



International Society of Biomechanics Newsletter

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AFFILIATE SOCIETIES OF ISB:

American Society of Biomechanics; British Association of Sport and Exercise Sciences; Bulgarian Society of Biomechanics; Canadian Society of Biomechanics/Société canadienne de biomécanique; Chinese Society of Sports Biomechanics; Comisia de Biomecanica Inginerie si Informatica (Romania); Czech Society of Biomechanics; Formosan Society of Biomechanics; Japanese Society of Biomechanics; Korean Society of Sport Biomechanics; Polish Society of Biomechanics; Russian Society of Biomechanics; Société de biomécanique (France).

From the President-Guenter Rau

The start into a new year is always an emotionally marked point on the timeline. Being right there when writing this column, I send my best wishes for a happy, peaceful, healthy, and successful 1998 to all ISB members.

Looking back, the big event for ISB in 1997 was the outstanding ISB Congress in Japan. All the participants may remember the scientific quality of the Congress as well as the great hospitality of our Japanese friends.

Communication by new media has changed the style of our daily work. Making use of the Internet and emailing friends is fast, effective, and sometimes disturbing by irrelevant messages spread out to large numbers of address lists. A few years ago, there was a proposal to establish an ISB Internet Conference in which parallel sessions with ongoing discussions could be arranged. Participants would not miss any sessions of interest because individuals would be able to switch between parallel sessions whenever they wished. A problem with this type of meeting is that the charm of personal face-to-face contact and the development of personal friendships will be lost. A potential solution - organize a 2-day ISB party with only leisure activities and drinking. But this seems somewhat premature - the restriction is the performance of the Internet.

So, one of the goals defined at the start of the year may be: use the email services in a disciplined way! Wrap your questions, remarks, comments and jokes condensed and concise in short email texts.

Presently, members of the Council are working on various projects in order to improve the ISB services to its members. I wish to mention the effort to establish the availability of all ISB relevant information on the Internet, and Ton van den Bogert performed an outstanding job in concept design. Try it yourself; you will be pleasantly surprised. Those of you who are reading these lines and are still not ISB members, you will find the necessary information on how to become a member. Also, I wish to refer to the students action program which has been initiated by our past president, Peter Cavanagh. Information about this endeavor is provided in this newsletter.

The 3rd World Congress on Biomechanics will be held in Sapporo this summer. Benno Nigg, past president of ISB, invited key note speaker, and member of the World Council for Biomechanics, will officially represent the ISB on this occasion. I

thank Benno for this important service to our society. I myself as Vice Chairman of the World Council for Biomechanics am sorry that I must miss this Congress with an excellent and comprehensive scientific program.

June 27-30, 1998, the ISEK Conference in Montreal is another highlight which is devoted to the Founder of ISEK, Professor Dr. John Basmajian. The links between ISB and ISEK exist *ex ovo*, and recently the scope of interest showed an increasing overlap. To intensify the mutual exchange, ISB will be an official sponsor of the ISEK Conference, and a joint session will be organized. In addition, the 1998 ISB Council meeting will be held in Montreal on June 27 in conjunction with this conference. I thank Bertrand Arsault, Chairman of the ISEK conference, for his hospitality.

During the last months, contacts have been established to the IEEE-Engineering in Medicine and Biology Society (EMBS). One section in this society is devoted to biomechanics and technologies in rehabilitation. It might turn out that an input from engineering sciences may be a valuable ingredient to ISB, and, in turn the ISB activities may supply stimuli to applications with IEEE-EMBS. This idea will be gradually developed in the future.

In Europe, we have a special situation of which you might not be aware. Not only will the new currency (EURO) be introduced in 1998 but the EU will establish the 5th Framework Program. This gives the directives for stimulating and supporting research and development in Europe, networking research, development and production transitionally as well as tying academia and industry together. One of the major focuses is life science and life quality. Of course, this 4-year program is equipped with considerable finances (approximately 16 billion ECU = 16 billion \$US). Interesting for an international society: Some non-European and overseas countries are considered as partners, and institutes or industries can take part in certain program sections.

Finally, we are looking forward to the 1999 ISB Congress which will be held in Calgary, Canada. Since we have to plan long ahead, so far already one group indicated to prepare a proposal for 2001. For the first Congress in the new millennium I wish to encourage proposals for the organization of the 2001 ISB Congress.

I wish to thank our council members working on various issues and levels of complexity to further develop the ISB, and after our meeting in June we

will inform you about the details. Everybody within and outside - ISB is welcome to address his questions, suggestions, and comments to me or any other council member: this contributes to keep ISB in progress.

Job Market

Faculty Positions

- ◆ An assistant / associate professor position is available, after August 1, 1998, at the Institute of Physical Education and Sports Science, Odense University, Denmark. Applicants should have documented competence in research within areas of muscle physiology and/or biomechanics. Special emphasis is on muscle metabolism, -fatigue, -function, and -mechanics. Applicants must be prepared to teach human physiology at all levels within the institute. Send a cover letter with reasons for applying, description of qualifications, and visions for the post along with five copies of a CV, up to 7 publications selected as particular relevant for the position, and documentation of teaching experience to The Faculty Secretariat, Faculty of Health Sciences, Odense University, Winsløwparken 15/1, DK-5000 Odense C, Denmark. Further information regarding the position may be obtained by contacting the head of the Institute of Physical Education and Sports Science - associate professor Jørn Hansen, tel. +45-6557-3459 or professor Gisela Sjøgaard, tel +45-6557-3429 or e-mail gis@sportmed.ou.dk. A full set of printed instructions for applicants for academic posts in the Faculty of Health Sciences may be obtained by contacting the Faculty Secretariat at the Faculty of Health Sciences, tel +45-6557-2932.
- ◆ A Visiting Faculty position is available in Biomechanics within the Department of Exercise Science at the University of Iowa for the 1998-99 academic year. This is a 9-month academic year appointment, with the possibility of a summer teaching appointment. The primary responsibilities will include teaching of one introductory and one advanced biomechanics course for undergraduate and graduate students. Research space and equipment is available and there will be opportunities for collaborative studies with faculty in Exercise Science and other departments. A tenure track line for a biomechanics position may become available for the 1999-2000 academic year. Send a CV, information on current status and two letters of recommendation to: Professor J.A. Maynard, Chair, Department of Exercise Science, The University of Iowa, Iowa City, IA 52242
- ◆ The Department of Kinesiology and The Center for Locomotion Studies at The Pennsylvania State University are seeking a tenure-track faculty member at the Assistant Professor level. The successful individual will hold a PhD or equivalent degree and will divide his/her time equally between teaching in the Department and conducting research at the Center. Send a letter of application, CV, samples of recent publications, and the names and addresses of three references to: Peter R. Cavanagh, Ph.D., Chair of Faculty Search Committee, Center for Locomotion Studies, The Pennsylvania State University, BOX B, 29 Recreation Building, University Park, PA 16802. Initial contacts to prc@psu.edu are encouraged.
- ◆ A faculty position at the Assistant/Associate or Professor level is available in the Biomedical Engineering Program, Michigan Technological University. The successful candidate must have an earned doctorate and a background in biomechanical design. Send a cover letter, a CV and the names, addresses, and telephone numbers of three professional references to: J.E. Beard, PhD, Center for Biomedical Engineering, Attn.: Biomechanical Design Position., Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295
- ◆ The Biomedical Engineering Department of Worcester Polytechnic Institute invites applications for a tenure-track faculty position at the Assistant or Associate Professor. Applicants should hold a PHD with an emphasis in applied physiology, biomedical instrumentation and biosensors and biomedical imaging are encouraged to apply. Send a statement of research and teaching interests, a CV, and a list of three references and contact information to: Search Committee, Biomedical Engineering Department, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609-2280 USA, www.wpi.edu/Academics/Depts/BioMedEng/
- ◆ A number of tenure track faculty positions in biomedical engineering starting September 1998 in the School of Biomedical Engineering, Science, and Health Systems, Drexel University. Applicants with engineering background and research experience in the Biomedical Sensors,

Biomechanics and Biomaterials areas are particularly encouraged to apply. Send a CV, statement of teaching and research interests and a list of three references to: R. Seliktar, PhD, Chair, Faculty Search Committee, School of Biomedical Engineering, Science, and Health Systems, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104, SELIKTR@duvm.ocs.drexel.edu

◆ A tenure-track position at the rank of Assistant Professor is available in the Department of Health and Human Development, Montana State University-Bozeman. Candidates should hold a PhD in biomechanics. Send a letter of application, CV, transcripts, and names, addresses, and phone numbers of three references to: S. Was, Search Secretary, Department of Health and Human Development, Herrick Hall, Montana State University-Bozeman, Bozeman, MT 59717-3540, Email: ahdsw@montana.edu, Tel: (406) 994-3242 Fax: (406) 994-2013

◆ The Department of Physics and Engineering at Hope College has a 3-year term position to teach undergraduate mechanical engineering courses starting in August 1998. Candidates should have a Ph.D. in mechanical engineering or closely related field and a demonstrated interest and ability in undergraduate teaching. Industrial experience is desirable. Send a CV and three letters of reference to P. DeYoung, PhD, Chair; Dept. of Physics and Engineering; Hope College, Holland MI, 49422-9000, Tel: (616) 395-7517, Fax: (616) 395-7123 Email: deyoung@physics.hope.edu, www.hope.edu)

Postdoctoral Positions

◆ A two-year post-doctoral fellowship is available in the Bone Research Laboratory, College of Health and Human Performance, Oregon State University. Candidates should hold a Ph.D. in biomechanics, bioengineering or related field with a background/interest in orthopedics and aging. The candidate will be engaged in studies related to the development and validation of performance indicators to assess risk of side falls in the elderly, (PI W.C. Hayes, PhD) studies on the effects of jumping on growing bones (PI: C.M. Snow, PhD). Send a cover letter, CV, and three letters of recommendation to C. Snow, PhD, Director, Bone Research Laboratory, Oregon State University, Corvallis, OR, 97331, Email: snowc@ccmail.orst.edu

◆ A postdoctoral position is available for an individual to work in the area of plasticity of the interactions of spinal cord circuitry and the musculoskeletal system in able-bodied human subjects and in patients with select neurological disorders. A Ph.D. and/or M.D. with experience in neurophysiology and/or biomechanics is desirable. This position will be available beginning September 1, 1998. Send letter of application, CV and three letters of recommendation to R.L. Segal, PhD, Department of Rehabilitation Medicine, Emory University, Room 228 CRM, 1441 Clifton Rd. NE, Atlanta, Georgia 30322. Voice: (404) 712-5654. FAX: (404) 712-4809. Email: rsegal@spinal.emory.edu.

Graduate Assistantships

◆ The Joint Worcester Polytechnic Institute (WPI) - University of Massachusetts Medical School Biomedical Engineering and Medical Physics PhD Program announces availability of funds to support Biomedical Engineering doctoral students demonstrating the need for support. Contact: S.S. Kohles, PhD, Attn: BME Graduate Admissions, Department of Biomedical Engineering, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609-2280, FAX: 508-831-5541, www.wpi.edu/Academics/Depts/BioMedEng/, www.ummed.edu/dept/gsbbs/

◆ The Ergonomics Laboratory in The Department of Industrial Engineering at North Carolina State University has openings for three graduate research assistants for the Fall of 1998. These positions are intended for students interested in pursuing either a Master's or PhD in the area of occupational biomechanics. Contact: G.A. Mirka, PhD, Tel: (919) 515 6399, Email: mirka@eos.ncsu.edu, or C. Sommerich, PhD, Tel: (919) 515 8614, Email: sommeric@eos.ncsu.edu, www.ie.ncsu.edu/ergolab/

◆ A graduate research assistantship is available to engineering students with an interest in control systems and signal analysis, particularly as applied to the study of human postural control. Interested students should have a B.S. (or M.S.) in electrical, mechanical or bio-engineering (or other appropriate degree) Contact: P. Loughlin, PhD, University of Pittsburgh, Dept. of Electrical Engineering, 348 Benedum Hall, Pittsburgh, PA

15261, Tel: (412) 624-9685, Fax: (412) 624-8003,
Email: pat@ee.pitt.edu,
http://siglab.ee.pitt.edu/~pat

Industry, Health Care, et al.

- ◆ The Human Performance Laboratory at the Duke University Medical Center has an opening for an individual with a Ph.D in Biomechanics, Biomedical Engineering, Kinesiology, Exercise Science, or a related field is required. Send a cover letter including professional goals and interests, a CV, and the names and phone numbers of three references to Mr. Anthony V. Seaber, Orthopaedic Laboratory Director, Duke University Medical Center, Box 3093, Durham, NC 27710, Tel: (919) 684-2521
- ◆ Schering-Plough HealthCare Products has a R&D engineer position available in Memphis, TN for an individual with an MS in Engineering, Physics or Biomechanics. Under the direction of the Senior Scientist, the candidate will develop and utilize biomechanical techniques to expedite new product development and to provide claims support for new and existing products. The ideal candidate will have experience in experimental design and analysis, human data collection, electronics, and biomechanics. Send a CV to Schering-Plough HealthCare Products, Human Resources, Department PC, 3030 Jackson Avenue, Memphis, TN 38151, Fax (901) 320-2057
- ◆ A position is available for a biomedical engineer to work in the Center on Aging, University of Kansas Medical Center. A BS in biomedical engineering, mechanical engineering, electrical engineering, or equivalent degree. An individual with an MS in biomedical engineering, mechanical engineering, electrical engineering, or equivalent degree, a minimum of two years additional research experience in the methods of experimental biomechanics such as motion analysis, force plates, and EMG, experience in computer maintenance, computer file backup and software installation is preferred. Qualified candidates should submit a letter of interest, a CV, and names and addresses of three references to: C.W. Luchies, PhD, Center on Aging, University of Kansas Medical Center, 3901 Rainbow Boulevard, Kansas City, Kansas 66160-7117, Tel: (913) 588-1442, Fax: (913) 588-1417, Email: cluchies@kumc.edu
- ◆ The Department of Biomechanics and Biomaterials at the Hospital for Special Surgery is seeking a research engineer to conduct and manage research projects in the foot biomechanics. Candidates should have minimum a B.S. in engineering and demonstrated knowledge of mathematics, engineering mechanics, instrumentation and computer software. Contact: J.C. Otis, Ph.D., Sr. Scientist, Department of Biomechanics and Biomaterials, The Hospital for Special Surgery, 535 East 70th Street, New York, NY 10021, Tel: (212) 606-1088, Fax: (212) 606-1490, Email: otisj@hss.edu
- ◆ A position has become available for a biomedical engineer or biomechanist at the Spaulding Rehabilitation Hospital in Boston, MA, USA. M.S. in Biomedical Science, Engineering or Computer Science preferred; thorough knowledge of IBM compatible computers, computer networks, Windows environment required; at least one year's experience in motion analysis, programming experience required. Send cover letter and CV to B. Annese, Human Resource Specialist, Spaulding Rehabilitation Hospital, 125 Nashua St., Boston, MA 02114, or fax materials to: (617) 722-6217.
- ◆ The Motion Analysis Laboratory at Children's Hospital-San Diego announces an opportunity for a full-time Biomechanical Engineer. The engineer will be responsible for developing, maintaining, and utilizing instrumentation and software for measurements in these collaborating laboratories, with principle emphasis on the Biomechanical Testing Lab and Joint Mechanics Lab. The position requires training in Mechanical Engineering, Biomedical Engineering, or a related field. Candidates should have at least a Master's degree, or a Bachelor's degree with significant experience. Send a cover letter, resume, and list of references to: Children's Hospital-San Diego, Human Resources Dept, MC 5040, 3020 Children's Way, San Diego CA 92123-4282.
- ◆ Shriners Hospitals for Children-Spokane is recruiting a graduate level engineer to manage its established motion analysis lab. Preference will be given to doctoral level bioengineers with motion lab experience. Send CV to R.L. Ferguson, M.D., Chief of Staff, Shriners Hospitals for Children, 911 W. 5th, Spokane, WA 99204, Tel: (509) 623-0428, Fax: (509) 623-0474

Upcoming Meetings, Workshops, Etc.

April

3rd Annual Gait and Clinical Movement Analysis Meeting. 15-18 April, 1998. San Diego, California. Contact: 1998 GCMA Meeting Program Chair, Children's Hospital San Diego, Motion Analysis Laboratory MC 5054, 3020 Children's Way, San Diego, California 92123-4282.

The International Sport Science and Sport Ergonomics Seminar of the Savoie, 24-30 Apr, 1998, Val d'Isere, Haute Savoie, France, Contact: M. Verlinden, PhD, (Seminar Secretary), Dept. Experimental Anatomy, Vrije Universiteit Brussel, Laarbeeklaan 103, 1090 Brussel, Belgium.

May

Motor Learning and Control: workshop on teaching, 15-17 May 1998, Max Planck Institute for Psychological Research in Munich and Human Performance Laboratory, Texas A&M University, College Station, TX on 19-21 Jun 1998. Contact: C.H. Shea, PhD, Email: cshea@tamu.edu, or G. Wulf, PhD. wulf@mpipf-muenchen.mpg.de, <http://digby.tamu.edu/classes/ce>

2nd International Biomedical Engineering Days, 20-22 May 1998, Istanbul, Turkey, www.boun.edu.tr/ibed98

Physiological testing of the Athlete, 23-24 May 1998. Bologna. Italy, Contact: A. Cicchella- Centro Universitario Sportivo, Bolognese, Tel +39-51-6013662, Email: promcus@alma.unibo.it

6th European Congress on Research in Rehabilitation, 31 May-4 June, 1998, Berlin, Germany, Contact: Congress Secretary ECRR-98, H. Kirsten, c/o BAR, Walter-Kolb Str. 9-11, D-60594 Frankfurt/M, Germany, Tel: +49-69-605018, Fax: +49-69-605018-37.

June

XIIIth Annual International Occupational Ergonomics and Safety Conference, 11-14 Jun 1998, Ann Arbor, MI, USA, <http://www.ualberta.ca/~tamell/ISOES/>

VIII Mediterranean Conference on Medical and Biological Engineering and Computing, 14-17 Jun 1998, Lemesos, Cyprus, Contact: C.S. Pattichis, PhD, Department of Computer Science, University of Cyprus, 75 Kallipoleos Street, CY-1678 Nicosia, Cyprus, Tel: +357-2-338705/06,

Fax: +357-2-339062, Email: pattichi@turing.cs.ucy.ac.cy, <http://www.ucy.ac.cy/ucy/cs/med98/med98.htm>

Symposium on Advances in Motor Rehabilitation, 19 June 1998, Chicago, Illinois, USA, Contact: A.S. Aruin, PhD, Senior Research Scientist, Rehabilitation Foundation, Inc, 26W171 Roosevelt Road, P.O. Box 675, Wheaton, IL 60189, Phone: (630) 462-4277, FAX: (630) 462-4547, Email: aaruin@rpslms.edu.

International Society of Electrophysiology and Kinesiology (ISEK), 27-20 Jun 1998 Montreal, Canada. Contact: ISEK Secretariat, Conference Office, McGill University, 550 Sherbrooke St. West, West Tower, Suite 490, Montreal, QC, Canada H3A 1B9, Tel: (514) 398-3770, Fax: (514) 398-4854, Email: isek@UMS1.Lan.McGill.CA, www.mcgill.ca/mco/isek

International Research Society of Spinal Deformities, 28 Jun - 1 Jul 1998, Burlington, Vermont, Contact: I.A. Stokes, PhD, University of Vermont, Department of Orthopaedics and Rehabilitation, Burlington, VT 05405-0084, USA, e-mail: irssd@med.uvm.edu, <http://salus.med.uvm.edu/~irssd/1998.htm>

8th International Symposium of Biomechanics and Medicine in Swimming, 28 Jun-2 Jul, 1998, Jyvaskyla, Finland, Contact the Symposium secretariat, Email: pitkanen@jyu.fi. to get

International Society of Electrophysiology and Kinesiology (ISEK), Montreal, Canada, 27 - 30 June, 1998. Contact: ISEK Secretariat, Conference Office, McGill University, 550 Sherbrooke St. West, West Tower, Suite 490, Montreal, QC, Canada H3A 1B9, Tel: (514) 398-3770, Fax: (514) 398-4854, Email: isek@UMS1.Lan.McGill.CA, <http://www.mcgill.ca/mco/isek>

July

Fifth International Symposium on the 3-D analysis of Human Motion, 2-5 Jul 1998, Chattanooga, Tennessee, Contact: M. Whittle, PhD, The University of Tennessee at Chattanooga, Michael-Whittle@utc.edu, <http://www.utc.edu/Human-Movement>

11th Conference of the European Society of Biomechanics, 8-11 July 1998, Toulouse, France, Contact: ESB'98, BP 3103, 31026 Toulouse, Cedex, France, Tel: 33 5 61 77 82 84/ 33 5 62 74 83 59, Fax: 33 5 61 31 97 52, Email:

ESB98. @purpan.inserm.fr,
http://esb.purpan.inserm.fr
**The Third Annual Congress of the European
College of Sport Science**, 15-18 Jul 1998,
Manchester, U.K.. Contact: Conference Secretariat,
HIT Conferences, Cavern Court, 8 Mathew Street,
Liverpool L2 6RE UK., Tel: +44 (0)151 227 4423,
Fax: +44 (0)151 236 4829, Email:
ecss@hit1.demon.co.uk

**Symposium of the International Society of
Biomechanics in Sports**. 21-25 July, 1998.
University of Konstanz (Germany). Contact
ISBS'98 Secretariat, Department of Sports Science,
Lehrstuhl Riehle, P.O.Box 5560 D30, 78434
Konstanz / Germany, Tel:+49-7531-883565, Fax:
+49-7531-884221, Email: isbs98@uni-konstanz.de,
**2nd International Conference on The
Engineering of Sport**, 13-17 July 1998, The
University of Sheffield, Contact: Miss A. Staley,
Conference Secretariat, 2nd International
Conference on the Engineering of Sport,
Department of Mechanical Engineering, The
University of Sheffield, Mappin Street, Sheffield S1
3JD, UK. Tel. (+ 44 114) 222 7801, Fax. (+44 114)
275 3671, email: a.staley@sheffield.ac.uk,
http://www.shef.ac.uk/uni/academic/I-
M/mpe/sportseng/

**International symposium on biomechanics of
sports**, 21-25 Jul 21-25, 1998, University of
Konstanz, Germany, Contact: R. Fritsch (chairman
of conference office/ISBS secretariat), University of
Konstanz, P.O. Box D30, D-78457 Konstanz,
Germany, Tel: +49 7531 883565, Fax:+49 7531
884221, http://www.ISBS98.uni-konstanz.de

**International Research Society of Spinal
Deformities**, 28 Jun - 1 Jul, 1998, Burlington,
Vermont. Contact: I.A. Stokes, PhD, Department
of Orthopaedics and Rehabilitation, University of
Vermont, Burlington, Vermont, 05405-0084,
Email:irssd@med.uvm.edu,
http://salus.med.uvm.edu/~irssd/1998.htm

August

**The Third World Congress of Biomechanics: 2-8
Aug 1998**, Hokkaido University, Sapporo, Japan;
Contact K. Hayashi, PhD, Biomechanics
Laboratory, Department of Mechanical Engineering,
Faculty of Engineering Science, Osaka University,
Toyonaka, Osaka 560, Japan; Tel: +81-8-850-6170,
Fax:+81-8-850-6171

VI Emed Scientific Meeting, 8-12 Aug, 1988,
Brisbane, Australia, Contact: C. Jordan, Medical
Engineering & Physics, King's College Hospital,
East Dulwich Grove, London, SE22 8PT, UK, Tel
& Fax: + 44 (0) 181 693 2345

**The Third North American Congress on
Biomechanics**: 14-18 Aug 1998, University of
Waterloo, Waterloo, Ontario, Canada. Contact: S.
McGill, Ph.D., host chair,
http://www.ahs.uwaterloo.ca/nacob98

First Pan-Pacific Conference on Rehabilitation,
29-31 Aug 1998, Guangzhou (formerly known as
Canton), Guangdong, China. Contact: Conference
secretariat Email: rsmtlyam@polyu.edu.hk,
http://www.polyu.edu.hk/panpac

September

**Third Triennial International Hand and Wrist
Biomechanics Symposium**, 9 Sep 1998,
Minneapolis, Minnesota. Contact: F.W. Werner,
PhD, Department of Orthopedic Surgery, SUNY
Health Science Center, 750 E. Adams Street,
Syracuse, New York 13210, U.S.A. Email:
wernerf@vax.cs.hscsyr.edu

Global Ergonomics Conference, 9-11 Sep 1998,
Cape Town, South Africa, Contact: D. McTeer,
Postgraduate Conference Centre, University of
Cape Town Medical School, Observatory 7925,
Cape Town, South Africa,
deborah@medicine.uct.ac.za

**The International IMEKO Conference on
Measurement in Clinical Medicine: "Biomedical
Measurement and Instrumentation" & 12th
International Symposium on Biomedical
Engineering**, 16-19 Sep, 1998, Dubrovnik -
Croatia, Contact: KoREMA, P.O. Box 473, HR-
10001 Zagreb, CROATIA, Tel.: +385 1 61 29
869/938, Fax.: +385 1 61 29 870, Email:
imeko.bmi98@zesoi.fer.hr, http://www.imeko-
bmi98.hr

XIth International Biomechanics Seminar, 18-
19 September 1998, Wroclaw, Poland, Contact:
IBS'98 Secretariat, Academy of Physical
Education, Unit for Biophysics of Motion,
Paderewskiego St. 35, 51-612 Wroclaw, Poland,
Fax: (48 71) 482281, Email: as@awf.wroc.pl,
http://www.awf.wroc.pl/~as/ibs98/

**3rd Combined Meeting of Orthopaedic Research
Societies of USA, Canada, Europe and Japan**,
28-30 Sep 1998, Contact: Hayato Hirotsu, MD,
Shigetomi Health Care Group, 1-1521, Shikenyu,

Moriyamaku, Nagoya, Japan 463. Tel: +81-52-776-2501, Fax: +81-52-776-2508.

Fax: (403) 284-4184, Email: mastroh@acs.ucalgary.ca

November

International Conference on Weightlifting and Strength Training (in conjunction with the World Weightlifting Championships), November 10-12, 1998, Lahti, Finland, Contact: Ms Pirjo-Leena Pitkanen, Conference Coordinator, ConFinnia Ltd, P.O. Box 35, FIN-40351 Jyvaskyla, Finland, Tel: +358-14-603662, Fax +358-14-603727, Email: pitkanen@jyu.fi, <http://www.jyu.fi/wlconference/>
3rd Interdisciplinary World Congress on Low Back- and Pelvic Pain, 19-21 Nov, 1998, Vienna, Austria, Contact: in Europe: European Conference Organizers, P.O.Box 4334, 3006 AH Rotterdam, The Netherlands. Phone +31 - 10- 4133287. Telefax + 31 - 10 - 4148059. Email:

SJCECO@WorldAccess.NL; in the U.S.: University of California, San Diego, Office of Continuing Medical Education, 9500 Gilman Drive, 0617, La Jolla, California 92093-0617, U.S.A. Tel:(619)534 3940. Fax:(619)534 7672

1999

World Congress of Science of Football, 22-26 February 1999 University of Technology Sydney, Australia. Contact: World Congress of Science of Football, PO Box 236, ROSEVILLE NSW AUSTRALIA 2069, Tel: 61 2 9411 4666, Fax: 61 2 9411 4243, Email: Nick@hotelnetwork.com.au
First World Congress of Science and Medicine in Cricket, 14-17 Jun 1999, Newport, Shropshire, Contact: N. Stockill, PhD, Tel: 01952 670185, Fax: 01952 820924, Email: nigelstockill@lsihpc.demon.co.uk
17th International Symposium of Bioemchanics in Sports. 30 Jun - 6 July, Perth Western Australia. Contact: R. Sanders, PhD, School of Biomedical and Sportss Sciences, Edith Cowan University, Joondalup, Western Australia, 6027. Tel: 61 8 9400 5860, Fax: 61 8 9400 5717, Email: r.sanders@cowan.edu.au, Http://weaver.fste.ac.cowan.edu.au/~blaw/sports/isb_s_invitation.html.

ISB99 The University of Calgary, 8-13 Aug, 1999, Contact: M. Stroh, Conference Mgmt. Services, 1833 Crowchild Trail N.W., Calgary, AB, CANADA T2M 4S7, Tel: (403) 220-6229,

Places to "Go"

- ◆NACOB 98
<http://www.ahs.uwaterloo.ca/nacob98>
- ◆ISB '99
www.kin.ucalgary.ca/isb99/
- ◆A public-service site to locate funding resources. Use of the site is free but requires registration.
<http://www.grantsnet.org>
- ◆International Biomechanics Seminar '98
www.awf.wroc.pl/~as/ibs98/
- ◆The proceedings of ispo97, International Society for Prosthetics and Orthotics
<http://www.latrobe.edu.au/www/ncpo/ispo/>

The Top Ten Lies Told by Graduate Students (taken from the Harvard Crimson)

10. It doesn't bother me at all that my college roommate is making \$80,000 a year on Wall Street.
9. I'd be delighted to proofread your book/chapter/article.
8. My work has a lot of practical importance.
7. I would never date an undergraduate.
6. Your latest article was so inspiring.
5. I turned down a lot of great job offers to come here.
4. I just have one more book to read and then I'll start writing.
3. The department is giving me so much support.
2. My job prospects look really good.
1. No really, I'll be out of here in only two more years.

and back by popular demand with new updated material... You just might be a graduate student if...

- you can analyze the significance of appliances you cannot operate.
- your carrel is better decorated than your apartment.
- you have ever, as a folklore project, attempted to track the progress of your own joke across the Internet.
- you are startled to meet people who neither need nor want to read.
- you have ever brought a scholarly article to a bar.

you rate coffee shops by the availability of outlets for your laptop.
 everything reminds you of something in your discipline.
 you have ever discussed academic matters at a sporting event.
 you have ever spent more than \$50 on photocopying while researching a single paper.
 there is a microfilm reader in the library that you consider "yours."
 you actually have a preference between microfilm and microfiche.
 you can tell the time of day by looking at the traffic flow at the library.
 you look forward to summers because you're more productive without the distraction of classes.
 you regard ibuprofen as a vitamin.
 you consider all papers to be works in progress.
 professors don't really care when you turn in work anymore.
 you find the bibliographies of books more interesting than the actual text.
 you have given up trying to keep your books organized and are now just trying to keep them all in the same general area.
 you have accepted guilt as an inherent feature of relaxation.
 you reflexively start analyzing those greek letters before you realize that it's a sorority sweatshirt, not an equation.
 you find yourself explaining to children that you are in "20th grade".
 you start referring to stories like "Snow White et al."
 you frequently wonder how long you can live on pasta without getting scurvy
 you look forward to taking some time off to do laundry
 you have more photocopy cards than credit cards
 you wonder if APA style allows you to cite talking to yourself as "personal communication"

Thanks to Leslie Hiemenz for these submissions

Recipes for Engineers: Chocolate Chip Cookies

Ingredients:
 532.35 cm³ gluten
 4.9 cm³ NaHCO₃
 4.9 cm³ refined halite

236.6 cm³ partially hydrogenated tallow triglyceride
 177.45 cm³ crystalline C₁₂H₂₂O₁₁
 177.45 cm³ unrefined C₁₂H₂₂O₁₁
 4.9 cm³ methyl ether of protocatechuic aldehyde
 2 calcium carbonate-encapsulated avian albumen-coated protein
 473.2 cm³ theobroma cacao
 236.6 cm³ de-encapsulated legume meats (sieve size #10)

To a 2-L jacketed round reactor vessel (reactor #1) with an overall heat transfer coefficient of approximately 100 Btu/F-ft²-hr, add ingredients one, two, and three with constant agitation. In a second 2-L reactor vessel with a radial flow impeller operating at 100 rpm, add ingredients four, five, six, and seven until the mixture is homogeneous. To reactor #2, add ingredient eight, followed by three equal volumes of the homogeneous mixture in reactor #1. Additionally, add ingredients nine and ten slowly, with constant agitation. Care must be taken at this point in the reaction to control any temperature rise that may be the result of an exothermic reaction. Using a screw extruder attached to a #4 nodulizer, place the mixture piece-meal on a 316SS sheet (300 x 600 mm). Heat in a 460K oven for a period of time that is in agreement with Frank & Johnstons's first order rate expression (see JACOS, 21, 55), or until golden brown. Once the reaction is complete, place the sheet on a 25C heat-transfer table, allowing the product to come to equilibrium
Thanks to Julee Kasprisin for this submission

Aging Research and Technology in Space: Top Ten Changes at NASA to Accommodate 76-Year-Old former astronaut John Glenn's Return to Space on the Shuttle Discovery:

10. All important devices now operated by the Clapper.
9. Shuttle's thermostat set at 80 degrees.
8. Shuffle board installed in cargo bay.
7. "Early Bird" specials from Morrison's Cafeteria included on menu.
6. One monitor specifically designated for Matlock.

5. Little bowls of candy scattered randomly about the ship.

4. Top speed of shuttle set at 25 miles per hour.

3. Installed a new bifocal windshield.

2. Space pants now go up to armpits.

and the number 1 change...

1. Left-blinker left on for entire mission.

Thanks to Diane Dobrea for this submission

Life's Little Axioms...

Everyone has a photographic memory. Some don't have film.

Save the whales. Collect the whole set.

A day without sunshine is like, well, night.

On the other hand, you have different fingers.

Change is inevitable, except from a vending machine.

Back up my hard drive? How do I put it in reverse?

I just got lost in thought. It was unfamiliar territory.

When the chips are down, the buffalo is empty.

Seen it all, done it all, can't remember most of it.

Those who live by the sword get shot by those who don't.

I feel like I'm diagonally parked in a parallel universe.

He's not dead, he's electroencephalographically challenged.

He's always late. His ancestors arrived on the June Flower.

You have the right to remain silent. Anything you say will be misquoted, then used against you.

I wonder how much deeper would the ocean be without sponges.

Honk if you love peace and quiet.

Pardon my driving, I am reloading.

Despite the cost of living, have you noticed how it remains so popular?

Nothing is fool-proof to a sufficiently talented fool.

Atheism is a non-prophet organization.

He who laughs last, thinks slowest.

Thanks to Alan Litsky for this submission

Next time you write a letter of recommendation...

Since I last wrote this fellow a letter of recommendation, he has reached rock bottom and has started to dig.

His colleagues would follow him anywhere, but only out of morbid curiosity.

I would not allow this student to breed.

This faculty member is really not so much of a has-been, but more of a definite won't be.

Works well when under constant supervision and cornered like a rat in a trap.

When she opens her mouth, it seems that this is only to change whichever foot was previously in there.

He would be out of his depth in a parking lot puddle.

This young lady has delusions of adequacy.

She sets low personal standards and then consistently fails to achieve them.

This student should go far - and the sooner he starts, the better.

This faculty member is depriving a village somewhere of an idiot.

Thanks to Adelaide Jaffe for this submission

The Thesis Exchange

Editor's note: This newsletter component provides a vehicle through which graduate students can disseminate, reasonably rapidly, the results of their Masters and Doctoral studies to the biomechanics community. These abstracts are intended also to provide impetus for interactive discussions on these topics among members and, thus, may provide valuable feedback to the author. Comments may be directed to the newsletter Editor for inclusion in future issues. The Newsletter Editor assumes no responsibility for being unilingual. Since no one seems to follow the previously published instructions anyway, submissions are received at the Editorial Office in many different forms, some of these forms are acceptable. The Editorial Office is particularly pleased to receive Thesis Abstracts that include data.

IN VITRO IMPACT ATTENUATION CHARACTERISTICS OF EQUINE DIGITS

Joel Lanovaz, MSc

University of Saskatchewan, 1997.

Advisors: L. Glen Watson, PhD and Hilary Clayton, PhD

The process of equine locomotion includes repeated impacts of the hooves with the ground surface. It is thought that, if the impact shock wave which accompanies initial ground contact is not properly attenuated, repeated impacts may lead to degenerative joint disease. In order to better understand what role the structures of the equine digit play in the attenuation of impact shock, an experiment was designed to test the impact characteristics of the equine digit in vitro.

Each of six cadaver equine digits was instrumented with uni-axial accelerometers and a uni-axial strain gauge. The accelerometers were mounted on the distal edge of the lateral hoof wall, the proximal edge of the lateral hoof wall, the dorsal surface of the second phalanx bone, and midway along the lateral side of the first phalanx bone. The hoof mounted accelerometers were oriented along the hoof tubules while the bone mounted accelerometers were oriented along the longitudinal axis of the bone. The strain gauge was mounted on the lateral hoof wall, midway between the two hoof mounted accelerometers, and was oriented along the hoof tubules. Each digit was mounted in a test apparatus designed to simulate impacts with the ground surface. The digits were subjected to several impact trials against a barrier at three different vertical impact velocities simulating a forward trotting velocity range of 2.67 to 4.46 m/s.

The digits in this study showed the expected trends of increasing impact deceleration with increasing impact velocity and decreasing impact deceleration with more proximal measuring locations. The details of the data suggested that, in the in vitro digit, the interphalangeal joints played larger role in peak deceleration attenuation than the hoof wall and a slightly larger role than the soft tissue structures within the hoof wall. The signal frequency data showed that the soft tissue structures within the hoof wall acted as a "low-pass" filter, attenuating higher deceleration frequencies. The hoof wall and the interphalangeal joints showed little frequency attenuation. The data also showed that impact deceleration at the level of the first phalanx could not be easily predicted from hoof wall decelerations.

Overall, the study provided a measure of the attenuation characteristics of the in vitro digit and gives a baseline to enhance the examination of impact attenuation in vivo.

Minutes of the ISB General Assembly Meeting

Wednesday 27 August 1997

Tokyo, Japan

11:20 am to 1:00 pm

The meeting was called to order by President Peter Cavanagh at 11:20 am.

Welcome to Members: Cavanagh welcomed the members and thanked them for taking the time to attend this important general assembly meeting of the society. There were approximately 92 attendees.

Review/Revision of Agenda: The agenda was displayed on an overhead projector and briefly reviewed. There were no changes.

Approval of Minutes of General Assembly Meeting in Jyväskylä 1995: Since the minutes had not been published in the ISB Newsletter, nor were they distributed to the attendees prior to the meeting, it was not possible to approve the minutes. Vaughan (Secretary-General) and Grabiner (Newsletter Editor) were asked to ensure that future minutes of the general assembly meeting were published in the newsletter as a matter of course.

Gift from the American Society of Biomechanics: Bob Gregor, President of the ASB, handed over a cheque for US\$500 to the ISB to use for its development and educational initiatives. Cavanagh thanked the ASB for their generous donation and assured Gregor that the funds would be put to good use.

Treasurer's Report: Wood presented the treasurer's report for 1995-97. Revenue for the two years was AUS\$197,218 and total expenses were AUS\$169,197. The balance sheet as at 30 June 1997 reflected assets of AUS\$95,198. The two members appointed by council to audit the books were Lutz Bauer and Walter Herzog who reported that the books were a faithful and true reflection of the society's business. Wood then presented the budget for 1997-99. John Paul asked why no loans to congress organizers were shown and Wood replied that neither the Tokyo nor Calgary organizers had requested a loan. The budget was proposed by Bob Gregor, seconded by Renato Rodano, and was approved unanimously.

Sponsorship Report: Elliott reported that he had approached 13 companies and had succeeded with five of them: Kistler (US\$5,000 p.a.); Motion Analysis Corporation (US\$2,500 p.a.); Qualisys (US\$2,500 p.a.); Oxford Metrics (US\$3,000 every second year); and Peak Performance (US\$1,500 every second year).

Membership Report: Wood reported that there had been a steady growth in membership over the past year although the number of non-financial members was unacceptably high. He anticipated that quite a few of these would be persuaded to pay their fees at the Tokyo meeting. As at August 1997, the membership numbers were: financial 574 (6 honorary, 468 full, 100 student); non-financial 704 (606 full, 98 student).

New Student Initiatives: Cavanagh presented a plan that had the full approval of council. The objectives were: to increase student participation in the society; to increase student membership in the society; and to retain student members when they graduate such that they become full members of the society. The strategy had six key ingredients: (1) to change the constitution to include a student member on council; (2) to initiate a Matching Dissertation Grant Programme; (3) to initiate a student Congress Travel Grant Programme; (4) to develop an international directory of short study opportunities; (5) to initiate an International Travel Grant Programme; and (5) to initiate a programme to monitor success in achieving the objectives. Over the past two years the Council has worked on the establishment of a financial cushion, mostly through sponsorship from commercial partners. The ISB now has assets of almost US\$75,000. The ISB's goal is not to accumulate funds but to serve members. Over a five year period, 90 students would benefit from the programme and the total to be spent would be US\$174,531. These funds would come from four sources: a dues increase of US\$15 per full member per annum; existing assets; interest from assets; and sponsors. Cavanagh said it would be important to evaluate the impact of the programme to make sure that this initiative had been a good investment. This could be done by measuring: the number of students assisted; the quality of the award winners; the increase in the number of ISB student members; and the number of student members who become full members. The discussion demonstrated considerable enthusiasm for the initiative. Comments included: the supervisor should provide a letter of support (John Paul); there should be matching

support from the host institution for travel (Virgil Stokes); selection criteria must include an emphasis on quality (Gregor); and there must be written commitment from the hosting institution (Rachel Skoss).

Dues Increase Proposal: Cavanagh reported that there had not been a dues increase since 1993. In view of the student initiative (cf. item 8 above), he recommended that the dues be increased from US\$35 to US\$50 for full members (student dues would remain unchanged). Cavanagh proposed the motion, Martyn Shorten was the seconder, and the motion was approved unanimously.

Newsletter Editor's Report: Mark Grabiner reported that four newsletters had been published since he took over the editorship from Graeme Wood. Paul asked that all the important information such as general assembly meeting minutes, budgets, etc. should be published in the newsletter. Cavanagh asked how much longer the newsletter should continue in hardcopy format. Guy Simoneau suggested that there could be a check-off box on the dues renewal notice for those who would not want the newsletter. It was decided to continue with the newsletter in its present format for the foreseeable future.

Working and Technical Groups Report: Vaughan, on behalf of Hubbard, reported that: the computer simulation and footwear groups had just held successful satellite meetings in Tokyo; the footwear group had applied for a change in status from working to technical group and this had been approved by council; the 3D group had held a successful meeting in Grenoble in 1996 and their next meetings were planned for Chattanooga in 1998 and Cape Town in 2000; and the shoulder group had held their first conference in Delft in 1996.

Education Report: Wood, on behalf of Yeadon, reported that the four tutorials had been very well-attended, with over 200 registrants. After paying off the printing and administrative costs, a profit of approximately AUS\$2,000 was anticipated.

Informatics Report: Ton van den Bogert reported that there were two main areas of activity: the ISB's World Wide Web homepage; and the BIOMCH-L listserver. The software and data on the homepage had proved very popular and he felt that this was an important service to students. The number of BIOMCH-L subscribers now stood at 3200. Stokes said that he believed some services (such as tutorial lecture notes) should only be available to ISB members. Van den Bogert agreed but said that for the time being the homepage was open to any interested person.

Affiliated Societies Report: Sandra Olney reported that there had been one request for affiliated membership and it was from the Formosan Society of Biomechanics. She proposed that the ISB accept their application, Brian Davis was the seconder and the motion was approved unanimously. Their secretary general, Fong-Chin Su, thanked the ISB members for their support. He also said that a link to their homepage could be found on the ISB homepage, and he was pleased to report that 21 papers at the Tokyo congress came from Taiwan. Cavanagh thanked Olney for all her hard work on behalf of the ISB over the past six years that she had served on council.

Awards Committee Report: Zernicke, on behalf of Savio Woo, reported that there had been an excellent response for all the awards. The committee was still hard at work and the final announcements would be made at the banquet. Cavanagh announced that Paavo Komi had been selected for, and had accepted, the Muybridge Medal award for ISB99.

Publications Report: Zernicke reported that three papers from the ISB93 conference in Paris had appeared in the Journal of Biomechanics and a fourth in the Journal of Applied Biomechanics. Having learnt from the problems with these publications, the papers from ISB95 in Jyväskylä had been more expeditiously handled and seven papers had recently appeared in the Journal of Biomechanics.

XV ISB Congress (1995): Komi gave a very brief report and said that the spirit of ISB95 lived on among the local team in Jyväskylä. There had been 680 participants, 499 papers and the finances had broken even. A few abstract books were still available for sale.

XVI ISB Congress (1997): Cavanagh said that it would be more appropriate for the local organizers to provide the full details at the closing ceremony in two days' time.

XVII ISB Congress (1999): Guenter Rau reported that the Calgary team were already well-advanced in their preparations. He had visited them in 1996 and felt that they had great facilities and a well designed programme. Zernicke provided a very brief report and said that he would be giving a slide show at the closing ceremony.

New Council Elections Report: Zernicke reported the new executive was as follows:

President-elect: Kit Vaughan

Council Members: Leendert Blankevoort

Peter Brüggeman

Brian Davis

Bruce Elliott

Mark Grabiner

Keijo Häkkinen

Toshio Moritano

Mary Rodgers

Gisela Sjøgaard

Ton van den Bogert

Cavanagh then thanked the outgoing council members for all their efforts over the years: Ron Zernicke (12 years), and Sandra Olney, Alf Thorstensson, Mont Hubbard, Savio Woo, and Fred Yeadon (all six years).

21. **Future Initiatives:** Rau thanked Cavanagh for his efforts as President of the society. He felt it was a very good sign that so many past presidents of the ISB were still active participants in the scientific life of the society. Rau said that he believed in quality and he was sure that the student initiative programme would go a long way to support this. He felt that biomechanics was a science in transition, from a phenotypical to a more genotypical approach. The field covered broad areas, from human movement and measurement, to modelling, morphology, cellular and microstructural studies, and protein and ion channels. There were new technologies of which we should be aware (e.g. cellular engineering in cartilage repair) and we should bring these to the forefront of biomechanics. Rau said that he wanted to encourage joint sessions with other societies (e.g. ISB council would be holding its meeting in Montreal in conjunction with ISEK next year) and he expressed his excitement about the next two years. He said he looked forward to the members' support and he encouraged them to contact him with their ideas.

Other Business: W. Erdmann asked if it would be possible to take a photograph of all past ISB presidents as well as the current council. Dick Nelson also asked anyone who had appropriate material for the special awards at the banquet to contact him.

There being no further business to discuss, the meeting adjourned at 1:00 pm.

DIRECTORY of ISB EXECUTIVE COUNCIL MEMBERS

(Officers are listed on the cover)

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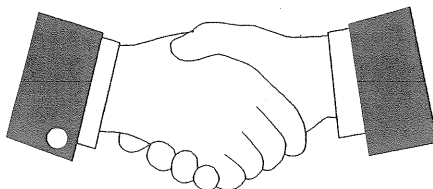
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EDITOR'S NOTE

The ISB Newsletter is published quarterly: February-March (Spring); May-June (Summer); August-September (Autumn), and November-December (Winter). There may be alternative printing schedules that coincide with unbelievable errors. Deadlines for material and articles are the first day of each first named month, except in the alternative schedule in which there are no deadlines or simply nothing will be accepted. The Newsletter is mailed to members whenever we can get to it except, of course on the alternative schedule which is always on time. Members are encouraged to submit just about anything they would like to relate to the biomechanics community. The content of the Newsletter does not necessarily reflect the philosophy and opinions of the ISB but may reflect the mood of the Editor. Naturally, serious items such as *Letters*, *Special Articles*, *Affiliate Society News*, *Laboratory Features*, *Reports*, or *Announcements of Meetings, Conferences, and Jobs Available*, *Reviews* of relevant conferences and other serious biomechanics-related information is desirable. *Thesis Abstracts* can be published. Thesis abstracts should provide an Introduction that includes the rationale and hypotheses of the study, description of the methods, the key results, and important conclusions. The title of the work student's name, department and institution, the degree earned and the conferring institution and supervisor's name should also be provided. Clearly though, no one actually does this but its important to have guidelines nevertheless. Material may be submitted electronically or on a computer disk as a text-only file, and must be in some form of English.

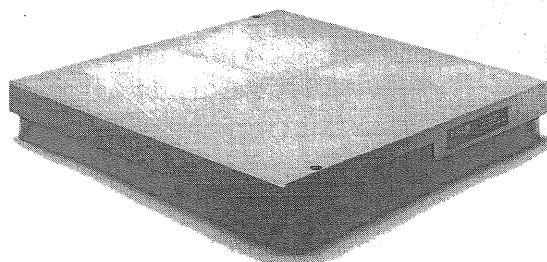
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