



International Society of Biomechanics Newsletter

ISB Officers

PRESIDENT

Kit Vaughan, Ph.D.
Dept. of Biomedical Engineering
Faculty of Health Sciences
University of Cape Town
Observatory, Western Cape 7925
South Africa
Tel: 27-21-406-6238
Fax: 27-21-448-3291
E-mail: kvaughan@anat.uct.ac.za

PRESIDENT-ELECT

Sandra Olney, Ph.D.
School of Rehabilitation Therapy
Queen's University
Kingston, Ontario, Canada K7L 3N6
Tel: 613-533-6102
Fax: 613-533-6776
olneys@post.queensu.ca

PAST-PRESIDENT

Prof. Dr. Günter Rau
Helmholtz-Institut für
Biomedizinische Technik
Pauwelsstrasse 20
D-52074 Aachen
GERMANY
Tel: (0241) 80-7111
Fax: (0241) 8888-442
E-mail: rau@hia.rwth-aachen.de

SECRETARY-GENERAL

Dr. Brian L. Davis
Department of Biomedical Engineering
The Lerner Research Institute
The Cleveland Clinic Foundation
9500 Euclid Avenue
Tel: +1 216 444 - 1055
Fax: +1 216 444 - 9198
E-mail: davis@bme.ri.ccf.org

TREASURER

Dr. Graeme A. Wood
C7, Central Mailroom
The University of Western Australia
Nedlands, WA 6907
Fax: +61-8-9386 8589
E-mail: gwood@cyllene.uwa.edu.au

NEWSLETTER EDITOR

Dr. Mark D. Grabiner
Department of Biomedical Engineering, Wb3
The Lerner Research Institute
The Cleveland Clinic
Cleveland, Ohio, 44106
Tel: +1 216 444 7276
Fax: +1 216 444 9198
E-Mail: grabiner@bme.ri.ccf.org

ISSUE Number 77
February- March (±), 2000

TABLE OF CONTENTS

From the Editor	2
Job Market	2
Upcoming Meetings	2
Reports from ISB Grantees /Award winners	4
Political Sensitivity in the USA	7
Chemical Philosophy	8
More Consumer Warning Labels	8
From the President('s student)	9
Editor's Note	9
The 5 th IOC-World Congress on Sport Sciences	10
ISB Membership News	12

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 Editor: Mark D. Grabiner

The importance and societal impact of musculoskeletal disorders comes as no surprise to members of ISB. A review of the program from last summer's ISB Congress in Calgary reveals that of over 58 percent of the sessions could be directly associated with musculoskeletal function, either normal or pathological.

Below is a brief description of an exciting initiative that has come to fruition due to the vision and concerted effort of an international team of clinicians and scientists. Worldwide support for the Bone and Joint Decade is growing and includes endorsements by WHO and the Secretary-General of the UN. Under the leadership of Dr. Kit Vaughan, the ISB has lent its formal support to this initiative.

Please visit the website for the Bone and Joint Decade. Once there you learn more about this worldwide effort and see how your particular interests can fit within the framework for international collaboration.

The Bone and Joint Decade 2000-2010
Dedicated to the Prevention and Treatment of
Musculo-Skeletal Disorders



<http://www.bonejointdecade.org/>

The initiative for the Bone and Joint Decade was instigated by a group of healthcare professionals who felt that the societal impact of bone and joint disorders should be addressed on an international level. A particular focus has been placed on the use of international resources. The idea was catalyzed by the success of the Decade of the Brain (1990-2000) which successfully raised public awareness of advances in the study of brain function and disorder, and which led to significant scientific progress in this area. An inaugural consensus meeting for the Bone and Joint Decade was held in Lund, Sweden in April

1998. From this meeting emerged a proposal for the Decade of the Bone and Joint from 2000 to 2010.

The overall goal for the Bone and Joint Decade is to improve the health-related quality of life for people with musculoskeletal disorders. The goals of the Decade will be achieved by:

1. raising awareness of the burden placed on society by musculoskeletal disorders.
2. empowering patients to participate in their own care.
3. promoting cost-effective prevention and treatment.
4. advancing understanding of musculoskeletal disorders through research to improve prevention and treatment.

The Bone and Joint Decade encompasses musculoskeletal disorders including joint diseases, osteoporosis, osteoarthritis, rheumatoid arthritis, low back pain, spinal disorders, severe trauma to the extremities, crippling diseases and deformities in children. Musculoskeletal disorders, the most common causes of severe long-term pain and physical disability, affect hundreds of millions of people across the world.

Job Market*

The Job Market may be accessed via:

<http://www.lri.ccf.org/isb/jobs/>

Upcoming Meetings, Workshops, Etc.

April

11th International Conference on Mechanics in Medicine and Biology, 2-5 Apr 2000

Maui, Hawaii. <http://www.icmmb11.com/>

19TH Southern Biomedical Conference, 14-16

April Virginia Polytechnic Institute and State university, Blacksburg, Virginia. Contact: K.

Forsten, PhD, Department of Chemical Engineering, 141 Randolph Hall, Email: kforsten@vt.edu, or J.

Rogers Foy, PhD, Engineering Science & Mechanics Department, 219 Norris Hall, Email: jfoy@vt.edu,

<http://sbec.abe.msstate.edu/2000/19/index.html>.

May

Sixth International Symposium on the 3D Analysis of Human Movement, 1-4 May 2000, Cape Town, South Africa. Contact: D. McTeer, Postgraduate

Conference Division, Barnard Fuller Building, University of Cape Town, Anzio Road, Observatory

7925, South Africa, Tel: + 27 21 406 6348, Fax: + 27 21 448 6263, Email: deborah@medicine.uct.ac.za,

<http://www.uct.ac.za/depts/pgc/3dhome.htm>

Foot and Ankle Research Retreat, STATIC AND DYNAMIC CLASSIFICATION OF THE FOOT, May 19-21, 2000, Annapolis, MD. Contact: Tara Fredrickson, c/o Orthopaedic Section, APTA Inc., 2920 East Ave. South, Suite 200, La Crosse, WI 54601, Tel: (800) 444-3982, tfred@centuryinter.net
13th IAA "Humans in Space symposium, 20-26 May, Santorini, Greece. Contact: Tel: 3031.435.331, Fax: 3031.459.660, Email: gasma@med.auth.gr or papadeli@med.auth.gr,

<http://www.med.auth.gr/conf/gasma/eng>

2nd Course in Clinical Gait Analysis, 26-28 May, Royal Children's Hospital, Hugh Williamson Gait Analysis Laboratory, Melbourne Australia. Contact: V Facey, Tel: +61.3.9345.5353, Fax: +61.3.9345.5447, Email: faceyv@cryptic.rch.unimelb.edu.au

June

13th Congress of International Society of Electrophysiology and Kinesiology (ISEK 2000), 25-29 Jun 2000, Sapporo, Hokkaido, Japan. Contact: Ichiro Watanabe, MD, Dept. of Rehabilitation Medicine, Hokkaido University, N15, W7, Sapporo, 060-8638 Japan ; Tel. +81-11-706-6066. Fax. +81-11-706-6067, Email : isek20@med.hokudai.ac.jp ; <http://soi.med.hokudai.ac.jp/~reha-w/isek2000.htm>

XVIIIth International Symposium on Biomechanics in Sports, 25-30 June 2000, Hong Kong. Contact: Y Hong, PhD, Tel: 852.2609.6082, Fax: 852.2603.5781, Email: isbs2000@cuhk.edu.hk, <http://www.cuhk.edu.hk/spe/isbs2000/index.htm>

July

24th Annual Meeting of the American Society of Biomechanics, 19-22 July
University of Illinois at Chicago, Chicago, Illinois. Contact: R. N. Natarajan, PhD, Department of Orthopedic Surgery, Room 1463 Jelke SC, Rush-Presbyterian-St.Luke's Medical Center, 1653 West Congress Parkway, CHICAGO, Illinois 60612, Tel: 312.942.5367, Fax: 312.942.2101, Email: mataraj@rush.edu

August

1st International Congress on Tennis Science and Technology, 1-4 Aug 2000, London, England. Contact: Congress Secretariat, International Tennis Federation, Bank Lane, Roehampton, London, SW15 5XZ, England. Tel: +44 (0)181 878 6464, Fax: +44 (0)181 392 4773, Email: tst@itftennis.com

2nd Euroconference on Tissue and Cell Engineering, 9-13 September 2000, Hoeven, The Netherlands. Contact: www.azvu.nl/stega/tce2000.
25th Congress of the Société de Biomécanique combined with the **11th Congress of the Canadian Society of Bioemchanics.** 23-26 August, Montreal, Canada, Contact: Email: bureau@congresbcu.com, www.congressbcu.com/sb-scb2000.htm
12th Conference of the European Society of Biomechanics, 27-30 Aug, 2000, Trinity College, Dublin, Ireland, Contact: P.J. Prendergast, Chairman ESB2000, Dept. Mechanical Engineering, Trinity College, Dublin 2, IRELAND, Tel: +353-1-6081383, Fax: +353-1-6795554, Email: pprender@tcd.ie

October

IX International Symposium on Motor Control, October 8-12, 2000, Varna, Bulgaria. Contact: Motor Control 2000, Institute of Physiology, Bulgarian Academy of Sciences, Acad. G. Bontchev St. Bl. 23, 1113 Sofia, BULGARIA, Phone: +359-2-705259, Fax: +359-2-719109, Email: mc2000@bio.bas.bg, <http://www.bio.bas.bg/~mc2000>

November

Symposium on the Design and Performance of Functional Biomaterials , 2000 ASME International Mechanical Engineering Congress and Exposition Nov. 5-10, 2000 Orlando, Fla. Contact: Michael Sacks, University of Pittsburgh, Dept. of Bioengineering, Pittsburgh, PA 15261; (412) 624-8985; e-mail msacks@engrng.pitt.edu
2nd International Conference on Weightlifting and Strength Training, 19th. to 21st. November, 2000, IPOH, MALAYSIA, Contact: Conference Secretariat, Tel/Fax 605-2545-688, Email: leecp@pc.jaring.my, <http://members.theglobe.com/promuscle/>

December

10th International Conference on BioMedical Engineering (ICBME), 6-9 December 2000, SINGAPORE, <http://www.nus.edu.sg/DB/icbme/>

2001

Fourth Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Europe and Japan, 1 Jun – 3 Jun 2001, Rhodes, Greece. Contact: Orhtopaedic Research Society, 6300 N. River Road, Suite 727, Rosemont, IL, 60018-4226

USA; Tel: 847.698.1625; FAX: 847.823.4921;
Email: ors@aaos.org.

XVIIIth Congress of the International Society of Biomechanics, 8-13 July 2001, Zurich, Switzerland, Contact: ISB2001, Wagistr. 4, CH-8952 Schlieren, Switzerland, Tel: +41 (0)1 633 6117, Fax: +41 (0)1 633 1124, Email: isb2001@biomech.mat.ethz.ch, www.isb2001.ethz.ch

2002

3rd World Congress of Biomechanics, University of Calgary, Calgary, Alberta, Canada.

**Report to the Student Grant Committee for the
ISB International Travel Grant
Witaya Mathiyakom**

I would like to thank the ISB committee for awarding me the travel grant award to the XVIIth ISB Congress in Calgary, Canada. With this award, I was able to attend the XVIIth ISB Congress, the IIth Congress of International Shoulder Group and two tutorials. The experience I had during the congress was valuable.

At the XVIIth ISB Congress, presented my research entitled "Joint kinetics differences during the inward and reverse diving takeoffs." In addition, I was also a co-author of the research entitled "Load distribution modification in two multijoint tasks with different mechanical objectives." During the preparation of the presentation, I learned to organize summarize, and simplify the knowledge I gained from the research into a format that could be easily understood. During the presentation, I learned to interact with the audience to make sure that they were able to follow my presentation. Although I prepared the script for my presentation, I did not totally use it during my presentation. I found myself talking to the audience as I was taking them through the results and discussion of my research. After the presentation, I was asked several questions regarding my research and related research. All the questions made me think in a deeper and boarder sense about my research and its implication.

There were so many interesting lectures, keynote presentations, and podium and poster presentations. I learned and gained so much information from all the presentations as well as from a direct interaction with the speakers. The most interesting experience I had was a blue-box lunch with Dr. Huxley. I was intrigued by his ability to

integrate all the information while isolating specific important issues of the research in muscle physiology and related area. Although my area of interest is not muscle physiology, the concept of how to develop a quality research based upon a thorough understanding of the body of knowledge, which I have learned to appreciate during the blue-box lunch with Dr. Huxley, is very important and applicable to all research. As a student, who is in the process of developing his career in research, I would like to thank the ISB committee for providing me this great opportunity to interact with one of many great researchers in Biomechanics.

It was a good opportunity for me to attend the IIth Congress of the International Shoulder Group. The congress was very informative and intimate. Although there were not so many people attending this congress, all of the attendees had a genuine interest in the conference. At this congress, I had more opportunity to personally interact with the experts in the area of shoulder biomechanics. I was able to exchange my clinical experience and knowledge with other researchers as well. I also attended two tutorials, namely: basic biomechanics of the knee and muscle physiology. The contents of both tutorials provided a good basic knowledge in both areas. The speakers organized the presentation well. Once again, I would like to thank the ISB committee for awarding me the travel grant. I also would like to thank participants of the ISB Congress. I really learned so much from you all. Finally, I would like to thank my advisor Dr. Jill McNitt-Gray and my colleagues at the Biomechanics Research Laboratory, USC, for encouraging me all along my learning process.

**Report to the Student Grant Committee for the
ISB International Travel Grant
Guenter Siegmund**

To begin, I would like to thank the Student Grant Committee of the International Society of Biomechanics (ISB) for awarding me an ISB International Travel Grant. This grant allowed me to travel from the School of Human Kinetics at the University of British Columbia in Vancouver, BC, Canada to the Department of Biomedical Engineering at Duke University in Durham, North Carolina to conduct one of my Ph.D. thesis experiments with Dr. Barry Myers (M.D. and Ph.D.). My thesis research is focused on whiplash injury resulting from a rear-end automobile collision. Despite the widespread nature of this injury, little is

actually known about the mechanics of whiplash injury. Recent clinical research has implicated the cervical facet capsular ligament as a source of chronic whiplash pain. Recent biomechanical studies have documented gross motion of the head, neck and torso, intersegmental motion of the cervical vertebrae, and cervical muscle response under whiplash loading. The purpose of my experiment at Duke was to attempt to bring these areas of research together and directly measure the strain field in the capsular ligament under loading conditions that approximate those which occur during a rear-end automobile collision. Duke was the natural place to go to perform this experiment because Dr. Beth Winkelstein (at the time a lowly graduate student like myself) and Dr. Myers had already developed a technique for measuring strain in the capsular ligament. In fact, the experiment was a natural extension of Beth's thesis work and her many years of hard work simplified the experiment immensely. Thank you Beth.

The experiment itself was relatively straight forward. Motion segments from human cervical spines were isolated and the right capsular ligament was delicately exposed. In addition to larger markers to track vertebral body motion, a 7-by-7 array of 0.8 mm photo-absorptive beads were carefully applied to the exposed ligament. The specimens were then subjected to posterior shear loads (superior body loaded posteriorly relative to the inferior body) while under four incremental compressive axial preloads: no preload, the addition of an average head weight, the addition of a load to approximate the inertial load due to the straightening of the thoracic kyphosis which occurs during the interaction of the seat and occupant in a collision, and the addition of a load to approximate contraction of the neck musculature. One pair of cameras was used to track vertebral motion and a second pair of camera with macro lenses was used to track the capsular markers. The same specimens have since been loaded to failure and the strain field from these catastrophic tests will be compared to the field observed in the original experiment to determine whether potentially injurious strains were applied to the ligaments during the whiplash-like loading.

While the ISB International Travel Grants are built around an experiment, the whole experience of travelling to another lab turns out to be about much more than just the experiment. The value of working in a different lab with different people who have different perspectives on the same area of research cannot be overstated. New acquaintances also make

for enjoyable conversations that begin with specific questions and inevitably end with philosophy. And there is also the general enlightenment that comes with travel - everything from a Durham Bulls baseball game on a humid summer night, complete with warm beer and hot dogs, to lunch-hour recitals on the three outstanding organs in the imposing Duke Chapel. I hope that other graduate students have been and will continue to be as fortunate as I have been and complement the ISB for offering a grant that allows for learning at many levels.

In addition to the ISB, I have many people to thank for the success of this trip. On the academic side, I am grateful to Dr. Barry Myers for giving me his guidance, support and the run of his lab; Dr. Beth Winkelstein, without whom this experiment would simply not have been possible; and Dr. David Sanderson (my advisor) and Dr. Tim Inglis, both of whom encouraged me to go to Duke in the first place. I owe many thanks to Martin Davis for his assistance during the experiments and his continued (and seemingly-unending diligence) in digitizing the data. Thank you also to Dr. Myers' grad students: Joshua Baker-LePain, Carol Chancey, Kurt Knaub and especially Chris Van Ee, whose own thesis work was on hold while I monopolized some of the instrumentation. A special thanks to Sarah Myers, who tolerated an unexpected dinner guest on numerous occasions with warmth and excellent food. And most important of all, I thank my wife Louise and our two little princesses, Emma and Hannah, for allowing Dad to venture to "Norf Carolina" to answer a question which might, one day, "help people hurt less".

<p style="text-align: center;">ISB Dissertation Grant Report Steve Boyd</p>

In the Spring of 1999, I received a 'Dissertation Grant' from the ISB which helped 'set the wheels in motion' for receiving further matching funds to support my planned research project. The project involved measuring micro-structural changes in the periarticular bone of the knee after an anterior cruciate ligament rupture, and prior to the eventual development of osteoarthritis (OA). Previous work I had done toward my Ph.D. at the University of Calgary found large decreases in bone mineral density in the periarticular bone (measured using quantitative computed tomography) which suggested that there were corresponding micro-structural changes. In order to understand these structural changes, we needed to use a high resolution state-of-the-art imaging

technique called micro-computed tomography (\square CT). As there is no such system presently in Calgary, with the assistance of my supervisor Dr. Ron Zernicke, I initiated a research collaboration with Dr. Ralph Müller at the Orthopedics Biomechanics Lab in Boston. For the month of May 1999, I visited Dr. Müller's laboratory at the Orthopedic Biomechanics Laboratory which is part of the Beth Israel Deaconess Medical Center and Harvard Medical School. With my bone samples already prepared previously in Calgary, I arrived ready to begin scanning the samples and doing as much of the subsequent analysis as possible. Dr. Müller and everybody at the OBL were extremely friendly and helpful, and although the learning curve was steep, I began my \square CT scanning marathon within a day or two. As it turns out, I underestimated the time required to complete all the scanning and spent many long days keeping things running smoothly so I could finish on time. Concurrently, I was learning about analyzing the \square CT data with Dr. Müller's expertise, and I did this analysis on the \square CT scans as they were being completed. Although the timing was tight, I was able to complete all the scans and the structural analysis of the \square CT data within the month.

This was the first time I had been to a different research laboratory (other than lab tours), and I found the experience incredibly rewarding. It was an opportunity to see how another lab functions, attend weekly seminars, and to meet researchers in the OBL and learn about their work. It was a very productive time for me, and the knowledge and experience I gained has been a very important part of my Ph.D. research. The results of my research were presented at the ISB this summer in Calgary, where I was a finalist for the Clinical Biomechanics award. I have since submitted a full length manuscript to that journal. Now that the micro-structural changes are better understood following ACLX, my research plan in the next year is to utilize the \square CT data for a finite element model to determine the influence of the micro-structural changes on stress distribution in the knee joint following an ACL injury.

I would like to thank the ISB for their financial support for this research endeavour, and in general for their commitment to aiding young researchers. I gained invaluable experience, and completion of a significant portion of the experimental work for my dissertation. Thank you very much.

Report to the Student Grant Committee for the
ISB International Travel Grant

Philip Santos Requejo

I would like to thank the International Society of Biomechanics for the \$1000 Conference Travel Grant award for the purpose of attending the XVIIth International Congress of Biomechanics held August 8-13, 1999 and the VIIth International Symposium on Computer Simulation in Biomechanics held August 5-8, 1999. The travel award provided the financial source that enabled me to attend these meetings. By attending these meetings, my academic and professional development was further enhanced.

The purpose of the International Society of Biomechanics Congress Travel Award is to alleviate the financial burden to students presenting their research at the XVIIth ISB Congress of Biomechanics. Generally the travel grant provides a means for academic and professional development of students wishing to attend an international meeting. As a student recipient of this award, I benefited from the chance to meet and interact with excellent biomechanists during this time, particularly with those involved in computer modeling and simulation of human movement. It was exciting to finally put a face to the authors of research papers that I have read. In addition, I also interacted with fellow students with varied backgrounds coming from around the world. Finally, this meeting allowed me to assess the current state of the biomechanics field in general and the computer modeling and simulation field in particular.

Attending the VIIth International Symposium on Computer Simulation in Biomechanics for the first time was very stimulating and enjoyable. The symposium consisted each of a 15 minutes slide presentation and a software demonstration session afterwards. The success of the meeting was due to the efforts of Dr. Ton van den Bogert from the Cleveland Clinic Foundation and faculty and students from the University of Calgary. In addition, the small number of participants provided a very intimate atmosphere conducive for in-depth discussions. I was impressed by the sophistication of the computer simulation models presented in the symposium and the level of presenters.

As a result, I was able to assess my current abilities and identified skills that I needed to develop. On a lighter note, I enjoyed my interaction with Dr. Fred Yeadon from Loughborough University. Dr. Yeadon's sense of humor was a festive ingredient to this meeting, particularly at the dart game and during the banquet. As a result of attending the modeling symposium, my future plans includes submitting for presentation my research in the VIIIth International

Symposium on Computer Simulation in Biomechanics which will take place in Milan, Italy in 2001.

The XVIIth International Congress of Biomechanics provided me the opportunity to be introduced to the research being done throughout the world. I also enjoyed the keynote speakers, particularly the chance to listen to the Nobel laureate Sir Andrew Huxley, the Warthenweiler Memorial Lecturer. Dr. Benno Nigg set the motto of the meeting: "Enjoy Nonsense". The majority of podium and poster presentations did make sense. The poster and podium sessions covered a wide range of topic from cellular to whole body biomechanics. The good number of human movement modeling and simulation podium and poster presentations encouraged me. The excellent poster viewing and podium presentation schedule promoted an environment for learning and for further discussions. I was able to both actively and passively participate in in-depth discussions during the lunch and coffee breaks. Furthermore, I enjoyed the student luncheon session with Sir Andrew Huxley. I was amazed with his ability to expand on varied topics, from his specific research to his life experiences. It was exhausting yet extremely stimulating.

In the XVIIth International Congress of Biomechanics, I presented a poster entitled "Modification in Joint Control in Anticipation of Contact". The poster presentation session allowed me to introduce my research to an international audience. More importantly, I received some very constructive feedback both from known researchers as well as from peers with similar research interests. I not only gained further presentation skills; I also obtained ideas regarding future research questions and the methods necessary to answer those questions.

In conclusion, I benefited both financially and professionally from the ISB travel grant award. The XVIIth International Congress of Biomechanics provided a very positive experience in the academic and professional development stage of my career. The VIIIth International Symposium on Computer Simulation in Biomechanics further enhanced my specific research development. I was not only able to assess the current state of my research skills, but was able to determine the necessary skills needed to become a successful scientist and educator. Hopefully, other students will have the opportunity to receive the same award for future conferences. I believe that the award provides a vital source of funding for students wishing to improve their chances at succeeding in the field of Biomechanics.

Political Sensitivity in the USA Americans With No Abilities Act

WASHINGTON, DC (SP)--On Tuesday, Congress approved the Americans With No Abilities Act, sweeping new legislation that provides benefits and protection for more than 135 million talentless Americans. The act, signed into law by President Clinton shortly after its passage, is being hailed as a major victory for the millions upon millions of U.S. citizens who lack any real skills or uses. "Roughly 50 percent of Americans, through no fault of their own, do not possess the talent necessary to carve out a meaningful role for themselves in society," said Clinton, a longtime ANA supporter. "Their lives are futile hamster-wheel existences of unrewarding, dead-end busywork: Xeroxing documents written by others, fulfilling mail-in rebates for toaster ovens, and processing bureaucratic forms that nobody will ever see. Sadly, for these millions of nonabled Americans, the American dream of working hard and moving up through the ranks is simply not a reality."

Under the Americans With No Abilities Act, more than 25 million important-sounding "mid-level" positions will be created in the white-collar sector for nonabled persons, providing them with an illusory sense of purpose and ability. Mandatory, non-performance-based raises and promotions will also be offered to create a sense of upward mobility for even the most unremarkable, utterly replaceable employees.

The legislation also provides corporations with incentives to hire nonabled workers, including tax breaks for those who hire one non-germane worker for every two talented hires. Finally, the Americans With No Abilities Act also contains tough new measures to prevent discrimination against the nonabled by banning prospective employers from asking such job-interview questions as, "What can you bring to this organization?" and "Do you have any skills that would make you an asset to this company?"

"As a nonabled person, I frequently find myself unable to keep up with co-workers who have something going for them," said BettyAnne Crump, who lost her position as an unessential filing clerk at a Minneapolis tile wholesaler last month because of her notable lack of skills. "This new law should really help people like me." With the passage of the Americans With No Abilities Act, Crump and millions of other untalented, unessential citizens can finally see a light at the end of the tunnel.

Said Clinton: "It is our duty, both as lawmakers and as human beings, to provide each and every American citizen, regardless of his or her lack of value to society, some sort of space to take up in this great nation."

Thanks to Alan Litsky, The Ohio State University, for this submission.

Chemical Philosophy

The following is a question and response that was given on a chemistry midterm examination at a PAC-10 university in the Northwest USA.

BONUS QUESTION: Is Hell exothermic (gives off heat) or endothermic (absorbs heat)? (Most students wrote proofs of their beliefs using Boyle's Law, which states that a gas cools when it expands and heats up when compressed. One student, wrote the following.)

First, we need to know how the mass of Hell is changing with time. So we need to know the rate that souls are moving into hell and the rate at which they are leaving. We can assume that the rate of souls leaving Hell is zero. Next we must determine the rate at which souls are entering Hell. This requires examining those religions that recognize the existence of Hell. Some of these religions state that individuals who are not members of that religion will go to Hell. Since there are more than one of these religions and since people do not generally belong to more than one religion, the result is that all souls go to Hell. In light of the current birth and death rates, we can assume that the number of souls entering Hell will increase exponentially.

Now let us evaluate the rate of change of the volume of Hell. Boyle's Law states that in order for the temperature and pressure in Hell to stay the same, the volume of Hell must expand as souls are added. This gives rise to two possibilities. The first, if Hell is expanding at a slower rate than the rate at which souls enter Hell, then the temperature and pressure in Hell will increase until Hell breaks loose. The second, if Hell is expanding at a rate faster than the increase of souls in Hell, then the temperature and pressure will drop until Hell freezes over. So which one is it? If we accept the postulate given to me by most women that I meet that "it will be a cold day in Hell before I go out with you", and consider that I have not yet successfully engaged a woman on a date, then #2 can not be true. Thus, I am convinced that Hell is exothermic and will not freeze.

Thanks to Vincent Hascall, The Cleveland Clinic Foundation, for this submission.

When good lawyers go bad... More consumer warning labels:

- On Sears hairdryer: Do not use while sleeping.
- On a bag of Fritos: You could be a winner! No purchase necessary. Details inside.
- On a bar of Dial soap: Directions: Use like regular soap.
- On some Swann frozen dinners: Serving suggestion: Defrost.
- On Tesco's Tiramisu dessert: (printed on bottom of the box): Do not turn upside down.
- On Marks & Spencer Bread Pudding: Product will be hot after heating.
- On packaging for a Rowenta iron: Do not iron clothes on body.
- On Boot's Children's cough medicine: Do not drive car or operate machinery.
- On Nytol sleep aid: Warning: may cause drowsiness.
- On a Korean kitchen knife: Warning keep out of children.
- On a string of Chinese-made Christmas lights: For indoor or outdoor use only.
- On a Japanese food processor: Not to be used for the other use.
- On Sainsbury's peanuts: Warning: contains nuts.
- On an American Airlines packet of nuts: Instructions: open packet, eat nuts.
- On a Swedish chainsaw: Donot attempt to stop chain with your hands or genitals.
- On a child's superman costume: Wearing of this garment does not enable you to fly.

Thanks to the Editorial Office of Clinical Biomechanics, for this submission.

From the President('s student) Food Service and Software Provider Parallels

- Patron: Waiter!
- Waiter: Hi, my name is Bill, and I'll be your Support. What seems to be the problem?
- Patron: There's a fly in my soup!
- Waiter: Try again, maybe the fly isn't really there.
- Patron: No, it's still there.
- Waiter: Then it must be the way you're using the soup; try eating it with a fork instead.
- Patron: Even when I use the fork, the fly is still there.
- Waiter: This is starting to sound like an incompatibility issue; what kind of bowl are you using?
- Patron: A SOUP bowl! The same one YOU served me!
- Waiter: Hmmm, that usually works. Maybe it's a configuration problem; how was the bowl set up?

Patron: You brought it to me on a saucer; what has that to do with the fly in my soup?!

Waiter: Can you remember everything you did before you noticed the fly in your soup?

Patron: I sat down and ordered the Soup of the Day!

Waiter: At this point my best advice is for you to upgrade to the latest Soup of the Day.

Patron: You have more than one Soup of the Day each day??

Waiter: Yes, the Soup of the Day is changed every hour.

Patron: Well, what is the Soup of the Day now?

Waiter: The current Soup of the Day is tomato.

Patron: Fine. Bring me the tomato soup, and the check. I'm running late now.

Waiter: (Leaves and returns with another bowl of soup and the check.)

Waiter: Here you are, Sir. The soup and your check.

Patron: This is potato soup.

Waiter: Yes, the tomato soup wasn't ready yet.

Patron: Well, I'm so hungry now, I'll eat anything.

Waiter: Enjoy! (Leaves.)

Patron: Waiter! There's another fly in my soup!

Waiter: That sir, is not a fly, it is a protein feature.

We have included this enhancement free with your soup upgrade.

Patron: This is completely UNACCEPTABLE!!!

Waiter: Well, according to the license agreement printed on the back of your latest napkin, we are not liable for your disliking our product features. I believe we can close this ticket now. (Removes old check and leaves a new one.)

Patron: (Reads the check:)

Soup of the Day

\$1.50

Upgrade to newer Soup of the Day

\$2.50

Access to support \$ 5.00 X 3 INCIDENTS

\$15.00

Subtotal

\$19.00

Mandatory Gratuity. (25%)

\$

4.00

Thanks to Steph Steiner, from the laboratory of Professor Kit Vaughan, for this submission

EDITOR'S NOTE

The ISB Newsletter is published quarterly: February-March; May-June; August-September, and November-December. There are alternative printing schedules that coincide with unbelievable errors. Deadlines for material and articles are the first day of each first named month, which if read literally would make everything due on January 1, but that is not correct. For the alternative schedule 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 anything they would like to relate to the international 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 at the time at which the item was received. We presume the content reflects somebody's philosophy and opinion at some time. Naturally, items such as *Letters, Special Articles, Affiliate Society News, Laboratory Features, Reports, or Announcements of Meetings, Conferences, and Reviews of relevant conferences and other biomechanics-related information are desirable and may be considered for publication if there is room. Thesis Abstracts* can be published if they do, or do not meet any criteria. For example, Thesis abstracts that provide an Introduction that includes the rationale and hypotheses of the study, description of the methods, the key results, and important conclusions are considered desirable. 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 student has ever done 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. The Editor reserves the right to translate the some forms of English to yet another form of English thus changing everything. Go ahead, roll the dice. Hard copy submissions of anything are acknowledged telepathically and subsequently placed in a recycle bin. Submission is not a guarantee of a timely or accurate appearance in the Newsletter.



IOC OLYMPIC
PRIZE
ENDORSED BY
PARKE-DAVIS

*The Fifth IOC-World-Congress on Sport
Sciences*

by Bruce Elliott and Benno M. Nigg

Between October 31st and November 5th, 1999, the Fifth IOC World Congress on Sport Science took place in Sydney, Australia, under the Sponsorship of Parke-Davis. This was part of the Olympic Partnership program between Parke-Davis and the IOC Medical Commission (the IOC Olympic Prize, the IOC World Congress, the Olympic Academy of Science and the Olympic Research Projects).

Organized by the Congress Organizing Committee of the IOC Medical Commission in co-operation with Sports Medicine Australia and the Sydney Organizing Committee of the Olympic Games (SOCOG), the congress attracted about

Professors Elliott and Dillman as co-chairs



Congress Organizing Committee

1300 scientists from 61 countries and all continents who were there to exchange new research findings and ideas related to movement, exercise and sport.

Under the umbrella theme of *Science and Medicine of skilled performance: optimization, injury prevention and rehabilitation*, symposia and workshops were offered in medical,

biological, physical and behavioral sciences. These dealt with both the elite athlete and the general population. Topics discussed in these workshops included (1) Keeping people physically active – motivation through the life span, (2) Strategies to enhance fatigue resistance, (3) Feedback of biomechanical information for the elite athlete, (4)

Sporting footwear and injury development, (5) Scientific basis of cycling and gymnastics. Additional symposia and workshops dealt with clinical sports medicine, physiotherapy and podiatry.

Keynotes / Invited Speakers:

Woo, USA: Olympic Prize address

Gandevia, Australia: The neural basis of fatigue

Coyle, USA: Determinants of endurance exercise performance

Mester, Germany: The vibration of biological systems

Frank, Canada: Optimization of the biology of soft tissue repair

De Koning, Netherlands: Technique, equipment and performance

Pedersen, Denmark: Exercise and the immune system

Hardy, UK: Stress, anxiety and performance

Lieber, USA: The biology of muscle injury rehabilitation

One of the highlights of the congress was the first selection of the winners of the Prince de Merode Awards for the best papers at the IOC World Congress. The awards were given in the areas of biological, medical, physical and behavioral sciences. The winners of these awards were:

Biological Science:

Simon Green

Effect of Exercise intensity on Muscle interstitial K⁺

Medical Science:

Chris Howe

Investigation of 17kDa Human Growth Hormone Fragment in Serum as a Marker for Human Growth Hormone Doping

Leanne Saxon

Heterogeneity in the Osteotropic Response to Exercise During Different Stages of Puberty

Physical Science:

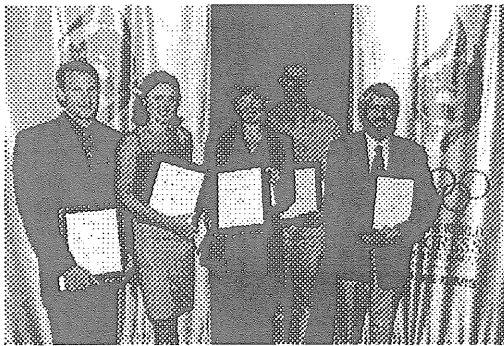
Thor Besier

A Biomechanical Knee Model for the Clinical Prediction of In-Vivo Tissue loads

Behavioral Science:

Trisha Leahy

Evaluation of a body Image Enhancement Program with Elite Athletes.



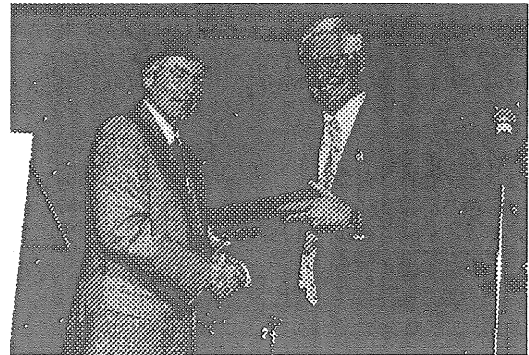
Left to right: Thor Besier, Leanne Saxon, Trisha Leahy, Simon Green, Chris Howe

The participants were invited to tour some of the Olympic Venues, the Olympic Village, the Olympic Pool and the Main Stadium and were impressed by the outstanding architecture and the integrated planning of facilities, Olympic Village and Venues.

The Olympic Academy of Science held its founding meeting during the Congress. A scientific body composed of outstanding scientists from all over the world. The Olympic Academy of Science will study movement, exercise and sport related questions. The 22 founding members include two Nobel Laureates, Dr. Christian de Duve of Belgium and Dr. Andrew Huxley of the United Kingdom. The goals of the Olympic Academy are (1) to

disseminate the knowledge on movement, exercise and sport to athletes and the general population, (2) to act in an advisory function to the IOC and (3) to elevate the field of movement, exercise and sport sciences.

Much to the pleasure of Congress participants, it was announced that research sponsored by Parke-Davis (250,000 US\$) and Adidas (125,000 US\$) will be conducted during the Olympic Games in Sydney. Top scientists will carry out projects in seven different sports - track and field, swimming, gymnastics, rowing, kayaking, tennis and softball - with the goal of improving performance and/or reducing the risk of injuries.



Dr. C. Dillman, Co-chair of the Congress Organizing Committee and W. Dickerson, Parke-Davis

The IOC World Congress takes place every two years. The 6th IOC World Congress will take place in Salt Lake City, September 2001.

ISB Membership News

New Members to ISB

CHU, Jeffrey (#2332)
Department of Exercise Science
University of Massachusetts at Amherst
16 Bedford Ct.
Amherst, MA 01002
USA

PAYNE, Craig (#2333)
Department of Human Biosciences
LaTrobe University
Kingsbury Drive
Bundoora, VIC 3083
AUSTRALIA

IMHAUSER, Carl (#2334)
Dept. of Mech. Engineering &
Mechanics
Drexel University
5 Starview Dr.
Neshanic, NJ 08853
USA

CUDDEFORD, Tyler (#2335)
Physical Therapy Graduate Program
University of Iowa
2600 Steindler Bldg
Iowa City, IA 52242
USA

RINGLEB, Stacie (#2336)
Gait Study Center
School of Podiatric Medicine
Temple University
Eighth at Race Street
Philadelphia, PA 19107
USA

SOMMER, H.J. (#2337)
Dept. of Mechanical Engineering
Penn State University
337 Leonhand Bldg.
University Park, PA 16802
USA

MICHAUD, Jean-Francois (#2338)
Department de Readaptation
Faculte de Medecine
University of Laval
525, Boul. Wilfrid-Hamel, Bureau B-77
Quebec, Quebec G1M 2S8
CANADA

CHRISTINA, Kathryn (#2339)
Dept. of Kinesiology (C.E.L.O.S.)
Penn State University
29 Recreation Bldg.
University Park, PA 16802
USA

ERDEMIR, Ahmet (#2340)
Dept. of Kinesiology (C.E.L.O.S.)
The Pennsylvania State University
29 Recreation Bldg.
University Park, PA 16802-5702
USA

SMEATHERS, James (#2341)
Dept. of Human Movement Studies
Queensland University of Technology
Kelvin Grove Campus
Victoria Park Road
Red Hill, QLD 4059
AUSTRALIA

CHEN, Dong (#2342)
School Of Pysiotherapy
La Trobe University
Bundoora, Vic 3083
AUSTRALIA

DENNIS, Gary (#2343)
Dept. of Physiotherapy & Exerc. Science
Griffith University, Gold Coast Campus
34 Palm Crest Heoghts,
Palm Meadows Dr.
Gold Coast, QLD 4217
AUSTRALIA

CHOW, Dann (#2344)
Human Performance Laboratory
University of Calgary
2500 University Dr. NW
Calgary, AB T2N 1N9
CANADA

NESTER, Christopher James (#2345)
School of Health Care Professions
University of Salford
Brian Blatchford Building
Salford, M6 6PU
UNITED KINGDOM

HAMEL, Andrew (#2346)
Dept. of Mechanical Engineering
Penn State University
C.E.L.O.S.
29 Rec. Hall
University Park, PA 16802
USA

VALSTAR, Edward R. (#2347)
Department of Orthopaedics
Leiden University Medical Centre
P.O. Box 9600
Leiden 2300 RC
THE NETHERLANDS

FERBER, Reed (#2348)
Dept. of Exercise & Movement Science
University of Oregon
122 Esslinger Hall
Eugene, OR 97403
USA

SOMMER, Hans-Martin (#2349)
Bereichsportmedizin
Institut fur Sportwissenschaft
U. Motologie, Uni-Marburg
Barfuesserstr, 1
35037 Marburg 35037
GERMANY

DESHPANDE, Balachandra (#2350)
Department of Safety Services
Easi Engineering
2025 Concept Drive
Warren, Michigan 48091
USA

MCKEOWN, Kelly Anne (#2351)
>Dept. of Exercise Science -
Biomechanics
>University of Massachusetts
187 Colonial Village
Amherst, MA 01002

NGUYEN, Tam Chanh (#2352)
Orthopaedic Dept. - Gait Analysis Lab.
Royal Children's Hospital
Flemington Rd.
Parkville, Vic 3052
AUSTRALIA

CAMPBELL, Rebecca (#2353)
Department of Anatomical Sciences
University of Queensland, St. Lucia
Brisbane, QLD 4072
AUSTRALIA

EILS, Eric (#2354)
Orthopaedic Department
University of Muenster
Funktionsbereich Bewegungsanalytik
Domogk str. 3
Muenster 48129
GERMANY

YOO, Herb (#2355)
NIKE Sport Research Laboratory
One Bowerman Drive
Beaverton, OR 97005
USA

TAKAHASHI, Keizo (#2356)
Doctoral Program in Health & Sport
University of Tsukuba
1-1-1 Tennodai
Tsukuba, Ibaraki 305-0006
JAPAN

NUNOME, Hiroyuki (#2357)
Res. Cntr. of H'lth, Phys. Fit. & Sport
Nagoya University
Furo-cho, Chikusa
Nagoya 464-8601
JAPAN

MONTI, Ryan (#2358)
Dept. of Physiological Science
University of California, Los Angeles
621 Charles E. Young Dr. Sth., Box
951527
Los Angeles, CA
USA

MARRAS, William S. (#2359)
Biodynamics Lab
The Ohio State University
1971 Neil Avenue
Columbus, Ohio 43210
USA

**Texts for the Movement Sciences
From
Waterloo Biomechanics**

**The Biomechanics and Motor Control of Human Gait;
Normal, Elderly and Pathological, 2nd Edition. 1991**
David A. Winter
143 pages, 125 figures, 50 tables, 500 references
\$45.00 CAN, \$35.00 US

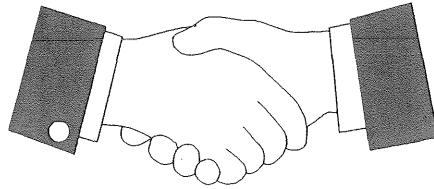
**A.B.C.(Anatomy, Biomechanics and Control) of Balance
during Standing and Walking. 1995. David A. Winter**
56 pages, 54 figures, 2 tables, 104 references
\$24.00 CAN, \$18.00 US

**Signal Processing and Linear Systems for the Movement
Sciences. 1997. David A Winter, Aftab E. Patla**
110 pages, 94 figures, 3 tables
\$35.00 CAN, \$27.00 US

**Introduction to Biomechanics for Human Motion Analysis
1998. D. Gordon E. Robertson**
230 pages, 131 figures, 13 tables, 120 example problems
\$65.00 CAN, \$48.00 US

For flyers and payment information please contact:
Waterloo Biomechanics
364 Warrington Drive
Waterloo, Ont. N2L 2P6, Canada
Ph:(519)747-0077, Fax:(519)747-1894, dwinter@golden.net
Price includes airmail delivery. US and Cdn cheques accepted

The International Society of Biomechanics Gratefully Acknowledges the Support of these Companies



 **Motion Analysis**TM

3617 Westwind Blvd. Santa Rosa, CA, 95403 Tel: 707-579-6500 FAX 707-526-0629

 **PEAK**
PERFORMANCE TECHNOLOGIES INC.
Tel: 303-799-8686 Fax: 303-799-8690 www.peakperform.com

QUALISYS ProReflexTM
Captures the motion

www.qualisys.se

QUALISYS AB (PUBL.) Göteborgsvägen 74, SE-433 63 Sävedalen, Sweden.
Tel: +46 31 36 94 00. Fax: + 46 31 36 94 20. E-mail: sales@qualisys.se

 **Vicon**
Motion Systems

Oxford Metrics Ltd, 14, Minns Estate,
West Way, Botley, Oxford OX2 0JB, UK
Tel: +44 (01865) 261800 Fax: +44 (01865) 240527
Email: sales@metrics.co.uk

**OXFORD
METRICS**

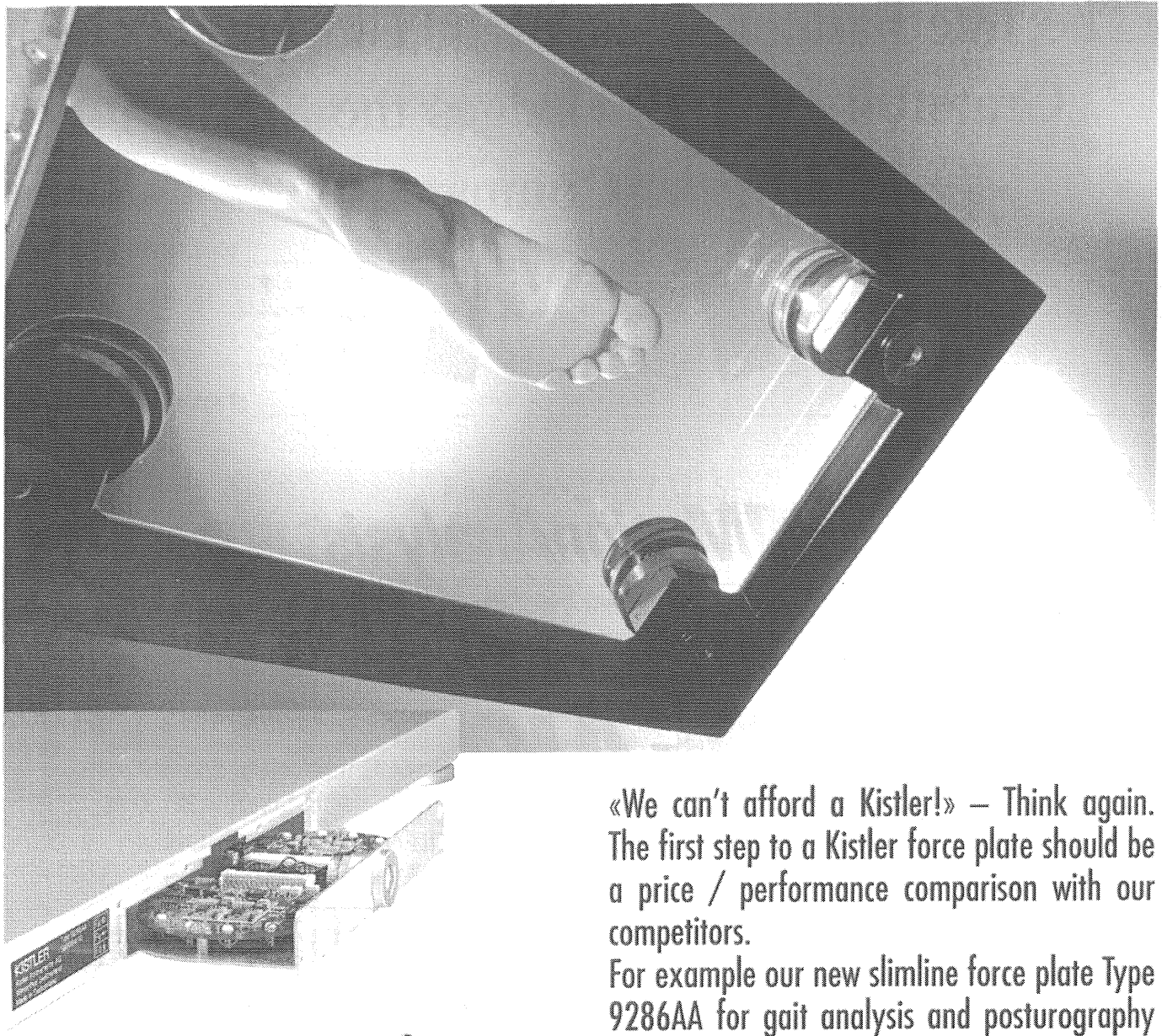
Vicon Motion Systems, 15455 Redhill Ave, Suite B&C, Tustin, CA 92680 USA
Tel: +1 (714) 259-1232 Fax: +1 (714) 259-1509 Email: sales@vicon.com Website Address: www.metrics.co.uk

Kistler Bio-mechanics Ltd.
Mill Lane, Alton, Hampshire GU34 2QJ, GB
Tel (0 14 20) 54 44 77
Fax (0 14 20) 54 44 74

KISTLER

Kistler Instrumente AG Winterthur
PO Box 304, CH-8408 Winterthur, Switzerland
Tel + 41 - 52-224 11 11, Fax 224 14 14
www.kistler.com/biomech

The Original – now at strain gage prices



**Price reduction
due to built-in
electronics**

«We can't afford a Kistler!» – Think again. The first step to a Kistler force plate should be a price / performance comparison with our competitors.

For example our new slimline force plate Type 9286AA for gait analysis and posturography has become 30 % cheaper after building the miniaturized charge amplifier right into it. Contact us for more information.

KISTLER

Kistler Bio-mechanics Ltd.
Mill Lane, Alton, Hampshire GU34 2QJ, GB
Tel (0 14 20) 54 44 77
Fax (0 14 20) 54 44 74

Kistler Instrumente AG Winterthur
PO Box 304, CH-8408 Winterthur, Switzerland
Tel + 41 - 52-224 11 11, Fax 224 14 14
www.kistler.com/biomech