



# International Society of Biomechanics Newsletter

**ISSUE Number 103**  
**February 2008**

## ISB Officers

### PRESIDENT

Dr. Walter Herzog  
Faculty of Kinesiology  
University of Calgary  
2500 University Drive  
Calgary, AB T2N 1N4  
CANADA  
Tel: (403) 220-8525  
Fax: (403) 284-3553  
E-mail: walter@kin.ucalgary.ca

### PRESIDENT-ELECT

Dr. Julie R Steele  
Department of Biomedical Science  
University of Wollongong  
Wollongong NSW 2522  
AUSTRALIA  
Tel: 61-(0)2-42213881  
Fax: 61-(0)2-42214096  
E-mail: julie\_steele@uow.edu.au

### PAST-PRESIDENT

Dr. Brian L. Davis  
Department of Biomedical Engineering  
The Lerner Research Institute (ND 20)  
The Cleveland Clinic Foundation  
9500 Euclid Avenue  
OH 44195, USA  
Tel: +1 216 444 - 1055  
Fax: +1 216 444 - 9198  
E-mail: davisb3@ccf.org

### SECRETARY-GENERAL

Dr. A. Stacoff  
Laboratory for Biomechanics  
Department of Materials, ETH Zürich  
Wagistrasse 4; 8952 Schlieren - Switzerland  
Tel: ++41 (1) 633 62 18  
Fax: ++41 (1) 632 11 24  
email: stacoff@biomech.mat.ethz.ch

### TREASURER

Dr. Graeme A. Wood  
PO Box 3156  
Broadway  
Nedlands, WA 6009  
AUSTRALIA  
Fax: +61-8-97 64 1643  
E-mail: gwood@cygnus.uwa.edu.au

### NEWSLETTER EDITOR

Dr. Karen Sjøgaard  
National Research Center for the Working Environment,  
Lersø Parkallé 105  
DK-2100 Copenhagen  
DENMARK  
Phone: +45 39 16 53 46  
Fax: +45 39 16 52 01  
E-mail: kas@NRCWE.dk

## TABLE OF CONTENTS

Editors note.....	2
<i>Karen Sjøgaard</i>	
ISB Presidents Letter .....	2
<i>Walter Herzog, President</i>	
2007 Nike Award for Athletic Footwear .....	3
Research	
Minutes of the ISB General Assembly Meeting .....	4
<i>Julie R. Steele</i>	
Student Outlook of the ISB Congress 2007.....	7
<i>Ediuska Laurens</i>	
Congratulations to ISB 2007 Award Recipients.....	8
Announcement: 2009 Nike Award for Athletic Footwear Research.....	10
New Trauma Biomechanics Textbook .....	10
Call for papers: North American Congress on Biomechanics.....	10
8 <sup>th</sup> Biennial Footwear Biomechanics Symposium ....	11
Workshop in Venezuela.....	12
<i>Ediuska Laurens</i>	
New members .....	14
Announcement: ISB 2009 in Cape Town .....	16

### AFFILIATE SOCIETIES OF ISB:

American Society of Biomechanics; Australian and New Zealand Society of Biomechanics; Brazilian 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; International Society of Biomechanics in Sports; Japanese Society of Biomechanics; Korean Society of Sport Biomechanics; Polish Society of Biomechanics; Russian Society of Biomechanics; Société de biomécanique (France); Taiwanese Society of Biomechanics.

## Editors note and apology

Dear readers of the Newsletter. Unfortunately this issue has been unduly delayed, partly due to electronic mysteries but mostly on problems with organizational changes and personal events in my end. So I do want to apologize to the readers although many maybe did not realize that the Newsletter was missing until now and to the sponsors, not at least Anybody who was promised a full advertisement on their release of a

new version in the fall, which in the meantime has become some months old. To make up for the long lack of Newsletters Brian Davis has promised to be the guest editor and put together the next issue that will show up very soon. So if you have a contribution please send it to Brian (davisb3@ccf.org) or me (kas@nrcwe.dk my new E-mail that now should work).  
*Karen Sjøgaard*

## ISB Presidents Letter

It was easy then; when I was a graduate student. Biomechanics was in its infancy, there were few biomechanists, few meetings to go to and lot's of job opportunities. Nobody needed to go for postdoctoral training; I think I was the first student out of Jim Hay's lab to do a postdoc. Not because I needed it but because I wanted to. Many of my student colleagues left well before they even had finished their PhD, because the job offers just came in.

And then there was the International Society of Biomechanics, the premier conference, the one that everybody was shooting for, the one attended by all. My first ISB conference was the one in Waterloo, 1983. Studying in Iowa, we (my co-supervisors Jim Hay and Jim Andrews), a visiting student from Belgium (Marc Louis) and a young postdoc from Poland (Kornelia Kulig) drove to Waterloo in a big van. None of us foreigners could afford the on-campus accommodation, let alone the hotels. So we camped somewhere, at a lake, about fifteen minutes from the University, not an official camp site, but a quiet place. It was heaven, until the rain came and we realized that our tent was leaking. Then Umea, 1985, I had just graduated a few days before the conference and had gone home to my native Switzerland, and again lack of money prevented me from flying to Sweden, but two days and one night on a train, get you from the Swiss Alps to the forests of Northern Sweden. That night on the train, I met a student from Umea, and he offered that I could stay on campus at his place; a University apartment he shared with his girl friend and two other students. I do not remember much about the conference, nor my presentation, but I do remember those students, and the never ending days of the Arctic summer. It was easy then.

Today, there are a host of societies and conferences to choose from. If you work on the molecular and cellular level, the Biophysics Society might be attractive, for orthopaedic researchers the ORS, for sport scientists the ISBS, and for animal biomechanists it is FASEB or the Society of Experimental Biology. Not to mention the host of National Societies and their corresponding conferences; for example the Canadian Society for Biomechanics Conference in my present home country. How can the International Society of Biomechanics remain attractive in the light of all these other societies and how can it remain on the schedule of overbooked scientists and critical students who face a vast choice?

The primary reason for attending a conference, like the ISB congress, is the quality of the program, and the fit with your personal interests. In the ideal case, you would like to have the best people in your field meet at the same place. A secondary reason for attending a conference surely is meeting old friends, making new connections, and remaining on top of the field even in areas that might not be directly along your research interests. The International Society of Biomechanics Congress has fulfilled these roles for me for a long time, and I am sure will continue to do so. However, another dimension of the ISB, and its congress, is its unique status as an international society in our field. Although there are other international organizations dealing with biomechanics, they either do not have biomechanics as their primary mandate, they organize a conference but do not have an associated "society" structure with educational and training goals, or they are specialized organizations with focus on a specific aspect of biomechanics research. I therefore maintain that the ISB and its associated congress play a vital role in the global structure of biomechanics.

One of these roles, and one that I would like to tackle over the next two years, is the international representation of ISB, and the globalization of biomechanics. We currently have almost 20 affiliated societies, many of them are well organized and run fabulous national meetings, but receive marginal international exposure. There are a variety of reasons for this, and I am sure, the reasons differ from one society to the next, and I would like to emphasize this is clearly not true for all affiliated societies. I would like to take as an example the Brazilian Society of Biomechanics, merely out of convenience as I have followed their progress for a long time, and two of my past students (the late Antonio Guimaraes and Marco Vaz) have played crucial roles in the development of this society (and another reason for using them as my example is that I know they will not take offence). I have been twice at the annual meeting of the Brazilian Society of Biomechanics, and both times the meeting was incredibly well organized and of high scientific quality. The conference on one of those occasions attracted about 800 scientists and students; a number that I do not think can be matched easily by another national organization. Furthermore, they have their own peer-reviewed journal, "the Brazilian Journal of Biomechanics", and a wealth of young, well-trained and eager students. However, their representation at the ISB can be counted on one hand, and there are good reasons for that.

So what can we do? I would like to propose that the ISB needs to get in touch with the affiliated societies

and have them help us develop a global network of biomechanics research. For the current year, I have been given some money from the council, and I am making the following offer to the affiliated societies:

1. If you invite an ISB member as a keynote speaker to your 2008 conference, the ISB will support such a speaker in the amount of \$2,000US (although you might want it in \$ Canadian soon if things go on the way they have) for travel, accommodation etc. In turn, the ISB would expect that the presentation is designated as the "ISB keynote lecture".
2. If you have a "young investigator-type of an award" at your 2008 conference, ISB will sponsor that award in the amount of \$500, and the award would then be designated as "sponsored by the ISB". An ISB supported young investigator could then apply for a travel grant from the ISB (\$ 1,500US) to attend the next ISB conference (2009 in South Africa).

I would hope that some of the affiliated societies will take advantage of this offer (first come first serve), and might make ISB a small part of their meeting. I realize that this is merely a symbolic gesture, and not a plan with wide ranging implications, but I do hope that we might come just a bit closer to some of our affiliated societies which have a great deal to offer. And I hope that we, the ISB, have something to offer to our affiliated societies as well.

*Walter Herzog*



## **2007 Nike Award for Athletic Footwear Research**

Congratulations to the recipients of the \$25,000 Nike Award for Athletic Footwear Research:

Liane Azevedo, Mike Lambert, Christopher Vaughan, Martin Schwellnus  
University of Cape Town

Award Paper: Kinetic, Kinematic and Muscle Activity Variables Associated with Achilles Tendinopathy in Runners

The award winners were announced at the Eighth Footwear Biomechanics Symposium at the National Yang Ming University in Taipei, Taiwan, June 27-29, 2007. This was the second time Nike has presented this award, with the inaugural award presented in 2005.

# Minutes of the ISB General Assembly Meeting Taipei, Taiwan, Wednesday July 4<sup>th</sup> 2007, 12.30 pm

**Present:** Brian Davis (Chair), Julie Steele (Minute Secretary), Kai-Nan An, Lars Andersen, Leendert Blankervoort, Martin Bobbert, John Challis, Andrew Cresswell, Andrea Giovanni Cutti, Genevieve Dumas, Taija Finni, Veronique Feipel, Senshi Fukashiro, Wendy Gilleard, Joe Hamill, Walter Herzog, Mont Hubbard, Faure Julien, Ediuska Laurens, Sian Lawson, Chris McGibbon, Jill McNitt-Gray, Kevin McQuade, Cheryl Metcalf, Peter Milburn, Bridget Munro, Benno Nigg, Stanislav Otahal, Mary Rodgers, Hermann Schwameder, Martyn Shorten, Gisela Sjøgaard, Karen Sjøgaard, Alex Stacoff, Darren Stefanyshyn, Zbysek Stěpánik, Azita Tajaddin, Kit Vaughan, Dirkjan Veeger, Fred Werne, Graeme Wood, and Ron Zernicke.

## 1. Welcome (*Brian Davis*)

Brian Davis welcomed all to the meeting and outlined the agenda.

## 2. Approval of Minutes: 3<sup>rd</sup> July 2005

### MOTION:

Moved: Mont Hubbard; Seconded: Ron Zernicke

*“To accept the minutes of the General Assembly meeting held 3<sup>rd</sup> July, 2005 in Cleveland, USA”*

Approved unanimously with no business arising.

## 3. President's Report (*Brian Davis*)

Brian outlined the major activities and achievements of the Council during the past two years. These included:

- **ISB Initiatives in Africa:** Brian presented slides of a trip to TATCOT made by ISB members (Brian Davis, Joe Hamill and Geza Kogler) and how they helped in establishing an educational gait laboratory. Brian described how the lab was built around them as they installed equipment. The forces platforms were donated by Cleveland Clinic and calibrated by AMIT. Vicon donated technical support and a 6 camera system that Kit Vaughan had previously used in Cape Town. Geza presented a lecture on orthotics while Brian presented a lecture on bone to very enthusiastic students. The actual costs associated with this project (~\$16,600) were substantially reduced (from ~\$67,000) on the basis of generous donations of time and equipment.
- **Further African Initiatives:** Following the success of the TATCOT initiative, biomechanics has been further fostered in Africa by AnyBody, who has donated modelling software to two groups in Africa. LeTourneau Engineering Global Solutions (LEGS) is also investigating establishing a base for testing prostheses in TATCOT. Nyavo Yawo was awarded an ISB Travel Grant to Hong Kong. ISB2009 will be held in South Africa, assisting to cement these initiatives.
- **ISB Initiatives in Venezuela:** It is hoped similar initiatives can be conducted in Venezuela, with Delsys having donated an EMG system there as a starting point.
- **Seed groups:** The Brazilian Dental Group has been established as a seed group.

After Brian took questions from the floor in relation to these initiatives, Martyn Shortyn thanked Brian Davis for all his efforts.

## 4. Treasurer's Report (*Graeme Wood*)

Graeme Wood presented the Treasurer's report, outlining ISB financial transactions for the past two years. In summary, the income and expenditures (in Australian Dollars where 1 AU\$ = 0.73-0.78US\$) were as follows:

### *Income Statement: 1 Jul 2005 to 30 Jun 2006:*

Revenue	235,423
Expenses	150,952
Profit (Loss)	84,471

### *Income Statement: 1 Jul 2006 to 30 Jun 2007:*

Revenue	161,879
Expenses	162,717
Profit (Loss)	(838)

Graeme explained the profit in 2005-06 came from the donation of \$100,000 from the Cleveland organisers of ISB2005. Graeme presented a breakdown of where the money was spent and where it came from. The main expenses included student grant funds, EDC initiatives, the website (which assisted in reducing NL costs) plus reg-

ular recurrent expenditure. Currently there is a balance of AUD \$256,353 in consolidated revenue, indicating substantial growth.

**Auditor's Report:** Graeme Wood then called on Wendy Gilleard to give her assessment of the Treasurer's figures. Wendy Gilleard stated that both she and Mont Hubbard had "examined the income and expenditure statements and balance sheets for the years 2005-2006 and 2006-2007, and found the figures to be in order and in agreement with Bank records."

**MOTION:**

Moved: Wendy Gilleard; Seconded: Mont Hubbard

*"...we recommend that the General Assembly accept the Financial Reports prepared by the Treasurer as a true record and correct statement of the Society's finances"*

Approved unanimously.

Graeme Wood then presented the proposed budget for the next two years, recommending that ISB draw down on consolidated revenue for next two years to provide greater benefits for full and student ISB members. This would be achieved by the budget accounting for increased offerings to maintain the successful student grants programs; funding initiatives to support biomechanics in developing countries; further development of ISB web services, better archives, plus standard operating costs. Walter Herzog expressed a desire for ISB to strengthen ties with affiliated societies via grants to national affiliated societies for Young Investigator Awards to recognise excellence at a national level as well as an international level. The proposed increase in expenditure is based on the assumption that membership and sponsorship will be maintained at current levels.

**MOTION:**

Moved: Benno Nigg; Seconded: Gordon Robertson

*"...that the proposed budget is approved".*

Approved unanimously.

**5. Informatics Report (Joe Hamill)**

Joe Hamill outlined the new ISB web site developments, with the web site now averaging 13,000 hits per month, and included new members only sections. The most popular pages on the site were the jobs (45,387), conferences (38,643), newsletter (25,804) and general information (7,064). Joe explained that ISB receives very few job postings with most postings on the site coming from his own searches. He requested members to submit job postings to the webmaster. Joe then outlined further improvements to the web site, including the membership page so that all membership information was now completely handled via the website; a page just for students to interact (put together by Cheryl Metcalf); and a revamping of the page for standards.

Kit Vaughan questioned whether closing parts of the web had attracted new members. Joe Hamill explained that, as the web had only recently had sections for members only, the effect is unknown. However, he will be able to report on this at the next meeting in Cape Town.

**6. Affiliated Societies and Economically Developing Countries Report (Jill McNitt-Gray)**

**Applications for Affiliated Status:**

Jill McNitt-Gray presented the case for an application from the Hellenic (Greek) Biomechanics Society seeking affiliated status. A brief history and the aims of Society were presented.

**MOTION:**

Moved: Martyn Shortyn; Seconded: Walter Herzog

*"...that the Hellenic (Greek) Society of Biomechanics be accepted as an Affiliated Society of the International Society of Biomechanics"*

Approved unanimously.

**Committee for International Collaboration:**

Jill McNitt-Gray outlined the goal of the newly established committee: "to foster biomechanics-related activities in Economically Developing Countries (EDC)". She explained how she has been working to learn what the

needs are of each of the countries so that projects can be developed which suit real needs. However, given the need to facilitate communication, an outreach section of the web page is being developed so people can look at ways of being involved with EDC; please check out this section of the web as it develops. If you would like to get involved with specific countries please let us know.

Brian Davis thanked Jill for the extensive work she had achieved in her portfolio.

## 7. Elections (*Mary Rodgers*)

May Rodgers outlined the election process for the Executive Council in which 218 ballots were received. She thanked the current Council members for their support and activity over the past two years. Mary also thanked Sandra as outgoing Past-President and the members whose terms had ended. The election results included:

***President Elect:*** Julie Steele

***Council:***

John Challis

Andrew Cresswell

Robert van Deursen

Veronique Feipel

Krystyna Gielo-Perczak

Joe Hamill

Frans van der Helm

Ediuska Laurens (Student Representative)

Peter Milburn

Tzyy-Yuang Shiang

Karen Sjøgaard

Kit Vaughan (ISB2009)

The New Executive also includes:

***President:*** Walter Herzog

***Past-President:*** Mary Rodgers

***Treasurer:*** Graeme Wood

***Secretary-General:*** Alex Stacoff

Brian Davis thanked the Council members who were leaving and welcomed the new members who were joining the team. Brian then passed the gavel to the new President, Walter Herzog, who expressed his honour to serve the Society. Walter noted that Brian Davis was a “hard act to follow”. Walter explained he would like to focus, during his term as President, on affiliated societies to increase representation from these national groups at ISB meetings via outreach programs, such as funding speakers to travel to the national meetings of these countries, to sponsor young investigator awards at national meetings and to facilitate them in attending ISB meetings so they might become long standing members of the ISB community. Walter encouraged ISB members to think of worthwhile activities for the Society to benefit members.

Certificates of appreciation were given by Walter to outgoing ISB Council members, including:

- Mary Rodgers
- Jill McNitt-Gray
- Maarten Bobbert
- Cheryl Metcalf
- Toshio Moritani
- Alex Stacoff
- Ewald Hennig

Walter Herzog explained what each member achieved and thanked them all for their efforts in their respective roles. New council member Veronique Feipel, Ediuska Laurens, Andrew Creswell and Robert van Deursen were then introduced to the meeting.

As there was no other business, everyone was invited to ISB2009 in Cape Town, with Kit Vaughan thanked for the work he would be doing in the next couple of years!

### **MOTION:**

Moved: Gordon Robertson; Seconded: Walter Herzog

“...to close the meeting”

Approved unanimously.

Meeting closed 1.20 pm

*Report respectfully submitted by Julie R Steele, Past ISB Secretary General*

**Student Outlook of the ISB Congress 2007 in Taipei, Taiwan**  
**Ediuska Laurens, Ph.D. candidate, ISB Student Representative**



**Taipei 101**

**Moon men**



**Taiwanese Dragon**

If the above images of the wonderful Taipei 101, the Moon Men, and the Taiwanese Dragons look familiar to you, then you were definitely one of the fortunate attendants of the **ISB XXI Congress in Taipei, Taiwan 2007**.

Throughout my life, I have been lucky enough to go through memorable experiences. However, becoming the ISB student representative and attending the biannual ISB Congress this year are by far the most unforgettable and rewarding ones!

I was not only exposed to first class and cutting edge biomechanics research, scientists, and technology, but also to the vibrant and colorful Taiwanese culture and their beautiful people. I learned extensively from lectures on Spine, Biorobotics, Biofluids, Muscle Mechanics, Gait and Balance and many other exciting topics pertaining to Biomechanics. In addition, the congress included the most outstanding list of keynote speakers, which presented me with the opportunity to listen to world renowned spokespersons in our field such as Drs. Savio L-Y Woo and Kai-Nan An among others.

Another important part of this journey was attending the ISB executive council meetings as a new incoming member. During these meetings I had no choice but to fall in love with the values, purpose, and work of this society and more deeply with the dedicated, assiduous, and exceptional council members who perform the crucial job of maintaining and achieving those values and objectives, respectively. I would really like to thank the ISB council for giving me such a warm welcome to their board and allowing students' perspectives to count in their decision making process.

Finally, I would like to thank all of you who voted and granted me this remarkable opportunity. I am truly honored to be the voice of biomechanist students around the world, and I will work hard to be a strong one! I would also like to take this opportunity and encourage students to become active in their society by taking advantage of the "Student Section" that has recently been added to the ISB website. By making use of the resources and benefits that are offered to you as student members, you will be able to experience how ISB can facilitate your personal and technological developments as young scientists in biomechanics.

## Congratulations to ISB 2007 award recipients!

### Winner of the Young Investigator Award for Podium Presentation Sponsored by Elsevier Science and Journal of Biomechanic



**Veerle Segers**

#### **THE WALK-TO-RUN TRANSITION: FROM VAULTING TO BOUNCING IN ONE SINGLE STEP**

**V. Segers**<sup>1</sup>, P. Aerts<sup>1,2</sup>, M. Lenoir<sup>1</sup> and D. De Clercq<sup>1</sup>

<sup>1</sup>University of Ghent (Belgium), Department of Movement and Sport Science,

<sup>2</sup>University of Antwerp (UA), Functional Morphology lab, Department of Biology

**Veerle Segers** became interested in Biomechanics in the final year of her Masters in Physical Education and wrote a dissertation on the biomechanics of humans galloping downstairs. She received her Masters degree with the highest distinction at the Ghent University (Belgium) in July 2001.

In 2002 she started her Ph.D. project entitled 'a biomechanical analysis of the realization of actual human gait transition' with the aid of a scholarship (BOF-RUG B/03796/01-IV1). This Ph.D. was realized at the Ghent University, Faculty of Medicine and Health Sciences, Department of Movement and Sports Sciences, under the supervision of Prof D. De Clercq. She used a full kinesiological analysis to gain insights in how and why humans change gait when speed is altered. Veerle presented at a number of national and international conferences and recently published in *Gait and Posture* (vol. 24, 247-254; vol. 25, 639-647) and the *Journal of Experimental Biology* (vol. 210, 578-585).

In March 2007, Veerle started her postdoctoral research at Ghent University, in which she will continue to explore the human gait transition. Her research was the starting point for two other promising Ph.D. projects in the field of human gait transitions (Philippe Malcolm and Kristof De Smet) which she will guide and assist.

Veerle's research interests are biomechanics, gait transition, locomotion in general, motor control and modeling.

### Winner of the Young Investigator Award for Poster Presentation Sponsored by the organizers of the XXth ISB Congress

**Philippe Malcolm**



#### **A PNEUMATIC ANKLE-FOOT-ORTHESES AS A MEAN TO EXPERIMENTALLY VALIDATE HYPOTHESES ABOUT THE ROLE OF THE TIBIALIS ANTERIOR IN THE WALK-TO-RUN TRANSITION**

**P. Malcolm**, I. Van Caekenberghe, K. De Smet, M. Lenoir, P. Aerts, V. Segers, and D. De Clercq

Department of Movement and Sport Sciences, Ghent University, Belgium

**Philippe Malcolm** obtained in 2002 a master degree in Physical Education with great distinction. His interests in biomechanics arose during his specialization in gymnastics coaching from a project involving a movement analysis of the giant swing on different gymnastic apparatus. In 2004 he got the opportunity to start working as assistant and pursuing Ph.D. studies at the department of Movement and Sports Sciences of the Ghent University under Prof. Dirk De Clercq.

Philippe is currently in the third year of his Ph.D. studies on human gait transition. At this stage he is focusing on the influence of the ankle musculature on gait transition and has developed a powered ankle-foot-exoskeleton in to be used as a means for experimentally manipulating the ankle power. His research interests include gait transition, locomotion in general, biorobotics and sports biomechanics.



**Winner of the Clinical Biomechanics Award  
Sponsored by Elsevier Science and Clinical Biomechanics**

**Diana Glaser**



**MIS VS. TRADITIONAL THA: *IN VIVO* COMPARISON OF HIP KINEMATICS, SEPARATION AND MECHANICS DURING GAIT**

**D. Glaser<sup>1</sup>**, D. Dennis<sup>2</sup>, and R. Komistek<sup>1</sup>

<sup>1</sup>Center for Musculoskeletal Research, University of Tennessee, USA

<sup>2</sup>Colorado Joint Replacement, Denver, CO, USA

**Diana Andreeva Glaser** received a Diplom Ingenieur degree (German equivalent of M.S. degree) in Civil Engineering from the RWTH-Aachen Technical University, Germany in 2001. Her thesis, granted by Hochtief AG, Germany, focused on the numerical analysis of the dynamical behavior of a locomotive construction. Afterwards, Diana worked for 3 years as mechanical engineer in the area of static and dynamic

analysis. She was involved also in vibration, fatigue and buckling strength analysis. In 2005 Diana was accepted into the Ph.D. program at the University of Tennessee, at which time she also began a graduate research assistantship in the Center for Musculoskeletal Research (CMR). Her Ph.D. program and research work is performed under the supervision of Dr. Richard D. Komistek from the Biomedical Engineering Department. Within the CMR program she is involved in different projects including *in vivo* analysis of hip and knee joint mechanics, 3D patient-specific mathematical modeling, and biomedical applications of DAQ systems. The majority of these CMR research projects are applying engineering technologies and new clinically relevant analyses to study the joint conditions. Her personal research in CMR towards the Ph.D. program involves the development and implementation of hip mechanics and a newly developed non-invasive acoustic and vibration analysis method for the evaluation of hip joint performance. Diana is planning to complete her Ph.D. in the summer of 2008.

**Winner of the Promising Young Scientist Award  
Sponsored by Motion Analysis**

**Paul Ivancic**



**Paul C. Ivancic** received his B.Sc. in Mathematics & Applied Mechanics in 1995 from Queen's University, Ontario, Canada. He received his M.S.E. in Bioengineering (1997), M.S.E. in Computer & Information Science (1999), and M.A. in Mathematics (2000) from the University of Pennsylvania. He received his M.S. (2002), M.Phil. (2003), and Ph.D. (2006) in Biomedical Engineering from Yale University where he conducted spine biomechanics research in the Yale Biomechanics Laboratory under the mentorship of Manohar Panjabi. He has published over 30 papers in peer-reviewed journals. Dr. Ivancic's research interests include human injury biomechanics, spine biomechanics, whiplash, and neck injury prevention. In addition to the 2007 Promising Young Scientist Award from ISB, he has received several other awards for his research including the Margaret H. Hines Award

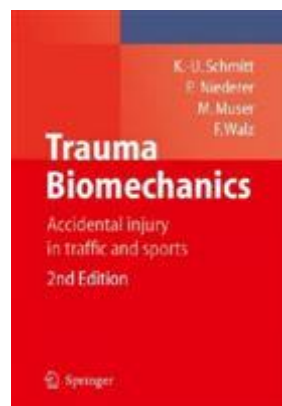
for best oral presentation at the 2007 Injury Biomechanics Symposium at The Ohio State University and the Raymond John Wean Foundation Fellowship from Yale University in 2000-2003. He is currently an Associate Research Scientist in the Department of Orthopaedics & Rehabilitation at Yale University School of Medicine where he is continuing spine biomechanics research at the Yale Biomechanics Laboratory. His future research will focus on understanding neck injury prevention during motor vehicle collisions.

## **ANNOUNCEMENT \*\*\*2009 Nike Award for Athletic Footwear Research\*\*\***

For the third time, Nike will again sponsor a \$25,000 award for Athletic Footwear Research. The award will be presented at the Ninth Footwear Biomechanics Symposium in the summer of 2009. Additional details will be available in future newsletters and can also be found on the Footwear Biomechanics Group webpage ([www.footwearbiomechanics.org](http://www.footwearbiomechanics.org)).

## **New Trauma Biomechanics Textbook**

The second edition of the short primer „Trauma-Biomechanics – Accidental Injury in Traffic and Sports“ by Schmitt, Niederer, Muser and Walz (Springer Publ., ISBN 978-3-540-73872-5) is available now. The text book addresses starters in the field of trauma biomechanics and is suitable as course material. Please note that with the second edition the title has slightly changed since the book also contains some chapters on sports injuries now. Those using the textbook in class are advised to get in touch with Springer directly for good value bulk buy.



## **Call For Papers: NORTH AMERICAN CONGRESS ON BIOMECHANICS, August 5-9, 2008**

The North American Congress on Biomechanics (NACOB 2008), a joint meeting of the American Society of Biomechanics (ASB) and Canadian Society for Biomechanics (CSB), will be held August 5-9, 2008, at the University of Michigan in Ann Arbor, Michigan, U.S.A. The organizers of NACOB 2008 encourage you to submit papers in a broad range of biomechanics topics, including aging, biofluidics, comparative and developmental biomechanics, cellular mechanics, dental, ergonomics, finite element modeling, injury prevention, locomotion, molecular motors, motor control, neuromechanics, novel instrumentation, orthopaedics, prosthetics, protein folding, rehabilitation, reproductive biomechanics, sports, tissue engineering, and vehicle occupant safety. Both modeling and experimental work is encouraged at scales ranging from the molecular to the whole body level. The program will include four concurrent sessions, lab tours, tutorials, symposia, four keynote lectures, best paper competitions (Microstrain, Clinical Biomechanics, and Journal of Biomechanics awards), the ASB Borelli, CSB Career, ASB Hay, and Young Investigator award presentations. Please see the ASB and CSB web sites for information on awards for outstanding research by student and other investigators. On campus housing will be available.

The deadline for abstract submission is March 1, 2008, and online submission will open February 1, 2008. Note this date is earlier than previously announced. Abstracts are to be submitted electronically at <http://www.abstracts.nacob2008.org/>. For more information about the meeting, please visit the NACOB 2008 website at <http://www.nacob2008.org/>.



## OVERVIEW

The Eighth Footwear Biomechanics Symposium was held as a satellite meeting of the XXI Congress of the International Society of Biomechanics. The meeting took place at the National Yang Ming University in Taipei, Taiwan, June 27-29, 2007. Over 100 registered delegates listened to 64 presentations of original work and exchanged ideas during discussions.

For the first time, the Symposium began with a special tutorial lecture on “The Human Foot from Early Child to Adulthood” by Ewald Hennig and Julie Steele. Three stimulating keynote lectures were provided by Gert-Peter Brüggemann “Motion Control Concepts Revisited”, Craig Payne “Forces, Motion and Outcomes with Foot Orthoses and Running Shoes” and Darren Stefanyshyn “Can Footwear Affect Sport Performance?”. The Symposium culminated with an entertaining banquet at the exquisite Grand Hotel including presentation of awards and announcement of the Nike Prize, local entertainment and even an appearance by the Illiotibial Band.

Special thanks to Sai Wei Yang who managed the local arrangements in Taipei with great success and Ned Frederick who diligently prepared the scientific program. Additional details and photographs of the symposium can be found on the Footwear Biomechanics Group website ([www.footwearbiomechanics.org](http://www.footwearbiomechanics.org)).

## SPONSORS

The generosity of the Symposium's sponsors made it possible to minimize registration fees, invite guest speakers and provide financial prizes for the research awards. Thank you to all of the major sponsors.



## RESEARCH AWARDS

*adidas Applied Research Award (\$1000)*

José Olaso, Juan Carlos González, Sandra Alemany, Enric Medina, Amparo López, Carlos Martín, Jaime Prat and Carlos Soler

Instituto de Biomecánica de Valencia, Spain

“Study of the influence of fitting and walking condition in foot dorsal pressure”

*Lar-New Young Investigator Award (\$1000)*

Marlene Mauch, S. Grau, I. Krauss, C. Maiwald, T. Horstmann

Medical University Clinic, Department of Sports Medicine, Tuebingen, Germany

“New designs in children’s footwear based on a foot type classification”

*Li-Ning Basic Research Award (\$1000)*

Jason Tak-Man Cheung, Bruno Bouchet, Ming Zhang, Benno M. Nigg

Human Performance Laboratory, University of Calgary, Canada

Department of Health Technology & Infomatics, The Hong Kong Polytechnic University, Hong Kong

“A 3d finite element simulation of foot-shoe interface”

*Nike Performance Research Award (\$1000)*

Elissa Phillips, Uwe Kersting

Department of Sport Exercise Science, The University of Auckland, New Zealand

“The effect of shoe sole modifications on lower extremity loading in change of direction tasks on artificial turf”

RSScan Pressure Research Award (\$1000)

Christian Maiwald, S. Grau, M. Mauch, I. Krauss, T. Horstmann

Medical University Clinic, Department of Sports Medicine, Tuebingen, Germany

“Relationship of plantar pressure patterns and lower limb kinematics in barefoot running”

#### ORGANIZATION

*Meeting Chairperson:*

Sai Wei Yang, Ph.D. National Yang Ming University, Taipei, Taiwan

*Program Chairperson:*

E. C. "Ned" Frederick, Ph.D. Exeter Research, Inc. New Hampshire USA

*Local Organizers:*

Sai Wei Yang, Ph.D. National Yang Ming University, Taipei, Taiwan

Wen-Pin Chen, Ph.D. Chung Yuan Christian University, Chung Li, Taiwan

Tzyy-Yuang Shiang, Taipei Physical Education College, Taipei, Taiwan

Tung-Wu Lu, Ph.D., National Taiwan University, Taipei, Taiwan

Ming-Shaung Ju, Ph.D. National Cheng Kung University, Tainan, Taiwan



## FOOTWEAR BIOMECHANICS GROUP

*- a Technical Group of the International Society of Biomechanics*

### **Do You Want to Have a Chance to Visit the Highest Waterfall in the World? Ediuska Laurens, Student Representative**

Dear ISB Members,

In ISB efforts towards promoting biomechanics around the world, I would like to announce that we are looking for volunteers who are interested in teaching workshops in certain areas of Biomechanics at the Simon Bolivar University (USB) in Caracas, Venezuela. As ISB is committed to develop biomechanics in Economically Developing Countries (EDC), the society will be able to finance a qualified member to participate in this educational and rewarding exchange. If you fulfill the following requirements, then you are a potential traveler to Venezuela:

- Expertise in of the following areas of biomechanics:
  - Finite Element Analysis (non-linear / viscoelastic) of both bone and in the development of medical devices.
  - Medical Devices, in particular external prosthesis.
  - Experimental test of bone structure.
- The workshops can be taught in English, but Spanish would be preferable.
- Availability for traveling either the second week of the month of December or in the month of April.

Venezuela is a beautiful country with amazing natural resources and landscape! Therefore, you will not only have the opportunity to enjoy this paradise and experience its rich culture, but most importantly you will be contributing to enhance biomechanics in this part of the world.

Members who are interested in this collaboration please contact Ediuska Laurens at [laurene@ccf.org](mailto:laurene@ccf.org).

Best Regards,  
Ediuska Laurens  
Student Rep.



# The AnyBody Modeling System™ version 3.0 is now available!



## IMPROVED USER INTERFACE FEATURES!

Users of The AnyBody Modeling System™ has time after time made it evident that the general capabilities of the software in terms of handling sophisticated, detailed models is not merely adequate and satisfactory - it is quite unique!

However, keeping track of all these details during modeling requires effort and skills.

That's why we now in version 3.0 have improved the general user interface of the system.

Version 3.0 has undergone significant improvements of the AnyBody interface in terms of supporting the modeling process, and now offers a platform for further improvement in the interface in terms of GUI, scripting language etc.

New features of version 3.0 are namely:

- parameter and optimization study features
- net moment measures about joints
- linear data filtering; and...
- extensive changes in the user interface.

Version 3.0 of the AnyBody Modeling System™ is now available for download from our website.

Visit our website at [www.anybodytech.com](http://www.anybodytech.com), and read the release news for more information.

Or contact us at [anybody@anybodytech.com](mailto:anybody@anybodytech.com) for inquiries on sales and services.

**ANYBODY™**  
**TECHNOLOGY**

The AnyBody Modeling System™ is a product of  
AnyBody Technology A/S.

## New members to ISB:

Lei Ren  
School of Physical Sciences and  
Engineering  
King's College of London  
London WC2R 2LS  
United Kingdom

Norio Kadono  
775 NW 23rd ST Apt4D  
Corvallis  
Oregon 97330  
United States

Tarang Jain  
3602, Rainbow Blvd, Apt # 203  
Kansas City  
Kansas 66103  
United States

Robert Crowther  
Institute of Sport & Exercise  
Science  
Townsville  
Queensland 4811  
Australia

Carmen Maria Muller-Karger  
Universidad Simon Bolivar, Dpto  
de Mecanica  
Caracas  
Miranda 1080  
Venezuela

Germano Gomes  
De Pintelaan 185  
Gent  
Oost Vlaanderen 9000  
Belgium

Jose F Rodriguez  
Mechanical Engineering  
Department, Maria de Luna S/N,  
Edf Betancourt  
Zaragoza  
Zaragoza 50018  
Spain

MAIRE MURPHY  
26 Chepstow Corner  
London  
London W2 4XE  
United Kingdom

James Martin  
1621 East Princeton Ave.  
Salt Lake City  
Utah 84105  
United States

Mr. Jason Long  
Orthopaedic Surgery  
Medical College of Wisconsin  
4738 S 123rd St  
Greenfield  
WI 53228  
United States

Christina Danielli Coelho de  
Morais Faria  
Rua Cons. Andrade Figueira,  
82/801, Gutierrez  
Belo Horizonte  
Minas Gerais 30430-280  
Brazil

Robert Fink  
6404 Wilshire Blvd #1004  
Los Angeles  
CA 90035  
United States

Andrea Ribeiro  
Rua Dr. João Alberto Mota Prego  
de Faria 55 1º  
Guimarães 4810-032 Guimarães  
Portugal

Tarkeshwar Singh  
Woodlands Avenue 9  
Singapore 738968

Brad Manor  
7645 Quorum Dr  
Baton Rouge  
LA 70817  
United States

Dominic Farris  
'The Flat', 8 Junction road  
Bath  
Somerset BA2 3NQ  
United Kingdom

Julien Favre  
Movement Analysis and  
Measurement Lab  
Ecole Polytechnique Fédérale de  
Lausanne  
EPFL-STI-LMAM, Station 11  
Lausanne  
Vaud 1015  
Switzerland

Joaquin Barrios  
301 McKinly Lab  
Newark  
Delaware 19716  
United States

Dr. Sotirios Korossis  
Institute of Medical & Biological  
Engineering  
University of Leeds  
School of Mechanical Engineering  
Leeds  
West Yorkshire LS2 9JT  
United Kingdom

Steve Elmer  
1174 Foothill Dr #423  
Salt Lake City  
UT 84108  
United States

Yoichi Iino  
Kasuya 4-11-23-202  
Setagaya  
Tokyo 157-0063  
Japan

Olga Panagiotopoulou  
Functional Morphology and  
Evolution Group, Department of  
Biology, S Block,  
University of York, York  
North Yorkshire, UK YO10 5YW  
United Kingdom

James Dunne  
80 Kalamunda RD Gooseberry Hill  
Perth  
Western Australia 6076  
Australia

Robert Wilkes  
6203 Farinon Drive  
San Antonio  
TX 78249-3441  
United States

Anand Navalgund  
236, Atwell Hall, 453, West 10th  
Avenue  
Columbus  
Ohio 43201  
United States

Andrea Morelli  
MAPEISPORT  
Via Marconi, 5  
Cadorago  
COMO 22071  
Italy

Jean-hong Jeon  
Cooke Hall, 1900 University Ave  
SE  
Minneapolis  
MN 55455  
United States

Rafael Baptista  
Rua Dona Eugênia 1206/302  
Porto Alegre  
RS 90630-150  
Brazil

Ragnar Viir  
Sorsavuorenkatu 8 B 41  
Helsinki, Uusimaa 8100  
Finland

Darnell Simon  
Biomedical Engineering  
New Jersey Institute of Technology  
107 West Kinney St. , Apt. 2B  
Newark  
New Jersey 07102-1140  
United States

Simone Andrea Faraoni  
Via Soprarisio 1  
Longone al Segrino  
Como 22030  
Italy

Sheng Han Gao  
No.1 University road  
Tainan city  
ROC 70146  
Taiwan

Yonghyun Park  
Seoul National University, 599  
Gwanangno, Gwanak-Gu  
Seoul 151-742  
Korea, Republic of

Leendert Schaake  
Galvanistraat 57  
Enschede  
Overijssel 7533AX  
Netherlands

Isabelle Villemure  
Ecole Polytechnique de Montreal,  
PO BOx 6079, Station Centre-Ville  
Montreal  
Quebec H3C 3A7  
Canada

Kathleen Shorter  
18 Spencer Street  
Corinda  
Queensland 4075  
Australia

Rafael R Torrealba A  
Calle Primera, Qta. No. 3, Las  
Marías, La Unión - El Hatillo  
Caracas  
Miranda 1080A  
Venezuela

Rodrigo Bini  
Exercise Research Laboratory  
UFRGS-Brazil  
Felizardo 750, Porto Alegre,  
RS 90690200  
Brazil

Frederico Dagnese  
Astrogildo de Azevedo, 328 Ap: 3  
Santa Maria  
RS 97015-150  
Brazil

Juan Fernando Tamayo Velez  
Carrera 64 #63-120  
Medellin  
Antioquia 5001000  
Australia

Carlos Alberto Henao Henao  
Carrera 64 #63-120  
Medellin  
Antioquia 5001000  
Colombia

Diego Leon Muñoz Zapata  
Cra 64#63-120  
Medellin  
Antioquia 5001000  
Colombia

Daniel Gallego posada  
Calle 51 #74-53 Apto1511  
Medellin  
Antioquia 5001000  
Colombia

Alvaro Jasond Barrientos  
Melendrez  
Carrera 45 #44-75 Apto 301  
Medellín  
Antioquia 5001000  
Colombia

Juan Sebastian Alvarez Chavarria  
Calle 77E #71-08  
Medellin  
Antioquia 5001000  
Colombia

Maria Isabel Arias Rendon  
Calle 55 #64B-98 Bl. 42 Apto 401  
Medellín  
Antioquia 5001000  
Colombia

Matheus Joner Wiest  
Rua José Bonifácio, 2475, apto 403  
Santa Maria  
Rio Grande do Sul 97015-450  
Brazil

Sivan Almosnino  
Ergonomics Research Group  
Queen's University  
119 Montreal St.  
Kingston  
Ontario K7K 3E9  
Canada

Yeon Soo Lee  
110-913 Rain Haitz APT, Bong  
Seon 1 dong  
Namgu  
Gwangju 503-751  
Korea, Republic of

Adam Wiles  
30 Kintore Street  
Thebarton  
South Australia 5031  
Australia

Blaine Christiansen  
2500 S 18th St, Apt. N  
Saint Louis  
MO 63104  
United States

Gernot Gruber  
Bennogasse 28/2/21  
Vienna  
Vienna 1080  
Austria

Han Seng Lai  
Blk 523 Bedok North St 3 #13-354  
Singapore  
Singapore 460523  
Singapore

kirill micaleff stafrace  
SERC, MOC, IPES  
No 1, Triq Dawwara  
Attard  
Attard BZN 13  
Malta

Louise Wood  
Flat 1, 17 Campbell rd  
Portsmouth  
Hampshire PO5 1RH  
United Kingdom

Angus Chard  
564 Old Northern Rd  
Dural  
NSW 2158  
Australia

Mr. Thomas Wheelock  
47 Fordwych Road  
London  
Middlesex NW2 3TN  
United Kingdom

Prof. Mario Kasoviæ  
Department of Biomechanics  
Faculty of Kinesiology University  
of Zagreb  
Horvacanski zavoj 15  
Zagreb  
10000 Croatia

Prof. Enzo Mora  
Via Cantore 37/9  
GENOVA 16149  
Italy

Avril Mansfield  
509 - 77 Davisville Ave  
Toronto, Ontario M4S 1G4  
Canada

Jonathan Lara  
Kinesiology  
Iowa State University  
4001 Quebec street  
Ames, Iowa 50014  
United States

Evelyn Anaka  
Kinesiology  
University of Laval  
243 rue du Senateur Howard  
Sherbrooke  
Quebec J1J 3K6  
Canada

Jaelyn Watt  
3535 Mandura Rd  
West Sacramento  
CA 95691  
United States

Simon Taylor  
2/114 Normanby Ave  
Thornbury  
Victoria 3071  
Australia

Thomas Gibson  
56 Carshalton St  
Croydon Park  
NSW 2133  
Australia

Mr. Rahul DMello  
Chemical & Biomolecular  
Engineering  
The Johns Hopkins University  
7825 Cambridge Drive  
Brecksville  
OH 44141  
United States

David Kirschman  
452 Alexandersville Road  
Miamisburg  
OH 45342  
United States

Vina Phei Sean Tan  
PT 156 Desa SBJ Dewan Beta  
Kota Bharu  
Kelantan 15100  
Malaysia

Isaac Ikram  
Biomechanics/Accident  
Reconstruction, Vollmer-Gray  
Engineering Laboratories  
2421 Palm Drive

Signal Hill  
California 90755  
United States

Cheryl Quenneville  
934 Blythwood Rd  
London  
Ontario N6H5W1  
Canada

John McLester  
Health, Physical education, and  
Sport Science  
Kennesaw State University  
1000 Chastain Road  
Kennesaw  
GA 30144-5591  
United States

Dean Hay  
311 City Court  
3-18-22 Akebono-cho,  
Tachikawa-shi  
Tokyo 190-0012  
Japan

Jose Lepe  
27800 McBean Parkway #261  
Valencia  
CA 91354  
United States

Haibo Fan  
One Follensbee Ave. Apt. #6  
Lebanon  
NH 3766  
United States

## 2009

# International Society of Biomechanics Congress

2009 International Society of Biomechanics Congress to be held in Cape Town, South Africa. The dates are Sunday 5th July to Thursday 9th July 2009.



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



**KISTLER**  
measure. analyze. innovate.

**VICON**

 **Motion Analysis**

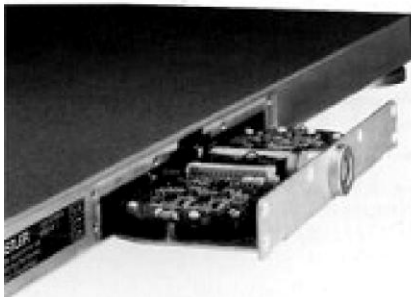
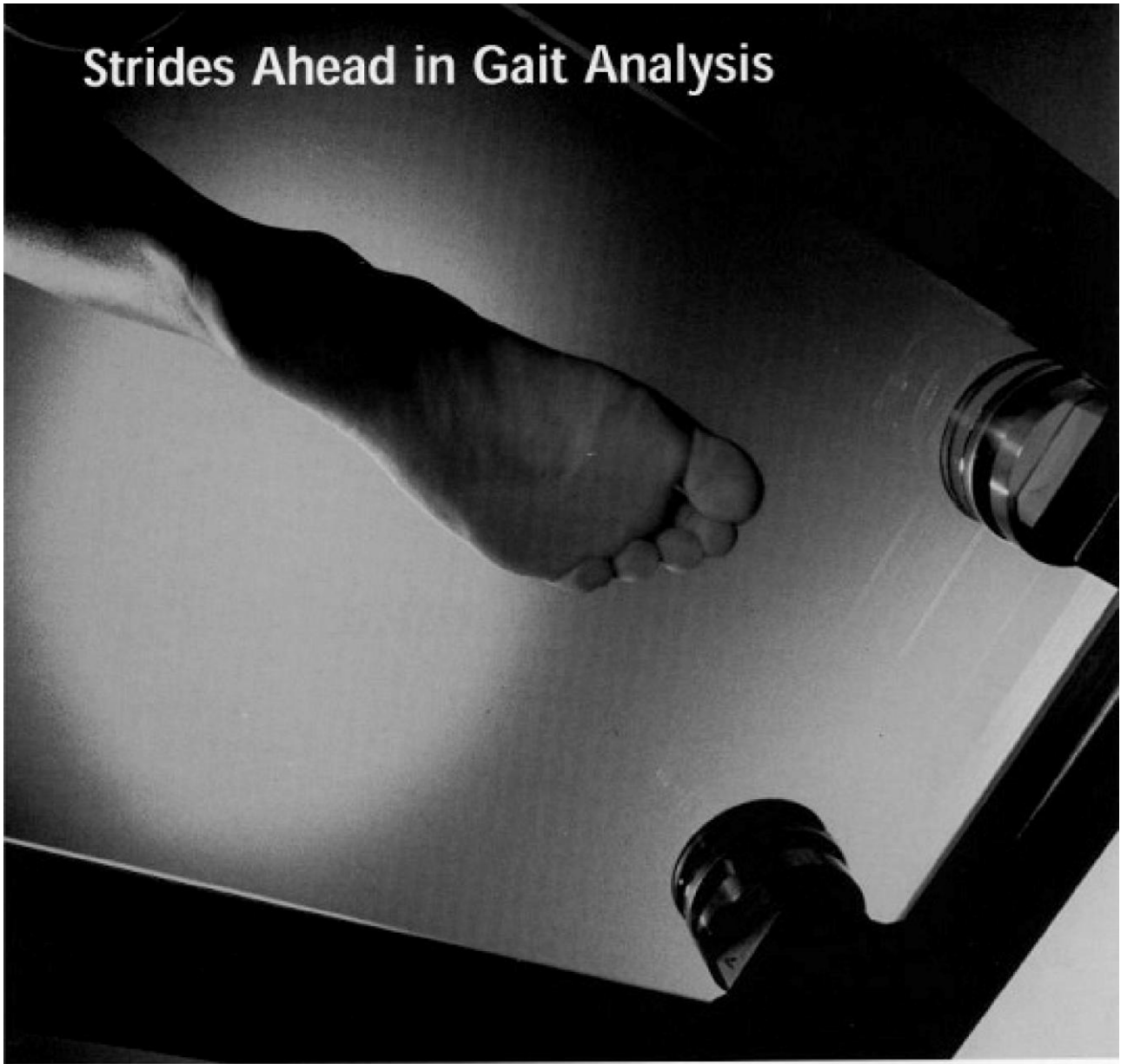
**ANYBODY**  
TECHNOLOGY

**Innovision Systems**  
INCORPORATED



**ELSEVIER**

# Strides Ahead in Gait Analysis



Innovative design together with the highest quality of manufacturing results in the outstanding performance of Kistler Force Platforms.

Kistler Force Platforms meet the needs of virtually any application from dynamic sporting activity through to the quiet-rhythm of standing balance.

Contact us for more information.

Kistler Instruments Ltd., Ailesford House, Mill Lane, Alton, Hampshire GU34 2QJ, UK  
Tel. +44 1420 54 44 77, Fax +44 1420 54 44 74, sales.uk@kistler.com

Kistler Instrumente AG, PO Box, CH-8408 Winterthur  
Tel. +41 52-224 11 11, Fax +41 52-224 14 14, info@kistler.com

**KISTLER**  
measure. analyze. innovate.