



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-Günter Rau

It is the President's privilege always to encourage the ISB membership to make use of the ISB Newsletter because it is a platform to disseminate information to the members. So I also have to contribute, and first I wish to report on some ISB issues.

The ISB council has met on June 27, 1998 in Montreal. Because of some air traffic problems several council members arrived delayed or got stuck on their way. However, thanks to advanced communication technologies we were able to discuss and to even take decisions by votes via telephone conversation.

The decision of highest interest was the site of the ISB Congress 2001. Dr. Edgar Stüssi, Professor of Biomechanics at the ETH Zürich, presented and explained in detail the proposal from the ETH which he had put together with his colleagues and staff. The proposal was excellent, and all major questions could be solved by him immediately. On this basis the council decided to place the first Congress in the new millennium in Zürich - where the cradle or the roots of ISB are located. We wish to thank Dr. Stüssi and his colleagues and associates explicitly, and we are looking forward to 2001 with excitement. Also, we hope that the other groups who had been interested in organizing the Congress will advance with their preparations for the application for the next in 2003.

Dr. Darren Stefansheyn on behalf of the Chairmen and the Organizers reported on the stage of preparations for the 1999 ISB Congress in Calgary. The program as designed so far looks very impressive regarding the scientific as well as organizational issues. Already the keynote speaker's list will attract all ISB members who still are able to locomote!

The reports of the council members in oral and/or written form about the various activities within ISB were very interesting. I wish not to report on details but just to pick up one action, namely the efforts towards standards and terminology. Ge Wu is very active and successful in promoting this challenging task with tremendous enthusiasm. Any support which may be given by ISB members is valuable - please contribute as actively as possible. Within ISEK the EMG standardization and measurement procedures, electrodes, signal processing and interpretation is

on its way, and by support of the European Commission a project is going on within Europe which is very advanced already. Perhaps the biomechanics and the EMG aspects can finally be put together to achieve a comprehensive manual for research and application in the field.

I wish to thank all council members, Brian Davis as the Secretary-General and specifically Graeme Wood as Treasurer for their work and continuous effort.

The ISEK Congress 1998 in Montreal was excellently organized by Dr. Bertrand Arsenault and his colleagues. There were outstanding key note lectures presented, and the presence of Prof. Dr. John Basmaïjan contributed to the positive and comprehensive spirits of this conference in a very special way. A session jointly organized by ISEK and ISB and chaired by the presidents of both societies, Prof. Dr. Jan Pieter Clarys and myself, demonstrated clearly that a close relationship in fact is very rewarding for both societies.

Finally, I wish to make some general remarks related to the field of Biomechanics. At present, general discussions are going on about innovations. The questions is: What may innovations in biomechanics look like? In principle, we distinguish between incremental innovations ("making better,") and basic innovations (real, "quantum leaps"). Basic innovations are characterized among others by a broad diffusion effect: they influence many areas of our life, and they may even induce changes in our societies. They also generate new infrastructures, education programs, new topic areas in research and development. Do real innovations in biomechanics exist? On the first glance one could assume "no" since the field and also the human "object" is not new. However, with the knowledge of other areas and in application to biomechanics the better understanding of basic phenomena under controlled conditions may open windows.

In my opinion, good examples are the results and consequences of the IOC-Olympic Prize 1998 winner Savio L.-Y. Woo considering "improving biomechanical structure and function by movement". Another example will be the answer to the question: What phenomena contribute to a muscle's transfer of the slide of its filaments to the resulting force and shortening? Or: How do

muscles regenerate, and what is the role of undifferentiated stem cells which are found even in skeletal muscle tissue?

Technologies, model calculations and cell research provide new approaches, and perhaps we will be able to demonstrate or record the dynamic processes at the contractile elements of a muscle which has - to my knowledge - nobody "seen" ever.

In essence, I feel even more than 5 years ago that biomechanics will keep us increasingly excited and will afford us many unexpected surprises in the near future. The key issue is an explicit interdisciplinary view which has been reinforced in ISB within the recent years. Let's go this way with open eyes.

From the Editor: Mark D. Grabiner

Perhaps at some time you have looked with horror at the ever-growing stack of to-be-done work as you have closed your office door as you leave for a conference. The conference will likely require you to be out of town for three to five days. Upon your return you discover the increase in the size and complexity of the stack you had left behind can be described with an exponential function. At this point you wonder whether attending meetings via Internet in the convenience of your own office might be a viable option.

For me, this past summer was an invigorating, frequent-flyer mileage accumulating biomechanics road show. The 3rd World Congress of Biomechanics was held in early August at Hokkaido University in Sapporo, Japan. The 3rd WCB was an excellently programmed and wonderfully hosted meeting. The scope ranged from molecular and cellular to, tissue, system and organismic mechanics. The congress organizers had received over 1000 abstracts that ultimately made up the program of plenary and tutorial lectures, symposia, and free communications. There was a substantial level of participation in the WCB by ISB members, including an excellent plenary lecture by a Past-President of ISB, Benno Nigg, who spoke about "Load and Energy Aspects in Locomotion". Aurelio Cappozzo, also an ISB Past-President, delivered a Tutorial Lecture on "Optimal Estimation of Bone Position and Orientation During Movement". Next year's ISB Muybridge Lecturer, Paavo Komi, organized, and presented a paper in, a symposium on

"Neuromuscular Control During Exercise and Fatigue". A number of ISB Executive Council members also participated in various symposia. The site of the 4th WCB, to be held during the summer of 2004, was announced. I highly recommend that you mark your calendars and plan to attend that meeting, which will be in Calgary, Alberta, Canada.

Only a few days and sleepless nights after returning from Japan, a group from my lab left to attend the 3rd North American Congress on Biomechanics (NACOB). NACOB was held at the University of Waterloo, a site of an ISB meeting in 1983. At NACOB, the organizers successfully introduced a meeting format that emphasized poster sessions as the primary free communication venue. Podium presentations were reserved for keynote lectures, symposia, and two, masterfully delivered debates. From all indications thusfar, this format was judged, by attendees, as excellent. I personally hope that we will see more of this in the plans of biomechanics meetings in the future.

The bottom line is that I spent most of the month of August away from my office. It seems that the time that I was in the office during August was spent recovering from a serious case of jet lag. However, the accumulated work is presently getting done, slowly (slower?) but surely, one step at a time. And for me, being at the meetings, being able to have that face-to-face with colleagues, meeting new people, is something that can not be duplicated in a face-to-screen format. Not to mention the opportunity to physically visit new places and especially to be immersed in different cultures. Remember, only 11 months to ISB'99 in Calgary! See you up there.

And speaking of ISB'99 Darren Stefanyshyn, University of Calgary

Planning is continuing for the International Society of Biomechanics XVIIth Congress August 8 - 13, 1999, in Calgary, Canada. The Congress will concentrate on muscle, locomotion, sport, clinical/rehabilitation and orthopaedic biomechanics. In addition to the Keynote lectures, several symposia have been organized with invited and symposia speakers.

Wartenweiler Memorial Lecture - Andrew Huxley
Muybridge Lecture - Paavo Komi
Presidents Lecture - Gunter Rau

Keynote Speakers:

T. Andriacchi
S. Grillner
W. Hayes
J. de Koning

Invited Speaker Symposia:

R. Enoka
R. McNeal Alexander
R. Woledge
Y. Kawakami
C. Vaughan
A. Shultz
F. Horak
J. Yang
M. Yeadon
P. Bruggemann
J. Mester
M. Miyashita
P. Cavanagh
S. Arnoczky
J. Dansereau
M. Gagnon
C. Rubin
J. O'Connor
L. Setton
L. Blankevoort
S. Woo

The abstract submission deadline is January 31, 1999. Guidelines for abstract submission and other pertinent information can be obtained from the Congress website:
www.kin.ucalgary.ca/isb99/.

Final announcements will be delivered in October. If you do not receive a copy or wish to receive additional copies, please contact the conference office at:
ISB99

Attention: Margaret-Anne Stroh
The University of Calgary
Conference Mgmt. Services
1833 Crowchild Trail N.W.
Calgary, AB, CANADA T2M 4S7
tel: (403) 220-6229
fax: (403) 284-4184
e-mail: mastroh@acs.ucalgary.ca

ISB Awards 1999: Leendert Blankevoort

In 1999 the following ISB awards will be presented:
- the Young Investigator Awards
- the Clinical Biomechanics Award
- the Promising Young Scientist Award.

Young Investigator Award

There are two awards, one for the best oral presentation (sponsored by *the Journal of Biomechanics*, Elsevier Science Ltd) and one for the best poster presentation (Sponsored by the organizing committee of the XVIth ISB Congress). The award recipients are offered a certificate, a monetary award of US\$ 500 and a reimbursement of the registration fee of the Congress. A short biography with an outline of the recipients' professional background is published in the ISB Newsletter

Requirements

Candidates must be the first author of an abstract submitted for a presentation of the XVIIth ISB Congress, have a maximum age of 35 at the first day of the congress, must have made the major contribution to the research presented in the abstract. If selected for the final round, the candidate must personally present the paper (whether oral or poster) at the XVIIth ISB Congress. The abstracts for this competition are solicited with the call for papers of the XVIIth ISB Congress.

Time schedule

Submission of abstract to Congress Secretariat:
January 31, 1999 (deadline)
Notification of the nomination: May 15, 1999
Final decision and presentation of the Award:
August 13, 1999

Clinical Biomechanics Award

This award is sponsored by *Clinical Biomechanics*, Elsevier Science Ltd. The winning paper will be published as the ISB Clinical Biomechanics Award paper in *Clinical Biomechanics* (subject to a normal peer review process). The first author of the winning paper will receive a certificate and a monetary award of US\$ 750. The first author of the winning paper will receive a reimbursement of the registration fee of the Congress.

Requirements

Any scientist may submit an abstract for the award, except the members of the ISB Executive Council. From the abstracts submitted for this competition, 5 abstracts are selected and nominated for the award. The authors of the 5 selected abstracts are requested to submit a full length paper prepared according to

the guidelines of *Clinical Biomechanics*. 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 other than *Clinical Biomechanics*. The paper must describe a study related to a clinical problem and contain some sort of biomechanical analysis pertaining to the clinical problem. A jury will evaluate the full papers and select the winning paper. The first author of the winning paper is invited to give an oral presentation of the winning paper at the XVIIth ISB Congress in a plenary session. Abstracts are solicited for this competition with the call for papers for the XVIIth ISB Congress.

Time schedule

Submission of abstract to Congress Secretariat:

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

Promising Young Scientist Award

This award is sponsored by Peak Performance Technologies. The Promising Young Scientist Award is a travel grant for scientific purposes, i.e. attending an International meeting or visiting other research groups. The recipient of this award receives a certificate and a monetary award of US\$ 1500 for the purpose of covering travel costs. If the recipient chooses to attend the XVIIth ISB Congress and present his or her work, a waiver of the registration fee is given. The awardee is required to write a report and submit it to the Executive Council of the ISB.

Requirements

The Promising Young Scientist award is to recognize superior research indicative of future promise in a single area of Biomechanics. The candidate must be a member of the ISB, be at a relatively early stage of his or her scientific career in Biomechanics. Each candidate must submit his or her full curriculum vitae and identify at least two first author full articles in peer-reviewed scientific journals that he or she has written in a single area of Biomechanics and provide interpretative summaries describing the contribution of each article.

Applications for this award are to be sent to the Jury chairman, Leendert Blankevoort, PhD.

Time schedule

Submission of application to the jury chairman:

January 31, 1999 (deadline)

Decision and notification: March 31, 1999

Presentation of the Award: August 13, 1999

For further information please contact:

Leendert Blankevoort, PhD

Orthopaedic Research Laboratory

800 Orthopedie

University of Nijmegen

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The Netherlands

tel. +31 24 3616959

fax +31 24 3540555

Email: L.Blankevoort@orthp.azn.nl

Show Me the Money! Mary M. Rodgers

ISB Student Grant Guidelines

Student members of ISB are eligible for the following three grants. A number of competitive grants will be awarded each year. All grant amounts are shown in US dollars.

The Matching Dissertation Grant Program:

There will be several competitive grants of \$2000 made for doctoral dissertation research. A condition is that the applicant will have a commitment from her/his institution or another source to provide a further matching \$2000. This program is applicable to those who are doctoral candidates and are seeking assistance with costs of their dissertation research. Applications should include the following:

- a) a 3 page summary which includes the purpose, reference to key related literature, study design, methods, timetable for the measurements and budget.
- b) CV of the applicant: 2-3 pages in length (include list of publications, current grade point average, results of any standardized tests that the applicant has taken (ie. GRE)).
- c) a document from her/his institution or other source which ensures provision of the matching \$2000
- d) a one page recommendation from the dissertation advisor who must also be an ISB member at the time of application.

Applications are to be received by January 15, 1999. Notification to applicants will be by March 25, 1999. Recipients will present results at the ISB Congress and acknowledge ISB support in any publications. A report to the council will include

accounting of how funds were spent. Recipients will be encouraged to publish their work in one of the ISB-affiliated journals.

The International Travel Grant Program:

In order to allow student members to travel abroad to experience science in other cultures, we will offer several grants of \$2000 for travel which is related to biomechanics research. A report on the accomplishments during the trip will be expected by the Executive Council. Applications should include:

- a) 3 page proposal which includes the purpose of the visit, timetable, activities to be involved in, the total budget for the visit (including other financial assistance, etc.)
- b) CV of the applicant: 2-3 pages in length (include list of publications, current grade point average, results of any standardized tests that the applicant has taken (ie. GRE)).
- c) a document from the host institution verifying support for the visit
- d) a recommendation letter of support for the travel from the applicant's supervisor who must also be an ISB member at the time of application.

Applications are to be received by January 15, 1999. Notification to applicants will be by March 25, 1999. Recipients will submit a brief report to the committee which will be published in the Newsletter.

The Congress Travel Grant Program:

This grant is offered only in the years of ISB Congress, therefore, this grant will be offered in 1999. ISB Congresses provide a wonderful opportunity for exchange of information and for meeting other scientists who can be influential in the development of new directions. By virtue of the need to move the congresses between different continents, it is often very difficult for students to afford to travel to the Congresses or to pay the registration fee if they can travel. Starting with the 1999 ISB Congress in Calgary, we will offer several travel grants of \$1000 to student members who will be presenting their research results at ISB Congresses. Applications should include the following:

- a) the proposal should have a maximum length of 3-4 pages including the abstract and the info of its acceptance, the total budget for the travel etc.

- b) CV of the applicant: 2-3 pages in length (include list of publications, current grade point average, results of any standardized tests that the applicant has taken (ie. GRE)).
- c) a one page recommendation from the supervisor who must also be an ISB member at the time of application.

Recipients will submit a brief report to the committee which will be published in the Newsletter. Applications are to be received by January 15, 1999. Notification to applicants will be by March 25, 1999.

Grant applications should be mailed to:

Dr. Mary Rodgers
Department of Physical Therapy
University of Maryland
100 Penn Street
Baltimore, MD 21201 USA
Email: mrodgers@physio.ab.umd.edu
Telephone: (410) 706-0840
Fax: (410) 706-6387

Student Grant Committee:

Dr. Mary Rodgers
Dr. Keijo Häkkinen
Dr. Gisela Sjøgaard
Dr. Peter Cavanagh
Dr. Christopher L (Kit) Vaughan
Student members who do not plan to apply for grants, but would be interested in serving on the student grants committee are asked to contact Dr. Rodgers.

**And speaking of ISB Student Grants...
My trip to Cleveland - the tale of a lost and
lonely Australian biomechanist - Scott McLean**

As a recipient of one of the 1998 ISB international student travel grant awards, I have been asked to comment on my experiences and thoughts stemming from this achievement. While the following passage may not be saturated with technical information, complicated formulae and earth shattering scientific discoveries, I hope that it does help convey my appreciation for the opportunities I have been given and the enthusiasm that I have for this concept.

When the original Biomch-I posting concerning

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the ISB student scholarship program was made, I was a naïve, sheltered, shy PhD student residing in Australia. Now, after being fortunate enough to receive one of the awards and working under the guidance of Dr. Brian Davis within the Department of Biomedical Engineering, The Cleveland Clinic Foundation, I find myself returning to Australia as a far more confident and accomplished researcher. I am still quite shy however.

While at the Clinic, I have been primarily involved in a research project geared towards the quantification of *in vitro* calcaneal strains under a variety of loading conditions. Specifically, the relationship between soft tissue strains (plantar aponeurosis and Achilles tendon) and the resultant strain magnitudes and distributions engendered in calcaneal cancellous bone have been examined under various loading and foot position (plantar flexion angle) conditions. This information may ultimately provide us with greater insight into means by which we can negate the deleterious effects of osteoporosis and space flight on resultant bone strength.

In order to achieve these goals, a large part of my work has involved the development of equipment and employment of techniques that I had previously not been exposed to. My Ph.D. work predominantly lay in the areas of rigid body mechanics and mathematical modeling. Hence, developing, characterizing and validating strain transducers and utilizing mechanical testing devices to impart loads on cadaveric specimens were obviously new, challenging and at times mind boggling areas of research for me. I feel however, that while there were times when I wished I could return to the world of markers, models and pretty graphics, I have benefited greatly from my research experiences. Furthermore, the fact that Dr. Davis did not (not to my knowledge) request my deportation prior to termination of my stay, suggests that I contributed positively in some way to the overall success of the project! In actual fact, plans have already been made for my return to Cleveland early next year to conduct further research with Dr. Davis, highlighting another valuable reason to apply for these awards.

There are numerous benefits extending from my short stay at the Cleveland Clinic and it is beyond the bounds of this passage to list them all. There are however, several key points that should be noted. Furthermore, I feel these points embrace the goals that the ISB student program hoped to achieve.

A major advantage of being able to work within a new scientific institution, whether it be in another city or on the other side of the world is the fact that you are continually exposed to new and interesting facets of research. An obvious extension of this process is the formulation and attainment of an increased skill and knowledge base. For me however, an equally important outcome lies in the fact that I have learned to develop alternate and diverse methods of answering specific research questions. At the risk of sounding like a PhD student seeking future employment, witnessing the "creative" approach to biomechanics by researchers such as Dr. Davis has definitely been one of the most rewarding experiences for me scientifically. There were many times when I was mystified as to where ideas had evolved. More often than not however, their associated methods would achieve the desired goal. I would hope that I could adopt a similar approach towards my own research when returning to complete my PhD, challenging my methods rather than automatically assuming they are the only and best solution.

My visit has also enabled me to make contacts, witness scientific exploits and attend a variety of scientific meetings that would otherwise have not been possible. It is quite amazing to meet and "rub shoulders" with biomechanists that had previously been names on books that for most of the year keep the door open or prop up your computer monitor. Finding out that these people in fact have faces, are approachable and are willing to offer advice is an added bonus. Again, the more exposure that one has to these situations, the more their own research career will benefit. The ISB student grant scheme has definitely facilitated this process. It has not only helped introduce me to the diversities of biomechanical research, but has also enhanced enthusiasm for my own research, both in the questions that I pose and the means through which I solve them.

It would be wrong to end this passage without commenting on some of the social and cultural differences experienced on my journey, which I feel are equally important. While typically subtle, there are indeed differences between the USA and Australia that made my stay more interesting. Whether it be spending an evening watching the Indians destroy the Yankees, educating people to speak "Orstraalian" and to appreciate the wondrous flavor of vegemite, dodging skunks on an afternoon run, or fleeing for your life as Americans continue to

drive on the wrong side of the road, it all combines to make the experience a memorable one. While this may not be the central focus of the student grant program, I feel it is still a beneficial outcome of this new venture.

On the whole, I would have to say that my experiences in the USA and in particular The Cleveland Clinic, have been both positive and rewarding. There have been however, several occasions where I wished that I had not ventured beyond the safe shores of Australia. One such instance involved an anonymous editor of a certain ISB newsletter (see inside cover) attempting to have me detained at the US border at the recent NACOB conference for illegally transporting "Scientific Proceedings"¹ Thankfully, most people have been far more receptive to my visit and have made my stay less traumatic.

While perhaps it is not my place, I would encourage students of the ISB to apply for these awards in future years. I cannot stress strongly enough, the value in experiencing biomechanical research in another country and the social and cultural diversities that are typically attached. I would like to express my sincere gratitude to the people within the Department of Biomedical Engineering that have made my stay an enjoyable and productive one. Whether they be in the workshop, the front office or in the lab they have all helped a poor lonely Australian to survive. I would also like to thank the ISB for this opportunity. Their commitment to this project truly supports the notion of an International society. Finally, if no-one applies for the awards next year, I will gladly come up to bat again (I learned that saying in Cleveland). Next time however, I may be looking for something a little less humid: perhaps Sweden, or France, or Norway, or...

¹DITOR NOTE: REGARDING THE BORDER INCIDENT THAT SCOTT MENTIONED, IT WAS CLEARLY A "HIM OR ME" DECISION. THANKFULLY (UNFORTUNATELY), SCOTT MADE IT THROUGH THE BODY CAVITY SEARCH FOR THE PROCEEDINGS AND WAS SUBSEQUENTLY ALLOWED TO RE-ENTER THE USA.

**Call for Biomechanics Project Applications:
Sydney 2000 Olympic Games**

Following the practice of recent Olympic Games, the Medical Commission of the International Olympic Committee will sponsor biomechanical research studies during the Sydney Summer

Olympic Games that will be held 15 September - 1 October, 2000.

The Subcommittee for Biomechanics and Sports Physiology of the IOC Medical Commission requests project applications from various scientific laboratories and institutes. Applications should specify the purpose (benefit to the athlete), research, methodologies, personnel involved and budget. Specific venue requirements, such as positioning of cameras, must be clearly stated in the proposal. Preference will be given to projects that clearly show direct benefit to athletic performance and have the support of National/International Governing Bodies. Proposal length should not exceed 6 pages. Deadline for submission is 1st September 1999. The IOC Medical Subcommittee will review the proposals and make the final selections by 15th January 2000.

Financial assistance will be allocated with consideration to: benefit of study, personnel involved, analysis procedures, accommodation and travel costs. Equipment used in each study is the responsibility of the project team. The IOC Medical Subcommittee for Sydney 2000 is looking at a reduced number of projects which will lead to increased funding for each team.

Accommodation will be provided for the successful Research teams. Research assistants are planned to be available to assist with projects at the games and no direct access can be expected with respect to athletes. Where appropriate, the accreditations, room reservations and local transport will be arranged by SOCOG in Sydney.

Proposals should be posted to:

Professor Bruce Elliott
Subcommission Coordinator
Sydney 2000 Applied Biomechanics Projects
C/- Department of Human Movement
The University of Western Australia
Nedlands, Western Australia 6907 Australia
Telephone (+61 8) 9380 2360
Facsimile (+61 8) 9380 1039
E-Mail Bruce.Elliott@uwa.edu.au

Job Market

The Job Market has been moved to the ISB website and may be accessed via:

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

The site, maintained by Tiffany Orlando (Great job, Tiffany! (Pun totally intended here)) holds current and past position announcements in the following categories.

- Faculty/Lecturer
- Postdoctoral
- Research Assistantships
- Career/Other
- Graduate Assistantships and Postgraduate Fellowships

Upcoming Meetings, Workshops, Etc.

October

III International Congress on Motor Rehabilitation, 5-8 Oct 1998, Sao Paulo, Brazil, Contact: Vertical Eventos e Turismo, R. Maria Monteiro, 1.104, Campinas.SP.Brazil-13025-151, Fax:019-254 7602, Email:

gla@obelix.unicamp.br, vector@bestway.com.br, www.unicamp.br/ib/congresso/motor-reabilit98

20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 29 Oct - 1 Nov 1998, Hong Kong, Contact: R. F. Kirsch, PhD, Cleveland VA FES Center, MetroHealth Medical Center, Hamann 640, Cleveland, OH 44109, Tel: 216.778.4139, FAX: 216.778.4259, Email: rfk3@po.cwru.edu

November

Control Mechanisms for Postural Behaviors, A satellite meeting to the Society for Neuroscience, 6-7 November 1998,

<http://sulu.smp.nwu.edu:80/~keshner>

75th Annual Conference of the American Congress of Rehabilitation Medicine, 8-10 November 1998, Seattle, Washington, Contact: American Congress of rehabilitation Medicine, 4700 W. Lake Avenue, Glenview, IL 60025-1485, Tel:847.375.4725, Fax: 847.375.4777, EMail: info@acrm.org, <http://www.acrm.org/>

International Conference on Weightlifting and Strength Training (in conjunction with the World Weightlifting Championships), November 10-12, 1998, Lahti, Finland, Contact: Ms Pirjo-Leena Pitkanen, Conference Coordinator, ConFinnia Ltd,

P.O. Box 35, FIN-40351 Jyvaskyla, Finland, Tel: +358-14-603662, Fax +358-14-603727, Email: pitkanen@jyu.fi, <http://www.jyu.fi/wlconference/>
3rd Interdisciplinary World Congress on Low Back- and Pelvic Pain, 19-21 Nov, 1998, Vienna, Austria, Contact: in Europe: European Conference Organizers, P.O.Box 4334, 3006 AH Rotterdam, The Netherlands. Phone +31 - 10- 4133287. Telefax + 31 - 10 - 4148059. Email: SJCECO@WorldAccess.NL; in the U.S.: University of California, San Diego, Office of Continuing Medical Education, 9500 Gilman Drive, 0617, La Jolla, California 92093-0617, U.S.A. Tel(619)534 3940. Fax:(619)534 7672
1st Euro-Asian Sports Medicien Congress, 26-29 Novemener 1998, Nicosia, Cyprus. Contact: Cyprus Association of Sports Medicine, Tel: 02.663762, Fax: 02.664669, Email:sportsmedicine@cytanet.com.cy

December

2nd International Workshop on 'Biomedical Aspects of Manual Wheelchair Propulsion: the state of the art II. 7-9 Dec 1998, Vrije Universiteit Amsterdam, Contact: Faculty of Human Movement Sciences, Department of Kinesiology, Van der Boechorststraat 9, 1081 BT Amsterdam, The Netherlands, Tel: ++31 20 4448470/4448530, Fax: ++31 20 4448529, Email:M_L_den_Besten@fbw.vu.nl, www.fbw.vu.nl/events/wheelchair98

1999

World Congress of Science of Football, 22-26 February 1999 University of Technology Sydney, Australia. Contact: World Congress of Science of Football, PO Box 236, ROSEVILLE NSW AUSTRALIA 2069, Tel: 61 2 9411 4666, Fax: 61 2 9411 4243, Email: Nick@hotelnetwork.com.au
4th Annual Meeting of the Gait and Clinical Movement Analysis Society, 10-13 March, 1999, Dallas, Texas, Contact: F.L Buczek, Jr, PhD, Program Chair, 1999 GCMA Annual Meeting, Shriners Hospitals for Children 1645 West 8th Street, Erie, PA 16505, USA, fbuczek@erie.net
18th Southern Biomedical Engineering Conference and 2nd International Conference for Ethical Issues in Biomedical Engineering, 2-4 April 1999, Clemson University, Clemson, South Carolina. Contact; S. Saha, PhD, Director, Bioengineering Alliance of South Carolina, 313 Rhodes Research center, Clemson University,

Clemson, SC 29634-0906, Tel: 864.656.7603, Fax: 864.656.4466, Email: amarand@clemson.edu
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

1st International Conference on Science and Technology in Climbing and Mountaineering; 7-9 April 1999, University of Leeds, UK. Contact: N. Messenger PhD, STCM conference, Centre for PE and Sports Science, University of Leeds, Leeds LS2 9JT, UK. Tel:+44 (0)113 233 5080, Fax: +44 (0)113 233 5083. Email: Climbing.conf@leeds.ac.uk, http://www.leeds.ac.uk/sports_science/conference/climbingsci99.html

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

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

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

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

11th Hungarian Medical Engineering Conference and the 2nd Hungarian Clinical Engineering Conference, BUDAMED '99, Budapest, 12-14 September, 1999. Contact: varady@fsz.bme.hu, <http://www.mmt.bme.hu/events/budamed99/actual.htm>

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

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

Vth I.O.C. World Congress on Sport Sciences, 31st Oct. - 5th Nov., 1999, Sydney, Australia. Contact: Bruce C. Elliott, PhD, Dept. of Human Movement, The University of Western Australia, Nedlands, WA 6907. Tel: +61-8-9380 2360; Fax: +61-8-9380 1039; E-mail: bruce.elliott@uwa.edu.au

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

2004 (yeah, that's right, 2004!)

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

Places to "Go"

◆ ISB '99

www.kin.ucalgary.ca/isb99/

The ups and downs with some biomechanics research

We recently had the opportunity to fly a biomechanics experiment on NASA's microgravity aircraft, the so-called "KC-135". This aircraft flies a series of parabolic trajectories, each cycle containing a 25 second period in which the occupants of the KC-135 experience weightlessness and a longer period in which everyone experiences elevated G-levels. The following summarizes Day 1 of the experiment. Names and times may have been altered where necessary.

8:00 A.M. Four of us arrive at Johnson Space Center to get I.D. badges. After seeing inspiring movies the previous day at Space Center Houston, we are all set to continue the examples set by NASA legends like John Glenn, Neil Armstrong and Shannon Lucid. This promises to be an unbelievably exciting adventure---certainly more exciting than collecting EMG and force data in a gait laboratory!

9:00 A.M. Time for us to check the hardware on the KC-135 that is sitting on the runway. Even an early morning temperature of 95 deg F cannot dampen our enthusiasm.

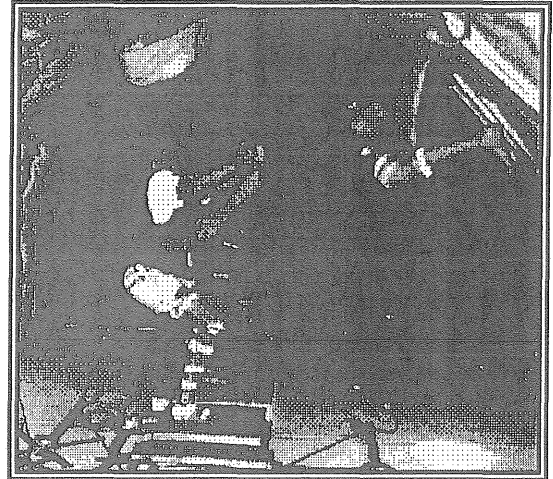
9:30 A.M. We carefully place adhesive EMG electrodes on all four subjects who will fly today. We make note of the precise location of the electrode sites and run through the duties required of each subject to ensure that everyone knows what task he/she is responsible for when not serving as the experimental subject. We have practiced our rotations at the various stations and we know we will operate like a smooth finely tuned machine. We calibrate our experimental cameras so that we can do full 3-D kinematic analyses. After being in our flight suits for over 35 minutes in Texas heat, we all long for take off.

10:30 A.M. Take off time!! We stow away our camcorders, 35 mm cameras juice bottles and candy. I look around, wondering which of my companions will later succumb to motion sickness. For this reason I had taken mental notes of what everyone ate at breakfast time--just so that I would know what I would have to deal with as the flight progressed.

10:32 A.M. We are told that we can leave our seats and that we have 10 minutes before our first parabola. We prepare our first subject with accelerometers reflective markers and connect the EMG leads to the amplifiers. We remind everyone

not to bump or even touch the experimental cameras, or all of our data will be for naught.

10:45 A.M. All of a sudden I'm on the aircraft



ceiling with the standby subject, rotating lazily across the field of view of the cameras.

10:45 A.M. We land on the floor as the KC-135 pulls out of the dive. "OK, scratch the data for the first parabola" I yell to the NASA engineer running the cameras. "Do that routine over" I try to tell the subject over the screaming of the aircraft engines.

10:46 A.M. Everyone tries to get back to their assigned positions, but find that we are experiencing what feels like a 10 G gravitational force. Our limbs appear to be stuck to the floor and turning one's head causes slightly disconcerting sensations in the vestibular system. Never mind, we were told about this during the training sessions we attended. Just focus on the task!

10:48 A.M. Parabola number 2! Darn it, one of the reflective markers has come adrift and is floating down the length of the fuselage---no problem, I can fly now that I'm weightless! Let's chase after the marker and return it to the subject. I am thinking now that I have spent a ton of time and money to get to this point, and here I am chasing a piece of styrofoam. If I had written the grant correctly, I could be sitting in First Class, sipping a martini and pressing a buzzer for some hors d'oeuvres.

10:49 A.M. I crash down on the floor again as we pull out of the dive. I struggle back to the subject, telling myself that I can handle elevated G levels. This experiment is important after all, and I need a full set of markers on the subject.

10:51 A.M. I get the marker back on the subject just in time for parabola number 3. However, I notice that an unsecured backpack has just drifted by the subject and has yanked the ground electrode

off the subject. "Scratch the data from this parabola as well" I tell the engineer.

10.52 A.M. We spend the next 3 parabolas cleaning the electrode and reapplying it to the skin.

Unfortunately we have to retrieve the gel bottle after it slipped out of my hands and in doing so, bump one of the cameras. The engineer says we can calibrate the cameras when we get back. I notice that I'm developing a headache.

11.05 A.M. We're all set again, and I give the thumbs up to the subject who has suddenly turned pale and has started coughing. Before I know it she is puking into a plastic bag.

11.07 A.M. We spend the next 4 parabolas switching subjects. I reassure the first experimental subject that she will soon feel better and that she mustn't worry about the stain that she deposited on my shirt sleeve during a particularly bad spell of nausea.

11.22 A.M. During the next parabola, the accelerometer comes off the subject---probably because he is sweating so profusely. "Stick it on anyway you can" I mumble to the person who is scheduled to be the third subject. The fact that he put it on sideways doesn't seem to bother me. In fact, I start to lose enthusiasm for this experiment. Of far more importance is the place where I put my own supply of plastic bags.

11.25 A.M. I finally give in to the inevitable when my stomach decides that it is time to get rid of the simple bagel I had for breakfast. This is most unpleasant because not all of the "debris" lands in the bag. Some hits my lap and because of the lack of gravity, rebounds and sticks to the undersurface of my chin. Then, in trying to make it to the back of the aircraft I stagger in to the cameras. "Too bad" I think to myself, "this whole experiment is a bad idea anyhow".

11.27 A.M. During the next 30 parabolas I find myself getting sick 35 times. I've lost all hope of ever getting back safely. I've lost all control of bodily functions. All I want is a steady stream of plastic bags and/or paper towels. I have no idea what is happening with the experiment--in fact, just seeing people participating in data collection annoys me because if everyone felt the way I do, they would insist on landing this @\$!*& aircraft.

12.30 P.M. I feel like *@#* as I am carried off the plane. After collapsing on the nearest piece of furniture (a padded workbench), I hear someone say "Too bad we didn't collect data on you. We'll have to do that when we fly tomorrow".

Acknowledgment: Thanks to Dr. Sudhaker Rajulu (from the Anthropometry & Biomechanics Facility, NASA-Johnson Space Center) who more than made up for my "weak stomach" and ensured that we collected the data we needed!

Thanks to Brian Davis, Julie Perry and Debbie Clark, The Cleveland Clinic Foundation, for this submission.

Further considerations for those pesky, but special letters of recommendation

"Since my last report, this employee has reached rockbottom and shows signs of starting to dig."

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

"I would not allow this employee to breed."

"This associate is really not so much of a has-been, but more of a definitely won't be."

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

"When he opens his mouth, it seems that this is only to change whichever foot was previously in there."

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

"This young man has delusions of adequacy."

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

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

"This employee is depriving a village somewhere of an idiot."

"Not the sharpest knife in the drawer."

"Got into the gene pool while the lifeguard wasn't watching."

"A room temperature IQ."

"Got a full 6-pack, but lacks the plastic thingy to hold it all together."

"A gross ignoramus -- 144 times worse than an ordinary ignoramus."

"A photographic memory but with the lens cover glued on."

"A prime candidate for natural deselection."

"Bright as Alaska in December."

"One-celled organisms out score him in IQ tests."

"Donated his brain to science before he was quite finished using it."

"Fell out of the family tree."

"Gates are down, the lights are flashing, but the train isn't coming."

"Has two brains; one is lost and the other is out looking for it."

"He's so dense, light bends around him."

"If brains were taxed, he'd get a rebate."

"Any dumber and he'd have to be watered twice a week."

"If you give him a penny for his thoughts, you'd get change."

"If you stand close enough to him, you can hear the ocean."

"One neuron short of a synapse."

"Some drink from the fountain of knowledge; he gargled."

"Takes him 1 1/2 hours to watch 60 minutes."

"Was left on the Tilt-A-Whirl a bit too long as a baby."

• "Wheel is turning, but the hamster is dead."

Thanks to Alan Listky, Ohio State University for passing on this submission from an apparently limitless source.

Confirmed (but redacted) Bumper Stickers

Dyslexics have more fnu.

Clones are people two.

Entropy isn't what it used to be.

Jesus saves, passes to Moses; he shoots, SCORES!

Microbiology Lab: Staph Only!

Santa's elves are just a bunch of subordinate

Clauses.

186,000 miles/sec: Not just a good idea, it's the LAW.

Air Pollution is a mist-demeaner.

Anything free is worth what you pay for it

Chemistry professors never die, they just smell that way!

COLE'S LAW: Thinly sliced cabbage.

Does the name Pavlov ring a bell?

Editing is a rewording activity.

Everyone is entitled to my opinion.

Gene Police: YOU!! Out of the pool!

Help stamp out and eradicate superfluous redundancy.

I used to be indecisive; now I'm not sure.

My reality check just bounced.

Rap is to music what Etch-a-Sketch is to art.

What if there were no hypothetical questions?

Energizer bunny arrested, charged with battery.

Boycott shampoo!!! Demand REAL poo!

A waist is a terrible thing to mind.

No sense being pessimistic. It wouldn't work anyway.

Passed on from Leslie Hiemenz by another person without Leslie's permission. Thanks anyway, Leslie!!

What you hear(read)...what it means...

"IT HAS LONG BEEN KNOWN"...

I didn't bother to look up the original reference.

"A DEFINITE TREND IS EVIDENT"...

These data are practically meaningless.

"WHILE IT HAS NOT BEEN POSSIBLE TO PROVIDE DEFINITE ANSWERS TO THE QUESTIONS"...

An unsuccessful experiment, but I still hope to get it published

"THREE OF THE SAMPLES WERE CHOSEN FOR DETAILED STUDY"...

The other results didn't make any sense.

"TYPICAL RESULTS ARE SHOWN"...

This is the prettiest graph.

"THESE RESULTS WILL BE IN A SUBSEQUENT REPORT"...

I might get around to this sometime, if pushed/funded.

"THE MOST RELIABLE RESULTS ARE OBTAINED BY JONES"...

He was my graduate student; his grade depended on this.

"IN MY EXPERIENCE"...

once

"IN CASE AFTER CASE"...

Twice

"IN A SERIES OF CASES"...

Thrice

"IT IS BELIEVED THAT"...

I think.

"IT IS GENERALLY BELIEVED THAT"...

A couple of other guys think so too.

"CORRECT WITHIN AN ORDER OF
MAGNITUDE"...

Wrong.

"ACCORDING TO STATISTICAL
ANALYSIS"...

Rumor has it.

"A STATISTICALLY ORIENTED PROJECTION
OF THE SIGNIFICANCE OF THESE
FINDINGS"...

A wild guess.

"A CAREFUL ANALYSIS OF OBTAINABLE
DATA"...

Three pages of notes were obliterated when I
knocked over a glass of beer.

"IT IS CLEAR THAT MUCH ADDITIONAL
WORK WILL BE REQUIRED BEFORE A
COMPLETE UNDERSTANDING OF THIS
PHENOMENA OCCURS"...

I don't understand it.

"AFTER ADDITIONAL STUDY BY MY
COLLEAGUES"...

They don't understand it either.

"THANKS ARE DUE TO JOE BLOTZ FOR
ASSISTANCE WITH THE EXPERIMENT AND
TO ANDREA SCHOTZ FOR VALUABLE
DISCUSSIONS"...

Mr. Blotz did the work and Ms. Shotz explained
to me what it meant.

"A HIGHLY SIGNIFICANT AREA FOR
EXPLORATORY STUDY"...

A totally useless topic selected by my committee.

"IT IS HOPED THAT THIS STUDY WILL
STIMULATE FURTHER INVESTIGATION IN
THIS FIELD"...

I quit.

*Thanks to Rachael Scoss, from whom the editorial
office hasn't heard from in a while (we thought
you didn't like us anymore), for this submission.*

**Is the English language doomed? Alternative
interpretations of common words:**

Artery: the study of painting.

Bacteria: the rear entrance to cafeteria.

Bowel: a letter like A,E,I,O,U

Cauterize: made eye contact with her.

Dilate: to live longer.

Enema: not your friend.

Fester: opposite of slower.

Impotent: worthy of attention.

Morbid: a higher offer.

Nitrates: cheaper than day rates.

Nodes: was aware of.

Outpatient: person who fainted.

Post-Operative: a letter carrier.

Rectum: Darn near killed him.

Seizure: a roman emperor.

Tablet: a small table.

Tumor: an additional two.

Urine: opposite of "Yer Out."

Varicose: nearby.

X-Ray: Adults only.

Focus: what the government does to us.

*Passes on from the Editorial Offices of Clinical
Biomechanics by Kim Burton. Thanks, Kim!*

ISB Membership News

New Members to ISB

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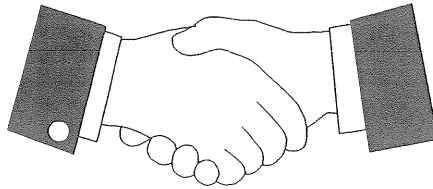
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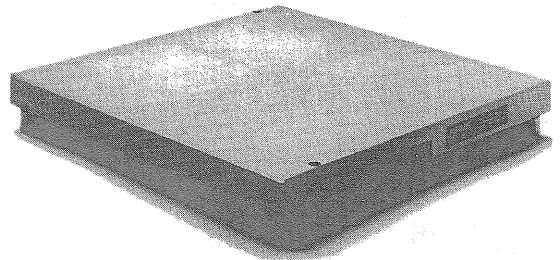
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