



# 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; Japanese Society of Biomechanics; Korean Society of Sport Biomechanics; Polish Society of Biomechanics; Russian Society of Biomechanics; Société de biomécanique (France).

## From the President- Peter Cavanagh

Biomechanics: Has it come of age?

There comes a point in the development of every scientific sub-discipline when it can be said to have clearly and demonstrably come of age. This month, I want to spend a few minutes of your time considering whether or not the science of Biomechanics has come of age.

The evidence for maturation probably depends on whether the discipline is classified as a basic or applied science - and Biomechanics certainly has elements of both. In an applied science, evidence might come in the form of a particular technology, well substantiated by theory, that has made its way into everyday life (such as fiber optic communication) or into standard medical care (such as MRI). In a basic science, the evidence might be some well recognized contribution to the body of knowledge that deepens our understanding of the human condition (such as the human genome project) or to some phenomenon that was previously unknown (such as reasons for the appearance and disappearance of species during evolution).

The history of our field is relatively brief. The names of the pioneers - Braune and Fisher, Wolff, Bernstein, Dempster, Sherrington et al. - are well known to us all, yet one might argue that they are not on the tip of the tongue of the average "scientist on the street" - as, for example, the names of Watson and Crick, Salk, and Leaky might be.

So what evidence is there for the maturation of Biomechanics? The answer will depend both on your view of the world and, no doubt, on which branch of this multifaceted field you are considering. Let me pose a few challenging questions related to the different areas of interest to the ISB that I hope will provide some debate on this issue:

Biomechanics as a Discipline: Have we progressed beyond the point where Biomechanics could be said to be an array of techniques in search of a problem?

Orthopaedic Biomechanics: Has Biomechanics made a difference in the treatment of bone and joint diseases and in preventing the burden of this group of diseases? Is surgical practice different today because of Biomechanics? Do we now have a clear understanding of the mechanics of hard and

soft tissues such that future developments will be in the nature of refinements to present theory?

Functional Anatomy: Have we added markedly to the understanding of human and animal function beyond the "armchair" Biomechanics of the early and mid 20th century?

Rehabilitation Biomechanics: The perennial questions here are: -Is gait analysis useful in the assessment of locomotor function? Does it change the outcome for the patient? Also, are the treatments currently being used in rehabilitation firmly grounded in theory and experiment developed by the science of Biomechanics? Have advances in prosthetic and assistive technology been led by scientists or practitioners?

Sport Biomechanics: Is sports equipment better and safer than it was 20 years ago? Is the performance of sport better and safer today because of the involvement of sport biomechanists? Have technical advances been made by athletes and coaches or have they been made by scientists?

Ergonomics: Is the workplace safer and are there fewer injuries today as a result of the efforts of industrial biomechanists? Has Biomechanics had an impact on policy and job training?

Medical Biomechanics: as Biomechanics contributed to a better understanding of organ function and to successful organ replacements which improve and extend life?

Electromyographic Kinesiology: Has Biomechanics deepened our understanding of neuromuscular function and disorders and has this knowledge made its way into practice? Are most surgeons aware of findings regarding muscle mechanics and do they apply this knowledge during reconstructive procedures?

Motor Control: Do we yet have a clear understanding of the manner in which voluntary movements are controlled and has Biomechanics made a difference? Has dynamical systems theory really made a contribution? Has the evaluation and treatment of movement disorders benefited from the results of scientific study? Have

we made an impact on reducing falls in the elderly?

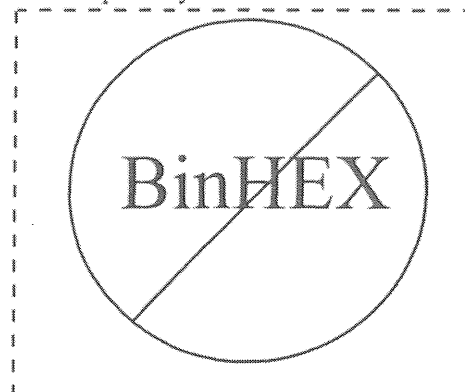
The debate over maturation of our discipline has a number of purposes. On one level, it gives each biomechanist pause for thought to consider if her or his contribution is appropriately directed. We could all apply our scientific energies in an almost infinite number of directions, and it is worthwhile to occasionally stop and ask ourselves "Is this the most important contribution that I can make?". On another level, it is more than simply an introspective or intellectual exercise. In a recent issue of Science (vol 272, 19 April 1995, 342-343), the draconian cuts in a number of graduate programs at the University of Rhode Island in the U.S. was chronicled. As has happened recently at so many universities throughout the world, programs thought to be less than pivotal have been closed - and at URI, this included some "giants" of the academic scene such as statistics, geology, and industrial engineering. In the present economic climate, it behooves us to examine our own place and purpose before someone else does it for us! A third reason for such reflection is that it has the potential to define a research agenda for the future.

Let me know by Email ([prc@psu.edu](mailto:prc@psu.edu)) your views and examples of how Biomechanics has made a difference. You might also have more compelling criteria against which we should judge ourselves. I will post a summary of your views on BIOMCH-L and on the ISB Web page (<http://www.kin.ucalgary.ca/isb>). This could turn out to be a useful document for a number of purposes: it will describe where we have been, where we are, and where we would like to be.

**From the Editor - Mark Grabiner**

As a middle-aged, quickly graying man with a rapidly changing lean body mass:other stuff ratio, I should have realized that the image of me in a Finnish sauna may have offended some Newsletter readers. After all,, it offends me every morning. In any case, in response to the one individual who felt strongly enough to voice a suggestion that the newsletter is no place for references to [my] nudity, I must formally announce that I HAVE REMOVED YOUR NAME FROM THE MAILING LIST, MOM! This issue includes a number of new items, some of them will be irregularly occurring, others will appear from time to time. It is quite

encouraging that I have received several contributions from members and Maarten Bobbert continues his efforts to organize Newsletter materials from a distant time zone. I would request of any members interested in sending to me items for the newsletter and who use Macs that the items be submitted as text files. As a reminder, please cut out the following on the dotted line and place it in a prominent spot in your office.



I am looking forward to receiving more items from the membership. Although thus far there is only an "n of 2", it may be possible to detect a negative correlation by which an increase in Newsletter items submitted by members is associated with a decrease in the length of the Editor's column.

**From the Council- Ron Zernicke, Past President**

**CALL FOR NOMINATIONS**

The Nominating Committee of the International Society of Biomechanics, herein, solicits nominations of candidates who will stand for election for the 1997 ISB Executive Council. In addition, the Committee asks for nominations for President-Elect of the ISB 1997. Nominations should be sent (mail, fax, or Email) to the Chair of the Nominating Committee:

Ron Zernicke, Ph.D.  
ISB Past-President  
University of Calgary  
Department of Surgery  
3330 Hospital Drive NW  
Calgary, AB  
CANADA T2N 4N1  
TEL: +403 220 8666  
FAX: +403 270 0617  
Email: [zernicke@acs.ucalgary.ca](mailto:zernicke@acs.ucalgary.ca)

Individuals nominated for the Executive Council must be members of the ISB, in good standing, and be willing to serve on the Council; thus, if you wish to nominate someone, please contact him or her in advance to be sure that your nominee is willing to run. When the nomination is sent to Dr. Zernicke, please include a short cover letter and a copy of the nominee's curriculum vitae.

Nominations are also invited for ISB President-Elect. This person must have served (or be currently serving) on the ISB Executive Council. Again, please contact your nominee in advance to be sure that he or she will allow his or her name to be placed in nomination. Send a brief cover letter along with the curriculum vitae of the nominee to Dr. Zernicke.

These are important leaders in the ISB, and input from the membership is vital for helping forge the future directions of the Society.

Take some time to think about these nominations, and then act.

#### **From the Council- Ton van den Bogert**

LINKING TO YOU FROM THE ISB WEB PAGE  
ISB member names, together with academic and Email addresses are soon to be added to the ISB Web page. If, for any reason, you would like to be *omitted* from this list, please send an Email message with the title line "No ISB Web listing please" to Ton van den Bogert (bogert@acs.ucalgary.ca).

#### **From the ISB '97 Organizers**

##### **XVIth Congress Update**

The XVIth Congress of the International Society of Biomechanics will be hosted by the University of Tokyo in Tokyo, August 25-29, 1997 and held at the Tokyo Metropolitan University located at west part of Tokyo. Please mark the following dates:

Second announcement and call for papers:  
August 15, 1996

Deadline for abstract submission: December 15, 1996 Note that abstract submission will be possible electronically!!

Notification to authors: March 15, 1997

Deadline for preferential fee: April 15, 1997

Deadline for registration by mail: June 15, 1997

The Congress Secretariat can be reached at the following address. Dr. Senshi Fukashiro / Dr. Yasuo Kawakami. Tel/Fax: +81-3-5454-9494, Email: isb97@idaten.c.u-tokyo.ac.jp <http://idaten.c.u-tokyo.ac.jp/ISB97/isb97.html> The page will be updated periodically. You can send your questions and comments through this page.

With Best Regards,

Mitsumasa Miyashita and Tetsuo Fukunaga,  
Congress Chair  
Kando Kobayashi and Tatsuyuki Ohtsuki,  
Congress Vice-Chair  
Senshi Fukashiro and Yuichi Hirano, Secretary  
General

**The Standard Bearer:** Ge Wu, Chair, ISB Standardization and Terminology Committee

Progress on the ISB standardization activity  
Since November 1993, the ISB Standardization and Terminology Committee has continued its journey to propose the standards for defining joint coordinate systems of various joints. Nine subcommittees involving a total of 25 people have been established and, so far, seven proposals have been completed. They include: ankle, spine, shoulder, hand and wrist, TMJ, whole body and elbow. Some of these proposals have been published in previous ISB Newsletters, and all of them are now available on the ISB Home Page. Please note that the proposal for the elbow joint is our newest addition.

I would like to take this opportunity to thank each of the committee members for contributing their time and expertise to this standardization effort. Also, I would like to encourage ISB members to visit the Standardization Page in the ISB Home Page and provide your view point on these proposals. Your comments, suggestions, and critiques will make a difference. Please direct your comments and requests for copies of the proposals to [GWU@ECL.PSU.EDU](mailto:GWU@ECL.PSU.EDU).

#### **Job Market**

**Assistant Professor (Ph.D.)** position with emphasis in the biophysical aspect of movement available September 1, 1996. Specialization in biomechanics

or related area is required. Teaching competencies in Sports Medicine/Athletic Training and NATABOC (ATC) certification preferred. Send letter of application, vitae, official transcripts, three current letters of reference to Dr. Barton Buxton, Biophysical Search Committee Chair, Department of Kinesiology, Georgia Southern University, LB 8076, Statesboro, GA 30460-8076. Tel: (912) 871-1820, Fax: (912) 681-0381.

**Assistant Professor (Ph.D.).** The Department of Physical Therapy at Eastern Washington University has a position available immediately for a tenure-track, 9-month, full-time faculty member in an entry-level Master of Physical Therapy program. The qualified candidate will have clinical expertise, eligibility for physical therapy licensure in Washington State and a commitment to entry-level graduate education. The successful candidate is expected to develop a research focus in his or her chosen area and will teach biomechanical analysis of movement, assist in research courses, and assist in other courses as needed. Contact: D.W. Vander Linden, PhD, PT, Department of Physical Therapy, Eastern Washington University, Cheney, WA 99004, Tel: 509-623-4332, Fax: 509-623-4334, Email: dlinden@ewu.edu.

**Visiting Assistant Professor or Instructor (Ph.D.):** The Department of Exercise & Movement Science at the University of Oregon is opening a search for a biomechanist. This position is a one-year academic appointment eligible to apply in the Fall of 1996 for the anticipated tenure-track position. Primary responsibilities will be teaching undergraduate and graduate courses in biomechanics, participate on master's thesis and comprehensive exam committees, as well as contribute to the research within the department. Send letter of application, curriculum vita, a sample of scholarly work, and the names of 3 references (with address and phone numbers) to J.L. Jensen, Ph.D. Search Committee Chair, Department of Exercise and Movement Science, 1240 University of Oregon, Eugene, OR 97403-1240, (541) 346-2687; Fax: (541) 346-2841; E mail: jlj@oregon.uoregon.edu

**Assistant Professor (Ph.D.)** Lyndon State College Lyndonville, Vermont (<http://www.lsc.vsc.edu>) Doctorate in biomechanics or exercise physiology (may appoint A.B.D. with active pursuit of doctorate), or Terminal Degree in athletic training (Master's degree in athletic training or related field

combined with NATA certification and at least three years of significant experience in the field prior to appointment to the Vermont State Colleges). Send letter of application, CV, names and phone numbers of three references to Chair, Allied Health Sciences and Physical Education Faculty Search Committee, B. Berryman, Ph.D., Dean of Academic Affairs, Lyndon State College, Lyndonville, VT 05851.

**Technical Director (Ph.D.):** The University of Kansas Medical Center's Center on Aging is looking to fill the position of Technical Director of the Human Performance Laboratory. The focus of this research laboratory is on physical performance as it relates to human aging, and is equipped to study kinematics, kinetics, electromyography, strength, and endurance. Contact. P. Duncan, M.D. or M. Hughes at: University of Kansas Medical Center, Center on Aging, 5026 Wescoe Pavilion, 3901 Rainbow Blvd., Kansas City, KS 66160, Tel: (913) 588-1468, Fax: (913) 588-1417, Email: mhughes@kumc.edu or pduncan@kumc.edu

**Director of Gait Laboratory (M.S.):** The qualified candidate should have a Masters degree in biomedical or mechanical engineering, preferably at least five years of experience specializing in gait and motion analysis and 2 years of management experience. Send resume and salary requirements to Shriners Hospitals for Crippled Children, Human Resources Department, 3100 Samford Avenue, Shreveport, LA 71103

#### Undergraduate, graduate, and Post-Doctoral Opportunities

**Graduate Assistantship (Ph.D.):** The department of Functional Anatomy of the Academic Centre for Dentistry Amsterdam (the Netherlands) has an immediate opening for a graduate student with a MS, preferably in biomechanical engineering, to work toward a Ph.D. on the subject of Mechanical loading of the human temporomandibular joint. The purpose of this study is to describe the geometry and mechanical properties of the temporomandibular joint and to construct a (finite element) model of this joint. For more information on this project please contact: T.M.G.J. van Eijden, Ph.D., Department of Functional Anatomy, ACTA, Meibergdreef 15, 1105 AZ Amsterdam, the Netherlands, Tel: +31 20 5665374, Fax: +31 20 6911856, Email: T.M.vanEijden@amc.uva.nl

or J.H. Koolstra, Ph.D., Tel: +31 20 5665370, Fax: +31 20 6911856, Email: J.H.Koolstra@amc.uva.nl

**Graduate assistantships (Ph.D.):** The Center for Locomotion Studies (CELOS) at Penn State University is interested in receiving applications from individuals with masters degrees for graduate assistantships starting in August 1996. Students will pursue a Ph.D. degree with specialization in Locomotion Studies and Biomechanics. Current research interests at the Center include foot and lower extremity biomechanics, finite element modeling of the foot, posture and gait in the elderly, biomechanical issues related to the neuropathic complications of diabetes, and exercise in microgravity. Further information may be obtained by contacting L. Mulfinger, Ph.D. at The Center for Locomotion Studies, Room 10 IM Building, University Park, PA 16802. Tel: 814-865-1972, Email: lxm14@psu.edu.

**Ph.D. studentship:** In the Dept of Human Anatomy and Cell Biology at The University of Liverpool, UK on the mechanics of the hip joint in early Homo. Work involves computer simulations using musculographics software on a Silicon Graphics Reality Station. Candidates with a strong background in computing (including C programming) or in biomechanics and a Honours degree (Class 2.1 or above) should send C.V and a letter of intent (either by Email or post) to Dr Crompton. Dept Human Anatomy and Cell Biology, University of Liverpool, Liverpool L69 3BX, U.K. Email: rhcromp@liv.ac.uk, Tel: +44 (0) 151 794 5500, **(available to UK or EC residents)**

**Postdoctoral Fellowship:** The appointee will work in the new Motion Analysis Laboratory in the Department of Health Sciences at the University of East London (UK) and will be responsible for the day to day running and organization of the Laboratory. The primary emphasis of the work in this Laboratory is the study of the effects of musculoskeletal injury, disease and rehabilitation on human movement. Contact M. Morrissey, Ph.D. Tel: 0181 849 3629, Fax 0181 849 3625, Email: m.c.morrissey@uel.ac.uk

**Biomechanics/motor control (M.S., Ph.D.)** The opening, six months plus a possible 6 month extension, is in support of the Human Movement and Coordination Laboratory at NASA Johnson Space Center. The incumbent will be involved in the analysis of kinematic and EMG data pertaining to postural, and locomotor control in relation to

issues concerning performance after space flight. Contact T. Jones, Ph.D. Division of Space Life Sciences, 3600 Bay Area Boulevard, Houston, Texas 77058. Email: jones@lpi.jsc.nasa.gov, or C. Layne, Ph.D., Tel: (713) 212-1485, Email: layne@sdmail.jsc.nasa.gov

**Postdoctoral Fellowship:** A one-year position is available in the Orthopedic Biomechanics Laboratory at Boston's Beth Israel Hospital for an individual with a Ph.D. in engineering and research skills in biomechanics. The successful applicant will work primarily in the area of joint injuries and reconstruction but will also collaborate on projects in the other research areas of the laboratory. The fellow must be a US citizen or hold permanent residency in the US. Contact: B. Myers, Ph.D., Interim Director, Orthopedic Biomechanics Laboratory, Beth Israel Hospital RN-115, 330 Brookline Ave., Boston, MA 02215, e-mail: brm@bihobl2.bih.harvard.edu

**Postdoctoral Fellowship:** A Post-doctoral position is available in human motor control studying the problems of muscle and joint redundancy. The studies will combine experimental and modeling approaches. Candidates with experience in neurophysiology, biomechanics and modeling are preferred. The position is available immediately. Send full CV to: A.G. Feldman, Ph.D., Research Centre, Rehabilitation Institute of Montreal, University of Montreal, 6300 av. Darlington, Montreal, Quebec., CANADA H3S 2J4, Tel: (514) 340-2085 local 2098, Fax: (514) 340-2149, Email: Feldman@ere.umontreal.ca

**Postdoctoral Fellowship:** The Departments of Mechanical and Aerospace Engineering, and Orthopaedics, at Case Western Reserve University are seeking a post doctoral research assistant interested in pursuing advanced work on cartilage biomechanics. The ideal candidate would be familiar with modern experimental and theoretical methods used in soft tissue biomechanical research. Send a resume and the names of three references to: Prof. Joseph M. Mansour, Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH 44106.

**Graduate Assistantships (M.S., Ph.D.):** A number of assistantships are anticipated to be available in Applied Biomechanics, Division of Exercise Science at the University of Toledo for the Fall of 1996. For more information contact: C.W.

Armstrong, Ph.D. Tel: 419-530-2753, Fax: 419-530-4759, Email: carmstr@uoft02.utoledo.edu

**Postdoctoral Fellowship:** The Mayo Clinic Department of Physical Medicine and Rehabilitation and the Orthopedic Biomechanics Laboratory announces a postdoctoral research opportunity sponsored by the National Center for Medical Rehabilitation Research (NCMRR). The research begins with current Biomechanics Laboratory projects such as gait, wheelchair kinematics analysis and progresses to independent self-directed research. Areas emphasized in this track include gait and balance, upper and lower, extremity joint mechanics, kinematics and kinetics, musculoskeletal, rehabilitation and movement disorders. Contact: M.M. Merten, M.D., Mayo Clinic Department of Physical Medicine and Rehabilitation, 200 First Street, SW, Rochester, MN 55905, Tel: (507) 284-2946, Fax (507) 284-0920.

**Postdoctoral Fellowship:** The Orthopaedic Research Laboratories at Rhode Island Hospital, in affiliation with the Medical School and the Division of Engineering at Brown University, are seeking a post-doctoral research assistant to study either the mechanisms and prevention of sports injury through basic science research, primarily impact mechanics or Biomedical Imaging to track skeletal joint motion in vivo using feature registration. Send a letter describing your interests and goals, a C.V., and a list of three references to J.J. Crisco, Ph.D., Director Bioengineering Laboratory, Orthopaedic Research, SWP-3, Rhode Island Hospital, Providence, RI 02903, Tel: 401-444-4231, Fax: 401-444-4559, Email: joseph\_crisco\_iii@brown.edu

**Postdoctoral Fellowship:** A postdoctoral position is available at the University of California (UCSF/UCB), Ergonomics Laboratory in Richmond, CA. The Ergonomics Laboratory (and the position) is primarily involved with Upper Extremity Posture and Motion Measurement. The main goal of the position is the development of a posture predicting model for the upper extremity during computer use. Funding is presently available for one year, beginning in May/June. Reply to this Email address or to D. Rempel, M.D. (rempel@itsa.ucsf.edu).

**Biomechanics (B.S., M.S.):** KRUG Life Sciences Inc. has an opening in the Human Movement and Coordination Laboratory at NASA Johnson Space Center. The position primarily involves study of

postural, locomotor, & manual control during and after space flight. Applicants need extensive experience with kinetic and kinematic measurement of human performance, report writing, experimental design, data collection, analysis, and mathematical modeling of performance characteristics. The incumbent must be physically able to assemble/disassemble and move equipment components up to 25 kg; run a 9.6 second 100 m, able to physically operate computers; and be available to travel to other US and overseas locations for data collection. Ability to acquire CPR certification will also be necessary. Send CV, references, and salary expectations indicating position #96-R26-02 to:

103354.2343@compuserve.com, or call Human Resources at 713-212-1273 for more information.

**Biomechanical Engineer (B.S., M.S.):** A two year (minimum) position is available with the Musculoskeletal Research Laboratory within the Department of Orthopaedics at the Hershey Medical Center Campus of the Pennsylvania State University. Primary responsibilities will be to conduct mechanical tests aimed at material/tissue characterization as well as implant/construct evaluation. Contact C. Jacobs, M.D., Department of Orthopaedics, P.O. Box 850, Hershey Medical Center, Hershey, PA 17033, (717) 531-4819

**Biomechanicist/Physical Therapist (M.S. or B.S.)** The Santa Rosa Biomechanics Laboratory has an opening for a full-time Biomechanicist/Physical Therapist. The successful candidate will have a Master's degree in Biomechanics, Kinesiology, Bioengineering, or related field; an undergraduate or Master's degree in Physical Therapy with current or potential licensure in Texas; and a certification for the performance of fine-wire EMG analyses. Experience is desired in gait analysis and 3D kinematic and kinetic biomechanics of human movement. Strong verbal and written communication skills are needed, as are computer literacy, an ability to interact well with patients and families. Send a CV, a brief statement of your interest in Biomechanics to F.L. Buczek, Jr., Ph.D., Director, Biomechanics Laboratory Santa Rosa Outpatient Rehabilitation Center for Children and Adults, 2701 Babcock Road, San Antonio, Texas, 78229, Tel:(210) 705-6597, Fax: (210) 705-6567, Email: fbuczek@srhcc.org

**Graduate Assistantship:** The Ergonomics Laboratory at North Carolina State University

announces the availability of several Graduate Research Assistantships for the Fall of 1996. The Ergonomics Laboratory is located in the Department of Industrial Engineering at North Carolina State University. For more information visit WWW site:

[http://www.eos.ncsu.edu/eos/service/ie/research/ergolab\\_res/](http://www.eos.ncsu.edu/eos/service/ie/research/ergolab_res/) or send Email to G. Mirka, Ph.D., [mirka@eos.ncsu.edu](mailto:mirka@eos.ncsu.edu) or C. Sommerich, Ph.D., [sommeric@eos.ncsu.edu](mailto:sommeric@eos.ncsu.edu)

**Graduate Assistantship (M.S.):** The Department of Human Kinetics at the University of Wisconsin-Milwaukee has one year, renewable graduate assistantships available August. The Department of Human Kinetics offers a Master of Science degree program emphasizing research in the human movement sciences. Position #1: Biomechanics Teaching Assistant, Contact: P. Schot, Ph.D., Email: [pschot@csd.uwm.edu](mailto:pschot@csd.uwm.edu). Position #2: Motor Control Research Assistant. Contact B. Hart, Ph.D. Email: [hart@csd.uwm.edu](mailto:hart@csd.uwm.edu).

**Gait Laboratory Kinesiologist (B.S.):**

The Springfield Unit of Shriners Hospitals is seeking a Kinesiologist in the Gait Analysis Laboratory. Responsibilities will include involvement in the clinical evaluation of patients; the synthesis of kinematic, kinetic, electromyographic, and clinical data into a comprehensive report used for treatment decision-making; and involvement as part of a developing research team. Candidates should have at least two years of experience working in a clinical gait or biomechanics laboratory. Send a resume and letter of intent to J. Kocot, Director of Human Resources Shriners Hospital - Springfield Unit 516 Carew Street, Springfield, MA 01104

**Product Support (B.S. or M.S.):** Qualisys, Inc. has a position available in its Product Support Group. The candidate must have an undergraduate degree in engineering; preferably mechanical but a graduate degree is preferred. Experience with computer programming, software application support, and video technology is required. The position will be located at Qualisys headquarters in Glastonbury, Connecticut. Contact Rudolph Gatti, Qualisys, Inc., 41C New London Tpke., Glastonbury, CT 06033, Email to: [Qualisys@AOL.com](mailto:Qualisys@AOL.com)

**Technical support (B.S.):** Oxford Metrics Inc. has an opening for a Technical Support person in the Oxford Metrics office at Baton Rouge, Louisiana.

Candidates should have scientific/mechanical/physical aptitude, technical confidence, communication skills, experience with MS and LANs. Preferably some experience in clinical biomechanics or motion capture for animation (ideally with VICON). Contact: Oxford Metrics Inc., 9441 Common Street - Suite C, Baton Rouge, Louisiana, 70809-1463 USA., Tel:+1 504 928-0616, Fax:+1 504 928-0261, Email: [support@metricsnet.com](mailto:support@metricsnet.com)

**Engineer (B.S., M.S.):** Automotive supplier of seating in Michigan has opportunity to become "seat comfort research engineer. Two years automotive experience with a knowledge of foam, statistics and vibration. Contact R. Millman, Ph.D., Autocruit-Tel: 810-357-5373, Fax:810-357-5379, Email: [autojo19@autojo19.rabbit.net](mailto:autojo19@autojo19.rabbit.net)

**Gait Lab Position (B.S. or M.S.):** The Shriners Hospital, Intermountain Unit in Salt Lake City, Utah has an opening for a full-time kinesiologist with a specialization in gait. Candidates for this position should have a B.S. degree in kinesiology (M.S. preferred) and experience working in a gait or biomechanics laboratory. Send a statement of interest and their resume to J D'Astous, M.D., Medical Director Gait Laboratory, Shriners Hospital, Intermountain Unit, Fairfax Road at Virginia Street, Salt Lake City, UT 84103 or contact D. Nicholson, Ph.D., E-mail: [DNICHOLS@PHTH.HEALTH.UTAH.EDU](mailto:DNICHOLS@PHTH.HEALTH.UTAH.EDU).

**Unspecified:** The University of Ballarat, School of Human Movement & Sport Sciences(Aquatics Research Centre) is seeking a Research Technician to assist with design, construction and maintenance of research equipment, and to assist with the conduct of research projects. Research is in the area of competitive swimming, water safety and lifesaving. An initial twelve month appointment is available, at Australian ~\$35k\$. Formal position description and application details from: Wes Walker, Director, Human Resources Services Email: [WCW@Ballarat.edu.au](mailto:WCW@Ballarat.edu.au).

**Really unspecified:** A silent client (hey that rhymes!) of Motion Analysis Corporation is seeking an engineer immediately to join their engineering and sports equipment design department. The ideal candidate will have a engineering/biomechanics design background and personal experiences in specific sports skills that may include swinging a cricket or baseball bat, golfing, and or hammer throwing in track and field, and experiences in foot



pressures, foot to shoe forces, product design, etc. All responses will be forwarded to the and will contact the candidates directly. Send resumes to biosales@macorp.com

**Upcoming Meetings, Workshops, Etc.**

*June*

**Biomechanics and Neural Control of Movement IX- Neuro-Mechanical Control: Interaction Between Neural Circuits and Biomechanics**, 1-6 Jun 1996, Deer Creek Resort and Conference Center, Mt. Sterling, Ohio, Contact: Engineering Foundation Conferences, 345 East 47th Street, New York, New York 10017, 212-705-7836 Fax: 212-705-7441, E-mail: engfnd@aol.com

**Interface of Biomechanics and Cell Biology in Orthopaedics**, 6-8 Jun 1996, Johns Hopkins Medical Institutions, Contact: Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner 20, 720 Rutland Ave, Baltimore, Maryland, 21205-2195, Tel: (410)-955-2959, Fax: (410)-955-0807.

**Biomechanics: What is its contribution to prevention and treatment of low back pain?** 25 June 1996, a Workshop to be held at the University of Vermont just before the International Society for Study of the Lumbar Spine (ISSLS) meeting in Burlington. Contact: I. Stokes, Ph.D. (Coordinators), Email: stokes@med.uvm.edu.

**14th International Symposium of Biomechanics in Sports**: 25-29 Jun 1996 Funchal, Portugal. Contact Dr. J. Abrantes, ISBS'96 Chairman, Laboratório de Biomecânica, Faculdade de Motricidade Humana, Universidade Técnica de Lisboa, 1499 Lisboa Codex, Portugal, Tel: 351-1-4149131/4196777, Fax: 351-1-415248.

**First International Summer School on 3D analysis of human movement**, 27-30 Jun 1996, Lyon, France, Contact Dr. J. Dimnet, Labatoire de biomechanique du mouvement, Centre de mecanique, University Claude Bernard, 43, Bd du 11 Novembre 1918 69622 Villeurbanne cedex, France, phone: +33-72 44 80 87, Fax: +33-72 44 80 54, or Dr. P. Allard, Centre de recherche, Sainte-Justine Hospital, 3175 Cote St-Catherine, Montreal, PQ, H3T 1C5 Canada, Tel: +1 514 345-4740 Fax: +1 (514) 345-4801, E-mail: allardp@ere.umontreal.ca

**Fourth International Symposium on 3D analysis of human movement**, 30 Jun - 3 Jul 1996, Grenoble, France, Contact Dr. J. Bianchi, Universite Joseph Fourier, BP 53-X, 38041 Grenoble, France, Phone: +33-76 51 46 94, Fax: +33-76 51 44 69, E-mail: bianchi@pop.ujf-grenoble.fr., or Dr. P. Allard, Centre de recherche, Sainte-Justine Hospital, 3175 Cote St-Catherine, Montreal, PQ, H3T 1C5 Canada, Tel: +1 514 345-4740 Fax: +1 (514) 345-4801, E-mail: allardp@ere.umontreal.ca

**Plantar pressure assessment in Physical Therapy**: 14 June, University of Minnesota, REGISTRATION IS LIMITED TO THE FIRST 50 APPLICANTS. Contact: T. McPoil, Ph.D., NAU Box 15105, Flagstaff, AZ 86011, Tom.McPoil@nau.edu

*July*

**The Engineering of Sport**: 2-4 Jul 1996, University of Sheffield, Sheffield, England; Contact Dr S. J. Haake, Dept. Mechanical and Process Engineering, University of Sheffield, Mappin Street, Sheffield S1 3JD, UK; Tel: 0114-282-5415, Fax.: 0114-275-3671, E-mail: S.J.Haake@sheffield.ac.uk

**Biomechanics of Human Movement in Orthopaedics, Rehabilitation and Sports**, 8-12 July 1996, Cambridge, Massachusetts, Contact Massachusetts Institute of Technology Summer Session Office, 8-201, Cambridge, MA, 02139, Tel: (617)-253-2101, Fax: (617)-253-8042, Email: summer-professional-programs@mit.edu, <http://web.mit.edu/summer-programs/>

**Modeling and Simulation of Human and Walking Robots Locomotion**, 8-12 July 1996, Udine, Italy, Contact: CISM, Palazzo del Torso, Piazza Garibaldi 18, 3100 Udine (Italy), Tel.: +39 (432) 294989 or 508251, Fax: +39 (432) 501523, E-mail: cism@hydrus.cc.uniud.it

**Bioengineering and Orthopaedic Science Gordon Conference**: 28 July -2 Aug 1996. Andover, New Hampshire, USA. Contact Dr. S.A. Goldstein, University of Michigan, Orthopaedic Research Laboratories, G0161 400 North Ingalls, Ann Arbor, Michigan, USA, 48109-0486, Tel: 313-763-9674, Fax: 313-747-0003, E-mail: stevegld@umich.edu.

*August*

**Second International Conference on Non-linear Dynamics, Chaos, Control, and their**

**Applications in Engineering Sciences:** 4-9 Aug, 1996, SFO Paulo, Brazil. For further information: Email: [icone@dpm.fem.unicamp.br](mailto:icone@dpm.fem.unicamp.br)  
[chaos@com001.uesp.ansp.br](mailto:chaos@com001.uesp.ansp.br)

**XIIth International Biophysics Congress** 11-16 Aug 1996, Amsterdam, The Netherlands, contact: Congress Secretariat XIIth IBC, Amsterdam RAI - OBA, P.O. Box 77777, 1070 MS Amsterdam, The Netherlands. Tel: +31 (0)20 549 1212, Fax +31 (0)20 646 4469

**19th Barany Society for Vestibular Research,** 12-16 Aug 1996, Sydney, Australia, Contact: Tel: 61-2-515-8820, Fax: 61-2-515-8347, I.S. Cuthoys, Ph.D., [ianc@psychvax.psych.su.oz.au](mailto:ianc@psychvax.psych.su.oz.au), or G.M. Hamagyi, Ph.D., [michael@icn.su.oz.au](mailto:michael@icn.su.oz.au)

**5th EMED Scientific Meeting,** 17-20 August, 1996, Penn State University, University Park, PA 16802, USA, Contact: Novel gmbh, Beichstrasse 8, 80802 Munich, Germany, ATTN: P. Seitz Tel: +49-89-390102, Fax: +49-89-337432.

**9th Canadian Society for Biomechanics**

**Conference:** 22-24 Aug 1996 Simon Fraser University, Burnaby, B.C.; Contact Dr. J. Eng., School of Kinesiology, Simon Fraser University, Burnaby, BC, Canada, V5A 1S6; Tel. 604-291-5770, E-mail: [jjeng@sfu.ca](mailto:jjeng@sfu.ca)

**Bernstein's Traditions in Motor Control,** 23-25 Aug 1996, Penn State University, State College, Pennsylvania. Contact Dr. M. Latash, Biomechanics Lab., Penn State University, University, Park, Pennsylvania, 16802. Tel: 814-863-5374, Fax: 814-865-2440, E-mail: [mll11@psu.edu](mailto:mll11@psu.edu)

**First Conference of the International Shoulder Group,** 26-28 Aug 1996, Preconference to the 10th Conference of the European Society of Biomechanics, Delft, The Netherlands. Contact F.C.T. van der Helm, Ph.D., Dept. of Mechanical Engineering and Marine Technology, Delft University of Technology, Mekelweg 2, 2628 CD Delft, The Netherlands, Tel. (+31)-15-2785616/2786400, Fax. (+31)-15-2784717, Email: [F.C.T.VanderHelm@wbmt.tudelft.nl](mailto:F.C.T.VanderHelm@wbmt.tudelft.nl), <http://www-mr.wbmt.tudelft.nl/schouder/isg/isg.html>

**10th Conference of the European Society of Biomechanics:** 28-31 Aug 1996 Leuven, Belgium; Contact Dr. J. Vander Sloten, Celestijnenlaan 200A, B-3001, Heverlee (Belgium); Tel: +321 632 7096 Fax: +321 629 2716; E-mail: [jos.vandersloten@mech.kuleuven.ac.be](mailto:jos.vandersloten@mech.kuleuven.ac.be)

*September*

**Third International Conference on Medical and Biological Implant Theory,**

2-6 Sep 1996, University of Nottingham, U.K., Contact Dr. K. Copeland, Conference Chairman, 6 Holland Court, Page Street, Mill Hill, London NW7 2DJ, UK, Tel & fax: +44 0 181 959 8626

**National Conference on Biomechanics,** Organized by the Academy of Physical Education in Poznan and the Polish Society of Biomechanics. 4-6 Sep 4-6 1996, Contact: T.Kregielski, Ph.D., Chair of Biomechanics, Academy of Physical Education, Park Wilsona, 00-776 Poznan, POLAND, **European Society for Movement Analysis in Children,** 12-14 Sep 1996, Contact: T. O'Brien, Ph.D., or A. Jenkinson, Gait Laboratory, Central Remedial Clinic, Vernon Ave., Dublin 3., <http://www.iol.ie/tdcrc/gait.htm>

**Gait Analysis in Rehabilitation Medicine,** 26-28 Sep 1996 Marriott Crystal City, Arlington, Virginia, Sponsored by National Center for Medical Rehabilitation Research, National Institute of Child Health and Human Development, National Institutes of Health. For information contact: Louis A. Quatrano, Ph.D., NCMRR, 6100 Executive Blvd, Room 2A03, Rockville, MD 20852-7510, Tel: (301) 402-2242, Fax: (301) 402-0832, Email: [QuatranL@hd01.nichd.nih.gov](mailto:QuatranL@hd01.nichd.nih.gov) or S.J. Stanhope, Ph.D., Biomechanics Laboratory, Building 10 Room 6s235, 10 CENTER DR MSC 1604, National Institutes of Health, Bethesda, MD 20892-1604, Tel: (301) 496-9891, Fax: (301) 402-0663, Email: [Steven\\_Stanhope@NIH.GOV](mailto:Steven_Stanhope@NIH.GOV)

**Preventing falls in the elderly:** 28-29 Sep 1996, Eden Roc Resort and Spa, Miami Beach, Florida, USA. Contact NRE, Tel: 360-696-2299 Fax: 360-699-1351

**Third Russian Conference on Biomechanics,** October, 1996, Nizhny Novgorod, Russia, Dr. Nina M. Anishkina. Institute of Applied Physics of the Russian Academy of Sciences. 46 Uljanov St., Nizhny Novgorod, RU-603600. E-mail: [nina@applsci.nnov.ru](mailto:nina@applsci.nnov.ru)

*October*

**Society for Physical Regulation in Biology and Medicine,** 16th Annual Meeting, 9-12 Oct 1996 at the University of Chicago and the Midland Hotel. This year's symposia include influences of

mechanical forces on vertebrate evolution, physical factors in bone and cartilage remodeling, mechanics of cellular mechanochemical signal transduction.

For updated information contact: Tel: 301-571-0680, Fax: 301-530-7049, E-mail: sprbm@faseb.org

**20th Annual Meeting of the American Society of Biomechanics:** 17-19 Oct 1996, Atlanta, Georgia, USA; Contact Dr. R.J. Gregor, Department of Health and Performance Sciences, Georgia Institute of Technology, Atlanta, Georgia, 30332-0110; Tel. 404-894-1028 Fax 404-894-7025 E-mail: robert.gregor@sac.gatech.edu

**Integrative Biology of Exercise,** 16-19 Oct 1996, Vancouver, British Columbia, Contact American Physiological Society Conference Office, Tel: (301)-530-7171.

**Evidence-Based Ergonomics, 28th Annual Conference of the Human Factors Association of Canada,** Valhalla Inn - Kitchener, Ontario, 23-26 Oct 1996, Contact Waterloo '96 HFAC/ACE Conference, 6519B Mississauga Rd., Mississauga, Ontario L5N 1A6, CANADA, Tel:(905) 567-7193, Fax:(905) 567-7191

**11th Congress of the International Society of Electrophysiology and Kinesiology (ISEK),** 27 to 30 October 1996 Contact: ISEK-96 Congress Secretariat, ACON Convention Services, P.O. Box 560, 7500 AN Enschede, The Netherlands, Tel: 31-53-4335800; Fax: 31-53-4341219; e-mail: acon@pi.net

**18th Annual International Conference of the IEEE, Engineering in Medicine and Biology Society,** 31 Oct-3 Nov 1996, Amsterdam, The Netherlands, contact: Conference secretariat: Basics International Conference Services, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands, +31-53-4356770

### *November*

**2nd Computer Assisted Orthopaedic Surgery Symposium,** 7-9 Nov 1996, For further information contact: CAOS-Secretary, M.E. Mueller Institute for Biomechanics, P.O. Box 30, CH-3010 Bern, Switzerland, Phone: +41-31-632-8722, Fax: +41-31-632-4951, Email: caos@mem.unibe.ch, WWW:

<URL:http://cranium.unibe.ch/cas/caos.html>

**Dynamics, Control, and Measurement of Biomechanical Systems: 1996 International Mechanical Engineering Congress and Exposition,** 17-22 Nov Atlanta Georgia, Contact

Dr. Y. Hurmuzlu, Dept. Mechanical Engineering, Southern Methodist University, Dallas, Texas, USA 75275, Tel: 214-768-3498, Fax 214-768-1473, E-mail : hurmuzlu@seas.smu.edu

### *Switching to long range sensors...*

**15th Annual Injuries in Baseball Course,** 23-26 January, 1997, Contact Judi Gold, Course Coordinator, American Sports Medicine Institute, 1313 13th Street South, Birmingham, AL 35205, Tel: 205/918-2135, Fax: 205/918-0800

**34th Annual Rocky Mountain Bioengineering Symposium,** 11-13 Apr 1997 Dayton, Ohio 45469 Contact Conference Chair, P.K. Bajpai, Ph.D., Dept. of Biology, University of Dayton, Dayton, Ohio 45469-2320, Email : Bajpai@neelix.Udayton.Edu)

**World Biomaterials Congress:** 29 May-2 Jun 1997; Toronto, Ontario, Canada, Contact Congress Canada, 191 Niagara Street, Toronto, Ontario, Canada M5V 1C9; Tel. 416-860-1772 Fax 416-860-0380

**XVith Congress of the International Society of Biomechanics,** 25-29 Aug 1997, Tokyo, Japan. Contact Dr. S. Fukashiro, General Secretary, XVith ISB, Tokyo Congress, Dept. Life Sciences, University of Tokyo, Komaba 3-8-1, Meguro 153, Japan. Tel & Fax: +81-3-5454-9494, E-mail: ISB97@idaten.c.u-tokyo.ac.jp.

**World Congress on Medical Physics and Biomedical Engineering:** 14-19 September, 1997 Nice (French Riviera, [very nice]), France. Contact Didier Geiger, Conference Co-Chair (GEIGER@UNIV-PARIS12.FR), Pierre Aletti, Conference Co-Chair (ALETTI@NANCY.FNCLCC.FR), GENERAL SECRETARY :48, rue de la Procession, F 75724 PARIS CEDEX 15 (FRANCE), Tel : +33 1 44 49 60 60, Fax : +33 1 44 49 60 44, E-mail : NICE97@UNIV-PARIS12.FR.

**The Third World Congress of Biomechanics:** 2-8 Aug 1998, Contact Hokkaido University, Sapporo, Japan; 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

**The Third North American Congress on Biomechanics:**, 14-18 Aug 1998, University of Waterloo, Waterloo, Ontario, Canada. Contact: S.

McGill, Ph.D., host chair,  
mcgill@healthy.uwaterloo.ca.

**\$\$Ask and ye shall (perhaps) receive\$\$**

Opportunities for lecturing or advanced research in over 135 countries are available to college and university faculty and professionals outside academe. *U.S. citizenship* and a Ph.D., or comparable professional qualifications are required. The deadline for applications is 1 Aug 1996. Contact: USIA Fulbright Senior Scholar Program, Council for International Exchange of Scholars, 3007 Tilden Street, N.W., Suite 5M, Box GNEWS, Washington, D.C., 20008-3009, Tel: (202)-686-7877.

**CALL FOR NOMINATIONS**

James R. Andrews Award for Excellence in Baseball Sports Medicine. Each year, the James R. Andrews Award for Excellence in Baseball Sports Medicine is presented during the American Sports Medicine Institute Injuries in Baseball course to an individual or group that has significantly contributed to baseball sports medicine. If there is someone who you feel should be considered for this award, please send your nomination, in writing to:

Andrews Award Selection Committee  
American Sports Medicine Institute  
Attn: Glenn S. Fleisig, Ph.D.  
1313 13th Street South  
Birmingham, AL 35205

Please provide the nominee's name, title, and address, as well as any information you feel would support the nominee. Be sure to also include your name, address, and telephone number. Thank you for your interest in helping us identify deserving candidates for this award.

*Deadline: Nominations Must Be Received by July 1, 1996*

**So, because you have way too much free time that can be spent reading another new journal...**

Mark Latash is the Editor of new quarterly journal *Motor Control*. The first issue is planned for January 1997. The journal is promoted as a multidisciplinary forum for the exchange of scientific information on the basic principles of motor control, control of human movement across the lifespan, and issues related to motor disorders

and rehabilitation. The journal will publish a wide variety of types of research papers, short reports, review articles, quick communications, commentaries, target articles and book reviews including clinical, experimental, modeling, and theoretical studies that clearly demonstrate a contribution to the understanding of control of movement. The Journal has impressive and internationally visible Section Editors and Editorial Board members: Section Editors: G.L.Gottlieb (Neurophysiology), D.A.Rosenbaum (Psychology), W.Z.Rymer (Motor Disorders and Rehabilitation), G.Schoner (Theories and Modeling), M.Wade (Motor Behavior), and V.M.Zatsiorsky (Biomechanics) Editorial Board: J.G.Anson, V.Dietz, R.Enoka, A.G.Feldman, C.P.J.Ghez, C.C.A.M.Gielen, J.A.Hoffer, T.Kasai, J.A.S.Kelso, P.Neilsen, T.R.Nichols, J.Scholz, M.Turvey, and C.Worringham. More information is available from the Editor, Mark Latash, Email: mll11@psu.edu.

**Places to "Go"**

ISB '97:

<http://idaten.c.u-tokyo.ac.jp/ISB97/isb97.html>

11th ISEK meeting:

<http://www.introweb.nl/~rrd/isekpage.htm>

Access to web sites at virtually all of the United Kingdom and World Universities.

<http://www.Birmingham.ac.uk/>

Sports Science at Brunel links to other UK Sports Science departments.

<http://www.brunel.ac.uk:8080/depts/pe/depts.htm>

ESB '96

<http://www.mech.kuleuven.ac.be/bmgo/esb.html>

**Lost in the Translation**

In the April, 1996 volume of *BioMechanics*: the magazine of lower extremity movement, an article titled *Orthotic Applications for Carbon Fiber* has boldly, if not indirectly, offered a resolution to a frequently arising and pesky problem. The ISB Standardization Committee should be particularly interested in the method used to decide between metric and English measurement systems. The article reports that a sheet of carbon fiber only 3 mm thick has the strength of a sheet of polypropylene that is 3/16 inch thick. The Newsletter Editorial office submitted these measurements to an exhaustive a

*posteriori* battery of statistical tests, the results of which revealed that the difference,  $1.76 \cdot 10^7 \text{ \AA}$ , may or may not be significantly different. Thanks to Brian Davis, Ph.D. for the tip on this one.

### And, because you've been searching for another Society to join

The Society for Kinesiology and Sport Sciences was recently founded in the Flemish Community. The purpose of this Society is to offer a forum for all Kinesiologists and Sport Scientists who are active in research concerning human movement and man in movement. The following officers were elected : Gaston Beunen (Leuven University) as president, Jan Borms (Brussels University) and Peter Aerts (Antwerp University) as vice-presidents and Dirk De Clercq (Ghent University) as secretary general. Contact : Prof. Dr. D. De Clercq, Universiteit Gent HILO, Bewegingsleer and Sportpedagogiek, Watersportlaan 2, B-9000 Gent, Belgium, Tel : (0)9 264 63 22, Fax : (0)9 264 64 97, Email : dirk.declercq@rug.ac.be

### The Sarcastic Corner

Perhaps prompted by a recent ISB Newsletter reference to Mark Twain's opinion of statistics (61:1, page 3), the following piece was submitted.

There are three kinds of science

- pure science
- science fiction
- political science

We always practice the first, end up with the second, and try to camouflage it as the third.

*Thanks to Moshe Solomonow, Ph.D. from the LSU School of Medicine.*

### The Philosophy of Science: Theory into Practice.

Ten mathematicians and ten biomechanists are going to a meeting by train. The ten Mathematicians each have their own ticket, but the ten Biomechanists purchase only a single ticket between them. The puzzled and timid mathematicians ask the biomechanists, "How will you manage with only one ticket?" "Elementary,

simply watch and learn." reply the biomechanists. They all get on the train and the ten mathematicians take their seats and hand their tickets to the conductor. Meanwhile, the biomechanists have all managed to squeeze into a restroom. When the conductor comes by and requests the "occupant's" ticket, a single arm reaches out and gives him the ticket. The mathematicians, feeling delighted, enlightened, and adventurous, decide to try the same thing on the way home. Following the meeting, they purchase just one ticket between the ten of them. However, the biomechanists buy no ticket at all. "How are you going to get home?" ask the mathematicians. Smiling mysteriously, the biomechanists reply "Observe, the second lesson". Upon boarding the train, all the mathematicians squeeze into a restroom. Meanwhile, nine of the biomechanists get into another restroom. The tenth biomechanist then knocks on the mathematicians' restroom door and says "Ticket please." Out comes a single arm to hand over the ticket.

The moral of the story: *Don't use a technique unless you thoroughly understand the principle.*

### Contest Announcement

Sorting through my daily Email, I came upon the following, which although have been obtained from untraceable sources, are said to have come from the Sunday Washington Post in a section called "The Style Invitational". I found some of the winners of the "worst analogies ever written in a high school essay" rather amusing. It is, therefore, with pleasure, that I invite all ISB members to submit their entries for the **1st (and possibly last) Annual "Worst Possible Biomechanics Analogies Contest**. Entries, real and imagined, should be applicable to the field of biomechanics teaching or research. A brief explanation of your analogy is acceptable as long as it serves to confuse the judges. The entries should be received by the Newsletter Editor no later than 1 September, 1996. The winner(s) will be announced in the Winter Newsletter. The Editor will convene a group of ISB experts in the area of worst analogies (and who, along with their families, will not be eligible to win) for the purposes of judging. Judging decisions will be final unless a mistake is made. Here are a few examples:

**On biomechanics expert witnesses:** He spoke with the wisdom that can only come from experience, like a guy who went blind because he looked at a solar eclipse without one of those boxes with a pinhole in it and now goes around the country speaking at high schools about the dangers of looking at a solar eclipse without one of those boxes with a pinhole in it.

**Fluids:** The little boat gently drifted across the pond exactly the way a bowling ball wouldn't.

**Non-elastic impacts:** McBride fell 12 stories, hitting the pavement like a Hefty Bag filled with vegetable soup.

**Anatomy:** Her eyes were like two brown circles with big black dots in the center.

**Technology:** Bob was a perplexed as a hacker who means to access

T:\flw.quid55328.com\aaakk/ch@ung but gets

T:\flw.quidaaakk/ch@ung by mistake.

**On the use of jargon:** Her vocabulary was as bad as, like, whatever.

**Kinematics:** He was as tall as a six-foot-three-inch tree.

**Also Kinematics:** Long separated by cruel fate, the star-crossed lovers raced across the grassy field toward each other like two freight trains, one having left Cleveland at 6:36 pm traveling at 55 mph, the other from Topeka at 4:19 pm at a speed of 35 mph.

#### Meeting Places

Report of the 21st BASES Workshop

The 21st British Association of Sport and Exercise Sciences Biomechanics workshop was attended by 44 delegates at Loughborough University in March of this year. The two day workshop involved one day on the theoretical aspects of 3-Dimensional Kinematic techniques with the second day open for free communication.

The start of the workshop began by viewing the impressive new Sports hall complex that is being constructed adjacent to the School of Sport and Exercise Sciences with the only larger one I have seen being at the ISB congress in Jyvaskyla in 1995. The first presentations were given by Fred Yeadon (Loughborough) on the theory of the DLT method, Bill Baltzopoulos (Manchester Met) on calibration of large spaces using an intersection method, John Challis (Birmingham (soon to be Penn State)) on segment reorientation in 3-D space and Mike Lindsey (Leeds) comparing the manual

projection video systems versus the Mac reflex system. All these talks were very interesting and showed some interesting results regarding 3-Dimensional reconstruction and Measurement.

The afternoon of the first day continued with demonstrations from the CODA system, Mac Reflex and the TARGET software for video digitization developed at the University of Loughborough which appeared to have sub-pixel resolution. The second day involved presentations from the University of Teeside, the University of Birmingham and the University of Loughborough on topics ranging from optimization techniques in gymnastics and high jumping to lateral displacement of the knee with different pedal interfaces in cycling. It was interesting to note that the optimization methods were presenting optimum values of: for example horizontal velocity in high jumping that were below those achieved in actual elite performances. The final session of the conference saw Fred Yeadon present a very interesting paper on aerial simulation for learning twisting somersaults with an updated computer generated model. The proceedings of the workshop are available from the British Association of Sport and Exercise Sciences.

*Thanks to Paul Grimshaw, grimshaw@wlihe.ac.uk, for the meeting description.*

#### Meanwhile, in another time zone...

In the field of biomechanics, Ukrainian and Hungarian researchers, professors of the Ukrainian State University of Physical Education and Sports as well as the Hungarian University of Physical Education initialized co-operation relating to subjects of "Posture, Equilibrium and Movement co-ordination. The tradition of these researches in both countries is well known. Two Nobel-prize winners, Hungarian by origin: R. Barany and G. Bekesy dealt with the vestibular functions as well as with postural sway. The research program, in co-operation with the Clinic of Ichenhausen, will study means to increase the effectiveness of physical education and rehabilitation. In the spirit of increased cooperation, Ukrainian Prof. Dr. V.N. Boloban and Mrs. T. Mistulova, mathematician, delivered an interesting seminar in Budapest, about the subject "Didactics of sport exercises involving complex co-ordination structure". A summary of this seminar follows. "Methodology of education to

sports exercises with complex coordinational structure integrating biomechanical, didactical and technological features and indices for the elements in gymnastics, acrobatics, figure skating to be mastered has been developed. Logico-structural scheme of didactic system for sports exercises with complex coordination has been experimentally substantiated. It consists of six levels of didactic materials providing mastery of basic educational tasks and sports exercise as a whole. Connections and relations between the levels of didactic materials are maintained, developed and improved by functional pedagogical equation (FPE). Technological direction of FPE consists in the fact, that according to planned result of education (right half of equation) didactic programming and structurization of content for knowledge and skill formation (left half of equation) is carried out. A positive effect has been achieved as a result of research realization in educational and training process for elite athletes."

*Thanks to Karoly BRETZ,  
BRETZ@samuel.hupe.hu, for this update.*

#### From the Students

TO ALL MEMBERS OF ISB:

At the most recent ISB Congress in Jyvaskyla, a group of graduate students met informally to outline some ideas that would increase student

involvement and membership. The following two points were the most discussed.

1. The currently reduced rate for student membership is an attractive offer that recruits many individuals. However, reduced conference registration fees for students such as that offered by the American Society of Biomechanics, would likely increase the number of graduate students that submit abstracts and attend the Congresses. Overall, this would increase student participation within the society.
2. The appointment of a graduate student (preferably 2nd year Master's student or Ph.D. student) to act as a liaison between the students and the Executive Council. This student representation would increase the awareness of the Executive Council of this important component of the Society's membership. Similarly, such an appointment would improve the students understandings of how the Society is governed.

*Thanks to Andrew T. Mahar, Student Member, for this piece. Andrew can be reached at MAHAR@ecs.umass.edu with any comments/threats that you may have.*

## ISB PUBLICATIONS

The following Society publications can be obtained at the special member rates by writing to the supplier shown.

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### EDITOR'S NOTE

This Newsletter is published quarterly: February-March (Spring); May-June (Summer); August-September (Autumn), and November-December (Winter). Deadlines for material and articles are the first day of each first named month, and the Newsletter is mailed to members early in the second named month.

Members can submit *Letters*, *Special Articles*, *Affiliate Society News*, *Laboratory Features*, *Reports*, or *Announcements of Meetings*, *Conferences*, and *Jobs Available*. Also, *Short Abstracts* from biomechanics society meetings and *Thesis Abstracts* can be published. In special circumstances a complete edition of the Newsletter can be devoted to the publishing of a Society's "Proceedings".

Submitted material must be in letter-quality print and computer scannable, or on a computer disk as a text-only file, and in English. Graphics or complex equations must be in camera-ready art form, and photographs must be black and white.

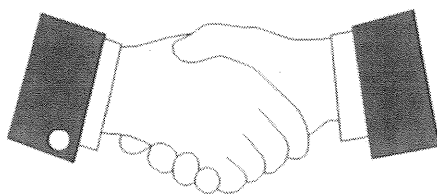
*Society abstracts* should not be more than 250 words in length. They should be submitted with full details of the conference, and accompanied by any conference or society logos which could be printed as well.

*Thesis abstracts* should be submitted with full details of Title, Student's Name, Department, Name of Degree and Conferring Institution, together with Supervisor's Name.

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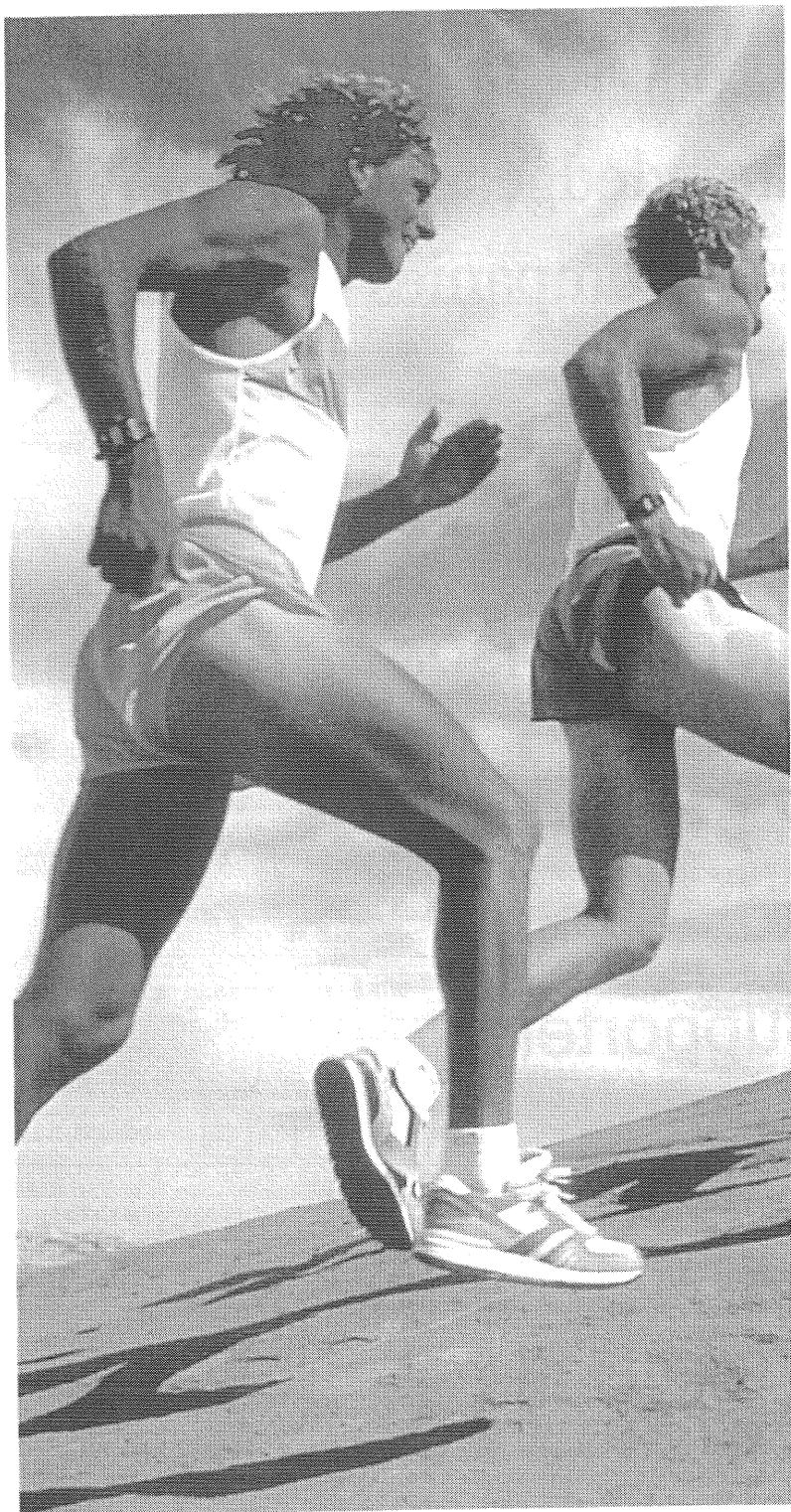
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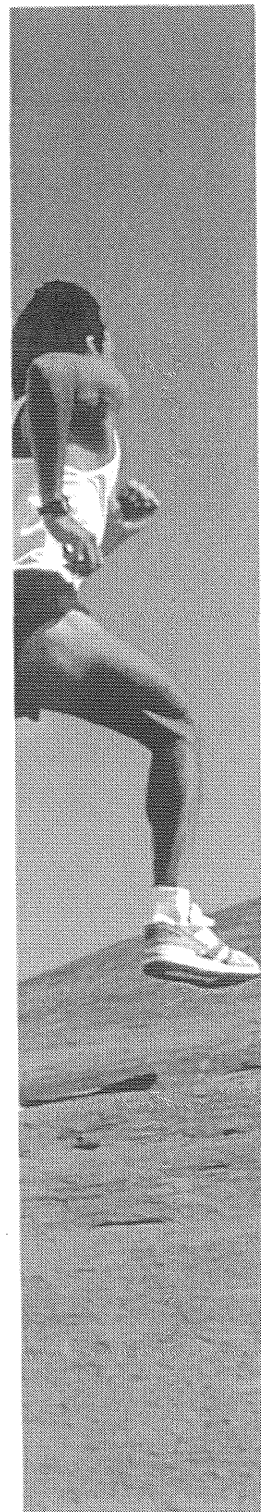


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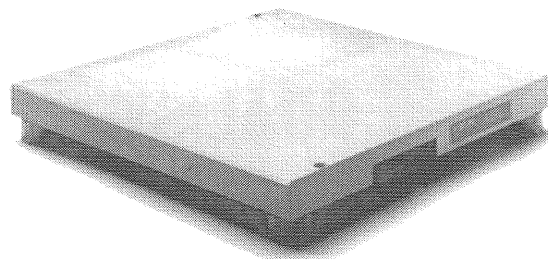
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