



# International Society of Biomechanics Newsletter

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### AFFILIATE SOCIETIES OF ISB:

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

## Note from the President

In the United States, we're entering the season of Fall—a time for change. But it's also a time of progression, of moving forward.

That's exactly what the International Society of Biomechanics (ISB) continues to do—move forward and make progress. In July, the ISB council met prior to the European Society of Biomechanics meeting in the Netherlands, and the group accomplished quite a lot. I really appreciate the efforts of the council members, both in attending the meeting and in their hard work on portfolios.

Bob Gregor has done a great job of sorting out details in the constitution and codes so that we can ensure continuity of the ISB initiatives; we're glad to have him involved.

Since the position of Archivist will now be an appointed one on the council, John Challis and I will be working on archivist responsibilities. John has also been unofficially updating the ISB archives. Be sure to read his interesting historical note in this newsletter.

As for the ISB finances, Graeme Wood continues to provide excellent oversight. When members need to renew their memberships, Graeme will send them electronic reminders. In addition, to make the process of joining the ISB and renewing memberships easier and more efficient, Graeme has established a secure area on the ISB Web site that enables people to do just that.

Also at the meeting, Brian Davis explained the process he used to obtain three applications for countries interested in hosting ISB 2007, stressing that every effort was made to ensure we would get the best applications possible.

Because we had three excellent proposals, making a decision wasn't easy. But I'm happy to announce that the 2007 ISB conference will be held in Taiwan. We are looking forward to working with the Taiwan biomechanics group in preparation for this conference. The group plans to present a preview at the 2005 ISB conference in Cleveland, Ohio, USA. For more information about biomechanics activity in Taiwan, be sure to check out the overview in this newsletter.

In other news, the response rate to the membership survey conducted during the past several months was fantastic. I've summarized some of the highlights in this newsletter, but members can also access the results directly. The survey has been instrumental in helping us identify priority areas that need the attention of the ISB council. Thank you for taking the time to respond. Your views will really make a difference in the future of ISB.

Speaking of our future, Alex Stacoff continues to do a fabulous job with the student grant program. (The membership survey confirmed that members think this program is one of the most important activities of the ISB.) The deadline for student grants is announced in this edition of the newsletter, on our Web site, and on BIOMCH-L. While only some of the student grant reports are included in this newsletter, all can be viewed on the ISB Web site. These reports highlight work accomplished by students and are a vital part of the ISB effort to foster student development in biomechanics. Be sure to take time to read them.

As for the ISB Web site, Joe Hamill continues to direct its upgrade. The student news job section is particularly popular for ISB student members who have had much success in locating potential employment by posting their resumes. In order to provide a useful resource for students—and to ensure that the page is up-to-date—Joe will list links to job sites on the Web page rather than listing the jobs themselves. He will also reformat the Biomechanics Yellow Pages to make it a list of companies with links to their own sites—again to ensure that the information is current. Joe is also in the process of moving the ISB Web page and the membership page to the same server.

Regarding the Economically Developing Countries (EDC): Jill McNitt-Gray has been working on strategies to support them. All countries are eligible to apply to be an affiliated society, although those countries with salary levels prohibiting members from participating in con

ferences could be considered EDC so that ISB can foster activities in those countries. Previ-

ously, successful ventures have resulted from the EDC Societies themselves requesting assistance to help them meet their needs. As a result, personally contacting the Societies is crucial. I urge all council members to pass any of their contacts in EDCs on to Jill so that we can get in touch with them. Next summer, a meeting is planned at the ISB conference to discuss strategies on assisting EDCs.

Also in this newsletter is a call for nominations for the ISB council. Being an ISB council member provides countless opportunities for impacting biomechanics throughout the world. Please consider nominating yourself or a colleague.

This election is special because it will be the first that will include the election of a student representative. Please encourage students to consider running for this position (See the solicitation by Motoshi Kaya in this newsletter).



The election will also be the first to be held electronically and will take place during January and February of 2005.

As part of the past-president responsibilities, Sandra Olney will prepare a slate of potential council member nominees by November 2004 for council approval. Candidate profiles will be in the next issue of the ISB newsletter, and candidate profiles and photos will also on the ISB Web site. The profile of each council member up for re-election will include the council responsibilities that he or she has had. In this way, ISB members will have more information to help them make informed decisions.

Be sure to read about the two new awards highlighted in this newsletter: the James G. Hay Travel Award and the Nike Award. Both present excellent opportunities for ISB members.

Finally, plans are moving forward for the 2005 ISB conference, which will be held in conjunction with the American Society of Biomechanics. See this issue for more information.

According to the membership survey results, conferences are vitally important to the mentorship of students and colleagues. Because of this, I encourage you to use this opportunity to work with students on abstract submissions for the conference—it promises to be an excellent one.

Until next time... *Mary Rodgers*

## Report from President-elect: Update on ISB 2007

One of the responsibilities of the President-elect is to solicit proposals for upcoming ISB congresses. At the 2004 ISB Council meeting (held just prior to the ESB meeting in The Netherlands), we reviewed three excellent proposals for ISB2007—two from Europe, and one from Taiwan. I am pleased to report that the 2007 ISB meeting will be held in Taipei. Not only did this group send a delegation of six representatives to attend the ISB Council meeting, but they gave a comprehensive overview of their plans for ISB 2007 and showed that they had already received substantial federal financial support for the meeting. Moreover, the last time ISB had a meeting in Asia was in 1997, in Tokyo.

Congratulations to Dr. Tzyy-Yuang Shiang and his colleagues for an excellent proposal. We look forward to visiting Taipei in 2007!

Brian L. Davis, Ph.D.

## Biomechanics in Taiwan

The International Society of Biomechanics had its last meeting in Asia in 1997 (Tokyo). Asia became a more important economic and politic group in the world. A congress in Taipei will be a unique opportunity for a large number of researchers and students to visit Asia again and participate in a high quality ISB meeting at relatively low cost.

The congress will be organized by the following 6 groups: National Taiwan University (NTU), Taipei Physical Education College (TPEC), National Yang Ming University (NYMU), National Cheng Kung University (NCKU), Taiwanese Society of Biomechanics (TSB), Taiwanese Society of Biomechanics in Sports (TSBS). These six institutions represent a wide range of research activities in biomechanics in Taiwan. The National Taiwan University is the leading university in Taiwan and is very active in the areas of orthopedic biomechanics, cardiac biomechanics, and clinical biomechanics. Taipei Physical Education College is active in sports biomechanics and sports equipment design areas. National Yang Ming University is famous in the areas of medical sciences. Orthopedic biomechanics, rehabilitation biomechanics and biomaterial are the major researches in the Institute of Rehabilitation Science and Technology. Researches at National Cheng Kung University include movement biomechanics and computational biomechanics. Taiwanese Society of Biomechanics is an affiliate society of ISB and an active society in Asia area. Taiwanese Society of Biomechanics in Sports is active in the sports biomechanics area in Taiwan and China, the society is also involved with the sports science programs of Olympic teams in Taiwan.

In addition to the wide range of biomechanics in Taiwan, the beautiful city of Taipei provides the friendly, welcoming nature of its inhabitants, the rich cultural heritage of 5,000 years of Chinese history and the high level of development created by Taiwan's economic miracle make Taiwan a cosmopolitan city that brings together the traditional and the new. The National Palace Museum houses the world's finest collection of Chinese art; beautiful temples are the setting for colorful folk festivals. As far as culinary delights are concerned, visitors can enjoy regional specialties from all parts of China. On top of all this, Taipei also offers bustling night markets, areas of spectacular natural beauty, streets lined with shops selling brand name products, and numerous international hotels.

*Tzyy-Yuang Shiang*



## Nominations requested for ISB President-Elect and Council members

Please submit your nominations for the position of President-Elect and for new Council members for 2005-2007. Please state briefly the reasons for your nominations. A final voting list will be prepared by the Executive Committee, attempting to achieve disciplinary and regional representation.

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## Nomination requested for Student representative in the council

As the ISB representative, I would like to encourage you to consider running for the next student representative position for 2005-2007. This position will be elected by electronic ballot and will commence at the time of the ISB congress in Cleveland, USA August 1-5, 2005. Eligible candidates for this position are full-time student ISB members who have finished at least one full year of PhD studies. Those who will finish their PhD prior to the end of their term are still eligible. The responsibilities of the position are to establish communication between student members and the executive board/conference organizers and to initiate and facilitate student initiatives. An added perk is that the student's expenses to the ISB board meeting will be covered by ISB. This is a great opportunity to further develop ISB student initiatives. Candidates will be presented in the December newsletter. If interested, please contact me (Motoshi Kaya) via email ([motoshi@kin.ucalgary.ca](mailto:motoshi@kin.ucalgary.ca)) by the end of November.

I hope to hear from many of you.

*Motoshi Kaya*



## Summary of the ISB Member Survey

Many thanks to all ISB members who participated in the membership survey conducted via the ISB website between June and September 2004. A total of 800 emails were sent to ISB members regarding the survey (175 non-deliverables –please update yourself if you didn't receive the e-mail) plus 1,120 survey announcements were distributed via the Newsletter. Response total was 246 members, indicating a

47% response rate if the 518 financial/active members are considered. This was an excellent return as far as surveys are concerned. A link to the Survey results is now on the membership home page so that all members can see the statistics. To access this online, just go to [www.isbmem.org](http://www.isbmem.org) and login using your membership number (same as for renewals), and then click on "View Results of Survey" link.

Since members have this on-line access, I will just touch on some of the very obvious indicators that emerged from the Survey (where a single choice was highly preferred). There's a lot of very useful data imbedded in the survey results, making it difficult to summarize in a Newsletter column.

Most respondents were males (79%) in the 30 - 49 year age range (62%) and from North America (50%). The majority of respondents were academic faculty/staff (52%), followed by graduate students (20%). Most (67%) of respondents were ISB members 10 years or less. Most (72%) respondents joined ISB as doctoral students or academic faculty/staff. ISB was primary professional affiliation for 47% of the respondents. Most respondents were full members (70%) and 24% were students. The breakdown for active participation in the ISB technical group(s) included:

- Computer Simulation Group-22%
- Footwear Biomechanics Group-33%
- 3D Analysis of Human Motion Group-39%
- International Shoulder Group-22%

Regarding ISB involvement, journals were most regularly used (58%) followed by BIOMCH-L (51%) and the newsletter (50%). Rank order of the top seven most important features that encouraged respondents to attend the ISB biennial Congresses were:

- Scientific program
- Opportunity to present research
- Cost
- Location
- Date of the congress
- Networking opportunities
- Keynote speakers

Regarding publications, rank order of most useful publications were:

- Journal of Biomechanics
- Clinical Biomechanics
- Journal of Applied Biomechanics
- Journal of Electromyographic Kinesiology
- ISB Newsletter

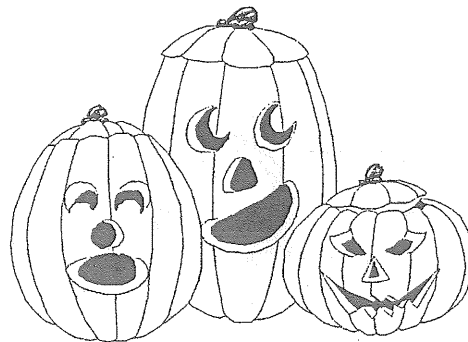
Regarding ISB Membership Services, your feedback was very favorable, and most (91%) indicated that it would not present a problem if ISB adopted a pay-by-credit-card-only procedure. The most useful additional membership services were additional journal offerings, the newsletter on the website, and the newsletter in electronic format.

Regarding ISB membership recruitment, the most common recruitment method used was encouraging students to attend ISB Congresses (36%). The most common methods of encouraging student members of ISB to become involved in various ISB activities was by involving students in faculty research and projects for presentation at ISB Congresses (33%) and actively assisting students in submitting their work for presentation at ISB Congresses (33%). Most (65%) recommended that ISB publicize the student initiatives grants program to encourage students to become ISB members. Many of you (37%) encourage colleagues to become members of ISB making information about ISB readily

available. Many (38%) encourage regular ISB members to become involved in the various activities of ISB by involving colleagues in faculty research and projects that will be presented at ISB Congresses. Most (67%) seek information on issues in biomechanics in order to remain competitive as a researcher and provide quality service. Your preferred medium for receiving information about biomechanics issues is on-line versions of journal publications (67%).

The feedback you have provided is greatly appreciated and will help to guide the council in meeting your needs. Thank you again for your help.

*Mary Rodgers*



## Editor's notes and requests

At this summer's council meeting the future of the Newsletter was discussed. Several decisions were taken. Since the number of awards has increased, the number of reports have increased similarly and could almost occupy half of the space of each Newsletter. Therefore it was decided that in the future all the reports will be published in a students corner of the ISB homepage and only a few published in the Newsletter. The current survey results indicated that an electronic version of the Newsletter would be useful for most responders. In accordance, it was decided to work towards an electronic copy of the Newsletter already by January 2005. As a test

version, the December issue may be the first to appear on the members' login on the homepage. For the members who have provided the treasurer with their current E-mail address an electronic version will be available. However, a paper version will still be available at least until the end of 2005. More on that issue in the coming Newsletter.

Next deadline for contributions for the Newsletter is the 22 of November. Please do remember the call for nomination for council candidates in this issue. Your input is important for the preparation of the slate of candidates who are to be presented in the Newsletter in due time.

*Karen Søgaard*

## Sponsorship Update

Although I am not the "official" ISB sponsorship officer, I have had occasion to speak with a few companies who have expressed "early bird" interest in exhibiting at the ISB 2005 Congress. I am extremely pleased to report that Kistler has agreed to be a "Platinum Level" sponsor of ISB, and Vicon Motion Systems, Inc. has agreed to sponsor us at the "Gold Level". As a result, both of these companies have inserts included in this newsletter, and both will have free exhibition space at ISB2005. The ISB has also received renewed support from Motion Analysis Corporation (a long term supporter of ISB) and from Nike Inc. Discussions with other companies are still pending. Updates regarding developments in this key aspect of ISB will be included in the next newsletter.

*Brian L. Davis, Ph.D*



VICON, the leading developer in motion capture, introduces another breakthrough in accuracy and accelerated workflow for motion capture with VICON MX, the company's next-generation suite of real-time optical motion capture systems. Ushering in ultra-high-resolution, virtually artifact-free capture with MX40 the world's first four-million-pixel motion capture camera, VICON MX revolutionizes the quality, flexibility and ease with which motion capture data can be applied to real-time and off line applications ranging from film, television and games creation to virtual prototyping, scientific visualization and biomechanical analysis. Vicon offers a wide range of solutions available to meet your application and budget needs.

For more information, please visit [www.vicon.com](http://www.vicon.com) or e-mail [sales@vicon.com](mailto:sales@vicon.com).

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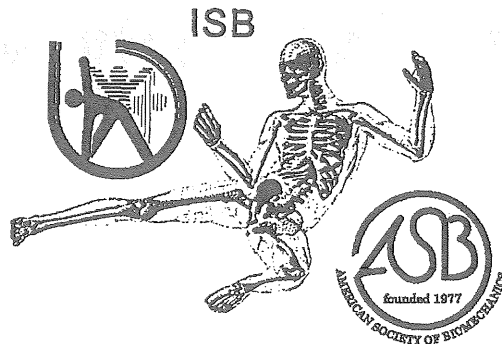
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## ISB 2005 Report



In each of the next four newsletters we will include a report from the team busy at work preparing for the next congress. Below is the first of these reports---from Scott McLean--an Australian who is now in Cleveland and on the Organizing Committee for the next meeting. Amongst his other responsibilities, Scott was instrumental in developing the logo shown above. He explains the logo and some of Cleveland's history.

The 20<sup>th</sup> International Society of Biomechanics Congress is almost upon us! The congress itself will be held at Cleveland State University from July 31<sup>st</sup> – August 5<sup>th</sup>, 2005 and promises to be a biomechanical extravaganza. We are very much looking forward to seeing all of you at next year's meeting here in Cleveland Ohio. There is an added bonus this year in that the congress is to be held in conjunction with the 29<sup>th</sup> American Society of Biomechanics' Annual Conference (hence the logo shown above). You can find more information about the combined meeting on the website (<http://www.isb2005.org/>). This site is updated monthly with lots of interesting information about both the meeting itself and Cleveland, the "New American City". For those of you unfamiliar with our fair city, not only is Cleveland a sporting, social and cultural Mecca, but it also has for many years been at the forefront of important scientific and medical discovery. The first airplane automatic pilot, the first blood transfusion, the first traffic light, the first padded bicycle seat, the first whole body scanner and x-ray machine and the first successful Siamese twin separation, all were developed or took place right here in Cleveland.

We promise to start the meeting with an outstanding opening address. The Wartenweiler lecture at ISB2005 will be given by Dr. Bruce Latimer, a world-renowned anthropologist. He works primarily on the biomechanics of hominid skeletons, especially limb bones and has conducted research in Ethiopia, Tanzania, and Siberia. He is probably best known for his work on the evolutionarily important hominid "Lucy" (*Australopithecus afarensis*). He has made several crucial observations about the range of possible functions in the arm and leg bones of this species, all of which have implications for reconstructions of its life habits. Comments from someone who heard Dr. Latimer speak at the 2003 Bone Fluid Flow workshop, "This presentation alone justified my attending this meeting!" With an opening address like this, imagine what the remainder of the conference must include!

Stay tuned----we will have more updates in the next newsletter.

## Biomechanics travel award launched



# Massey University News Release

Public Affairs  
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Total pages: 1  
Friday, September 17, 2004

A travel grant for researchers and postgraduate students who investigate how the body works - the field of biomechanics, has just been launched.

The James G. Hay Travel Award, named for a pioneer in the discipline in New Zealand, has been organised by Massey University's Dr Alan Walmsley. It is to be funded from the income from a surplus following a conference of the International Society for Biomechanics (ISB) held in Dunedin last year. The fund will be managed and administered by the Royal Society of New Zealand.

Dr Walmsley, who co-chaired the ISB conference last year with Associate Professor Peter Milburn of Otago University, says when the organisers realised there was likely to be a surplus from the conference they decided to establish a fund to support travel to future ISB Congresses by New Zealand biomechanists and student biomechanists. "Travel to ISB Congresses is becoming increasingly difficult and expensive for New Zealand biomechanists and their students because institutional support is becoming more difficult to obtain, and international costs are rising.

"I've always wanted to celebrate Jim Hay, who was one of the founders of sport biomechanics internationally. Unfortunately, Jim died before the ISB Congress in Dunedin, and so he did not see his work formally recognised and celebrated in New Zealand. Jim has left a legacy of biomechanists world wide, and it is a fitting and lasting tribute to him to name the Awards in his honour."

A small selection committee will determine how the income from the investment is given out, depending on how much money is available. The first round of applications will be called for later this year for the 20<sup>th</sup> ISB congress to be held in Cleveland in 2005. Dr Walmsley says postgraduate students and researchers from tertiary institutions working in biomechanics will be able to apply biennially to the Royal Society for an award to travel to the ISB Congress to present a paper. Recipients will present a report on their experience to the Royal Society, and, wherever possible, present the work in an appropriate New Zealand forum.

Jim Hay was born in Waipukurau in 1936, and, over a professional career in sport science spanning more than 40 years, he became one of the world's pre-eminent sport biomechanists. He was a former President of the ISB, and a Charter Member of the Olympic Academy of Science. Most of his professional career was spent in the USA at the University of Iowa, and Jim made a substantial contribution to US Olympic teams through his work in the Elite Athlete Programme. On his retirement from Iowa, Jim returned to New Zealand to his home in Tauranga, and continued his work at Auckland University.

Contact Dr Alan Walmsley on (04) 801 2794 Ext 6749.

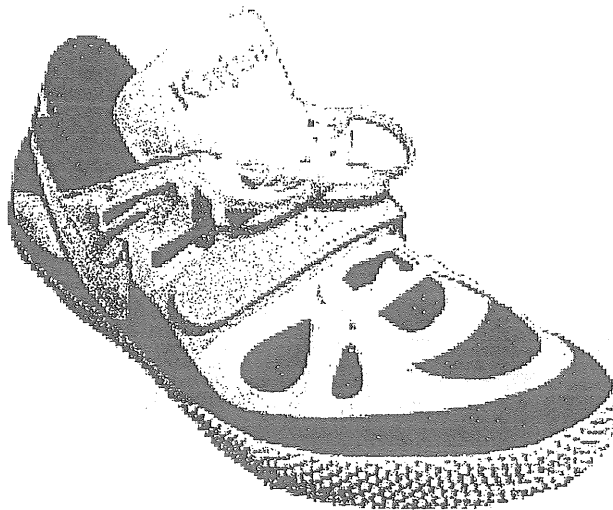
## New Nike Award for Athletic Footwear Research

Nike will sponsor a prize of UD\$25,000 on a biannual basis to encourage research on the role of athletic footwear in the prevention of chronic sport injuries. The prize will be granted for the first time at the meeting of the ISB Footwear Biomechanics Technical Group to be held in conjunction with the 2005 ISB congress.

The Prize will be awarded competitively on the scientific merit of the work\*. A panel of experts from the field will be assembled to determine the winner of the award. Full papers containing original material, not previously submitted for publication, should be in the form of a scientific report in the English language. The papers must be received no later than May 15, 2005.

Full details for submission will be available soon on the ISB website ([www.isbweb.org](http://www.isbweb.org)) and ISB Technical group on Footwear ([www.staffs.ac.uk/~isb-fw/](http://www.staffs.ac.uk/~isb-fw/)).

\*Note that research sponsored by Nike will not be eligible for this award.



## Notes from the archives

When the ISB was formed in 1973 the constitution did not contain a definition of biomechanics. An information sheet about the formation of the society also avoids defining biomechanics, but states

*"Interest in biomechanics, a relatively new science, is interdisciplinary in scope, with applications in such fields as physics, mathematics, engineering, biology, medicine, and sport sciences. Biomechanics has gained importance in such fields as physical medicine, bioengineering, and ergonomics. It is also relevant to basic muscular and neuromuscular research."*

The meaning of the term biomechanics was discussed at the 4<sup>th</sup> International Seminar on Biomechanics (August, 1973), when the society was formed, but no definition was presented. The late Herbert Hatze (1937-2002) corresponded with the then Vice-President (Dick Nelson, now an Honorary member of the society), about appropriate definitions. Herbert defined biomechanics as follows,

*"Biomechanics is the study of the structure and function of biological systems by means of the methods of mechanics."* (Hatze, 1971 translated from the German).

His proposal was to use the term bionetics for the specifying the scope of interest of the ISB. He defined bionetics as follows,

*"...the interdisciplinary study of the structure and function of biological systems..."*

These ideas were never pursued and the society has flourished with the word biomechanics defining what we are interested in. Judging by the scope of papers at the most recent ISB Congresses most people have found this word, biomechanics, inclusive of their interests.

Herbert also objected to the term "biomechanics of movement", because

*"...it is senseless to speak of 'Biomechanics of Movement' since the term mechanics in Biomechanics by definition implies the study of motion."*

These comments were written in 1973. Interestingly the current constitution (article 2.1) uses the term "biomechanics of movement".

Many of Herbert's comments were subsequently published, in 1974, as a letter to the editor of the Journal of Biomechanics.

### References

Hatze, H. (1971) What is biomechanics *Leibesübungen-Leibeserziehung*, 2, 33-34.

Hatze, H. (1974) Letter: The meaning of the term "biomechanics". *Journal of Biomechanics*, 7(2), 189-190.

*[The ISB has an archive of its important materials, kept at Penn. State University. If you have any materials you think should be in the archive, and you would consider donating them to the archive please contact John Challis ([jhc10@psu.edu](mailto:jhc10@psu.edu)).]*

John Challis

# ISB Student Grant Update 2005

## Alex Stacoff

### International Society of Biomechanics (ISB) Student Grant Guidelines 2005

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

#### **1) The Matching Dissertation Grant Program:**

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

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

Applications are to be received by **January 15, 2005** both by email and airmail (including the signatures). Notification to applicants will be by March 12, 2005. Recipients will present results at the next ISB Congress in 2005 or 2007 and acknowledge ISB support in any publications. A report to the council will include accounting of how funds were spent. Recipients will be encouraged to publish their work in one of the ISB-affiliated journals.

#### **2) The International Travel Grant Program:**

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

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

Applications are to be received by **January 15, 2005** both by email and airmail (including the signatures). Notification to applicants will be by March 12, 2005. Recipients will submit a brief report to the committee, which will be published in the Newsletter.

### **3) The Congress Travel Grant Program:**

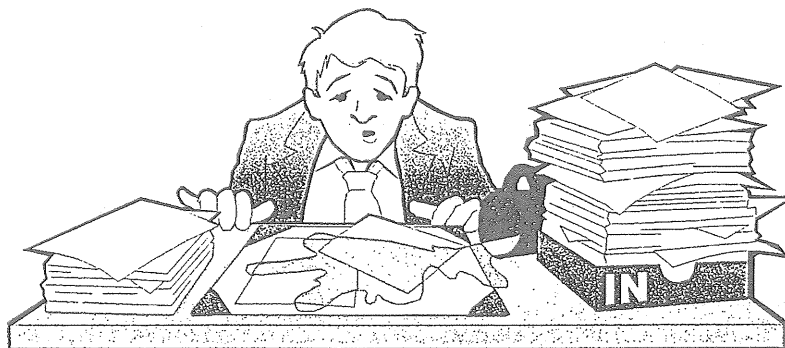
This grant is offered only in the years of an ISB Congress, therefore, it will be offered in 2005 to help reduce the travel expenses to attend the XXth ISB Congress in Cleveland, USA, <http://www.isb2005.org>. ISB Congresses provide a wonderful opportunity for exchange of information and for meeting other scientists who can be influential in the development of new directions. By virtue of the need to move the congresses between different continents, it is often very difficult for students to afford to travel to the Congresses or to pay the registration fee if they can travel. However, we will offer several travel grants of up to \$1000 to student members who will be presenting their research results at the 2005 ISB Congress in Cleveland, USA. Applications should include the following:

- a) a proposal which should have a maximum length of 3 pages including a copy of the submitted abstract and, the total budget for the travel;
- b) a CV of the applicant: 2-3 pages in length (include list of publications, passport picture, current grade point average, results of any standardized tests that the applicant has taken (i.e. GRE));
- c) a one page recommendation from the supervisor who must also be an ISB member at the time of application.

Recipients will submit a brief report to the committee, which will be published in the Newsletter. Applications are to be received by **January 15, 2005** both by email and airmail (including the signatures). Notification to applicants will be by March 12, 2005.

#### **Final notes:**

- Please be aware that applications can only be accepted from FINANCIAL member applicants and supervisors.
- Please provide the ISB membership number in your application. It can be obtained from the Treasurer, Dr. Graeme Wood at: [gwood@cygnus.uwa.edu.au](mailto:gwood@cygnus.uwa.edu.au)
- ISB student grants do not cover indirect costs.
- ISB student grants are intended for students only, not post-docs.
- First time applicants are preferred, but others can be considered if the funds allow.
- The evaluation committee is authorized to limit the number of applications per institution.



## International Society of Biomechanics Travel Grant Reports XIXth Congress, Dunedin, New Zealand, July 6th – 11th 2003

**Helen Huang**  
**Human Neuromechanics Laboratory**  
**University of Michigan, USA**

One of the highlights of my first year in graduate school was traveling to New Zealand and attending my first ever academic conference, the ISB XIXth Congress in Dunedin, New Zealand. This trip certainly would not have been possible had I not received one of the ISB Student Travel Grants. I would like to thank the ISB council for awarding me this grant and giving the opportunity to be part of this wonderful experience.

Because this was my first academic conference, I spent much of the time meeting new people, trying to match faces with names, and learning about the various research being conducted in biomechanics around the world. I especially enjoyed Dr. Fukunaga's Muybridge lecture on using ultrasonography to study muscle mechanics and dynamics within a human body. I remember thinking how innovative I thought his approach was. I tried to attend as many talks as I could and was impressed with the breadth of topics being researched. I also had some productive and engaging discussions with other students about talks we had heard and the research being done.

As for my own research, I gave an oral presentation titled "Neural Coupling Between Arm and Leg Muscles During Recumbent Stepping." It was no secret that I was extremely nervous. I very clearly remember the chair of the session, Dr. M. Bobbert, reassuring me prior to my talk that it would be fine. To my surprise and relief, my presentation went very well. Several members complimented me for giving an engaging talk, which definitely helped my confidence. In addition, I obtained constructive feedback and some very perceptive and interesting questions regarding my research.

Besides hearing several talks and meeting many people, I also enjoyed the multiple opportunities we had to explore Dunedin and the beautiful country of New Zealand. I made sure to take some time to run up the world's steepest street, Baldwin St., which was only a couple of miles away from the university. I also went on a sea kayaking tour and a bicycle tour of the area,

both offered by the University of Otago Recreation Services. The tours were well organized and thoroughly enjoyable. During the sea kayaking tour, we saw seals playing in the seaweed and watched an albatross take off. On the bicycle tour, we pedaled through rain and wind to reach the beach where we saw double rainbows and hooker sea lions. The wild-life in New Zealand was amazing. I don't think we ever saw an actual Kiwi bird, however.

I am extremely grateful for the opportunity to have attended the XIXth ISB Congress. It was a wonderful experience for me. I learned a great deal about the various biomechanics research being conducted around the world and was able to meet several of the people responsible for all this great research. I would again like to thank the ISB council for funding and supporting my travels to this conference. I also want to compliment the organizers and the University of Otago for all their hard work in making this conference such as success.

**ISB Congress Travel Grant Report**  
**Jinger Gottschall**  
**University of Colorado, Boulder, USA**

Thank you to the International Society of Biomechanics for the travel grant. With this funding, I was able to attend the XIX Congress in Dunedin, New Zealand. My general opinion of biomechanists, as a group, has changed after the experience. Prior to the conference, I thought that the majority of people who study the mechanics of movement were 'nerds'. Now, I think they are 'studs'.

Let me start from the beginning. On the first day of the conference I participated in a modeling seminar instructed by Professor Ton van den Bogert. It was incredible. Dr. Bogert gave a fascinating description of the simulation and optimization programs he utilizes. His clear descriptions and examples were interesting and easy to follow. Wow.

In general, the daily highlight of the conference was the keynote speakers. I have been studying physiology and biomechanics for over 6 years. So it was such a pleasure to hear legends in these fields speak about their research in person. Professor Roger

Enoka delivered an inspirational talk on the neuromuscular mechanisms that mediate fatigue. Additionally, Professor Tetsuo Fukunaga gave an amazing presentation on the methods utilized to evaluate muscle mechanics in vivo. Both these gentlemen have developed novel techniques and challenged current theories in our field for over a quarter of a century. Talk about superstars.

I also played an active role in the conference by displaying two posters. It was an excellent venue for me to discuss my current research ideas and receive feedback on my initial observations. The stimulating questions motivated me to assess my interpretations in novel ways. What a treat.

Lastly, the social functions and outdoor activities were thrilling. I met people from all over the world... Canada, England, Italy, France, Japan, Australia, and of course, New Zealand. The student pub-crawl was a brilliant idea. It was an informal, fun environment that sparked interesting dialogue and scientific debate. In addition, the sporting option provided entertainment for everyone. I went horseback riding on the coast and four-wheeling in the mountains. I kept forgetting that I was at a conference! Just kidding. Honestly, thank you to the Society, thank you to the organizing committee, and thank you to city host. And thank you to all the people that changed my mind about people in biomechanics. You are all really 'cool'.

**Jian Ping Wu**

School of Mechanical and Materials Engineering,  
The University of Western Australia, Perth, WA,  
Australia 6009. Email:wping@mech.uwa.edu.au.

I am grateful to the Student Grant Committee of ISB for offering me a student Congress Grant in 2003. This award allowed me to present (podium) my study titled "Study of the Architecture and Biomechanics of Collagen Fibres in Articular Cartilage" in the ISB XIXth Congress in Dunedin, New Zealand in July 2003.

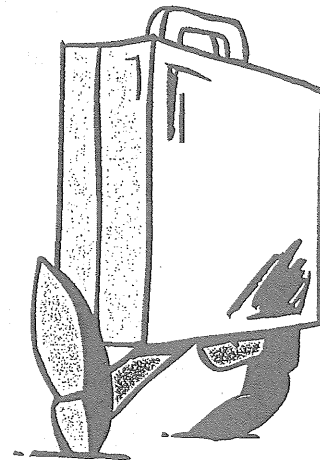
Arthritis is a disease which causes disability, long-term suffering and financial costing. The pathogenesis of this disease remains uncertain but is well associated with the degeneration of articular cartilage (AC). Collagen matrix in AC plays important role in determination of the biomechanical properties of AC. Disruptions of the collagen matrix and deteriorations of the collagen fibres in AC degrade the biomechanical functions of AC. Therefore, better understanding of functions of AC in relation to its collagen matrix is an important step to approach understanding of the etiology of arthritis. The goal of my PhD study is to

examine the biomechanical properties of articular cartilage in relation to the 3D collagen matrix.

In the past years, the study of the relationship between the functions and the structure of the AC was mainly based on two-dimensional microscopic techniques. AC, however, has a three-dimensional fibrillar matrix. Some important information about the 3D structure of AC can be lost in two-dimensional microscopic observations. Also, the requirement of tissue dehydration and physical sectioning in many of the traditional microscopic techniques can cause artifacts in the study of AC and errors can be introduced in the interpretation of the structure of AC. We have developed a new method which can be used to study the 3D collagen matrix in bulky and hydrated cartilage using optic fibre laser confocal microscopy. We found that the degree of the loss of integrity of the collagen matrix is well co-related to the degree of arthritis and decrease of the biomechanical functions of AC.

This is the final year for my PhD. Attending ISB congress in Dunedin and presenting my study in the congress offered me great opportunities to share my studies with other researchers in the world. Listening to the talks delivered by the world leading scholars has broadened my knowledge. I also made new friends in the conference. All these are invaluable for my future research.

On the way home from the Congress, I visited Professor Neil Broom's Biomechanics Laboratory in University of Auckland. Prof Broom is a leading research scholar in my research area. He has broad knowledge and numerous important publications in the biomechanics and internal structure of AC. I also met Dr Rene Flachsmann in Prof Broom's laboratory. I am grateful for their invaluable discussions and hospitalities during the time in their laboratory. I believe that I am benefited a lot from this visiting.





## Membership News and Important Announcements

Before the end of this year we want all ISB members to be reachable by e-mail. This will enable us to conduct the next Council elections electronically, and also to begin distributing electronic versions of membership notices and quarterly Newsletters. Both initiatives will save the Society a lot of money in printing and mailing costs.

For those of you who renewed your membership in a timely fashion this year, we should already have your current e-mail, but if it has changed please visit [www.isbmem.org](http://www.isbmem.org) and update your contact details.

Those who have not renewed their membership this year may begin to miss out on communications in the future because we might not have a current e-mail address for you. Even if you intend to only pay your 2004 dues next year (the Society's rules allow some flexibility here), please nevertheless go to [www.isbmem.org](http://www.isbmem.org) and update your contact details so that we can still reach you in the meantime.

**If, however, you did not pay your 2003 dues either, then time's fast running out for you! All members who are two years in arrears will be placed on the *In-Active* list after November 30, 2004.**

Are you financial? If the address label on the envelope that brought you this Newsletter has the code **\*\*NF\*\***, then you are **not financial!**

Beginning in 2005 the Society's web-based processes will be somewhat different. We will be installing a new password protection system (self-defined) for both membership matters and for access to *members-only* information. In order to implement the new password system we need to be able to send everyone an e-mail – hence the importance of your contact details being correct. Also for 2005, all on-line payments will go directly through our Bank's secure on-line payment system and be immediately debited to your account.

## New Members to ISB

Prof. Anatol G. Feldman  
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United States of America

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Mr. Jun San Juan  
Human Physiology  
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Eugene, OR 97402  
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## Upcoming Meetings, Workshops

### 2004

#### The Fifth Australasian Biomechanics Conference.

Dates: December 9-10, 2004

Venue: The University of New South Wales, Kensington.

Information: E-mail: [abc5@unsw.edu.au](mailto:abc5@unsw.edu.au)

#### APCST 2005

Asia-Pacific Congress on Sports Technology -

Dates: September 12-14

Venue: Tokyo Institute of Technology, Japan

Information:

E-mail: [Aleksandar.Subic@rmit.edu.au](mailto:Aleksandar.Subic@rmit.edu.au)

[ujihashi@mei.titech.ac.jp](mailto:ujihashi@mei.titech.ac.jp)

See website: [www.astaonline.com.au](http://www.astaonline.com.au)

### 2005



#### NASPSPA 2005 Conference

Dates: June 9-11

Venue: St. Pete's Beach in Florida

Information:

E-mail: [naspspa@hotmail.com](mailto:naspspa@hotmail.com)

Conference Program Chair:

[fischmg@auburn.edu](mailto:fischmg@auburn.edu)

See website: [www.naspspa.org](http://www.naspspa.org)

#### ISPGR XVII

International Society for Postural and Gait Research

Dates: May 29 – June 2

Venue: Marseille, France.

Information:

E-mail: [christine.assisante@dpm.cnrs-mrs.fr](mailto:christine.assisante@dpm.cnrs-mrs.fr)

See website: <http://www.ispgr.org>



#### ISB XX

International Society of Biomechanics Congress

Dates: 1-5 August 2005

Venue: Cleveland, Ohio, USA

Information:

E-mail: [info@isb2005.org](mailto:info@isb2005.org)

See website:

<http://www.ISB2005.org>



### 2006



#### NASPSPA 2006 Conference

For this conference, we will join with the American College of Sports Medicine.

Dates: June 1-3, 2006

Venue: Denver, Colorado.

#### ISSP 11th World Congress of Sport Psychology

Dates: 15 - 19 August 2005

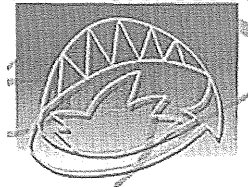
Venue: Sydney, Australia

Information:

See website:

[www.issp2005.com](http://www.issp2005.com)

ISSP 11th World Congress of SPORT PSYCHOLOGY



15 - 19 August 2005  
SYDNEY - AUSTRALIA

#### 5th World Congress of Biomechanics

Dates: 29 July – 4 August 2006.

Venue: Munich, Germany

Information:

Email: Prof. Dr.-Ing. habil.

Dieter Liesch, [info@WCB2006.org](mailto:info@WCB2006.org)

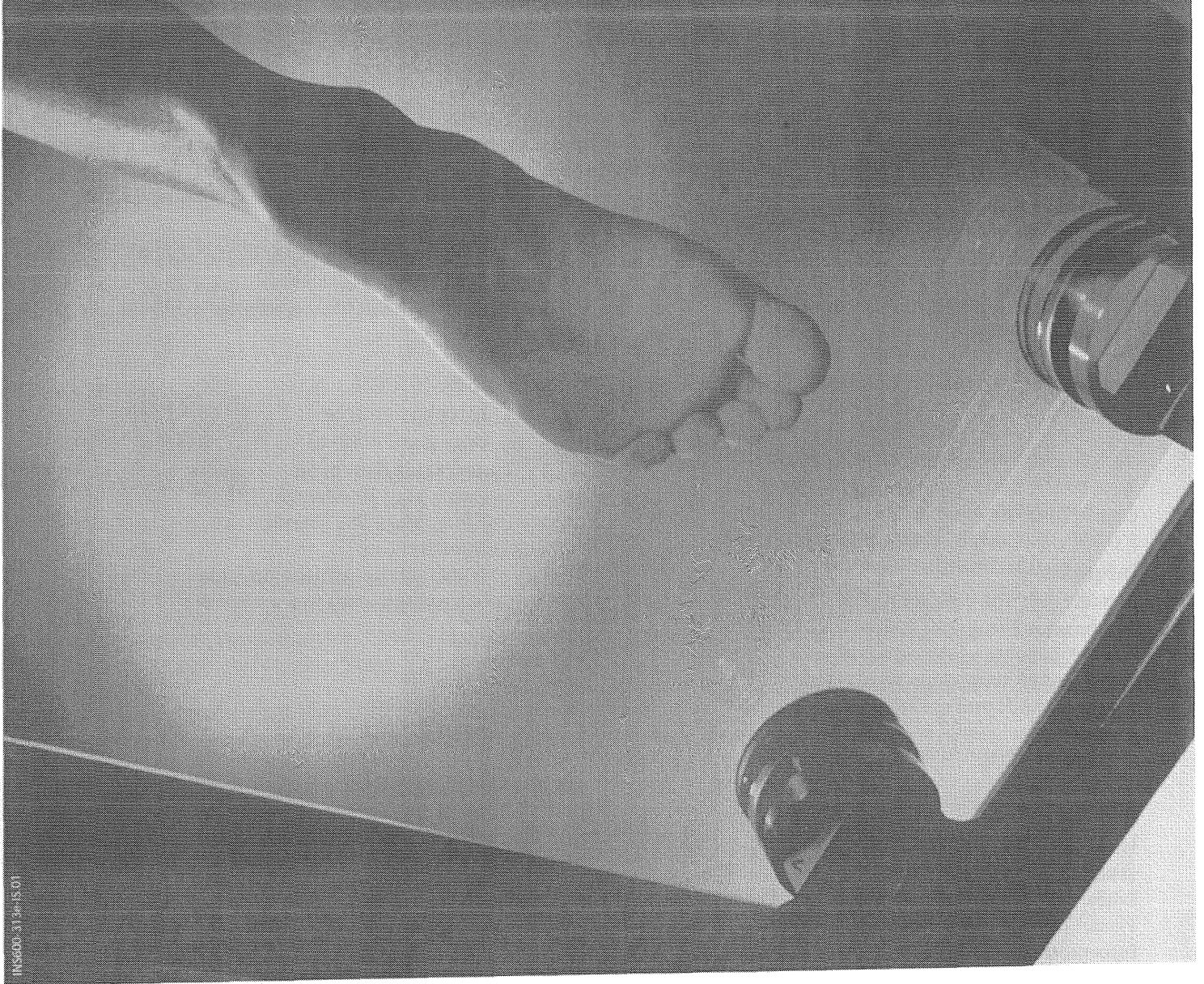
See website:

<http://www.wcb2006.org>

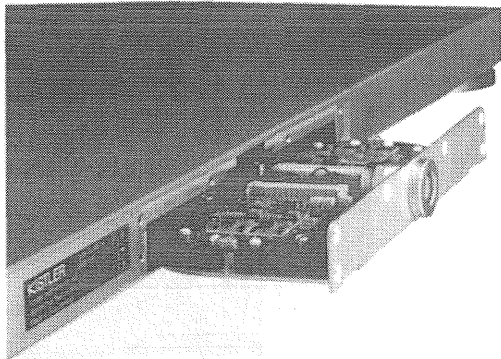
Munich, Germany - July 29 - August 4, 2006  
V. World Congress of Biomechanics



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