ISB

International Society of Biomechanics Newsletter

ISSUE Number 78
May-June, 2000

TABLE OF CONTENTS

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: Kit Vaughan

The theme that I have chosen to explore in my column this time is "Academia and conflicts of interest". All of us involved in biomechanics – whether we are students, lecturers, or in business – will inevitably find ourselves in situations which place us in an invidious position. Sometimes there are no easy answers and we must use our own best judgement. I therefore thought it might be useful to sketch a few scenarios (hypothetical, I hasten to add!) that could arise during the course of one's career. For some of you, this may be a case of *déjà vu*, for others you may not even have realised that such situations could occur. Read through each of these vignettes and ask yourself: "How would I react?"

Jennifer Jordan is a mechanical engineer who is registered for her PhD at the National University of Scotland (NUS). She has passed her comprehensive examinations, majoring in biomechanics with minors in anatomy and computational biology, and has completed the gathering of data for her dissertation. The focus of her work is a novel application of finite element modelling theory to the mechanics of articular cartilage. After three years of hard work and considerable sacrifice, Jennifer is at the write-up stage and can finally see the light at the end of the tunnel. Like all diligent graduate students, she has been spending some serious time on the web, trolling through the sites that are relevant to her area of research. She comes across an obscure reference to a thesis published at the Technical University of Poland in 1993. On a whim she manages to make contact with the university who agree to send her a copy of the document. Jennifer's boyfriend happens to speak Polish and helps to translate certain key sections of the thesis. To her horror, Jennifer discovers that her own research project has already been done! The problem is that NUS is one of those universities which does not permit a student to submit a PhD thesis for research that is not novel (*i.e.* it must not have been published and another thesis constitutes publication). Should Jennifer inform her supervisor? Should her boyfriend keep quiet?

Toshio Nakamura, PhD, is a basic scientist attached to the orthopaedics department at the Kyoto Institute of Technology (KIT). His research interest is osteogenesis and, in particular, the relationship between morphology and function in the osteoblast. One of the tools which he uses to study these developing bone cells is a stereo electron microscope which enables him to measure their external 3D shape. What he lacks, however, is a tool to visualise the internal 3D structure of the cells. In the evenings, at home, Toshio is an avid "gamer" and he delights in writing his own computer code (in C++ naturally!) to recreate the weird characters who inhabit his imagination. He dabbles in mathematical algorithms to visualise the 3D features of his characters and, serendipitously, stumbles upon a super-fast method of reconstructing tomographic images. Not surprisingly, Toshio makes the connection with his own work on osteoblasts and then realises that his discovery has far-reaching applications in the broader field of medical imaging. Excitedly he surfs over to the IBM patent searching web-site (www.patents.ibm.com) and establishes that nobody has patented his break-through algorithm. Now, Toshio has a contract which states that any intellectual property that he develops while working at KIT or utilising KIT's resources, belongs to them. Unlike many employers, however, they have quite a generous scheme which pays 10% of any royalty income into an account over which the inventor has sole control. This means that the inventor can use these funds to purchase equipment, travel overseas, entertain guests at the institute, etc. However, the funds may not be used to subvent the inventor's personal income. Toshio knows that his algorithm, implemented in computer code, could be licensed to medical imaging companies such as Toshiba, Siemens, General Electric and Philips and would generate hundreds of millions of yen. Should he tell his boss at KIT of his discovery or would he be in his rights to negotiate directly with these companies?

Georgina Cooper, a post-doctoral fellow and Henrietta Gabor, a PhD student have

become firm friends while working in the sports biomechanics laboratory at Oscaloosa Medical College. Not only are they working on similar research problems – the aetiology and prevention of running injuries – but their families spend time together on the weekends, sharing a barbecue and other social events. On completion of her fellowship, Georgina and her husband move to New York where she has secured a tenure-track position at the State University in Albany. In time her career takes off. She publishes a steady three papers per year, her work is funded by the Whitaker Foundation and the National Science Foundation, and after six years she is awarded that most closely guarded of academic prizes: tenure. Henrietta, meanwhile, has also been pursuing her career. She lands a tenure-track position at the University of Washington DC. Her husband is opposed to living in the Nation's capital and their marriage unfortunately falls apart. Despite this personal setback, Henrietta thrives in the intellectual atmosphere of her new academic department. Her computer simulation model of musculo-tendinous injury and repair is widely accepted and garners numerous awards. She publishes her work in the best journals (with the highest impact factors!) and is invited to deliver keynote lectures at overseas conferences. After five years, Henrietta's chairman puts her name forward for tenure and asks her to recommend two referees. Understandably, she nominates her friend and colleague Georgina Cooper. The instructions given to referees by the University of Washington DC include the question: "If the candidate were being considered for tenure at your institution, would you recommend the award?" Given Henrietta's obvious success as an academic, Georgina would seem to have an easy task. However, Henrietta does have one weakness: her grant to the National Institutes of Health has just been turned down for the third time and, aside from a few thousand dollars provided by an athletic shoe company, she has been unable to raise any funding to support graduate students. The guidelines for tenure at the State University in Albany are quite explicit: without peer-reviewed Federal funding there can be no tenure. How should Georgina respond?

Henk van Doorn has been busy with his PhD at the University of Emmeloord in the Netherlands for over five years. As is the European tradition, he needs to have at least three papers published in peer-reviewed journals before he can contemplate the submission of his doctoral thesis. Henk has two papers that have already been published, one in the *Journal of Biomechanics* and the other in *ASME Journal of Biomechanical Engineering*. A third paper is currently being considered by the *Journal of Locomotor Studies* but is undergoing a torrid review. Henk lacks one piece of crucial evidence and the editor's resolve is unswerving: without the evidence she will not recommend that the paper be published. At the time of this impasse, Henk's supervisor Professor Jan Domkop is sent a manuscript to review by the editor of *Gait & Posture*. Knowing that the material is related to Henk's work, Professor Domkop asks him to review the manuscript. Yes, you guessed it, Henk discovers the crucial evidence he needs for this third publication! Should he contact the authors directly for permission to cite the work, knowing that would be a breach of confidentiality since *Gait and Posture* use blind reviews? Or should he wait until the manuscript is published (which may take another two years) before resubmitting his own paper to the *Journal of Locomotor Studies*?

I think you will agree that Jennifer, Toshio, Georgina and Henk are each faced with tough ethical dilemmas. I welcome a discussion of these vignettes and suggest that the most appropriate forum might be BIOMCH-L. I look forward to your participation!

From the Editor: Mark D. Grabiner

This issue of the ISB Newsletter is marked by the presence of an opinion essay submitted by Dr. Klaus Nicole. In his opinion essay, Dr. Nicol presents a thought-provoking collection of concerns about the present status and future of biomechanics and the ISB. The

extent to which Dr. Nicol's concerns are an accurate portrayal should be of interest to many ISB members. I invite responses to Dr. Nicol's essay, the body of which will be made available to ISB members through both the Newsletter and society website. All comments should be submitted electronically to me at grabiner@bme.ri.ccf.org.

Among its other purposes, the Newsletter is a conduit through which ISB members can be in direct communication with the membership of the Society and the ISB Executive Council. In this manner, the Newsletter is a unique Society resource through which members may formally raise issues, grievances and concerns to an international audience that shares a common denominator of ISB membership. In turn, the Newsletter serves those members desiring to proffer their responses. Meaningful debate and exchange of such communications is not restricted to topics involving ISB, but rather, may be better bounded by the dimensions of biomechanics and science in general.

Because the original version of Dr. Nicol's essay is quite long and includes many graphics it was not possible to include the entire document in the Newsletter. At my request, a shorter version was submitted and which is found below. Through the assistant of Dr. Ton van den Bogert, the ISB's informatics officer, the full document has been posted on the ISB website and can be accessed at the following site: http://isb.ri.ccf.org

As in the present case, submissions of this type will be published with minimum editing.

OPINION

Biomechanics, where are you heading to ?

Submitted by Klaus Nicol

ISB is going to celebrate its 30th anniversary next year. This should be occasion for some considerations on how biomechanics is standing today. In the following an abstract is given, the full text is posted on the ISB website.

Do we need laws? In a key note lecture in Wingate in 1979, Jim Hay proposed that the goal of biomechanic research should not be to measure everything which is around and to publish small bits of detailed results, but to look behind the surface and to try find out where this all comes from. i.e. to find a short description for a large variety of appearances, to find something that is equivalent to laws in mechanics. Today, 20 years later, the situation is not much different. Biomechanics research basically is empirical research of very small areas which means nothing for everybody who is not working just in this field. What is missing are wide scope results like those published by Hochmuth in the 60ies on principles of movement or the very rare wide scope publications at the Calgary Congress like those by Hay & Kaya on stroke/stride length in locomotion, by McNeill Alexander on man's standing compared to animals in terms of speed, drag and energy costs in swimming and by Cavanagh, who simply told us that foot is a sensory organ. In his opening address of the Calgary Congress, Benno Nigg called for more „nonsense" in Biomechanics. I dare to state the nonsense:

There are pictures in biomechanics, not only pieces of a puzzle, there are laws in biomechanics, not only data.

What's about the biomechanic community? My diagnosis is: We had considerable success in the 70ies and 80ies, and now we are going to loose what we achieved. In the past we had congresses where ergonomics, accident research, blood flow and mattress design was a major issue, working groups on shoe research and forensic biomechanics were originated. It seemed that we were bringing together those working in biomechanics. Today, the ISB congress is basically a congress of medical biomechanics of the skeletal system, the other fields of biomechanics live a life of their own or they do not live at all.

A similar situation is seen in the journals. There are three biomechanical journals. Two of them are per se focussed on medical aspects, the third one seems to approach the

same profile. I am afraid that one day, biomechanists working in a non medical field will have hardly any possibility to publish in a biomechanical journal and Biomechanics will have become a synonym of "Applied medical Biomechanics".

Do we need biomechanists? The question of interest comes from doctors, measuring devices come from industry, measuring procedures come from literature; stride length, maximum force and some few other parameters are routinely evaluated by medical assistants, and statistics is done by the hospital statistician. So, is a high paid biomechanist really needed? My answer is: No, as long as biomechanists overlooked the basic task of biomechanics which is tackling the question of interest by significant parameters which are able to extract the right answer from the measurements. Maximum force is not the right parameter for everything, there are hundreds of more powerful parameters, and the biomechanist should be the only person to know about them.

Is Biomechanics a science? In large fields of biomechanics nobody is working or people from outside are working who may even not know the name of biomechanics, the area of pure science is underdeveloped. Many problems have shown up only recently, promising developments of the past have not been continued. Summarizing: Biomechanics is not a science like physics, which has a sound and wide basis of knowledge from which applications are derived, instead biomechanics is just a collection of small patches of applications.

From the ISB Awards Jury Chairman: Stuart McGill
ISB Awards 2001 XVIIIth Congress

At the 2001 congress in Zurich, there will be three ISB awards presented: the Young Investigator Awards: the Clinical Biomechanics Award; and the Promising Young Scientist Award. Award submissions are due on the regular abstract submission date : 15 November, 2000.

Young Investigator Award

There are two YI 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 ISB). 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

Candidates for the YI awards must be the first author of an abstract submitted for presentation, have a maximum age of 35 at the first day of the congress, and 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 Congress. The abstracts for this competition are solicited with the call for papers of the XVIIIth ISB Congress.

Clinical Biomechanics Award, 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, a monetary award of US$ 750, and a reimbursement of the registration fee of the Congress.

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

Congress in a plenary session. Abstracts are solicited for this competition with the call for papers for the XVIIIth ISB Congress.

Promising Young Scientist Award, 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 XVIIIth 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.

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 careers in Biomechanics, and be no more than 5 years post PhD degree at the first day of the congress. 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, Stuart McGill.

For further information please contact the Awards Jury chairman, ISB, Stuart McGill, Professor, Email: mcgill@healthy.uwaterloo.ca

Job Market*

The Job Market may be accessed via:
http://www.lri.ccf.org/isb/jobs/

Upcoming Meetings, Workshops, Etc.

July

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

August

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

International Symposium of Contemporary Practice of Rehabilitation Medicine and Motor Control, 5-6 August, 2000 , Taipei, Taiwan. Contact: Y. C. Lin MD, The Department of Physical Medicine and Rehabilitation, Chung Gang Memorial Hospital, 199,Tung Hwa North Rd. Taipei, Taiwan, Tel: +886-3-3281200 ext 3846, FAX: +886-3-3274850, Email: sirius@adm.cgmh.com.tw

Clinical Cartilage Symposium, A International Symposium on the Treatment of Articular Cartilage Injuries, 18-19 August 2000, Vail, Colorado Contact: H. Horvath, Email: holly.horvath@shsmf.org Fax: 970-479-9753

September

3rd Meeting of the International Shoulder Group, 4-5 September 2000, Newcastle, United Kingdom, Contact: E.K.J. Chadwick, Department of Mechanical Engineering, Delft University of Technology, Mekelweg 2, 2628 CD Delft, The Netherlands, Tel: 31 15 278 7891, Fax: 31 15 278 4717, Email: E.K.J.Chadwick@wbmt.tudelft.nl, http://www.wbmt.tudelft.nl/mms/staff/chadwick/main.htm

2nd Euroconference on Tissue and Cell Engineering, 9-13 September 2000, Hoeven, The Netherlands. Contact: www.azvu.nl/stega/tce2000.

Biomechanics 2000, Annual Conference of Polish Society of Biomechanics, 10-13 September 2000, Miko□ajki, Poland, Contact: Conference Secretariat, Central Institute for Labour Protection, ul. Czerniakowska 16, Poland. Tel. + 48 226233275, Email: daliu@ciop.pl

APEC Workshop on Technology with Humanistic Concerns for Disabilities, "Assistive Technology in the 21st Century", Contact:W.Wang, Pt19-20 September 2000, Taipei, Taiwan, Contact: C-K Cheng, Tel: 886.2.28267020, FAX: 886.2.28202519, Email: ckcheng@bme.ym.edu.tw or W.T.J. Wang, Te;: 886.2.28210271 ext 14, FAX: 886.2.28201841, Email: tjwnag@ym.edu.tw

25th Congress of the Société de Bioméchanique combined with the **11th Congress of the Canadian Society of Bioemchanics**. 23-26 August, Montreal, Canada, Contact: Email:bureau@congresbcu.com, www.congressbcu.com/sb-scb2000.htm

Motor Coordination in Sport and Exercise, 23-24 September 2000, University of Bologna, Italy. Contact: A. Ciccella, Tel/FAX: 39.51.6013662, Email: promcus@alsm.unibo.it

12th Conference of the European Society of Biomechanics, 27-30 Aug, 2000, Trinity College, Dublin, Ireland, Contact: P.J. Prendergast, Chairman ESB2000, Dept. Mechanical Engineering, Trinity College, Dublin 2, IRELAND, Tel: +353-1-6081383, Fax: +353-1-6795554, Email: pprender@tcd.ie

October

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

12th Annual Electromyography: Fine Wire Technique Course, ANNUAL ELECTROMYOGRAPHY: FINE-WIRE TECHNIQUE COURSE, October 13-14, 2000, San Diego, California, THIS COURSE IS RESTRICTED TO LICENSED PHYSICIANS AND PHYSICAL THERAPISTS. Contact: J. Buttermore, Email: jbuttermore@chsd.org.

17th Annual Gait Analysis Interpretation Course, 16-19 October 2000, San Diego, Contact: M.P. Wyatt, Email: mwyatt@chsd.org.

November

Symposium on the Design and Performance of Functional Biomaterials , 2000 ASME International Mechanical Engineering Congress and Exposition
Nov. 5-10, 2000 Orlando, Fla. Contact: Michael Sacks, University of Pittsburgh, Dept. of Bioengineering, Pittsburgh, PA 15261; (412) 624-8985; e-mail msacks@engrng.pitt.edu

2nd International Conference on Weightlifting and Strength Training, 19th. to 21st. November, 2000, IPOH, MALAYSIA, Contact: Conference Secretariat, Tel/Fax 605-2545-688, Email:leecp@pc.jaring.my, http://members.theglobe.com/promuscle/

Clinical Movement Analysis for Rehabilitation Medicine, 26 November-1 December 2000 Florence, Italy, Contact: F. Benvenuti, Laboratorio di Fisiopatologia e Riabilitazione del Movimento, U.O. di Geriatria, INRCA, Viale Michelangiolo 41, 50125 Firenze, Italy, Tel. 39-055-6577253; 39-055-65771, Fax: 39-055-6577413, Email: bevenuti@dinonet.it, www.medea-italia.it

December

10th International Conference on Biomedical Engineering, 6-9 December 2000, Singapore, Contact: A. Thambyah, Dept. of Orthopaedic Surgery, National University of Singapore, S(119074), Tel: 65.8746521, Fax: 65.7744082, Email: ashvin@nus.edu.sg, http://www.nus.edu.sg/DB/icbme

2001

Fourth Combined Meeting of the Orthopaedic Research Socieities of the USA, Canada, Europe and Japan, 1 Jun – 3 Jun 2001, Rhodes, Greece. Contact: Orhtopaedic

Research Society, 6300 N. River Road, Suite 727, Rosemont, IL, 60018-4226 USA; Tel: 847.698.1625; Email: ors@aaos.org.
XVIIIth Congress of the International Society of Biomechanics, 8-13 July 2001, Zurich, Switzerland, Contact: ISB2001, Wagistr. 4, CH-8952 Schlieren, Switzerland, Tel: +41 (0)1 633 6117, Fax: +41 (0)1 633 1124, Email: isb2001@biomech.mat.ethz.ch, www.isb2001.ethz.ch
Biomechanica IV, Davos, Switzerland, 23-25 September, 2001, Contact: http://www.ao-asif.ch/events/ao/biomechanica/index.shtml

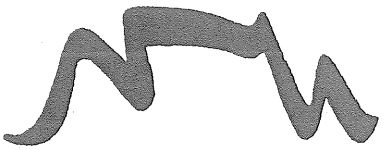
2002

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

Report of the Sixth International Symposium on the 3D Analysis of Human Movement

Submitted by Kit Vaughan

The ISB Technical Group, which focuses on the 3D analysis of human movement, held its sixth biennial meeting in Cape Town from 1 to 4 May 2000. The official host was the University of Cape Town and the venue was the picturesque Vineyard Hotel, tucked away in the shadow of Devil's Peak which forms part of the Table Mountain range (*cf.* conference logo below).



This was a small but intimate meeting where the science was of a high standard and the social programme was most convivial. In all, 42 delegates attended and we were grateful for the generous support of 7 sponsors. There was a total of 29 scientific presentations, including 4 keynote addresses. In addition, 6 of the sponsors had an opportunity to describe the latest developments in 3D technology.

Our two keynote speakers were Clay Anderson from Texas (who recently moved to Stanford, California) and Tung-Wu Lu from Taiwan who each provided two outstanding presentations. Clay spoke on dynamic simulation of human motion and using a computer model to assess muscle function during gait, demonstrating the real power and startling insights that can come from a computer simulation model which is faithful to the underlying biology. Tung-Wu spoke on the use of artificial neural networks to understand 3D scapular kinematics and also on the use of computer graphics-based models with anatomical joint constraints, showing how skin movement artefacts could be minimised.

There were eight separate scientific sessions: modelling; data capture; upper body mechanics; analytical methods; bone mechanics; and human gait (3 sessions). Each speaker provided a four page camera-ready paper that contributed to a 102 page conference proceedings. THERE ARE A FEW OF THESE LEFT OVER AND THE FIRST PEOPLE TO CONTACT ME VIA E-MAIL WILL BE SENT A COPY FREE OF CHARGE! Since we anticipated that many scientists who were not able to join us in Cape Town might be interested in the proceedings, we have created a portable document format (PDF) file and placed it on the official web-site of the Technical Group for 3D Analysis of Human Movement. Just point your browser at:

http://www.utc.edu/Human-Movement/capetown/

and please note that it is case-sensitive. Then make sure you have the latest version of Adobe Acrobat Reader available on your computer and follow the instructions. Be aware that the layout for the proceedings was designed for A4 paper (210 x 297mm) and not the ubiquitous 8.5" x 11" paper found in North America. This will be important when you make a hard copy of the PDF file!

As expected, most of the speakers at the conference chose to use a data projector connected to a computer for their presentations (except for a group of computer scientists from

Belgium who didn't trust the technology and opted for an overhead projector instead!). While some brought their own laptops, others loaded their talks onto my PC which was used during the conference. The upshot is that I have about 15 presentations -- mostly Power Point and video files -- which I have also placed on the 3D Human Movement web-site with the approval of the authors and the assistance of Mike Whittle:

http://www.utc.edu/Human-Movement/capetown/

This is my first attempt to try and persuade the biomechanics community to share their ideas and material on a broader basis. For those of you who take the time to peruse these files, I trust that you will find the exercise worthwhile. If you really like the idea, and would like to see it expanded, please let me know and I will pursue the concept more vigorously with other conference organisers.

Aside from the excellent scientific programme put together by Garth Johnson of Newcastle in the UK, we also found time to enjoy a hectic social programme. A description of the famous Cape wines that we tasted is included in the conference proceedings (see the PDF file referred to above), while Gideon Ariel (as always!) was snapping away with his digital camera and the photographs may be seen at:

http://www.sportsci.com/topics/3D_conference_Cape_Town4-29-00/index.htm

The venue for the seventh international symposium on the 3D Analysis of Human Movement is Erlangen in Germany where our host will be Oskar Schmid. We look forward with anticipation to this meeting, confident in the knowledge that our field will have made considerable progress over the next two years.

Say, were you at the Midwest Graduate Students' Biomechanics Symposium?
Submitted by Paul DeVita

Each year, graduate students and faculty from Biomechanics programs in the Midwest gather for science and friendship at the Midwest Graduate Students' Biomechanics Symposium. Over the years and despite little financial support, hundreds of graduate students have made their first professional presentations at this symposium. On March 31 and April 1, 2000, Dr. Steve McCaw of the Department of Health, Physical Education and Recreation at Illinois State University, hosted the 22nd (+/- 2) annual symposium for this group. About 50 students and faculty attended the symposium. Steve served as the program chair, organizing committee, scientific review committee, session moderator and he was also in charge of muffins and coffee. He did an outstanding job in all roles and particularly in his muffin selection.

The symposium was also outstanding with an opening lecture on Friday evening, followed by 15 student and two keynote presentations on Saturday. The student presentations covered a variety of topics including locomotion biomechanics in children, healthy and injured young and elderly adults and adults with ALS, orthopaedic biomechanics, and instrumentation techniques. One unique presentation from Ball State University included a tag-team approach with five students sharing one 30 minute presentation. The presentation was very interesting, however, they did not actually tag each other during the exchanges and this may have been a rule violation. Fortunately, no one knows which rule this might be.

The entire group of presentations were, in a word, excellent. The students were fully prepared and knowledgeable about their topics. The audience was inquisitive, challenging each student with many questions, and the students responded superbly. The real mission of the symposium is to provide a challenging educational experience from which novice biomechanists can improve their professional abilities. The symposium was a clear success in this regard.

The American Society of Biomechanics graciously provided financial support for the symposium. These funds were partially used to support the keynote and opening lectures by Dr.

Tim Derrick of Iowa State University and myself (1). Tim gave an excellent presentation on his work in the area of shock attenuation in the human body and I presented some of our findings on ACL injury and reconstruction surgery. Tim presented intriguing data on factors that influence shock absorption and the mechanisms of shock absorption in humans. I showed a lot of pictures. I also had the privilege of giving the opening lecture in which I presented a decidedly off-beat look at the director of the first Laboratory of Biomechanics, the Russian avant-garde theatre director, Vsevolod Meyerhold. No kidding. Basically, I showed a lot of pictures, like,

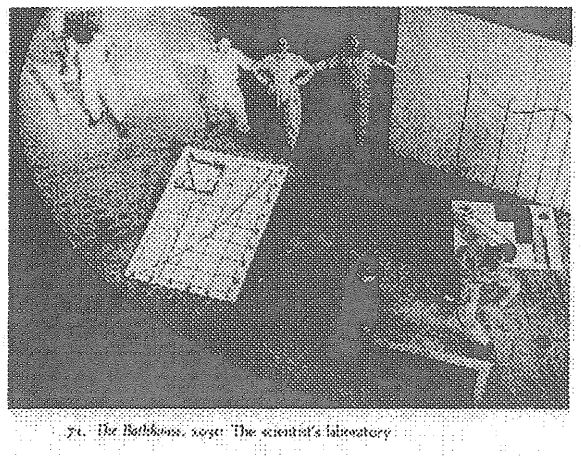


Figure 1. Biomechanical actors portraying scientists. Say, is that Mark Grabiner on the left end of the line?

Congratulations to Steve and all the student presenters for making the symposium a complete success. Please look for announcements about next year's Midwest Graduate Students' Biomechanics Symposium which will be hosted by Dr. Phil Schot at the University of Wisconsin at Milwaukee. Remember, the symposium serves great muffins.

2nd Annual Southern California Conference on Biomechanics

Submitted by Mark D. Grabiner

I had the privilege of having been invited to speak at the above conference that was held at the University of Southern California on April 7-8, 2000. The meeting, sponsored by the Department of Biokinesiology and Physical Therapy and the Musculoskeletal Biomechanics Research Laboratory, received funding from the American Society of Biomechanics. The mission of this annual event is to provide an opportunity for graduate and undergraduate students in biomechanics to present their research to the local scientific community. For the second year in a row, the biomechanists in the Southern California area have come together and created an excellent program and environment from which both students and faculty alike were beneficiaries.

The meeting organizers were George Salem, PhD and Chris Powers, PhD, PT and they did an outstanding job. Friday evening's opening session included a welcome from the organizers followed by a Keynote address by Dr. Jacqueline Perry. Dr. Perry, the Director of the Pathokinesiology Laboratory at Rancho Los Amigos National Rehabilitation Center, provided an historical overview of gait analysis, one of the many areas that she has enriched in her long career. Dr. Perry's address was followed by a session of four student presentations. This session established the tone of the meeting, which was diverse in scope, highly interactive and constructive. Because being highly interactive and constructive can be grueling, this session was followed by a social at which contacts with old friends were re-established and new friends were met. The next day was a very full schedule consisting of 21 papers distributed to four sessions. **Conference abstracts can be viewed at the conference web site:**

http:// www.usc.edu/go/mbrl.

Outstanding Presentation Awards were presented to students Robert Allaire and Kathleen Ganley for their presentations titled *Effects of Triangular Fibrocartilage Complex Transection on the Kinematics of the Distal Radioulnar Joint* and *The Use of Dual-Energy X-Ray Absorptiometry in Determining Subject-Specific Anthropometric Measures for Kinetic Analyses*, respectively.

Rules of Engagement in the great State of Texas: things to know when accepting a job

If you run your car into a ditch, don't panic. Four men in a four-wheel drive pickup with a 12- pack of beer and a tow chain will be along shortly. Don't try to help them, just stay out of their way. This is what they live for.

Don't be surprised to find movie rentals and bait in the same store.

Remember: "Ya'll" is singular, "All ya'll" is plural, and "All y'alls'" is plural possessive.

"Mom'n'em" is not one person. When someone asks, "How's your mom'n'em?" They are referring to the whole family.

Be advised that "He needed killin'" is a valid defense here.

If you hear a Texan exclaim, "Hey, y'all, watch this," stay out of the way. These are likely the last words he'll ever say.

When you come up on a person driving 15 mph down the middle of the road, remember that most folks learn to drive on a John Deere and the rest learned to drive while road hunting in the back roads. In both cases, this is the proper speed and position for that vehicle.

Don't be surprised if an obituary mentions that the deceased requested to be buried in his four-wheel drive truck because, "It ain't never been in a hole it couldn't get out of."

"Ya'll come back now, ya here," is a temporary statement. We love Yankees to visit, but damn Yankees are those who decide to stay.

If you decide to stay in Texas and bear children, don't think we will accept them as texans. After all, if the cat had kittens in the oven, we wouldn't call 'em biscuits.
Thanks to Lynn Haynor, University of Burrito, for this submission.

Rocket Science, Instruction sets, and Sensitivity to Initial Conditions

Scientists at NASA have developed a gun built specifically to launch dead chickens at the windshields of airliners, military jets and the space shuttle, all traveling at maximum velocity. The idea is to simulate the frequent incidents of collisions with airborne fowl to test the strength of the windshields. British engineers heard about the gun and were eager to test it on the windshields of their new high speed trains. Arrangements were made. But when the gun was fired, the engineers stood shocked as the chicken hurtled out of the barrel, crashed into the shatterproof shield, smashed it to smithereens, crashed through the control console, snapped the engineer's backrest in two and embedded itself in the back wall of the cabin. Horrified Britons sent NASA the disastrous results of the experiment, along with the designs of the windshield, and begged the US scientists for suggestions. NASA's response was just one sentence, "Thaw the chicken."
Thanks to Chris Phillips, University of Pittsburgh, for this submission

New Directions in Inspirational Posters

Rome did not create a great empire by having meetings...they did it by killing all those who opposed them.

If you can stay calm, while all around you is chaos...then you probably haven't completely understood the seriousness of the situation.

Doing a job RIGHT the first time gets the job done. Doing the job WRONG 14 times gives you job security.

Eagles may soar, but weasels don't get sucked into jet engines.

Artificial Intelligence is no match for Natural Stupidity.

A person who smiles in the face of adversity...probably has a scapegoat.

Plagiarism saves time.

If at first you don't succeed, try management.

Never put off until tomorrow what you can avoid altogether.

TEAMWORK... means never having to take all the blame yourself.

Never underestimate the power of very stupid people in large groups.

We waste time, so you don't have to.

Hang in there, retirement is only thirty years away!

Go the extra mile. It makes your boss look like an incompetent slacker.

When the going gets tough, the tough take a coffee break.

INDECISION is the key to FLEXIBILITY.

Succeed in spite of management.

Aim Low, Reach Your Goals, Avoid Disappointment.

Thanks to Rachel Skoss, University of Western Australia, for this submission

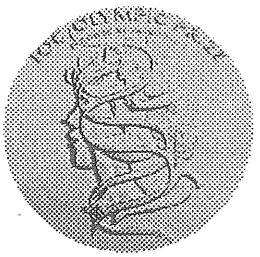
More Insider Information for Graduate Students-Secret memos uncovered by our crack ISB Newsletter Investigative Team

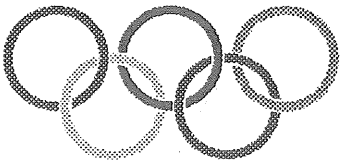
As anyone in the business knows, the examiner is always at a real disadvantage: although you of course understand the principles of the subject far better than the student, he or she starts off with the unfair advantage that they inevitably know far more about the details of their work than you can possibly absorb, particularly as you have had only 3 hours on the train or plane to read their wretched thesis. Although you start from an inferior position, Eingen shows how it isn't too difficult to reverse the situation so that, after a couple of hours of oral exam, the student (1) is grateful to be allowed to pass, (2) despises his or her supervisor for their shallow attempts to educate them and (3) realizes that it is only your understanding and kindness that has been their salvation.

Eingen starts by reminding you of the guiding principle behind the Spanish Inquisition, "In just one page of any man's prose there is evidence to burn him," before emphasizing the importance of giving the illusion of extensive preparatory work. Here, the assay is to have sticking out from at least 20% of the pages of the thesis a Post-It on which something (anything) has been written so that the student realizes with a sinking heart that you have actually read every word of the text. The student will then be softened up for the first question of the oral, one that is ostensibly designed to put him or her at ease: traditionally, this is something simple about the literature. You thank them for their answer and ask them if they had considered the possibility that the literature here was wrong or superficial, or failed to deal with some point or other where you actually know something.

Ten minutes along this line and they are ready for an analysis of their results, and a safe question (for you) is to ask the student to discuss the controls of their key experiments and why they chose that particular statistical method to analyze their results. After 30 minutes of this, you can then go to the third line, another variant on Morton's fork: if the results were clean and conclusive, you can ask them to consider the narrowness of experiments which exclude novel results. If they were messy, you can ask them to spend ten minutes using hindsight to redesign their experiments so that things would have worked better. As to the discussion, a reliable way to handle this is to look for any clever idea in the text and ask the student how it could be disproved. The approach is as ever to keep the initiative and to ask students questions that don't require you to have done more work than is merited by the miserable fee that you are going to receive in six months' time when the administration has finally dealt with the paperwork.

Thanks to Brian Davis, The Cleveland Clinic Foundation, for this submission, Taken from http://www.biomednet.com/hmsbeagle/75/xcursion/humor





IOC OLYMPIC PRIZE
ENDOWED BY
PARKE-DAVIS

Sport Science Research Thrives as Parke-Davis and the IOC Medical Commission Announce New Programs

by Benno M. Nigg

It has only been in the last several decades that sport scientists have shifted their research focus to movement in response to growing public concern over physical inactivity. In the 1950s, immobility of a large segment of the population captured the attention of the government and the private sector spawning new research dollars devoted to movement and mobility and a new generation of brilliant scientists. Exercise and physical activity was beginning to be widely recognized for its role in ensuring a healthy lifestyle and the betterment of human kind.

"Helping People Live Active Lives" is the mission of the IOC Medical Commission and Parke-Davis association.

With the announcement of the recently formed IOC Olympic Academy and the IOC Olympic Research Program, the IOC Medical Commission is emphasizing, now more than ever, the importance of movement, physical exercise and sport for the well being of humankind and educational programs dedicated to that cause.

Four key programs, endowed by Parke-Davis, significantly contribute to disease state management and helping people live active lives. The IOC Medical Commission has long been at the forefront of encouraging movement and physical exercise and sport for the well being of humankind and acknowledging that research within these areas needs to be a top priority. It was for this reason that Parke-Davis teamed up with the IOC Medical Commission to support the research and education.

The IOC Olympic Prize on Sport Sciences recognizes excellence in research related to movement, physical exercise and sport. Recipients of the Prize are honored with an Olympic medal and a cash award of US $500,000.00. The 2000 IOC Olympic Prize winner will be announced July 25 in New York City. The Prize Medal will be awarded September 10 at the opening ceremony of the IOC Session in Sydney, Australia. Watch for updates and media coverage of these upcoming events!

Past recipients of the prestigious IOC Olympic Prize are:

- Atlanta, 1996: Jeremy N. Morris, MD and Ralph S. Paffenbarger Jr., MD for their discovery and documentation of the association between physical exercise and cardiac health which inspired a fitness revolution.
- Nagano, 1998: Savio L-Y Woo, PhD for his outstanding contribution to the understanding of ligament healing that altered the way physicians treat sports-related injuries.

The ***IOC Olympic World Congress on Sport Sciences*** attracts the world's leading sport scientists, athletes and coaches who convene every two years at the site of the Olympic Games to share and discuss the latest developments within the field of movement, physical exercise and sport.

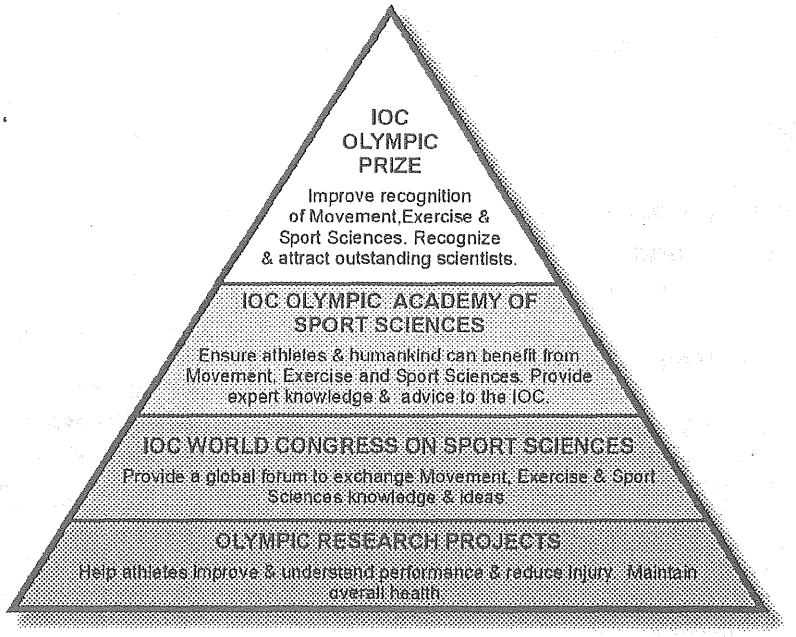
Parke-Davis and the IOC Medical Commission recently announced the ***IOC Olympic Research on Sport Sciences program***. The research will further scientific knowledge in the area of injury prevention and performance enhancement. The projects are long-term, and involve research and measurement of athletic performance during actual Olympic competition.

The ***IOC Olympic Academy on Sport Sciences*** is a scientific academy with the mission to further the ideals of Olympism through the integration of scientific and medical programs in research and education. The goals of the academy are:

- Ensure that all athletes and humans can benefit from the knowledge in the field of movement, exercise and sport sciences;
- Provide expert knowledge, and;
- Elevate the recognition of sciences dealing with movement, exercise and sport.

For more information on the Parke-Davis/IOC Medical Commission's Olympic Association including upcoming events and progress reports on current research and award programs, visit www.parke-davis.com/OlympicAssociation.

Parke Davis/IOC Medical Commission Association



New Members to ISB

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

KUITUNEN, Sami (#2360)
Dept. of Biology of Physical Activity
University of Jyvaskyla
P.O. Box 35
40351 Jyvaskyla
FINLAND

YUDA, Jun (#2361)
Doctoral Program in Health & Sport Sci.
University of Tsukuba
1-1-1, Tenno-dai
Tsukuba, Ibaraki 305
JAPAN

WOBROCK, Jesse (#2362)
Dept. of Kinesiology
California State University
18400 Prairie St. #215
Northridge, CA 91325
USA

MOREAU, Megan Jeanne (#2364)
Dept. of PE & Rec. (Grad. Studies & Res)
University of Alberta
P-421 University Pavilion
Edmonton, Alberta TGG 249
CANADA

CHEN, Shou-I (#2365)
Comp. Aided Engin. Sys. - Adv. Res. Lab
National Cheng Kung University
Institute of Biomedical Engineering
#1 University Road
Tainan 701
TAIWAN

BESIER, Thor (#2366)
Dept. of Human Movement & Ex. Sci.
The University of Western Australia
Nedlands, WA 6907
AUSTRALIA

ST LAURENT, Bryan (#2367)
Dept. of Exercise Science
Arizona State University
1123 East Apache Blvd. #326
Tempe, AZ 85281
USA

SOLOMON, Kenneth A. (#2368)
Institute of Risk and Safety Analysis
5324 Canoga Avenue
Woodland Hills, CA 91364
USA

DONOHOE, Matthew (#2369)
>Institute of Risk Safety Analysis
3725 2nd Avenue
La Crescents, CA 91214
USA

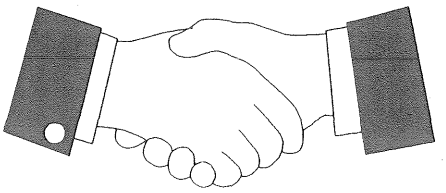
SOARES, Denise Paschoal (#2370)
Laboratorio De Pesquisa Do Exercicio
Universidade Federal Dorio Grande Do Sul
K. Felizardo, 750
D.Jaime De Barros Camara 74/22
Rio Grande Do Sul 91130-160
BRAZIL

FUKUSHI, Tamami (#2371)
Brain Sciences Cntr/ Dept. of Neurosci.
VAMC / University of Minnesota
One Veterans Drive
Minneapolis, MN 55417
USA

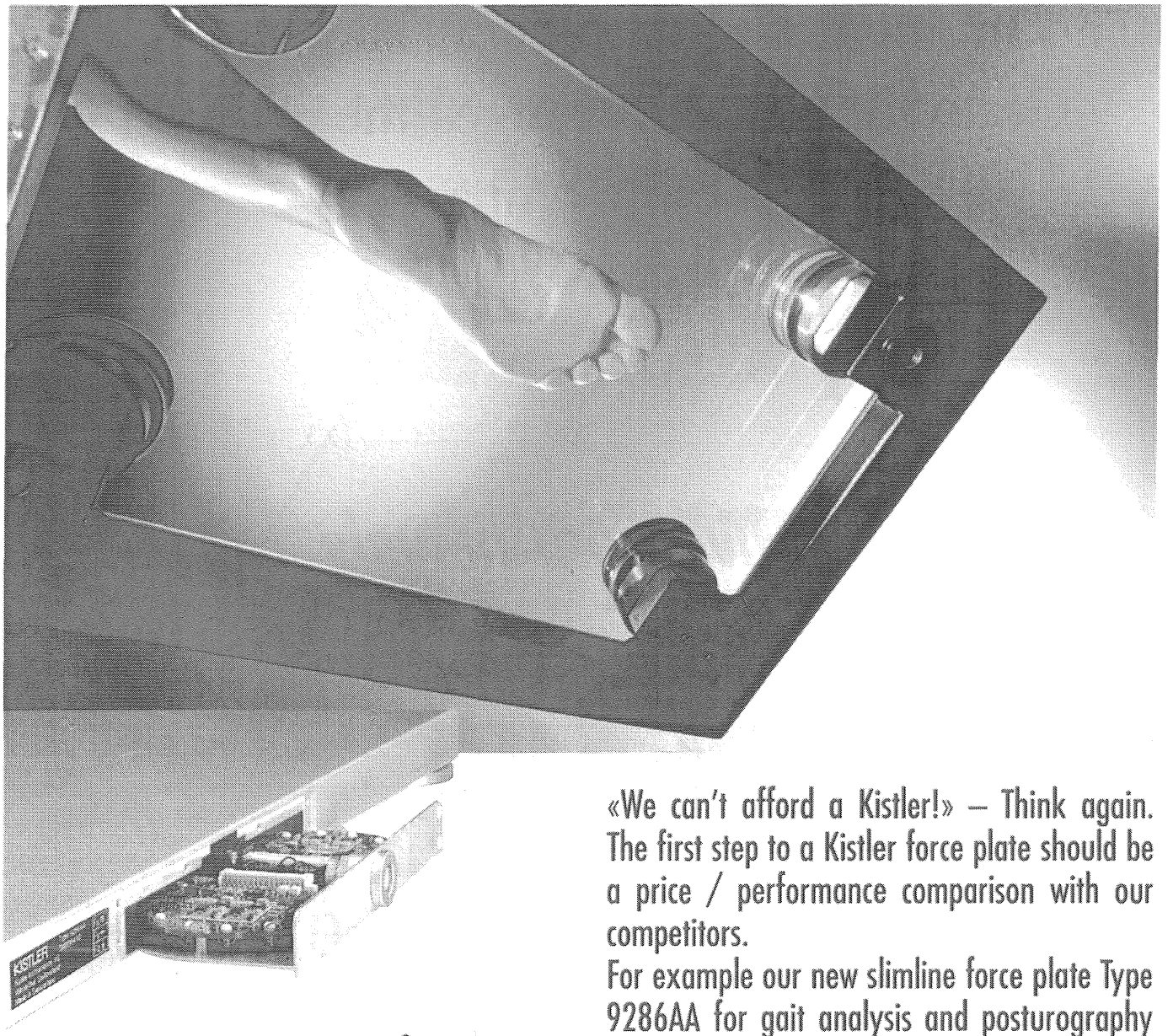
JOHRI, Anurag (#2372)
J.N. Medical College
Aligarh Muslim University
MIG - 90, A.D.A. Colony, Ramghat Road
Aligarh, 202 001
INDIA

PURKIS, Shelia (#2374)
Institute of Medical Sciences
University of Toronto
49 Frizzell Ave.
Toronto, ON M4J 1E2
CANADA

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



The Original – now at strain gage prices



«We can't afford a Kistler!» – Think again. The first step to a Kistler force plate should be a price / performance comparison with our competitors.
For example our new slimline force plate Type 9286AA for gait analysis and posturography has become 30 % cheaper after building the miniaturized charge amplifier right into it. Contact us for more information.

Price reduction due to built-in electronics

KISTLER

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

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