: | others: X | Funding (percent) | univ: | governm.: | grants: | others: X | Educat. programs, student grants: | | teaching Ruhr-University Bochum, Germany. | | |
| Working in the lab: | permanently: | on funds: | students: | others: X | | | | | | | | | | | | | | |
| Funding (percent) | univ: | governm.: | grants: | others: X | | | | | | | | | | | | | | |
| Educat. programs, student grants: | | teaching Ruhr-University Bochum, Germany. | | | | | | | | | | | | | | | | |

Name: **Calderale** **First Name:** Pasquale Mario **Title:** Full Prof.
Address: Dipartimento di Meccanica
 Politecnico di Torino
 C.so Duca degli Abruzzi, 24-10129 Torino, Italy
Tel.: 39-11-5646919/5646904 **Fax:** 39-11-564999



Main research areas: Orthopaedic Biomechanics-Dentistry Biomechanics.
 Cardiovascular non invasive diagnosis methods - Man or dummy interaction
 with vehicle during crash. Mechanical characterization of biomaterials.

Available research methods:

F.E.M., Photoelasticity Strain-gages, Acoustic Intensity.

Possible support and cooperation for other researchers:

We are open to cooperation subject to limitation due to economical possibilities.

Some publications: "C ar accident mathematical model: femur and pelvis stress analysis" IVth IRCOBI 1979; "Mechanical properties of bovine pericardium" 5th ESB, Berlin, 1986; "A mathematical model of the locomotor apparatus" Eng.in Med. 16,3,1987; "Mechanical analysis of stem length in hip prostheses" Progress in Bioeng.Seminar,Glasgow, 1988; "Dentistry biomechanics by experimental and theoretical methods" Progress in Bioeng. Seminar, Glasgow, 1988ated surfaces

Working in the lab: permanently: 4 on funds: 1 students: 3 others: 2
Funding (percent) univ: 20 governm.: 80 grants: / others: /
Educat. programs, student grants: Undergraduate course in Mechanical Engineering (Biomechanical side)
 Biomechanics Medical Schools, PhD in Biomechanics.

Name: **de Groot** **First Name:** Gert **Title:** Dr.
Address: Fac. Human Movement Sciences
 Dept. Exercise Physiology and Biophysics
 vd. Boechhorststraat 9, NL-1081 BT Amsterdam, The Netherlands
Tel.: 020-5487334 **Fax:** 020-462228



Main research areas: Exercise physiology and biomechanics of sports, especially
 speed skating, swimming, cycling.

Available research methods:

Ergometry, 3-D analysis, EMG, inverse dynamics, statistics.

Possible support and cooperation for other researchers:

3-D analysis, mathematics, kinematics.

Some publications: G. de Groot, et al.: "Method to determine 3-D coordinates for speed skating", ISB, UCLA, 1984; G. de Groot, et al.: "Applied physiology of speed skating", J. Sports Sciences 5, (1987) 249 - 259; Toussaint et al.: "Active drag related to velocity in swimming", J. Biomech. 21 (1980) 435 - 438

Working in the lab: permanently: X on funds: students: others:
Funding (percent) univ: X governm.: grants: others:
Educat. programs, student grants: energetics of cyclic movements

CONFERENCE ANNOUNCEMENT

Co-sponsored by European Society of Biomechanics, European
Orthopaedic Research Society & British Orthopaedic Association

**5th Annual International Symposium
on Custom Prostheses**

1-3rd October 1992
Castle Hotel, Windsor, Nr London UK.

Of interest to Orthopaedic Surgeons,
Bioengineers & Manufacturers

Keynote Lectures, Free Papers, Posters,
Demonstrations & Technical Exhibition
Early Registration advisable

For further information contact:
Jessie Smart/Prof. P S Walker
Dept. of Biomedical Engineering
Institute of Orthopaedics, RNOH Trust,
Stanmore, Middx. HA7 4LP, UK.
Tel No. 081-954-0956
Fax No. 081-420-6497

PRESIDENTIAL GUEST LECTURE

We are pleased to announce that Professor Van C Mow will deliver
the Presidential Guest Lecture at the ESB Meeting in Rome.

**European Society of Biomechanics
Bi-Annual Meeting**
21-24 June 1992, Rome.

Cell-Matrix-Interaction in Cartilage Under Compression

Professor V C Mow
Orthopaedic Research Laboratory
Columbia University
New York, USA