



International Society of Biomechanics Newsletter

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AFFILIATE SOCIETIES OF ISB:

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

From the President: Guenter Rau

Each of the members of the ISB has started into the last year of the millennium with individual feelings and expectations. I hope that we will be prepared at the end of this year to face all of our personal and professional Y2K-challenges. The upcoming Congress at Calgary 1999 will be an outstanding ISB event. It will provide an excellent platform for coming together to exchange professional knowledge and to address those tasks that confront us. Due to the provisions arranged by the organizers, the Congress will be a beautiful occasion to meet new friends and to re-acquaint ourselves with "old" friends. The ISB initiatives directed at our student members will hopefully enable many of our young scientists to participate in the Congress. We can already offer our congratulations to the organizers! I hope to see all of you in Calgary.

The developments in life sciences seem to me very vigorous at the moment. Similar ideas are considered as important in various regions of the world. However, the level of support for research and development and the topics for which support is available is very different across countries. In the US, a certain continuity is to be observed while the resources are likely to be increased. In Europe the so-called 5th Framework Programme has been approved by the European Parliament and will be started in action in March 1999. Here the human well-being is in the focus of interest, technology is considered one of the inevitable tools.

The world-wide trends towards biotechnology, molecular and cellular biology, and genetic engineering are expanding. Perhaps it would be reasonable to establish an ISB task force to review current developments along those lines and to propose means by which ISB can adjust to accommodate these trends.

Various activities within ISB are ongoing such as development of standardised biomechanical, continuous dialogues with sponsors and authorities, student's programmes, and contacts with other scientific societies etc. I wish to thank all members of the Council and the ISB for their input and their active efforts. If you would care to share your personal views, opinions and experiences, please, forward them to me or a Council member. And do not forget to visit our WEB pages.

From the Editor: Mark D. Grabner

I recently read three items that caused me to think about what has been generally referred to as a glut in the PhD market. The three items were an interview with Nobel Laureate Douglas Osheroff, a report entitled "Trends in Early Research Careers of Life Scientists" from the National Academy of Sciences (NAS), and a

report from a National Institutes of Health (NIH) Bioengineering Symposium convened in February of 1998.

The interview with Dr. Osheroff, Professor of Physics at Stanford University and 1996 Nobel Laureate in Physics, appeared in the *Annals of Improbable Research* 5:1, 1999. Dr. Osheroff was asked "What advice do you have for young people who are entering your field?"¹ The Professor responded, "... look for something that you find intellectually stimulating and yet at the same time emotionally satisfying... something you enjoy doing and you do well and that you think has a purpose and a value... don't be attracted to a field because it's a lofty ideal or a momentary excitement... if you don't enjoy the day to day doing of what you do, you've made a big mistake". On one level I was impressed with these suggestions. However, not all of us can reach the level of accomplishment of Dr. Osheroff. Further, even many Nobel Laureates must be concerned with where the next grant will come from. It is possible that quite independent of the stimulation and satisfaction a person anticipates deriving from being involved in a given field, a crucial variable in the equation is the availability of the career opportunities in the selected field. At least in some scientific disciplines, career opportunities are increasingly decreasing.

The report from the NAS was published in *The Physiologist* 41:6, 1998. One component of the report was an assessment of career trends for PhDs in the life sciences. Although PhDs in the Life Sciences reflect a different population than PhDs in Biomechanics, I found myself wondering about how the issues raised in the report relate to Biomechanics. As far as I know, there are no such data to which we as biomechanists can turn. In my opinion, this represents a worthy undertaking for ISB.

In the life sciences there are simply more PhDs than PhD positions. Indeed, during the period 1987-1996 there was a 42 percent increase in PhD production. This increase was not accompanied by similar growth in available employment. For PhDs in the life sciences graduating in 1985-86, only 38 percent had achieved tenured positions at universities 10 years later. Today's new life scientist PhD is twice as likely to accept a postdoctoral fellowship compared to the new PhD during the 1960s and 1970s. Further, it is common for a person to spend 5 or more years as a postdoctoral fellow. The report indicated that because the future of the life

Editor's Note¹ Other questions in the interview included the following. "When you go to a lecture hall, how do you go about choosing a seat?" "Do you have any secrets for dozing off". All of this is compelling reading.

sciencesⁱⁱ is reliant on attracting the most talented students, these students should be appraised at the onset of their training of their chances for achieving their career goals.

In the life sciences, PhD production exhausts the availability of the collective employment opportunities found in academe, government and industry. One of the broad recommendations from the committee was to *curtail the rate of growth of the number of graduate students*. Although this would directly address the prediction that the number of PhDs in the life sciences will double in the next 14 years, the recommendation is not universally applauded.

Another recommendation of the committee was to ensure that the PhD degree remains a research intensive degree with the primary purpose of training future independent scientists. Quite often, independence is characterized as sustained funding. This is one reason that I believe the Proceedings of the NIH Bioengineering Symposium should be of interest to all mentors and students in biomechanics. The symposium was organized to identify the challenges in biomedical research that can benefit from bioengineering approaches, to define the role of bioengineering for future advancements in biomedical research, to determine how to integrate bioengineering with biological research to meet these challenges, and to make recommendations to the NIH for areas of future investment.

The document includes the reports of 16 panels. Each was charged with "identifying goals and obstacles and to prepare recommendations for new scientific initiatives of the highest priority, accompanied by strategies for achieving the proposed objectives". Among the panel sessions were those focused on bioengineering in clinical medicine, biomedical engineering in rehabilitation, functional biomaterials, imaging, instruments and devices, mathematical modeling, and therapeutics.

The section titled Biomechanical Solutions was chaired by Y-C Fung and Carol Lucas. The following was taken directly from the Vision Statement. "Biomechanics has contributed to understanding physiology and pathology, development of medical and diagnostic and treatment procedures, design and manufacture of prostheses, improvement of human performance in the workplace and sports, automobile safety, injury prevention, and protection of the aged, handicapped, sick and injured. Biomechanics has addressed problems of blood circulation, musculoskeletal systems, ultrasound imaging, tissue remodeling, mass transport in kidney dialysis and in cancer drug delivery, development of artificial internal organs and joints,

ⁱⁱ Some would argue that it is the future of senior scientists in the life sciences that is reliant on attracting the most talented students

automated gait analysis, human tolerance, and tissue engineering... Biomechanics is uniquely qualified to address these broad issues. Biomechanics must be an integral part of a solution to the grand challenge of integrating bioengineering with biological research of the next 1-2 decades".

Being an optimist, I am excited by the future for biomechanics as depicted by the NIH Bioengineering Symposium. I also believe that the discipline of Biomechanics presently offers a breadth and depth of career opportunities that increases the wisdom of the advice offered by Dr. Osheroff. I would be happy to hear your comments on these issues (grabiner@bme.ri.ccf.org).

**From ISB99: Darren Stefanyshyn
NOVEL Award for Foot Biomechanics**

The International Society of Biomechanics (ISB) has received an award offer of US\$10,000 from NOVEL GmbH for a competition to attract outstanding papers in the area of Foot Biomechanics. The award will be presented at the XVIIth ISB Congress in Calgary, August 1999 and the first author of the winning paper will present the NOVEL Invited Lecture at the Congress.

Abstracts are solicited for this competition with the call for papers for the XVIIth ISB Congress. Any scientist may submit an abstract for the award, including non-ISB members. From the abstracts submitted for this competition, 6 abstracts are selected and nominated for the award. The authors of the 6 selected abstracts are requested to submit a full-length 20-25 page double-spaced paper. The paper must be entirely original, not published at the time of the Congress in any journal nor submitted for publication to any Journal or Book. The paper must describe a study related to foot biomechanics. A blind review of entries will be conducted by a jury of senior members of the ISB who are experts in foot biomechanics.

Individuals must include a cover letter with their abstract submission clearly indicating they would like to be considered for the Novel Award.

Time schedule

- Submission of abstract to Congress Office: January 31, 1999 (deadline)
- Notification of the nomination: March 24, 1999
- Submission of full manuscripts to jury chairman: April 24, 1999 (deadline)
- Decision and notification: May 15, 1999
- Presentation of the Award: August 13, 1999

Additional information about the award and the XVIIth ISB Congress can be obtained from the Congress website, www.kin.ucalgary.ca/isb99/

**In Fond Memory-
Thomas A. McMahon, 1944 - 1999**

"In my dream, it never would end this way ... "

He was a Harvard man with a doctorate from MIT. He advised and taught engineering students; conceived of, designed, built and performed biological experiments; and took an occasional sabbatical to write a novel. He liked to share his musings and equations - which were sometimes the same - with auditoriums full of people, but on any given morning he could be found sculling alone on the Charles River. Professor Thomas A. McMahon, the Gordon McKay Professor in the Division of Applied Sciences at Harvard University died Sunday, February 21, 1999, in his home in Wellesley, MA, where he was recovering from surgery. He was just 55 years old. Time is short.

Far from retired in spite of his several seminal contributions to biology, engineering and biomechanics, Tom actively conducted research, wrote, and inspired with his gifts of creativity and wonder, which were still in bloom. Just three years ago, he and his student James Glasheen were popularly and professionally recognized for their experiments with the "Jesus Christ Lizard," a Central and South American lizard that runs on top of water for short distances when it is startled. Many of you were at the ASB meeting several years ago for his memorable lecture on the subject. That lecture demonstrated the rigorousness, uniqueness and creativity (sometimes bordering on silliness) that blended so well in Tom's work.

The physics of human and animal motion was an enduring interest of Professor McMahon's. He was intrigued by scaling principles in muscle and bone, which he summarized in the artful yet scientific *On Size and Life*. With colleague Peter R. Greene he designed the "tuned running track," an unusually soft and springy track that reduced times by about 3 percent while cutting injuries in half. When one of these was first installed at Madison Square Garden in New York City, runners produced record times in 11 of 12 events. Many of us were or will be students of his textbook *Muscles, Reflexes and Locomotion*. And you know you chuckled privately if not out loud when Professor McMahon explained energy efficient "Groucho running." Tributes to his many published contributions to engineering biology and biomechanics will continue for years to come in classrooms and conferences around the world.

Professor McMahon lived what is a professional dream for many, though his life was touched by the very human suffering he sought to prevent. His own father died after a fall and hip fracture while Tom collaborated with Toby Hayes and then-student Steve Robinovitch to develop preventive measures to that m. He experienced the struggles of being on the business end of an

orthopaedic surgeon's knife as well as the joy of being able to resume his beloved rowing shortly thereafter.

Professor McMahon's scientific heroes included Huxley, Hill, and McKay. He knew that the stories of scientific progress are the stories of people and their relationships, of hard work, crazy ideas, competition, and repeating a three-year project in the last three months before a deadline. He tried to share this secret with people through his novels, including *Principles of American Nuclear Chemistry: A Novel*, and *McKay's Bees*. He won the American Academy of Arts and Letters' Rosenthal Award for his 1987 novel *Loving Little Egypt*, about a nearly blind genius who tapped long-distance phone lines to create an underground network through which the blind could communicate. I wonder whether we'll get to see any part of his most recent work in which, he said, there are characters resembling people we know ...

Professor McMahon leaves his wife Carol (Ehlers), a son and daughter, two sisters, a granddaughter - and us.

*"In My Dream" by Roger Rose as sung on Mad at the World's *Flowers in the Rain*(1988).

Thanks to Amy Courtney for this submission

Job Market

The Job Market may be accessed via:

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

Upcoming Meetings, Workshops, Etc.

June

Russian Biomechanics Conference - 1999, 2-4 June 2-4, 1999, Ust-Kachka, Russia. Contact: Y. Nyashin, PhD, Tel: 3422 39 13 78, Email:

nyashin@tex.icmm.perm.su or J. Vossoughi, PhD, Tel: 202.274.5175, Email: vossoughi@classic.msn.com

First World Congress of Science and Medicine in Cricket, 14-17 Jun 1999, Newport, Shropshire, Contact: N. Stockill, PhD, Tel: 01952 670185, Fax: 01952 820924, Email:

nigelstockill@lsihpc.demon.co.uk

4th Summer Bioengineering Conference, 16-20 June, 1999, Big Sky, Montana. Contact: V.K. Goel, PhD, Iowa Spine Research Center, Department of Biomedical Engineering 1410 EB, College of Engineering, University of Iowa, Iowa City, IA 52242, Fax:

319.353.7516/319.335.5631, Email: Vijay-Goel@uiowa.edu,

www.asme.org/divisions/bed/summer99.html

Seminar on the Non-invasive Method of Myometry, 28 June -2 July 2, 1999, Tartu, Estonia. Contact: K. Kepler, Head of the Training Centre of Medical Physics and Biomedical Engineering, University of Tartu, Tahe 4, 51010 Tartu, ESTONIA, Tel: +372 7 375539, Email: kalle@physic.ut.ee, <http://www.ut.ee/BM/myoeng.html>

July

17th International Symposium of Bioemchanics in Sports. 30 Jun - 6 July, Perth Western Australia. Contact: R. Sanders, PhD, School of Biomedical and Sportss Sciences, Edith Cowan University, Joondalup, Western Australia, 6027. Tel: 61 8 9400 5860, Fax: 61 8 9400 5717, Email: r.sanders@cowan.edu.au

VI International Conference on Rehabilitation Robotics, 1-2 Jul, 1999, Stanford University, Stanford, California, U.S.A. Contact: M. Van der Loos, Ph.D., Rehabilitation R&D Center, VA Palo Alto Health Care System, 3801 Miranda Ave. #153, Palo Alto, CA, 94304, U.S.A. Tel: 650-493-5000 #65971.

vdl@roses.stanford.edu

3rd IMACS/IEEE International Multiconference on Circuits, Systems, Communications and Computers, 4-8 Jul 4 1999, Athens, Greece,

<http://www.softlab.ntua.gr/~mastor/CSCC99.htm>

14th Symposium of the International Society for Posture and Gait Research, 10-15 July, 1999, University of Waterloo, Waterloo Ontario, Canada,

[Http://www.ahs.uwaterloo.ca/ispg](http://www.ahs.uwaterloo.ca/ispg)

Bone and Tissue Mechanics Course, 19-23 Jul, 1999, Centro Internazionale di Scienze Meccaniche, Palazzo del Torso- Piazza Garibaldi, 18, 33100 UDINE (ITALY) Contact: Tel: +39.432.248511, Fax: 248.550, www.uniud.it/cism/homepage.htm

August

ISB Technical Group on Footwear Biomechanics Fourth Symposium, 5-7 Aug 1999, Greenwood Inn, Canmore, Canada, Contact: www.uni-essen.de/~qpd800/FWISB/Canmore99.html

VIIth International Symposium on Computer Simulation in Biomechanics, August 5-7, 1999, Calgary, Canada. The symposium is organized by the Technical Group Computer Simulation (TGCS) of the International Society of Biomechanics. Contact Email: icsb@bme.ri.ccf.org, <http://isb.ri.ccf.org/tgcs>.

ISB99 The University of Calgary, 8-13 Aug, 1999, Contact: M. Stroh, Conference Mgmt. Services, 1833 Crowchild Trail N.W., Calgary, AB, CANADA T2M 4S7, Tel: (403) 220-6229, Fax: (403) 284-4184, Email: mastroh@acs.ucalgary.ca

Second conference of the International Shoulder Group, 15 -16 August 1999, Calgary, Canada, (ISG is

an official working group under the ISB) Contact: www-mr.wbmt.tudelft.nl/shoulder/isg/isg.html

Progress in Motor Control - II: Structure-Function Relations in Voluntary Movements, 19-22 Aug 1999, Penn State University. Contact: M.L. Latash, PhD, Rec. Hall 267-L, Department of Kinesiology, Penn State University, University Park, PA 16802, Tel: 814.863.5374, Fax: 814.865.2440, Email: mll11@psu.edu

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

III International Scientific Congress on Modern Olympic Sport, 29 Aug -1 Sep, 1999, Warsaw, Poland. Contact: Akademia Wychowania Fizycznego, Jozefa Pitsudskiego, 00-968 WARSZAWA 45, skr. poczt. 55, ul. Marymoncka 34, Poland, Tel: (48-22) 864 21 00, Email: congress@awf.edu.pl

September

IV Polish Conference of Biomechanics, 9-11 September 1999, Polanica Zdroj, Poland. : Contact: Prof. R. Bedzinski, Wroclaw University of Technology, ul. Lukasiewicza7/9, 50-371 Wroclaw, Poland, Tel. ++48 71 3202713, Fax: ++48 71 227645, Email:

bedzin@exbio.ikem.pwr.wroc.pl

XII International Biomechanics Seminar, 10-11 Sept, 1999, Chalmers University of Technology, Göteborg, Sweden, Contact: K. Thörneby, Biomechanics, Chalmers University, S-412 96 Göteborg, Sweden, Tel: +46-31-772 1311, Fax: +46-31-772 1303 - 1313, Email: krisby@polymm.chalmers.se

11th Hungarian Medical Engineering Conference and the 2nd Hungarian Clinical Engineering Conference, BUDAMED '99, Budapest, 12-14 September, 1999.

Contact: varady@fsz.bme.hu

2nd International Cyberspace Conference on Ergonomics, 15 Sep - 15 Oct, 1999,

<http://www.curtin.edu.au/conference/cyberg/>

From basic motor control to function recovery- concepts, theories and models- present state and perspectives, 22 to 26 Sep 1999, Organised at the Black Sea, near Varna (Albena or Golden sands) in Bulgaria. Contact: N Gantchev, UPR Neurobiologie et Movements, CNRS, 31 Chemin Joseph-Aiguier, 3402 Marseille cedex 20 FRANCE, Phone 33 4 91 16 41 00, Fax 33 4 91 77 50 84, gantchev@lnf.cnrs-mrs.fr

October

IV International Symposium on Computer Methods in Biomechanics & Biomedical Engineering, 13-16 Oct, 1999, Lisbon, Portugal. Contact: John Middleton,

Biomechanics Research Unit, Cardiff Medicentre, Heath Park, Cardiff CF4 4UJ, Wales, UK. Tel/Fax: + 44 (0) 1222 682161, Email: MiddletonJ2@Cardiff.ac.uk
23rd Annual Meeting of the American Society of Biomechanics, 21-23 Oct 1999, University of Pittsburgh, Pittsburgh, PA, USA. Contact: J-K Suh, PhD. Musculoskeletal Research Center, Department of Orthopaedic Surgery, University of Pittsburgh, E1641 Bioscience Tower, Pittsburgh, PA, USA, Tel: 412.648.1985, Fax: 412.648.2001, Email: jsuh+@pitt.edu
VIIIth Association des Chercheurs en Activités Physiques et Sportives (roughly Association of Researchers on Physical Activity and Sports), 31 Oct – 3 Nov, 1999, Macolin, Switzerland. Contact: Claude-Alain Hauert, FPSE - Université de Genève, 9, route de Drize, CH-1227 CAROUGE, Tel: +41 22 705 97 70, Email: Claude-Alain.Hauert@pse.unige.ch,
<http://www.bham.ac.uk/sportex/ACAPS>

November

European Medical & Biological Engineering Conference, EMBEC'99, Vienna, Austria, 4-8 November 1999, <http://www.univie.ac.at/EMBEC99/>

2000

2nd International Congress on Skiing and Science in St. Christoph/Arlberg, Austria, 9-15 Jan 2000. Contact: Hermann Schwameder, Secretary General, Email: hermann.schwameder@sbg.ac.at
XVIIIth Conference of International Society of Biomechanics in Sports (ISBS2000), 25-30 June, 2000 in Hong Kong. Contact: Email: isbs2000@cuhk.edu.hk,
<http://www.cuhk.edu.hk/spe/isbs2000/index.htm>

2002

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

Places to "Go"

◆ ISB '99

www.kin.ucalgary.ca/isb99/

◆ Ergonomics and Human Factors sites
Human Factors and Ergonomics Society
www.hfes.org/

International Ergonomics Society
www.louisville.edu/speed/ergonomics/international_ergonomics_association.html

OSHA ergonomics page

www.osha-slc.gov/SLTC/ergonomics/

Report of the XIth International Biomechanics Seminar

The XIth International Biomechanics Seminar (IBS'98) was held in Wroclaw, Poland in September of this year. It was organised jointly by the Academy of Physical Education, Wroclaw, Poland, the Chalmers University of Technology, Göteborg, Sweden and the Polish Society of Biomechanics under the chairmanship of Prof. Stefan Kornecki.

The theme of the two-day seminar was the problem of muscular synergism with special emphasis on stabilising functions of skeletal muscles. It comprised four sessions devoted to various aspects of the muscle force sharing problem, each starting with a lecture of a distinguished invited speaker and containing four to five free communications. The lecturers were Necip Berme (Ohio State University), Roger Enoka (University of Colorado), Herbert Hatze (University of Vienna) and Walter Herzog (University of Calgary).

A book of proceedings containing full texts of the four invited lectures and free communications by authors representing Belgium, Bulgaria, Czech Republic, France, Israel, Latvia, Netherlands, Poland, Sweden and United Kingdom was published just before the seminar. More information on the seminar and the proceedings book is available at:

<http://netra.awf.wroc.pl/~as/ibs98/>

Thanks to Adam Siemienski, Secretary of the XIth International Biomechanics Seminar, for this submission.

International Travel Grant Report

Anna Murphy

San Diego, Portland and Glasgow in 45 days

When I opened my recent ISB newsletter, I received a very blatant reminder of my commitment to ISB to share my experiences as another of the recipients of the 1998 ISB International Student Travel Grant awards. As I am now a fellow student of Scott McLean at the University of QLD I can not allow myself to "let the team down" and be illusive in my appreciation for such a tremendous opportunity.

At the time I made the decision to apply for the grant, I was comfortably entrenched in a full-time job at the Australian Institute of Sport, considering with immense trepidation, the pro's and con's of becoming a full-time student once again. Having applied for a Ph.D. scholarship and been accepted, before I knew it I decided to take the plunge and redirect my career. In doing so, I became eligible for the grant and was fortuitously granted the opportunity to visit a clinical gait analysis laboratory and explore the realms of prosthetic technology across the other side of the world, a combination that reflected my subsequent Ph.D. endeavors. The intention of my travels was not only to gain some insight into my new direction, but to also discuss with numerous experts from a wide range of professional areas my thoughts and ideas for a Ph.D. project in the rehabilitation of lower limb amputees.

I was convinced by an old friend to begin my travels earlier than planned and attend the NASGCMA meeting in San Diego. Aside from the tutorials, posters and presentations that form the basis of a such a meeting, attendance at the meeting provided an invaluable opportunity to meet the people whose names you know only too well. Although attending such a conference may not be the purpose of such a grant, being given the opportunity to travel to the Northern Hemisphere provides endless possibilities that a southerner cannot normally contemplate. Scott was also privy to such experiences, which I believe highlights further the opportunities and benefits of the travel grant.

From San Diego, it was a short trip north to Portland Oregon, to spend two weeks at the Shriner's Hospital. My heartfelt thanks to Susan Sienko and Cathleen Buckon, who together provided an interesting outlook into the collaboration and cooperation necessary for the successful workings of a clinical gait laboratory. This relatively short stopover was an important component in fulfilling the desired outcome of my trip. I will be using a clinical gait laboratory for data collection. I therefore felt it was essential to understand and appreciate the roles of the rehabilitation team and the power of biomechanics in such an environment. This was a significant learning experience for me. The importance of biomechanical testing and the ensuing results may ultimately lead to critical surgical decisions whose outcome may change the physical capacity of a child. This truly hit home the importance of accuracy in your methodology, in data collection and profound knowledge in data interpretation. This became more evident when I had the unexpected opportunity to observe several orthopaedic surgical procedures. Fortunately I experienced no dizzy spells and managed to keep well

away from anything remotely sterile (much to the relief of my sister, a medical doctor in general practice).

The National Centre for Training and Education in Prosthetics and Orthotics at The University of Strathclyde was my final destination. Dr. Derek Jones provided a compact and interesting program, involving me in activities at both the University and the Southern General Hospital over a period of four weeks. I met numerous professionals at the hospital who all inundated me with information. Noteworthy of particular mention, are the many hours I spent with Catriona Nicolson, a talented technician, who demonstrated the finer skills of making prostheses. Helen Scott, Head of Physiotherapy, provided me with an assortment of material pertaining to physiotherapy and rehabilitation considerations, including activity programs currently being implemented in their gym and information about the support network available to all amputees. There were also many exuberant prosthetists who patiently described and discussed the essential issues in prosthetics and the most pertinent "rules" in ensuring success in pain free ambulation for the lower limb amputee. The combination of watching, listening and learning from such a wide range of professionals who make up the amputee rehabilitation team, certainly gave me the necessary foundations in developing an understanding of the needs and demands in prosthetics.

Scotland is a most fortunate place in that the Health System generously provides for their amputees. In returning home and becoming involved in the Amputee Clinics at local hospitals, I have come to realise how generous the Scottish support really is. Resources are very restricted here in Australia, particularly for children. Being exposed to a well-organised and well set-up system enabled me to appreciate the importance of a team approach to attain the highest functional outcome for the patient, regardless of monetary assistance. Research using statistical analysis and data retrieval has aided in the continual development and improvement of this service throughout Scotland. Led by Elizabeth Condie, the project SPARG provides detailed analysis of each amputee centre. Hence the success of different techniques of rehabilitation management can be assessed and implemented, with an expectation to improve the functional outcome of the patient population.

Research of the biomechanical variety has a very high profile within the National Centre. Jack Taylor, a man who has been involved in the development of prosthetics for over 40 years, is currently working on the design of a hydrostatic pressure system for casting of a prosthetic socket. This approach would virtually eliminate the need for rectification of the cast, a process that requires the technician to change the shape of the socket so that weight bearing can be distributed to appropriate sites on the stump. Computer aided design and manufacturing of sockets using the CAD/CAM is an internationally recognised system developed at the National Centre. The opportunity to observe the power of the interactive computer graphic techniques to create the form of the final socket was impressive. It highlights the true human skill required to make the perfect socket for each individual.

Taking advantage of my time in Scotland, I also spent a number of days investigating gait analysis systems. The Bioengineering Department at the

University of Strathclyde is a postgraduate haven, with a gait analysis system installed solely for research purposes. The invitation to spend one of my Ph.D. years at the University is certainly a tempting offer, and one I continue to contemplate. I also ventured east for a day to visit the Dundee Limb Fitting Centre, an Amputee Rehabilitation Hospital. Again the rehabilitation staff wore tremendous in their sharing of knowledge, but I was particularly interested in the Centre's gait analysis laboratory whose small claim to fame is the integral role it played in developing the Vicon system. The lab is currently considering a move to link up with a local university and diversify into sports biomechanics. An area I was all too familiar with!

My educational experiences however did not all involve talking. The National Center for Training and Education in Prosthetics and Orthotics has a wonderful library. With over 33,000 references in prosthetics alone, I was able to search to my heart's content for articles of interest for my own study. The video collection was also worth watching and was a good activity for some of those colder and very wet afternoons!

There were many people who contributed to the success of my trip and many who filled my head with lots of ideas, thoughts and endless possibilities. Without the support and commitment of ISB to their student members, however, such an opportunity would never present itself. My show of appreciation has certainly taken a long time in coming, but I have been able to reflect, recognise and appreciate the full value of my travels during the past 6 months. The impact it has had on my direction and understanding of clinical rehabilitation has proven invaluable in my adjustment to research within a Rehabilitation Department. I thank the ISB for their generous contribution and encourage all students to take advantage of experiencing, biomechanics not only in a different country, but also in a new and unfamiliar field of expertise. Not only will it impact on one's choice of career, but it will almost certainly guarantee the desire to keep traveling and experiencing the oddities of accents and language barriers and the beauty and culture each place has to offer. It has only reaffirmed my decision to change the direction in my career, and now I only have the long steep climb to finishing my Ph.D. project. Thanks ISB!

**Graduate Student Guide:
How to write more good**

1. Verbs has to agree with their subjects.
2. Prepositions are not words to end sentences with.
3. And don't start a sentence with a conjunction.
4. It is wrong to ever split an infinitive.
5. Avoid cliches like the plague. (They're old hat)
6. Also, always avoid annoying alliteration.
7. Also too, never, ever use repetitive redundancies.
8. Be more or less specific.
9. Parenthetical remarks (however relevant) are (usually) unnecessary.
10. No sentence fragments.
11. Contractions aren't necessary and shouldn't be used.

12. Foreign words and phrases are not apropos.
13. Do not be redundant; do not use more words than unnecessary; highly superfluous.
14. One should never generalize.
15. Comparisons are as bad as cliches.
16. Don't use no double negatives.
17. Eschew ampersands & abbreviations, etc.
18. One-word sentences? Eliminate.
19. Analogies in writing are like feathers on a snake.
20. The passive voice is to be avoided.
21. Eliminate commas, that are, not necessary. Parenthetical words however should be enclosed in commas.
22. Never use a big word when a diminutive one will suffice.
23. Kill all exclamation points!!!
24. Use words correctly, irregardless of how others use them.
25. Profanity is for ##@%!
26. Understatement is always the absolute best way to put forth earthshaking ideas.
27. Use the apostrophe in it's proper place and omit it when its not needed.
28. Eliminate quotations. As Ralph Waldo Emerson said, "I hate quotations. Tell me what you know."
29. If you've heard it once, you've heard it a thousand times: hyperbole; not one writer in a million can use it effectively.
30. Puns are for children, not for groan readers.
31. Go around the barn at high noon to avoid colloquialisms.
32. Even if a mixed metaphor sings, it should be derailed.
33. Who needs rhetorical questions?
34. Exaggeration is a billion times worse than understatement.
35. Proofread carefully to see if you any words out.

Update your vocabulary

- Assmosis:** The process by which some people seem to absorb success and advancement by kissing up to the boss. You will all be measured on this at some point in your career.
- Blamestorming:** Sitting around in a group discussing why a deadline was missed or a project failed and who was responsible. This one will be particularly valuable to those of you who have projects going right now.
- Seagull Manager:** A manager who flies in, makes a lot of noise, s---s all over everything then leaves. Another word for consultant.
- Salmon Day:** The experience of spending an entire day swimming upstream only to die in the end. We've had these before (and will again).

Chainsaw Consultant: An outside expert brought in to reduce the employee headcount, leaving the brass with clean hands.

CLM: Short lingo for 'career limiting move'. Used among microsersfs to describe ill-advised activity. Trashing your boss while she is within earshot is a serious CLM. (Related to CLB, career limiting behavior)

Adminisphere: The rarefied organizational layers beginning just above the rank and file. Decisions that fall from the adminisphere are often profoundly inappropriate or irrelevant to the problems they were designed to solve.

Dilberted: To be exploited and oppressed by your boss (not me!). Derived from the experiences of Dilbert, the geek-in-hell comic strip character. "I've been Dilberted again. The old man revised the specs for the fourth time this week."

Flight Risk: Used to describe employees who are suspected of planning to leave the company or department soon.

404: Someone who's clueless. From the World Wide Web error message "404 Not found", meaning that the requested document could not be located. "Don't bother asking him...he's 404, man."

Ohnosecond: That minuscule fraction of time it takes to realize that you've just made a BIG mistake.

Percussive Maintenance: The fine art of whacking the crap out of an electronic device to get it working.

Thanks to Rachel Skoss, University of Western Australia for the above vocabulary submissions

Resume Builders: taken from real resumes, published in Fortune Magazine, July 21, 1997

- I demand a salary commiserate with my extensive experience.
- I have lurnt Word Perfect 6.0 computer and spreadsheet programs.
- Received a plague for Salesperson of the Year.
- Reason for leaving last job: maturity leave.
- Wholly responsible for two (2) failed financial institutions.
- Failed the bar exam with relatively high grades.
- It's best for employers that I not work with people.
- Let's meet, so you 'ooh' and 'aah' over my experience.
- You will want me to be Head Honcho in no time.
- Am a perfectionist and rarely if ever forget details.
- I was working for my mom until she decided to move.
- Marital Status: single. Unmarried. Unengaged, Uninvolved. No commitments.
- I have an excellent track record, although I am not a horse.

- I am loyal to my employer at all costs?.. Please feel free to respond to my resume on my office voice mail.
- I have become completely paranoid, trusting completely no one and absolutely nothing.
- My goal is to be a meteorologist. But since I possess no training in meteorology, I suppose I should try stock brokerage.
- I procrastinate, especially when the task is unpleasant.
- Personal interests: donating blood. Fourteen gallons so far.
- As indicted, I have over five years of analyzing investments.
- Instrumental in ruining entire operation for a Midwest chain store.
- Note: Please don't misconstrue my 14 jobs as 'job-hopping'. I have never
- quit a job.
- Marital status: often. Children: various.
- Reason for leaving last job: They insisted that all employees get to work by 8:45 AM every morning. I couldn't work under those conditions.
- The company made me a scapegoat, just like my three previous employers.
- Finished eighth in my class of ten.
- References: none. I've left a path of destruction behind me.

Groaners...

- Q: How do crazy people go through the forest?
A: They take the psycho path.
- Q: How do you get holy water?
A: Boil the hell out of it.
- Q: What did the fish say when he hit a concrete wall?
"Dam!"
- Q: What do Eskimos get from sitting on the ice too long?
A: Polaroids.
- Q: What do prisoners use to call each other?
A: Cell phones.
- Q: What do the letters D.N.A. stand for?
A: National Dyslexics Association.
- Q: What do you call a boomerang that doesn't work?
A: A stick.
- Q: What do you call cheese that isn't yours?
A: Nacho Cheese.
- Q: What do you call Santa's helpers?
A: Subordinate Clauses.
- Q: What do you call four bull fighters in quicksand?
A: Quatro sinko.
- Q: What do you get from a pampered cow?
A: Spoiled milk.
- Q: What do you get when you cross a snowman with a vampire?
A: Frostbite.

Q: What has four legs, is big, green, fuzzy, and if it fell out of a tree would kill you?

A: A pool table.

Q: What lies at the bottom of the ocean and twitches?

A: A nervous wreck.

Q: Where do you find a dog with no legs?

A: Right where you left him.

Q: Where do you get virgin wool from?

A: Ugly sheep.

Q: Why are there so many Smiths in the phone book?

A: They all have phones.

Q: Why do bagpipers walk when they play?

A: They're trying to get away from the noise.

Q: What is a zebra?

A: 26 sizes larger than an "A" bra.

Q: What do you get when you cross a pit bull with a collie?

A: A dog that runs for help...AFTER it bites your leg off.

Q: What does it mean when the flag is at half mast at the post office?

A: They're hiring.

Q: What kind of coffee was served on the Titanic?

A: Sanka

Thanks to Julee Kasprisin, Cleveland Ohio, for the two preceding submissions.

Old and new concerns for Baby Boomers:

Then: Long hair.

Now: Longing for hair.

Then: Keg

Now: EKG.

Then: Acid rock

Now: Acid reflux.

Then: Moving to California because it's cool.

Now: Moving to California because it's hot.

Then: You're growing pot.

Now: Your growing pot.

Then: Watching John Glenn's historic flight with your parents.

Now: Watching John Glenn's historic flight with your kids.

Then: Trying to look like Marlon Brando or Elizabeth Taylor.

Now: Trying not to look like Marlon Brando or Elizabeth Taylor.

Then: Seeds and stems.

Now: Roughage.

Then: Popping pills, smoking joints.

Now: Popping joints.

Then: Our president's struggle with Fidel.

Now: Our president's struggle with fidelity.

AND THE WINNERS ARE:

Fifth Runner-up

Then: Paar.

Now: AARP.

Fourth Runner-up

Then: Being caught with Hustler magazine.

Now: Being caught by Hustler magazine.

Third Runner-up

Then: Killer weed.

Now: Weed killer.

Second Runner-up

Then: Hoping for a BMW.

Now: Hoping for a BM.

First Runner-up

Then: The Grateful Dead.

Now: Dr. Kevorkian.

And the winner:

Then: Getting out to a new, hip joint.

Now: Getting a new hip joint

Oldies but goodies...

When an agnostic dies, does he go to the "great perhaps"?

Why is the time of day with the slowest traffic called rush hour?

Do you think Houdini ever locked his keys in his car?

Why is there a road sign that says "Braille Institute, Next Exit"?

Can atheists get insurance for acts of God?

If procrastinators had a club would they ever have a meeting?

If the #2 pencil is the most popular, why is it still #2?

Have you ever wondered why just one letter makes all the difference between "here" and "there"?

When you go into a hotel you always see "reception". Why do you never just see "ception"?

If time heals all wounds, how come belly buttons stay the same?

If a lawyer and an IRS agent were both drowning, and you could only save one of them, would you go to lunch or read the paper?

Isn't it strange that the same people who laugh at gypsy fortune tellers take economist seriously?

If genetic scientists crossed a chicken with a zebra would they get a four legged chicken with it's own barcode?

If practice makes perfect, and nobody's perfect, why practice?

Why is there always one in every crowd?

If all the world is a stage, where does the audience sit?

Is it possible to have déjà vu and amnesia at the same time?

Why do hair shampoo instructions say "Lather. Rinse. Repeat"? If you did that, how could you stop?

Who decided "Hotpoint" would be a good name for a company that sells refrigerators?

How do you know when it's time to tune your bagpipes?

If you mixed vodka with orange juice and milk of magnesia, would you get a Phillip's Screwdriver?

Why do we say something is out of whack? What is a whack?

If a pig loses its voice, is it disgruntled?

Why do women wear evening gowns to nightclubs?

Shouldn't they be wearing nightgowns?

If love is blind, why is lingerie so popular?

When someone asks you, "A penny for your thoughts," and you put your two cents in, what happens to the other penny?

Why is the man who invests all your money called a broker?

Why do croutons come in airtight packages? It's just stale bread to begin with.

When cheese gets its picture taken, what does it say?

Why is a person who plays the piano called a pianist, but a person who drives a race car is not called a racist?

Why are a wise man and a wise guy opposites?

Why do "overlook" and "oversee" mean opposite things?

If horrific means to make horrible, does terrific mean to make terrible

Why isn't 11 pronounced "'onety-one"?

"I am" is reportedly the shortest sentence in the English language.

Could it be that "I do " is the longest sentence?

If lawyers are disbarred and clergymen defrocked, doesn't it follow that electricians can be delighted, musicians denoted, cowboys deranged, models deposed, tree surgeons debarked and dry cleaners depressed?

Why is it that if someone tells you that there are 1 billion stars in the universe you will believe them, but if they tell you a wall has wet paint you will have to touch it to be sure?

Do Roman paramedics refer to IV's as "4's"?

If people from Poland are called "Poles," why aren't people from Holland called "Holes"?

Do infants enjoy infancy as much as adults enjoy adultery?

If one synchronized swimmer drowns, do the rest have to drown too?

If you ate pasta and antipasto, would you still be hungry?

Why is it that when we bounce a check, the bank charges us more of what they already know we don't have any of?

Why can't you make another word using all the letters in "anagram"?

Why is it that no word in the English language rhymes with month, orange, silver, or purple?

Why, when I wind up my watch, I start it, but when I wind up a project, I end it?

Why is it that we recite at a play and play at a recital?

Why don't tomb, comb, and bomb sound alike?

If the singular of GEESE is GOOSE, shouldn't a Portuguese person be called a "Portugoose"?

Why is a procrastinator's work never done?

Are people more violently opposed to fur rather than leather because it's much easier to harass rich women than motorcycle gangs?

Thanks to Alan Litsky, Ohio State University for the two preceding submissions.

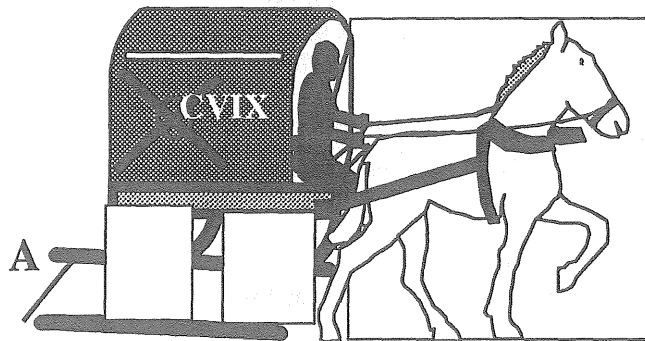
Roads, Horses, Romans and Biomechanics

Brian L. Davis
Cleveland Clinic Foundation

The US Standard railroad gauge (distance between the rails) is a very odd dimension: 4 feet, 8.5 inches. The explanation for this number is has been adapted from www.sdrm.org/faqs/gauge.html

1. That's the way they built them in England, and the US railroads were built by English expatriates.

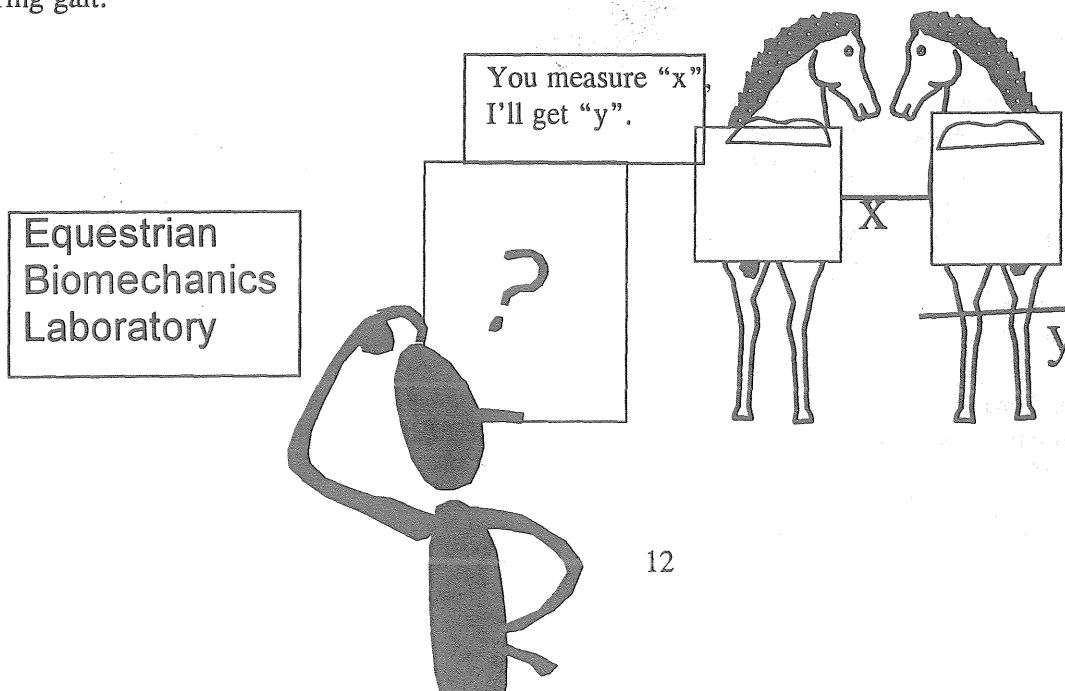
2. The English people build them like that because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used. These people in turn used the same jigs and tools that they used for building wagons with that wheel spacing.



3. Wagons used that odd wheel spacing because if they tried to use any other spacing the wagons would break on some of the old, long roads that had ruts worn into them.

4. The first long distance roads in Europe were built by Imperial Rome for the benefit of their legions. The initial ruts, which everyone else had to match for fear of destroying their wagons, were first made by Roman chariots that were all built in an identical way.

5. Imperial Roman chariots were made to be just wide enough to accommodate the back-ends of two war horses plus the amount of medio-lateral sway that horses produce during gait.



Satellite Symposium on Skeletal Muscle Mechanics
August 6 and 7, 1999
Canmore, Alberta

Dear Colleagues,

The University of Calgary will be hosting the Scientific Conference of the International Society of Biomechanics in Calgary, Alberta from August 8-13, 1999.

Immediately preceding this primary event of biomechanics research in 1999, we will organize a **Satellite Symposium on Skeletal Muscle Mechanics**. The Symposium will take place in **Canmore, Alberta**, a small town about 1 hour (by car) west of Calgary in the Rocky Mountains, and about 15 minutes (by car) from the famous vacation resort, Banff, Alberta, on **August 6 and 7, 1999**.

The scientific programme consists of four sessions (½ day each): three oral sessions and one poster session.

The oral sessions are grouped into three topic areas:

- 1) **Skeletal Muscle Modelling**
Keynote Lecturer: **Dr. George Zahalak** of the University of Washington

- 2) **In Vivo Muscle Function**
Keynote Lecturer: **Dr. Andrew Biewener** of Harvard University

- 3) **Mechanisms of Muscle Contraction**
Keynote Lecturer: **Dr. Toshio Yanagida** of Osaka University

We are tremendously excited about the quality of the Keynote Lecturer. Dr. George Zahalak is one of the leading researchers in the area of modelling skeletal muscle function in biomechanics. Dr. Andrew Biewener has made many revolutionary discoveries through the direct measurement of muscle function in experimental animal models. Dr. Yanagida is the first to ever measure simultaneously the forces generated by single cross-bridge heads and the corresponding biochemical events associated with ATP hydrolysis. Furthermore, Professor Andrew Huxley, the ISB Wartenweiler Memorial Lecturer will join the Canmore symposium as a guest.

Each of these keynote lecturers will be followed by 6-8 podium presenters who will be selected from the submitted abstracts. Abstracts not chosen for podium presentation, if judged to be of excellent quality, will be presented in a separate poster session.

ABSTRACT SUBMISSION

1 page abstracts should be submitted for one of the three topics of this symposium

- Skeletal Muscle Modelling
- In Vivo Muscle Function
- Mechanisms of Muscle Contraction

The guidelines for abstracts are identical to those for the ISB Congress (see website www.kin.ucalgary.ca/isb99/) with the following additions:

When submitting an abstract, please provide the following information:

- 1) your mailing address, email address, telephone, and fax numbers
- 2) Furthermore, in a letter of submission clearly state for which of the three session your abstract should be considered.
- 3) Also, I have contacted John Wiley and Sons who is interested in publishing a hard-cover book of this symposium. The aim of the book is to summarize the state of the art knowledge in the three topic areas of the symposium. As such, we would like the book to be a valuable reference source of the science at the end of this century, not just a proceedings of the conference. Contributions should be of the highest quality with a good mix of cutting edge science and basic problem discussion. Please indicate on the registration form if you will be providing a book chapter (8-15 printed pages) of your presentation by October 1, 1999

IMPORTANT DATES

1. Submission of Abstracts: May 28, 1999 (Received by symposium secretariat, no exceptions. Late abstracts will be returned unopened.)
NO FAXED COPIES PLEASE
2. Notice of Acceptance: June 4, 1999
3. Registration: July 2, 1999 (because of the facility, registration will be restricted to about 100 people. We will operate on a first come, first-served basis with preference to people who submit an abstract; early registration is encouraged since we already have a tremendous show of interest). Please indicate in your registration if you plan to submit an abstract. **LATE REGISTRATIONS WILL LIKELY NOT BE POSSIBLE DUE TO THE SPACE LIMITATIONS.**

Registration forms may be obtained by visiting our website or by contacting the conference secretariat, Ms. H. Hanna at 403-220-8525, or email hhanna@ucalgary.ca.

4. Symposium dates: August 6 and 7, 1999
Canmore, Alberta
Location: Bill Warren Training Centre (site of the 1988 Winter Olympic cross-country and biathlon races)
5. Submission of book chapter
October 1, 1999

FEES

All fees are quoted in Canadian dollars.

Registration fee: Regular: \$225 (\$209.25 + \$15.75 gst)
Students: \$125 (\$116.83 + \$8.17 gst)

Above fees include coffee breaks, light lunch and banquet. Payment can be made by cheque (payable to the University of Calgary & drawn on a Canadian Bank) or by credit card (Visa or Mastercard). For the ease of currency exchange we recommend the use of credit cards.

Registration forms may be sent via fax ONLY if payment is made by credit card.

CANCELLATION POLICY

In the unfortunate event that a registration must be cancelled, a full refund less \$50 administration fee, will be issued provided written notification is received by the University of Calgary on or before July 15, 1999

CONFERENCE OFFICE

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phone: 403-220-8525
fax: 403-284-3553

TRAVEL ARRANGEMENTS AND CANMORE ACCOMMODATION

We have made reservations in several hotels in Canmore for this event. For travel planning and hotel accommodation you may contact:

The Travel Gallery
Mike Mather
email: notravel@cal.cybersurf.net
phone: 403-202-3862
fax: 403-247-6389

I am looking very much forward to meeting all of you in Canmore before the ISB Conference for the Skeletal Muscle Satellite Symposium. I am happy that we have such a strong programme of keynote lecturers, and for those who have never been in the Canadian Rockies, it is an unbelievable place.

Sincerely,

W. Herzog
Organizer and Scientific Chair
Canmore Symposium on Skeletal Muscle Mechanics

REGISTRATION FORM

Please print or type clearly

CANMORE SATELLITE SYMPOSIUM ON SKELETAL MUSCLE MECHANICS
AUGUST 6 - 7, 1999

Dr.	Name _____		For Badge
	First Name		Last Name
Mr.	Title _____		
Ms.	Organization _____		
Mrs.	Address _____		
	City _____	State/Prov _____	Zip/P.Code _____
	Country _____	Telephone () _____	Fax _____
	Email _____		
Are you submitting an abstract? Yes No			
Are you contributing a book chapter by October 1, 1999 Yes No			
REGISTRATION FEES: All fees are quoted in Canadian dollars.			
	Regular rate: \$225.00 (\$210.30 + \$14.70 gst)		\$
	Student rate: \$125.00 (\$116.83 + \$8.17 gst)		\$
Above fee includes coffee breaks, light lunch and banquet and proceedings			
ADDITIONAL TICKETS - for guests, accompanying persons			
Banquet	(August 7, 1999)	# _____ x \$35.00 (\$32.71 + \$2.29 gst)	\$
TOTAL AMOUNT INCLUDED (in Canadian Funds)			= \$
For planning purposes please complete the following:			
I will attend the following included in my registration fee:			
Banquet (August 7)	yes	no	
Lunches	Fri	Sat	Vegetarian Meals required
Every attempt will be made to meet your special dietary requirements			

REGISTRATION PAYMENT: Payment must accompany this form in Canadian funds. For the ease of currency exchange we recommend the use of credit cards.

Visa
 Mastercard
 Cheque (Payable to University of Calgary & drawn on Cdn bank)

Credit card number _____ Expiry Date _____

Name of Cardholder _____ Signature _____

CANCELLATION POLICY: Full refund LESS \$50 administration fee will be issued provided written notification is received by the University of Calgary on or before July 15, 1999

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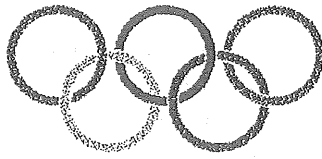
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EDITOR'S NOTE

The ISB Newsletter is published quarterly: February-March (Spring); May-June (Summer); August-September (Autumn), and November-December (Winter). There may be alternative printing schedules that coincide with unbelievable errors. Deadlines for material and articles are the first day of each first named month, except in the alternative schedule in which there are no deadlines or simply nothing will be accepted. The Newsletter is mailed to members whenever we can get to it except, of course on the alternative schedule which is always on time. Members are encouraged to submit just about anything they would like to relate to the biomechanics community. The content of the Newsletter does not necessarily reflect the philosophy and opinions of the ISB but may reflect the mood of the Editor. 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. *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 one actually does this but its important to have guidelines nevertheless. Material may be submitted electronically or on a computer disk as a text-only file, and must be in some form of English. Hard copy submissions of anything are acknowledged telepathically and subsequently placed in a recycle bin. Submission is not a guarantee of a timely appearance in the Newsletter.



IOC OLYMPIC
PRIZE
ENDOWED BY
 PARKE-DAVIS

The IOC Olympic Prize

by Benno M. Nigg

Physical activity and exercise play a central role in maintaining a healthy lifestyle. Advances in movement-related science have demonstrated the numerous benefits that physical activity has on the human body.

The IOC Medical Commission has a number of programs that support the study of human movement, exercise and sport. Parke-Davis joined with the IOC Medical Commission to form the *Olympic Prize Partnership* in a global effort to spur significant scientific discoveries that benefit humankind. The joint projects include:

- The IOC Olympic Prize
- The Olympic Academy of Science
- The IOC World Congress
- The research projects during the Olympic Games.

This publication describes the IOC Olympic Prize, the Olympic Prize Partnership between the IOC Medical Commission and Parke-Davis and invites nominations for the IOC Olympic Prize 2000.

Over the past five years, the IOC Medical Commission and Parke-Davis have recognized the work and findings of movement scientists around the globe. The Olympic Prize program has become a catalyst to stimulate and share scientific knowledge worldwide for the betterment of humankind. The IOC Olympic Prize endowed by Parke-Davis is awarded (in conjunction with the Olympic Summer and Winter Games) every two years to a scientist for contributions that advance the science of movement, exercise and sport and that make a great impact on society. Recipients of the IOC Olympic Prize receive an Olympic medal, a diploma of excellence and a US\$ 500,000 cash award. The next Olympic Prize will be awarded during a special presentation ceremony at the Olympic Games in Sydney, Australia, in September 2000.

Call for nominations for the IOC Olympic Prize 2000

Objectives

The IOC Olympic Prize was established by the IOC

under the sponsorship of Parke-Davis to recognize, support and develop outstanding research related to human movement, exercise and/or sport.

Nominations

Nominations for potential prize winners should be submitted for specific findings resulting from outstanding basic and/or applied research of the nominee *related to human movement, exercise and/or sport*, which fulfill one or several of the following descriptions:

- represent a significant innovation
- contribute to the betterment of humankind
- significantly impact science, health, and/or society

Fields

A candidate can be nominated for work in the fields of:

- Medical science
- Biological science
- Physical science
- Psychological science

Possible topics

Possible movement, exercise and sport-related research topics, which qualify for the IOC Olympic Prize include, for example:

- the healthy development of the human body and its main components as they relate to movement, exercise and/or sport
- the effect of movement, exercise and/or sport on health and quality of life
- the basic understanding of the functioning of the human body and its main components in movement, exercise and/or sport
- the prevention of injuries due to movement, exercise and sport
- the improvement and/or optimization of physical performance through enhanced understanding of the functioning of the human body for all age groups

Number of nominees

Typically, there will be one recipient of the IOC Olympic Prize. However, it is possible to nominate two researchers with common research findings.

Nominator(s)

There are no restrictions as to who can nominate a candidate. Nominations may come from one or several individuals or from a national, regional or international group. More than one person can be nominated by the same person or group.

Confidentiality

The nominator is not bound to keep her/his role secret and may inform the candidate or any other person regarding the candidacy if she/he wishes to do so. However, the members of the Selection Committee are bound to keep all information regarding the nominees confidential.

Limitations

Certain limitations apply for the nomination process:

- A person cannot nominate herself/himself
- Members of the IOC, of IOC Commissions, the Selection Committee and the Jury are not eligible for the Prize until four years after leaving office
- Full-time employees of the IOC and the sponsor of the IOC Olympic Prize are not eligible for the Prize until four years after terminating these employment arrangements

Required information for nominations

- 1 *Brief biographical sketch.* Name, affiliation, business and home address, business and home telephone and fax, date and place of birth, and 2 good recent photographs (one color and one black and white) of the nominee.
- 2 *Education and professional development of the nominee.*
- 3 *Proposed citation* (about 20 to 25 words). This citation shall describe the finding for which the nominee should be honored.
- 4 *Awards and honors* (only most prominent ones: limit to maximum of 10).
- 5 Brief and concise description (two page maximum) of the *scientific achievement that merits the IOC Olympic Prize.*
 - Nominations should concentrate on *one major finding*
 - *Primacy* of the nominee for this finding must be established
 - The IOC Olympic Prize is not a lifetime achievement award
- 6 A copy of the three most significant publications of the nominee related to the achievement/finding that merits the Prize.
- 7 Description of the importance and relevance of the described finding(s) for movement, exercise and/or sport.
- 8 A maximum of *3 letters of endorsement* from experts in the field who are in a position to critically assess the achievement of the nominee. Letters of endorsement shall refer specifically to the outlined finding of the nominee and the primacy aspect of the finding. Letters

of endorsement from members of the Selection Committee are not appropriate.

9 *Structured list of publications.*

10 *Other material considered relevant* by the nominator.

Language: The nomination must be submitted typewritten in English.

Copies: An original (single-sided and unbound) and 17 copies (double sided and bound) shall be submitted.

Deadline: Nominations for the IOC Olympic Prize 2000 must be received not later than Sept 1, 1999. The complete nomination package must be received by the deadline at the following address:

IOC Olympic Prize
International Olympic Committee
Medical Commission
Château Vidy
CH-1007 Lausanne, Switzerland
Tel: 41.21.621 6111
Fax: 41.21.624 6166

Information

The chair of the Selection Committee is available for answering questions regarding the IOC Olympic Prize and the preparation of nomination packages. The address is:

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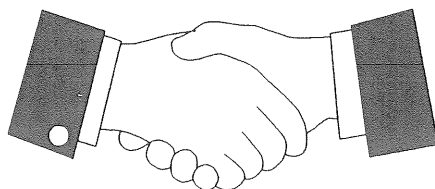
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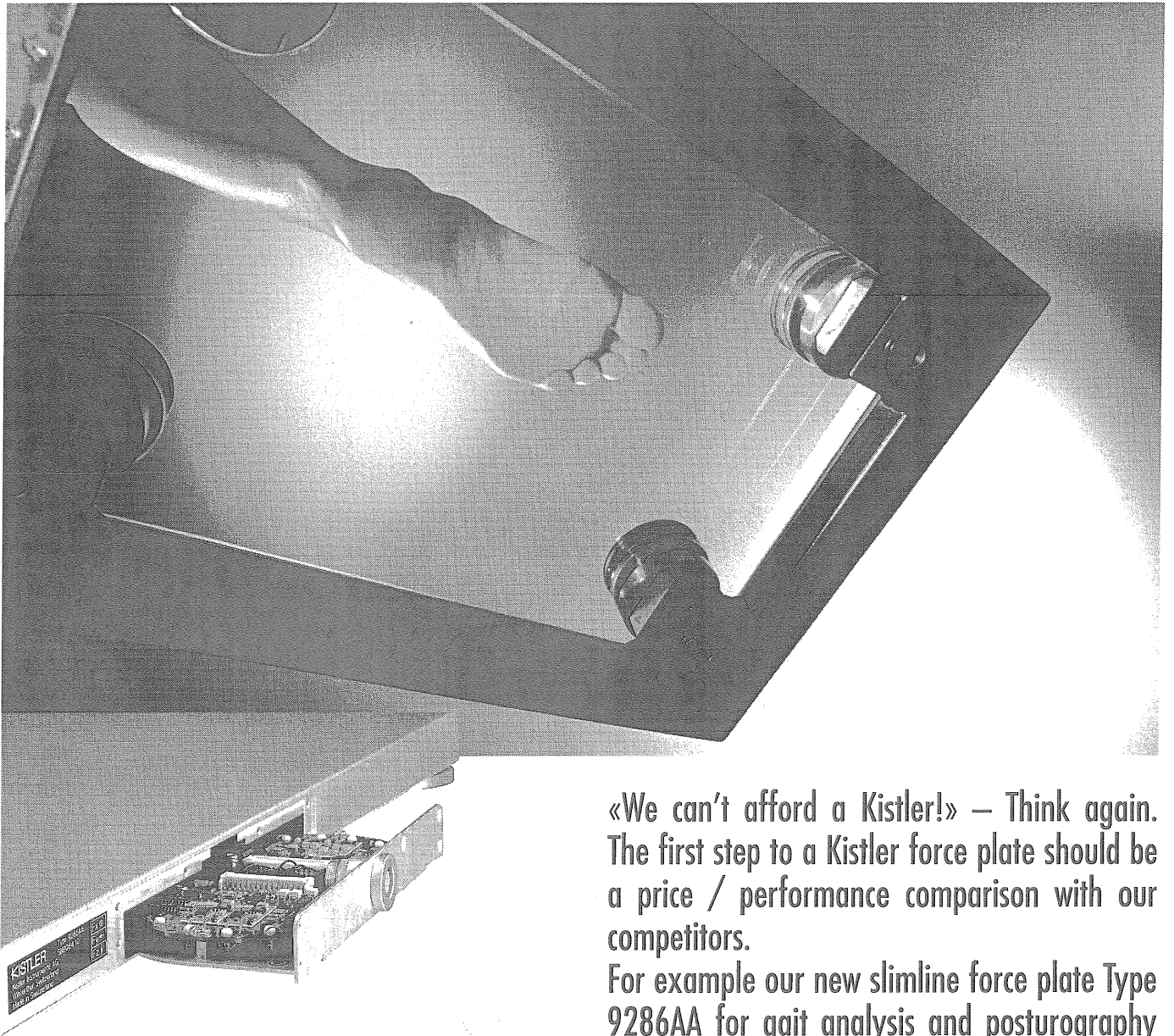
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