



# American Society of Biomechanics Newsletter

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[www.asb-biomech.org](http://www.asb-biomech.org)

## From the President

**J. J. Trey Crisco**

As we speed ahead to the end of the academic year excitement is in the air, the snow is gone, spring is here, graduation is closing in fast - parties to go to - friends to see, projects need to be completed, exams taken, plans for summer, plans for next year...and beyond. With all this going on, it is always a tough time to focus—but focusing during this time is especially important. At times what we focus on is not our choice; in academia, it is often our instructor's, mentor's or our Dean's, but even if the focus is not our choice there is often substantial leeway to make decisions within a larger framework.

From an outside perspective, ASB may not seem focused. A quick look at our annual meeting program reveals talks on insects jumping, baseball pitching, strains in soft tissue, computer modeling, knee injuries, artificial joints...Where is the focus? Ah it is there! The focus is biomechanics—the application of mathematics, engineering, and physics to biological tissues structures and system. While the questions and species may differ, the approaches and the path to understanding are focused on biomechanics. This diverse subject matter, interconnected via common techniques and scientific principles, is the most exciting part of ASB and of our annual meeting.

Perhaps we are a society of proverbial “hammers” looking for “nails.” The nails are the questions that need to be answered, the hammers are the techniques that we use to do so. Some say that the hammer should not be your focus – I like to disagree. To paraphrase Earnest Estwing, founder of Estwing Hammers, *“if you give me a hammer and a house to build, I may not finish the house, but I will come-up with a better hammer.”* It could be said that he lacked focus, but I think that is a matter of perspective. To some the construction of the house should be the “nail,” Estwing's focus instead was improving the hammer and in 1923, his company introduced one of the first hammer innovations since the Stone Age. Focus is critical; without focus, goals cannot be accomplished.

The current focus of our Society is the upcoming annual meeting to be held in conjunction with the International Society of Biomechanics (ISB) meeting in Cleveland, Ohio, August 1 - 5. Working with the ISB, ASB has arranged Thursday to be slotted as “ASB day” and ASB

Program Chair, Art Kuo, has developed an outstanding program. See the ISB meeting web site [www.isb2005.org](http://www.isb2005.org) for all the details.

As many of you know ASB strives to recognize its members who have presented outstanding work at the annual meeting. What you may not know is that many of the awards (detailed in the previous Newsletter) allow for the awardees to submit and publish their work in an accelerated fashion to an international audience in the Journal of Biomechanics. Awardees should always take advantage of these opportunities—publishing is a clear and concrete way to demonstrate what you have accomplished. In upcoming journals be sure to keep a look-out for these ASB award winning studies. As an aside, the Journal of Biomechanics has now overcome a large backlog of accepted papers by expanding their issues; so those of you who have been reading the Journal may have noticed recent publication of ASB award winning studies in the April 2005 issue. These were the awardees from the 2003 annual meeting.

In other news, the Executive Board has voted to change the Student Representative position from a one-year position to a two-year position. The Board strongly believes that student interests and needs are critical to the society, so extending the position a year would allow better representation for the students.

While on the topic of student interests and needs, I would like to highlight the three recent ASB Regional Meetings specifically geared towards students. In early November, the First Upper Midwest ASB Regional Meeting was held in Minneapolis Minnesota. This meeting was organized by Joan E. Bechtold, Ph.D., Minneapolis Medical Research Foundation, Hennepin County Medical Center (HCMC), University of Minnesota and Donald D. Anderson, Ph.D. at The University of Iowa. In mid-April, the Southern California Meeting, organized by Guillermo Noffal and Karen Perell was held at California State University, Fullerton. David Nuckley, Ph.D. University of Washington and Andrew Karduna, Ph.D. University of Oregon organized the 1st Northwest Biomechanics Students Symposium in mid-May. I offer my sincere thanks to the organizers of these meetings and I would encourage more members to hold their own meetings. ASB will help financially support these regional meetings so, please contact Steve McCaw if you are considering organizing your own meeting.

See you in Cleveland and don't forget your blue suede dancing shoes!



## ASB NEWSLETTER volume 17, number 2

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### Editors Note:

All previous ASB newsletters have been converted into pdf documents and are archived on the ASB website:

**[www.asb-biomech.org/newsletter](http://www.asb-biomech.org/newsletter)**

### Newsletter Advertising

The Editorial Board invites various businesses and corporations that have products or services of interest to members of the Society to advertise in the ASB Newsletter. Advertising space may also be purchased for job postings or other special announcements.

The current advertising rates are as follows:

1/4 page	\$100
1/2 page	\$200
full page	\$400
back page	\$600
separate insert	\$600

If you are interested in learning more about advertising in the ASB newsletter, please email Michelle Sabick at [MSabick@boisestate.edu](mailto:MSabick@boisestate.edu).

### ASB Involvement

If you are interested in becoming more active in the Society (e.g., serving on a committee or chairing a conference session), contact Steve McCaw ([smccaw@ilstu.edu](mailto:smccaw@ilstu.edu)), Education Committee Chair with your name, address, phone/fax number, email address, and your desired involvement. This information will be included in a data base which is periodically updated and distributed to the Executive Board.

### Graduate Programs

The ASB maintains an on-line database of universities and colleges with graduate programs in biomechanics. The database is organized alphabetically by country and state and currently includes more than 70 institutions from Canada, the United Kingdom, and 32 different states within the US. This is a great resource for undergraduate students who may be considering graduate school as well as for anyone who just wants to find out what's going on at other institutions.

Is your institution included in the database? If not, new information can be sent to Kathy Simpson at the University of Georgia via email: [ksimpson@uga.edu](mailto:ksimpson@uga.edu). Because the information contained in these listings may gradually become outdated as equipment and personnel at laboratories change over time, all institutions are encouraged to review and update their information periodically.

New and updated program information can be transmitted directly via e-mail. Alternatively, an online form can be used to submit updated graduate program details.

The graduate program database can be accessed through the Society's homepage at: **[www.asb-biomech.org](http://www.asb-biomech.org)**

## Secretary/Treasurer

Don Anderson

Ah, what to report? That is the question. Whether 'tis nobler... Oh, whatever – here's the news that I deem fit to pass along.

We have nearly reached the end of our “fund-drive” part of the year. We have received membership renewals from 528 members (421 regular, 100 students, 7 emeritus), and I just mailed out one last plea (to which my response was about 20 or 30 “undeliverable” replies). If you know, or even suspect that you may not have yet renewed your membership, please let me know by e-mail or phone. I would like to get this taken care of before next year's drive starts. And if you wouldn't mind, everyone please try to keep me current on your e-mail address. Thanks.

New members who are receiving this newsletter – let me apologize for not having mailed many of you your membership certificate, yet. That is next on my list. Please accept my sincere welcome to the ASB.

We have now officially closed the Seattle Branch of the Secretary/Treasurer's office. (I received a shipment of about 15 boxes of “archival” materials. I have that down to about 6 boxes of truly archival stuff.) As of May 1, funds in our cash accounts totaled \$43,645.83. In our investments portfolio, we have \$125,712.33. Members often rightly ask us why we have so much money in an investments portfolio. Well, let me take a shot at explaining this.

Consider a scenario in which an annual meeting had to be cancelled at the last minute, with financial commitments made which we were obligated to honor. Absent registration dollars to offset those bills, we would need to reach deep into our reserves. In this case, our investments portfolio would serve to bail out the society, effectively buying a year for the membership to decide what to do next. This is the purpose for which the majority of our investments portfolio is set up. A secondary focus of our investments is on growing a small endowment to provide award funds for the Hay Award in perpetuity. This segment of the investments (around \$13,000) is managed in a separate fund.

A goal that I have set for my term as S/T is that we move from the current paper-based invoicing system to an online payment system, whereby members renewing their membership take greater responsibility in the payment process. In the best-case, this would mean about an equivalent amount of work each year for the members, and a lot less work on the part of the S/T office. (With that saved time, I could be mailing out new member certificates...).

Finally, I want to alert the membership to a percolating issue regarding sales tax on journal subscriptions. I have been contacted multiple times by Publishers and others, seeking for clarification from me regarding ASB tax-exempt status. While we are indeed a 501(c)3 organization, I have some work to do to prove to myself that means we legitimately do not owe sales tax on our subscriptions. There are signs in the air that our not having to pay sales tax may go away one day soon. At such time, it might make sense to re-evaluate whether or not the society desires to continue serving as a journal subscription clearinghouse, effectively placing the Secretary/Treasurer as a go-between journal publishers and the membership. Obviously, this will be a topic of discussion for the Executive Board to ponder in the near future.

Well, that's all for now. Have a great summer.

## Student's Corner

Melissa Scott-Pandorf

Greetings ASB student members! I hope everyone stayed afloat during the busy spring semester and came out with stories of success. With all the signs of summer around us, we know that the ASB/ISB meeting is quickly approaching. There is a full week of events planned for this year's meeting that promises many wonderful opportunities. In keeping with ASB's mission to foster the student members of the society, specific student events that are planned for the meeting include the Women In Science Breakfast, the ASB Mentor Program, the Student Luncheon and a Student Night Out.

The Women In Science Breakfast will continue for the second year. Due to last year's outstanding attendance, we have asked for a larger room. For those that were unable to attend or are new to ASB, the Women in Science Breakfast was established to build networking between young female scientists and senior scientists. It offers informal opportunities for discussion on balancing a family and work, the challenges of being a woman in a male dominant profession, and career path choices. A possible discussion topic for this year's meeting is how to keep females active within ASB following graduation.

In addition to its normal agenda, the Student Luncheon will include a panel of established scientists who will be discussing career paths in biomechanics. Students will be able to ask questions such as the number of publications needed for success and the requirements for working in academia or industry.

The ISB student representative and I are working on an optional Night Out around midweek of the conference for all student members of ISB and ASB. It will be a chance for students to get together in an informal environment and take in the sights of Cleveland. Students will have the opportunity to hear stories about life in other laboratories and make future research collaborations. Possible gathering places are located at “The Flats”, a popular entertainment area in Cleveland.

The mentor program will continue due to reports of great success following last year's meeting. The mentor program was established in 2004 to encourage interaction between senior scientists and the student members by pairing students and scientists with similar interests. Current ASB student members are welcome to participate in the program. This experience is meant to build the student's professional network and promote discussion of their research and career directions. More information on the mentor program is listed in on the ASB website ([www.asb-biomech.org/student](http://www.asb-biomech.org/student)). Students signed up for the program should be receiving information on their mentor matches in July. This year, students and mentors will also receive suggestions or ideas from previous participants for increasing their interaction throughout the meeting. Future intentions for 2006 will be to create a system where students can select whether they want to be paired with a doctoral student or senior scientist in the hopes that doctoral students will gain experience in mentoring to further the program in the future.

If you have any suggestions or comments that you feel will improve the interaction within ASB, please contact me via email ([mmsscott@mail.unomaha.edu](mailto:mmsscott@mail.unomaha.edu)). For further details on event plans for the ISB/ASB meeting visit the ASB website (<http://asb-biomech.org>).

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## ASB Executive Board

Dear ASB Student Member,

The Executive Board of the American Society of Biomechanics, acting on behalf of the ASB membership, has decided to provide financial assistance to any of you who attend this summer's Annual Meeting. As you no doubt already know, the meeting is being held in conjunction with the XXth Congress of the International Society of Biomechanics in Cleveland, July 31-August 5th this summer. The ASB/ISB student member early registration fee is \$225, and we will refund \$50 of that amount following your attendance at the meeting. We believe that this meeting is too good of an opportunity for students to pass up, but that because it is coupled with the Congress, it is much larger and longer, hence more expensive. We don't want that to stand in the way of you deciding to come to Cleveland.

Here's what you need to do to receive the \$50 check from ASB:

-- Be a paid ASB student member by July 25, 2005 (deadline for applications to membership committee is June 20th).

-- Register for, and attend the meeting (if you don't register by May 30th, registration increases \$50, to \$275).

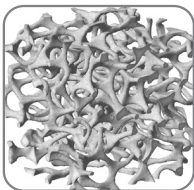
-- Present to me (by e-mail, fax, or postal mail) a copy of your registration receipt by September 1, 2005.

That's all it takes. So start making your plans to attend, now, by visiting the Meeting site at [www.isb2005.org](http://www.isb2005.org). And register for the meeting while you're there.

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Visit us at the ASB/ISB meeting in Cleveland this August

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# Book Review

Rodger Kram

While many others have been noting the centenary of Einstein's magnificent 1905 year in Physics, I have been reading about two characters from the 19<sup>th</sup> century history of biomechanics. Like Einstein, Muybridge and Marey were also interested in understanding time and space. Muybridge is best known to biomechanists for his photographs of horses and other animals during locomotion and the premier award of the International Society of Biomechanics is named the Muybridge Medal. Marey is less well known to biomechanists, despite his being much more of a scientist than Muybridge. But to understand Marey, one must appreciate Muybridge also.

I will discuss three books. The most recent is *Time Stands Still; Muybridge and the Instantaneous Photography Movement* by Phillip Prodger. Complementing that book, are two semi-recent books about Etienne-Jules Marey: *Picturing Time* by Marta Braun and *Etienne-Jules Marey: A Passion for the Trace* by Francois Dagognet. I thank my two French colleagues, Drs. Belli and Morin for the kind gift of the latter book.

*Time Stands Still* was published to accompany an exhibition of photographic art from the 1839-1878. The touring exhibition was developed at Stanford University. "Instantaneous" photography refers to the substantial improvements in the sensitivity of photographic plates and the ensuing increase in shutter speed. Previously, photography required that the object being captured remain almost motionless. The goal of this book was to highlight the artistic vision of Muybridge and his contemporaries. While it provides some biographical vignettes and some technical issues about photography, the author points to better treatments of those two topics in other books. The first 100 pages or so are very much art history. Nonetheless, they are beautifully illustrated and the quality of the images throughout the book is excellent. Even the author himself cannot help but note the inordinate number of nude female figures that Muybridge chose to photograph. Defensively, he notes that the images are "erotic... but never prurient". By today's standards, Muybridge's images of women unfastening their corsets are rather tame. The second half of the book would be of most interest to locomotion biomechanists. Photographs from Marey and the much lesser known Eakins and Anschutz complement the Muybridge images. Along with a menagerie of species, Muybridge photographs documenting the movements of

obese persons and patients with multiple sclerosis are included. Those biomechanical topics are of even more interest today. Like Muybridge's career, this book winds down rather suddenly. After highly productive stints at Stanford and then in Philadelphia he produced little thereafter, due in part to various personal eccentricities and turns of events.

Although *Picturing Time* is mostly about Marey, just three pages into the introduction it attacks the notion of Muybridge being a scientist. Braun states that Muybridge's images "give us no way to measure anything real" and are "not scientific depictions of movement, but fictions". Indeed, Muybridge's images are illusory. They often feature a grid background, but with no way of calibrating the distances in the plane of motion. Moreover, when capturing locomotion, Muybridge used multiple cameras triggered at equal points in space but not time. But it is our own fault for converting these images in our mind to a motion picture. Fortunately, *Picturing Time* does not dwell too long on bashing Muybridge. Rather Braun extensively follows the career of Marey from cardiovascular physiologist to muscle physiologist to locomotion biomechanist, to exercise physiologist and ergonomist. Along the way, we get snippets of Marey's persona, but only fleetingly because Marey's personal records were destroyed after his death. Fortunately, the reader does get wonderful depictions of Marey's apparatus, much of which he invented himself. I really loved the pictures of his pneumatic force platforms. *Picturing Time* is also extensively referenced so that the reader could investigate more in detail. Since Braun covers the photographic motion capturing aspects of both Marey and Muybridge it is much more comprehensive if less detailed and with more advocacy than *Time Stands Still*.

Speaking of advocacy, by its very title, *A Passion for the Trace*, gives away that it is not an objective look at the life of Marey. Lacking much concrete detail on the personal life of Marey, Dagognet seems to make it up. At first, he portrays a dualistic Marey, the internal Marey vs. the external Marey. His strongest evidence for the duality is that Marey preferred to winter in Naples rather than Paris and that early in his life Marey went by Jules-Etienne and then later Etienne-Jules. Then, after making the case for two, Dagognet presents three Mareys, one for each phase of his scientific career. More grandiose, Dagognet presents his thesis that Marey transformed science, art and industry. In this version of history, Muybridge is relegated to being a tertiary technician who was hired by Stanford after he read Marey's books. Marey is also credited with being instrumental in the development of the airplane because one of his colleagues made a small model plane powered by

compressed air driven propellers. Despite the psychobabble and exaggeration, *A Passion for the Trace* does present a well structured analysis of the important influence of Marey on modern scientific thinking. Marey was first and foremost a proponent of mechanistic thinking among the vitalists of the time. Vitalism was/is the belief that life can not be understood from chemical-physical-biological analysis. Second, Marey was adamant about creating physiological and biomechanical recording devices that did not alter the function being studied. He made incredible instruments and recordings in an age that barely had electricity let alone electronics. Third, Marey insisted on verifying his observations by creating physical models of the systems he studied. At today's ASB meeting, Marey would more likely use computer models to verify his experimental results but the philosophy is the same, measure and verify.

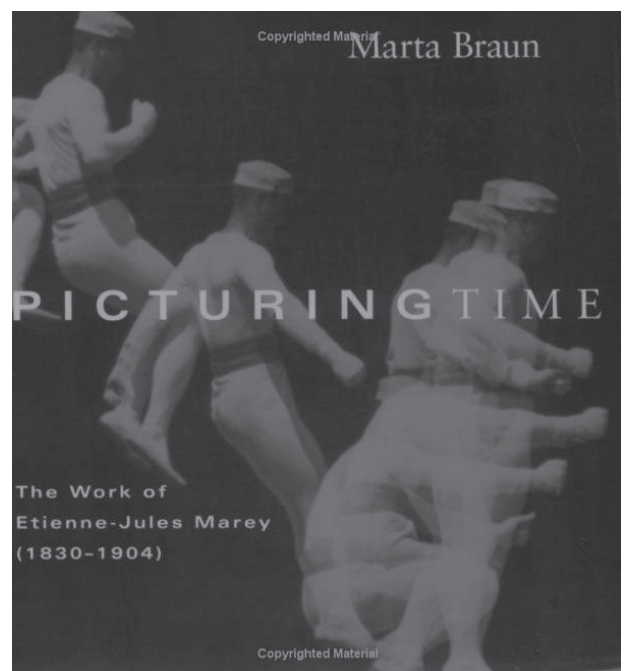
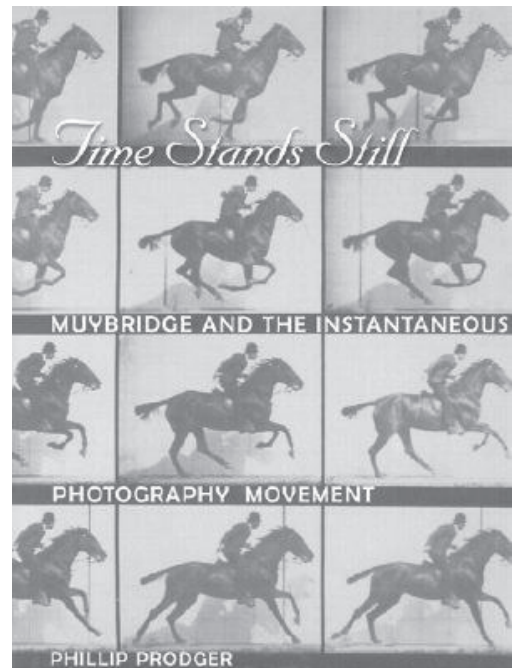
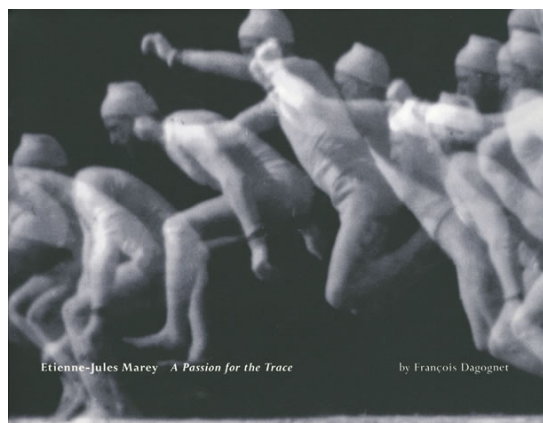
To sum up, if I had to recommend just one book for a biomechanist, it would surely be *Picturing Time*. It covers much of the material that *A Passion for the Trace*, but more objectively with less hero worship and more science. *Time Stands Still* is much more of an art book, which is only appropriate since Muybridge was first and foremost an artist/photographer.

All three are in print and available from on-line booksellers and in many libraries:

Prodger, Phillip. *Time Stands Still; Muybridge and the Instantaneous Photography Movement*. Oxford Univ. Press, 2003.

Braun, Marta. *Picturing Time*. Univ. of Chicago Press, 1992.

Dagognet, Francois. *Etienne-Jules Marey: A Passion for the Trace*. MIT Press, 1992.





# Education Committee

Steve McCaw

Driving home from hockey one late night last February, in addition to getting razzed for my wayward passes, dubious playmaking strategies and less than cannonading slapshot, my two teammates who carpool the 80 mile roundtrip trek from Normal to Pekin every Sunday night asked me about the ASB Executive Board held the previous weekend in Boulder (I think they noticed my absence because our team won). My traveling companions, who know me mostly for my ability to give up the puck and a fondness for an obscure radio station playing esoteric music (try wwhp.com, you might like it) when it is my turn to drive, were intrigued to think that I actually hung around with "real scientists." Arriving early in Boulder for the meeting, I had been given a tour of the Human Physiology Labs and current research projects at the University of Colorado (special thanks to Dr. Evangelos Christos and Dr. Roger Enoka for their hospitality), and was later updated on the research projects of fellow Executive Board members. These I described to my teammates, both of whom work in the insurance companies that dominate the Normal economy. It reminded me, riding home in the dark and listening to their envious comments regarding the dynamic environment in which I get to work, of how grateful I should be for the teaching, research and service opportunities available to me as a biomechanist. If you ever get the doldrums regarding your career choice, compare it to most alternatives and you will soon regain an appreciation of your niche in life.

## ASB Graduate Student Grant-in-Aid Program

The Grant-in-Aid program makes available to graduate students money to support research endeavors conducted as part of a degree program. In January, thirteen applications were received and sent for review by the education committee (Becky Zifchock (student member), Irene Davis, Loren Maletsky and Jeanie McCrory). ASB is pleased to announce funding to the following five applicants (titles in parentheses): Cort J. Cieminski, University of Minnesota (Factors affecting range of motion of the shoulder during internal rotation); Rachael Crabb, University of Minnesota (Macroscopic biomechanical and optical properties of the stromal equivalent); Stephanie J. Crenshaw, University of Delaware (Gait variability and stability of people with multiple sclerosis); Christopher J. Hasson, University of Massachusetts (Coordination of mono- and biarticular muscles in the learning of a novel force-directing task); Staci M. Stevens, University of Toledo (Knee extensor torque and muscle fatigue following ACL injury). The society looks forward to seeing results of the funded projects presented at the ASB meeting in 2006. The next submission deadline is January 15, 2006. Watch the ASB website and the fall newsletter for details on next years Grant in Aid program.

## Important update on ASB Student Travel Awards

In the past, ASB student travel funds were awarded to individual students attending the annual meeting. The available funds were

divided up among the successful applicants, with 28 students receiving awards for Portland. However, with the recently adopted policy of ASB to subsidize registration costs for *all* students attending the annual meeting, it was decided by the Executive Board to incorporate the funds previously allocated to the student travel awards into the pool of money used to reduce student registration costs (including Cleveland - see page 5).

## ASB Mentor program in Cleveland

Following the initiative of former ASB president Joan Bechtold and former ASB student representative Max Kurz, a mentor program was instituted at the Portland ASB meeting. This program allows a student member of ASB to be linked with a mentor who is a full member of the society during the meeting. The intent is that the student and mentor will meet on several occasions, providing the student with the opportunity to get sage advice regarding all aspects of a career in biomechanics. The success of the program in Portland (35 mentor pairs established) was such that the program will be tried again in Cleveland. The majority of participants enjoyed the program, and I encourage all students to take advantage of the opportunity this program offers, and encourage all ASB members to volunteer to serve as a mentor. Student representative Melissa Scott-Pandorf will coordinate the program; additional details are available in her column and at the ASB website.

## Tutorials/Workshops at future ASB meetings

Since this year's meeting will be held in conjunction with ISB, and the ISB organizers are responsible for tutorials, the education committee has not had to arrange tutorials for 2005. It is not too early to plan, however, and so I welcome your submission of names and/or topics of potential tutorials for 2006, and remind you that if your idea is adopted you will receive a complimentary registration for the 2006 meeting.

## On-line Evaluation of the 2004 Portland ASB meeting

For the first time, the evaluation of the annual meeting was conducted all on-line. In spite of a few glitches, over 100 evaluations were received. In general, attendees were happy with all aspects of the meeting, with the most-frequently reported complaint the need for increased availability of drinking water throughout the venue and more vegetarian meals. And if that is all attendees have to complain about, we can consider the 2004 meeting a great success. The tutorials by Rick Lieber and Walter Herzog were highly praised, and the majority of attendees were very satisfied with the keynote speakers and sessions focused on their area of specialty. It must be remembered that MEMBERS are responsible for the quality and quantity of presentations in their area, not the organizers of a meeting or the ASB. If you want to see more oral or poster presentations, encourage your colleagues to submit to and attend the meeting. The ASB supports all disciplines with keynote speakers and specialized awards, so it is up to the membership to ensure that the program is of the highest quality.

Regarding the abstract review process, the general consensus of the evaluation respondents was that since meetings provide an opportunity for discussion and interaction, conference organizers should err on the side of letting in too many rather than too few



presentations. This point is directly related to the quality of the science that will be available at the annual meeting, and I welcome your comments and opinions of the review/acceptance policy of the ASB. All comments at any time are appreciated and are passed on to the organizers of future meetings, so we do not expect that the Cleveland meeting will be marred by irate, dehydrated vegetarians demonstrating during the poster sessions.

### Happy Update: Regional Student Meetings

The interest in hosting the popular regional student meetings continues to grow. In addition to the November 2004 meeting in Minnesota and the California meeting in April, the ASB is pleased to provide support for the 1<sup>st</sup> Northwest Biomechanics Students Symposium, which was held at the University of Washington, Seattle on May 13-14, 2005. If you are interested in hosting an ASB supported Regional Student Meeting, see the application details at the ASB website or contact me directly. The ASB has limits on funding available for any one regional meeting, but is committed to providing as much support as feasible. The format of a student meeting is whatever will work. There are no deadlines for applications, so don't worry about missing one. Host one, you'll like it.

“...we do not expect that the Cleveland meeting will be marred by irate, dehydrated vegetarians demonstrating during the poster sessions.”

### Topical Section: Enhancing your Presentation

As this is being written, the organizers of the Cleveland meeting are distributing the abstract review decisions. Those with accepted abstracts will be formulating their presentations. While there are many spots on the web that provide guidelines for “successful presentations” (search “presentation hints”), let me use this opportunity to emphasize three hints that, if adhered to, will enhance at least my personal experience at a meeting.

1) Use slide colors that actually provide a contrast when your presentation *is printed or projected* (note the italics). What looks good on the 19 inch screen in your office often bleaches out when

projected to 20 feet high by 30 feet wide. While this might be useful if the lines on your graphs don't show the magnitude of difference between conditions you had hoped for, allowing you to use a laser pointer to bamboozle the crowd with freehand renditions of the data lines, it is matched in attendee annoyance level by few other presentation faux pas.

2) Avoid having to apologize for a complicated slide. If your first impulse, as the presenter, is to say “This slide is a little complicated, let me lead you through it”, the slide *is* too complicated and needs to be made less complicated so that attendees will actually get something from it. This error is aggravated when the presenter only points out part of the information on the slide, whether the slides contains a figure with too many unnecessary bars and/or lines, or, one of the most annoying presentation errors of all, a vast matrix of values listed in an incomprehensible table or tables. The adage that “a picture is worth a thousand words” does not mean that “a thousand pictures are worth a million words”.

3) Poster presentations should not include an entire written manuscript. Watch attendees at the poster sessions. They walk through the aisles, reading the titles and quickly skimming through the content of the poster. If the poster is of interest, a viewer will stop and read more thoroughly. The great utility of a poster session is the opportunity it provides for interaction between the presenter and the interested reader. To me, the conversations provoked by the poster are as, or more, valuable than the content of the poster. Provide only the most critical aspects of the background to the problem and the methods; details can be filled in during conversation. Clearly presented results, with graphs preferred to tables and bulleted lists highlighting the key points, should be legible from at least 10 feet away. The discussion and implications should also be presented as short sentence bullets. Reduced content posters will probably increase the amount of discussion provoked with attendees.

Nothing like a little rant on a cool and cloudy supposedly spring day. I feel better already. See you in Cleveland. Bring a colleague and a student.



# 5th World Congress of Biomechanics

Munich, Germany - July 29<sup>th</sup>-August 4<sup>th</sup> 2006

Incorporating

The 31<sup>st</sup> Congress of the Société de Biomécanique

The 15<sup>th</sup> European Society of Biomechanics

First Call for Papers

The Scientific Organizing Committee of the 5th World Congress of Biomechanics is seeking original research and application papers in the following areas:

## **Bone mechanics**

- Bone healing
- Bone as an organ
- Bone remodeling
- Bone tissue
- Osteointegration
- Osteoporosis

## **Musculoskeletal mechanics**

- Cartilage
- Disc
- Muscle mechanics
- Tendons and ligaments
- Tissue adaptation and remodeling

## **Musculoskeletal systems and performance**

- Gait analysis
- Joints - *Hip, Knee, Upper extremity*
- Locomotion and falls-  
mechanisms, injuries and interventions
- Neuromuscular control
- Spine mechanics

## **Implants for trauma and orthopedics**

- Hip endoprosthetics
- Knee endoprosthetics
- Wear
- Shoulder endoprosthetics
- Trauma implants
- Implantable telemetry

## **Occupational and impact biomechanics**

- Impact injury biomechanics
- Vehicular biomechanics-safety, impact,  
vehicular guidance
- Ergonomics
- Spine kinematics
- Low back pain
- Occupational disorders, repetitive strain injury
- Rehabilitation mechanics

## **Sport biomechanics**

## **Dental mechanics**

- Bone implant interaction phenomena
- Bone and periodontal ligament

Dental implant mechanics

Dental materials reliability

Image processing and computer-aided presurgical  
analysis

Mechanics and mechanobiology in orthodontics

Dental device manufacturing and biomechanical reliability

Numerical modelling in dental biomechanics

Experimental testing in dental biomechanics

## **Computational Biomechanics**

### **Computer-assisted surgery**

- Navigation in orthopaedic surgery
- Navigation in neurosurgery
- Robotic systems
- Vascular surgery
- Surgical technologies

### **Tissue engineering**

- Tissue and cell mechanobiology
- Bone tissue engineering
- Cartilage and ligament tissue engineering
- Engineered vascularized organs
- Large vessel tissue and cardiac valve engineering and  
vascular elasticity
- Platform technologies in tissue engineering

### **Cellular and molecular mechanics**

- Cell mechanics
- Cytoskeletal and membrane rheology
- Cell migration and molecular motor-  
Mechanotransduction
- Molecular biomechanics
- DNA and protein mechanics*
- Microstructural modelling of cells

### **Artificial organs**

- Artificial kidney and dialysis
- Artificial heart devices
- Artificial circulatory assist devices
- Artificial liver
- Artificial lungs and pulmonary assistance

### **Biomaterials**

- Characterization of biomaterials
- Endovascular materials

### **Respiratory mechanics**

- Airway liquid dynamics
- Parenchymal and whole lung mechanics
- Flow through compliant airways
- Pulmonary cell mechanics
- Whole lung function measurement and control

### **Cardiovascular mechanics**

- Cardiac mechanics and biology
- Cardiovascular function and control
- Tissue adaptation and remodelling
- Coronary circulation

Arterial or large vessel fluid mechanics  
Heart valves and prostheses  
Vascular wall elasticity  
Mechanobiology of vascular walls and cells  
Vascular implants and devices  
Computational modelling  
Flow measurement and imaging  
Cardiovascular disease

#### **Microcirculation and Biorheology**

Cell-vascular wall interactions and cell adhesion  
Blood rheology  
Angiogenesis  
Glycocalix  
Microvascular fluid mechanics

#### **Biomechanics in nature**

Bionics  
Swimming and flying  
Micro organisms  
Plant biomechanics  
Terrestrial locomotion

#### **Brain and neural mechanics**

Cerebral aneurysms  
Panta Rei  
Imaging  
Cerebro-spinal fluid

#### **General biomechanics**

Bioheat transfer  
Biological mass transport

Clean room technology  
Flow-structure interactions  
Geriatric mechanics  
Micro-fluidic devices  
Paediatric mechanics  
Biomechanics of miscellaneous organs  
Soft tissues  
Reproductive systems  
Eyes  
Ears  
Skin  
Urinary tract

The conference language will be English. Submissions to the Congress will be electronic and should consist of an extended two page abstract.

At least one author of each accepted paper must register for and present the work at the Congress.

For more information please consult the Congress website at [www.wcb2006.org](http://www.wcb2006.org)

#### **Important Dates**

Abstract Submission Deadline	January 30 <sup>th</sup> , 2006
Notification of Acceptance	March 15 <sup>th</sup> 2006
Early registration Deadline	May 1 <sup>st</sup> 2006
Congress Dates	July 29 <sup>th</sup> -August 4, 2006

# VICON**PEAK**

For both video and digital optical  
movement analysis - Vicon Peak.

We will be attending ISB/ASB on 31 July – 5 Aug 2005  
in Cleveland, Ohio, USA. We look forward to seeing you  
there. California: (949) 472 9140, Colorado: (303) 799 8686,  
UK: +44 (0) 1865 261800, Web: [www.viconpeak.com](http://www.viconpeak.com)



# Membership Committee

Julianne Abendroth-Smith

Greetings from the Pacific Northwest, though that may be a common greeting this newsletter, since a few of the Executive Board are from out this way. As Membership Chair, I thought I would take the time to review our process for membership. We ask that potential members apply for acceptance, because we stand by the philosophy that we are a research – based Society, and we want members who actively participate in our group. Recent research publications, proceedings, abstracts, meeting presentations, and meeting attendance are things we look for on the applications.

We are working this year on speeding up the process for former student members to become regular members, but it still is slower than I would like. Currently, all potential member applications are mailed out, four to five times a year, to the membership committee, who review the applicants, and then vote yea or nay. It is a time consuming process for all. However, I appreciate the time my committee has given to me and the Society.

Membership committee members currently include Lena Ting, Andrew Mahar, Christopher Hess, and Max Kurz. The committee (that has served since before I first came on as Chair) has now finished their three year commitment. I thank them for their diligence, patience, and time they gave to help out. These members included Darryl Thelen, Kevin Granata, and Dan Ferris. Andrew Mahar joined on the committee a year later, and so will stay another year.

On that note, we all thank you for your patience in the process as well. Many members or members-to-be are unaware of the fact that we are a volunteer driven organization. We elect and appoint positions on the Executive Board, but all of us who serve on the Board volunteer our time and efforts. All of us have “full time day jobs”, and none of us are paid. This of course, serves to keep our costs low, such as our membership dues, and student costs for conferences. However, in this day and age of instant messaging, we forget that everyone is busy with their jobs as well as ASB duties. So if we do not respond to you within a day, please be patient.

Questions about becoming a member should be addressed to me. Once you are a member, fees and most questions are directed to the Secretary/Treasurer, Don Anderson. He is the keeper of current memberships. If you have been inactive for more than 2-3 years, and wish to rejoin, then that gets sent back to me, and I usually ask for an updated CV. If you still meet our criteria, you skip the committee review and we welcome you back with open arms. If I have any questions, I send them out to my committee for confirmation. That is the process in a nutshell.

We look forward to seeing many of you at our joint meeting this summer in Cleveland, with ISB. I always like matching up all the

names that come across my desk, with actual faces! Remember, if you are interested in serving on any of the committees, or on the Executive Board itself, plan on attending the ASB business meeting. It is the best way to become involved. We may be a research-based Society, but we are also one of the friendliest and most fun Societies I have ever been associated with. Come and see!

## Past President

Walter Herzog

As the past-president, I am chairing the awards committee and the nominating committee. Below I would like to briefly update you on these two activities.

**Awards Committee:** The purpose of the awards committee is to select the finalists and winners for the various awards that are given on an annual basis to individuals at the ASB conference. These awards can be grouped broadly into two categories: Awards given to specific people who were nominated by their peers or supervisors, and awards based on the abstract submission. The former awards include the Borelli Award, the Jim Hay Memorial Award, and the Pre- and Post-Doctoral Young Scientist Awards. The latter awards include the Journal of Biomechanics, the Clinical Biomechanics and the Microstrain Award.

The awards committee has reviewed all applications for the nominated awards and the winners are given below. We have not yet received the abstracts from the ASB/ISB organizers; therefore the abstract-dependent award winners could not be selected. The recipients for the nominated awards are:

Borelli Award:

Dr. Kai An (Mayo Clinic, Rochester)

Jim Hay Memorial Award:

Dr. Mont Hubbard (University of California, Davis)

Pre-doctoral award:

Kate Holzbaur (Stanford University)

Post-doctoral award:

Stefan Duma (Virginia Tech)

Congratulations to all the winners. I would like to acknowledge the awards committee members for all their help in the selection process. These included: Ted Gross, Trey Crisco, James Ashton-Miller, Joan Bechtold, Julianne Abendroth-Smith, and Mark Grabiner.

**Nominating Committee:** The purpose of the nominating committee is to select and propose to the membership candidates for specific positions on the ASB executive board. This year, we were asking the membership to propose people for president-elect and for program chair elect. Five candidates were nominated for each position, and after I contacted all candidates and made sure they were willing to let their name stand, the nominating committee selected two candidates for each position. The membership now



will vote which of the two candidates they would like to see as the president elect and program chair elect. Here are the candidates:

President elect:

Dr. Kenton Kaufman (Mayo Clinic, Rochester)  
Dr. Steve McCaw (Illinois State University)

Program chair elect:

Dr. John Chow (University of Florida, Gainesville)  
Dr. Francisco Valero-Cuevas (Cornell University)

On the next page, you will find short biographies for all the candidates. Please review them carefully and then do not forget to vote. I would like to acknowledge the elected members of the nominating committee who helped to get through the nominating process efficiently, Tom Brown and Bob Gregor.

## **Southern California Meeting**

### **Guillermo Noffal**

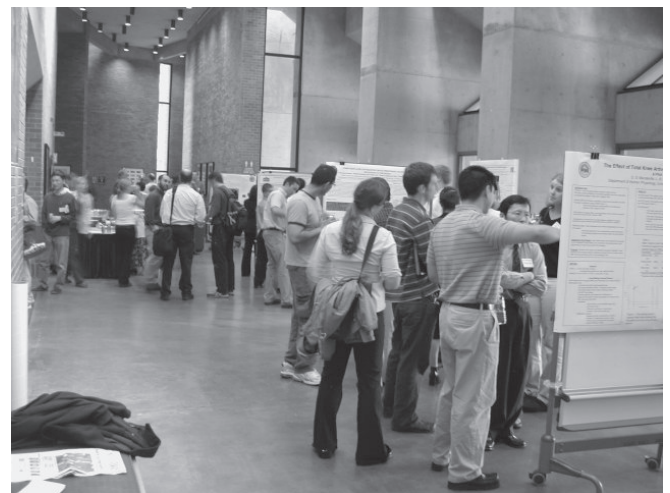
The 2005 Southern California Conference on Biomechanics (SCCB) was held April 22-23, 2005 at California State University, Fullerton. 129 individuals attended the conference and heard eighteen presentations by master's and doctorate students representing six laboratories from four universities. Abbie Ferris from California State University, Pomona received the outstanding master's student presentation award for her research, "Ground reaction forces of the equine forelimb during landing". Richard Souza and Shruti Arya, both from the Musculoskeletal Biomechanics Research Laboratory at the University of Southern California were co-recipients of the award for the outstanding doctorate student presentation. Richard's research was titled, "The relationship between femoral anteversion and frontal and transverse plane femoral segment kinematics and hip joint kinetics during a step down maneuver" and Shruti presented on the "Relationship between achilles tendon stiffness and lower limb inter-segmental stiffness in an individual with achilles tendinosis". In addition to the student presentations, the conference was highlighted by two keynote addresses. On April 22, Dr. George Salem from the Musculoskeletal Biomechanics Research Laboratory at the University of Southern California presented the SCCB Keynote Address, "Preserving physical function: biomechanics-based intervention". On April 23, Dr. Joseph Hamill from the School of Public Health and Health Sciences at the University of Massachusetts Amherst gave the ASB Keynote Address, "Biomechanics of Athletic Footwear". The abstracts from the student presentations can be read at the conference web site: <http://hdcs.fullerton.edu/knes/sccbio/default.htm>.

On behalf of the organizing and program committee members for the SCCB, we thank the ASB for its generous support of regional student conferences.

## **Northwest Student Meeting**

**David Nuckley**

Student learning, collaboration, and biomechanics research advancement took center stage at the first ASB Northwest Biomechanics Symposium, held May 13-14, 2005 in Seattle. The recent growth in biomechanics in the Northwest was underscored by 91 participants from 14 different academic institutions and industry gathering for a student centered meeting. The symposium, hosted by University of Washington, was marked by 20 podium presentations covering topics ranging from gait changes resulting from concussion to material properties of the spinal cord. Additionally, 11 students presented posters of their research in progress. Anchoring the symposium and inspiring us all was the ASB Keynote Address delivered by the 2005 Borelli Award winner, Dr. Kai-Nan An from the Mayo Clinic. Dr. An's presentation describing the history and future of medical imaging in orthopedic biomechanics engaged the community and stimulated an excellent exchange of ideas. Students, faculty, and industry engineers shared their experiences and ideas in small group discussions following each of the five student presentation sessions. These small group discussions facilitated collaboration, knowledge transfer, and student learning. The first Northwest Biomechanics Symposium Outstanding Student Award was presented to Ms. Eno Yliniemi for her research on "Dynamic Tensile Testing of the Human Cervical Spine." This symposium was possible because of a significant contribution from the American Society for Biomechanics and information about the meeting can be found at <http://depts.washington.edu/nwbs>.



Students and faculty members exchanging ideas in Kane Hall at the University of Washington

# NOMINATIONS FOR OFFICE IN THE ASB

Here are the biographical sketches provided by the candidates nominated to run. Please consider these sketches carefully as you vote. It is very important that the membership of our society take an active role in determining who will fill these positions. In early June, you should receive voting instructions by e-mail. Please remember to VOTE AT THAT TIME. We will announce the results at the annual meeting in Cleveland. If you do not receive an e-mail, please contact Don Anderson (contact information on page 3).

## Candidates for Program Chair-Elect

### **John W. Chow, Ph.D.**

John Chow received his B.S. in Physical Education from Springfield College (in Massachusetts) and both of his master's and Ph.D. degrees in Exercise Science from the University of Iowa. He is currently an Associate Professor and the director of the Biomechanics Laboratory in the Department of Applied Physiology and Kinesiology, University of Florida. Over the years, John has made contributions to the field of biomechanics in cinematographic/videographic techniques, musculoskeletal modeling, and performance characteristics of selected tennis strokes and wheelchair sports. In the last few years, he has expanded his research interests to include injury-related and multi-disciplinary research. His long-term goal is to apply the method of musculoskeletal modeling and principles of mechanics to address practical issues such as functional improvement, performance enhancement, and injury prevention in the field of exercise/sports medicine and geriatric mobility. Specifically, he is interested in the effect of corrective/enhancement interventions on biomechanical characteristics during various functional activities. As secondary research interests, he still involves in research related to wheelchair propulsion and mechanics of tennis strokes. His current research projects are funded by the NIH, UF Opportunity Fund, and US Tennis Association. In addition to research endeavors, he has led a NSF-funded project to develop web-based laboratory modules for biomechanics and movement coordination in the last few years ([www.rimas.net](http://www.rimas.net)). John is a fellow of the American College of Sports Medicine and currently serves on the Board of Directors of the International Society of Biomechanics in Sports. He has published over 30 peer review articles and book chapters. He presented at 11 ASB/NACOB meetings since 1990 and served as an abstract reviewer for the ASB meetings in 2000 and 2004. If elected program chair, he will make every effort to maintain a balance in programming among different disciplines of the Society. He will be open to suggestions on how to improve/enhance the program of the annual meeting.

### **Francisco J Valero-Cuevas, Ph.D.**

Francisco J Valero-Cuevas is an Assistant Professor in the Sibley School of Mechanical and Aerospace Engineering at Cornell University where he is director of the Neuromuscular Biomechanics Laboratory and Co-PI of the IGERT Program on Nonlinear Systems. He received a BS in Engineering from Swarthmore College in Swarthmore, PA, an MS in Mechanical Engineering from Queen's University in Kingston, Ontario, and a PhD in Mechanical Engineering from Stanford University. Dr. Valero-Cuevas' research interests are focused on basic science and clinical studies of human manipulation at the interface of neuroscience, engineering, mathematics and robotics. His current projects include the clinical evaluation of manipulation, sensorimotor control strategies for dexterous function, predictive models of complex anatomical systems, and cortical activity for hand function. Dr. Valero-Cuevas is a member of biomechanics (ISB and ASB), neuroscience (SFN and NCM) and engineering (IEEE EMBS and ASME) societies. He has been elected to the Sigma Xi Scientific Research Society, elected as a Faculty Mentor by the Sloan Foundation, is a Fellow of the Thomas J Watson Foundation, and honored with the Post-doctoral Young Scientist Award from ASB, the CAREER award from NSF, and a Research Fellowship from the Alexander von Humboldt Foundation. He serves as Associate Editor for the IEEE Transactions on Biomedical Engineering, and is *ad hoc* reviewer for numerous journals, including the *Journal of Biomechanics*. His objective as program chair is to bring into focus the usefulness of current computational methods to biomechanics research, and to highlight the critical role biomechanics needs to play in a cross-scales integration of systems neuroscience with orthopedic biomechanics and tissue engineering.

# Candidates for President-Elect

## Kent Kaufman, Ph.D.

Hello, I'm Ken Kaufman. I currently work as the Director of the Biomechanics Laboratory, Professor of Biomedical Engineering, and Consultant in the Departments of Orthopedic Surgery, Physiology and Biomedical Engineering at the Mayo Clinic. I am also a registered professional engineer. I earned my Ph.D. degree in biomechanical engineering in 1988 as a combined program from North Dakota State University and Mayo Clinic. My research focuses on the biomechanics of human movement. I am funded by two grants from NIH. One is focused on developing a technique to measure muscle force in-vivo. This is done in collaboration with Dr. Rick Lieber at UC-San Diego. The other grant assesses the use of aerobic exercise for treatment of early stages of osteoarthritis. Previously, I have conducted research to decrease overuse injuries in military recruits and developed the combat boots currently used by the U.S. Marine Corps. I have published over 80 scientific articles, 25 book chapters, and hold 4 patents. I have been fortunate to receive several awards including the Excellence in Research Award in 1989 and the O'Donoghue Sports Injury Research Award in 1993 from the American Orthopedic Society for Sports Medicine, the Clinical Research Award from the American Academy of Orthopedic Surgeons in 1996, and Best Scientific Paper Awards from the Gait and Clinical Movement Analysis Society in 1999 and 2002. My work has also been cited in the Washington Post, Preventive Medicine, Men's Health, and WebMD. I was elected as a Fellow in the American Institute for Medical and Biological Engineering in 2002. I have served our profession in a number of ways. I am on the editorial boards of Gait and Posture and the Journal of Applied Biomechanics. I have served as a grant reviewer for NIH since 1993 as well as for NIDRR, CDC and the VA. I was on the Working Group on Injury Prevention of the Armed Forces Epidemiological Board from 1994-95, the Expert Panel on Conditioning Exercises for Naval Special Warfare Personnel in 1994, the Expert Panel on the Evaluation of the United States Marine Corps (USMC) Recruit Training Program in 1994, and the Expert Panel for Microprocessor-Controlled Knee Prostheses at Walter Reed Army Medical Center in 2003. I attended my first ASB meeting in 1989, when I won the Young Investigator Award and have been active in the society since then. I served on the Graduate Student Grant-in-Aid Committee from 1998 to 2000 and then served on the Awards Committee in 2001. Most recently, I Co-Chaired the 1<sup>st</sup> Upper Midwest Student Regional Meeting in Minneapolis, MN. I strongly believe that nurturing students to attend and present at the ASB meeting is the key to future growth of the society. There needs to be continued support for the regional meetings to achieve this goal. I treasure the interdisciplinary nature of the society and enjoy learning about the unique applications of biomechanics at our annual meeting. If elected President, I would be able to bring experience to the position, since I have previously served as the President of the Gait and Clinical Movement Analysis Society from 2001-2002.

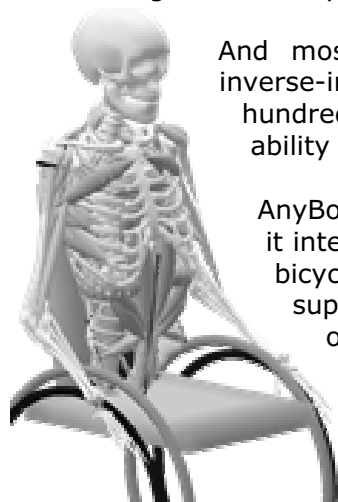
## Steve McCaw, Ph.D.

I am a professor in the School of Kinesiology and Recreation at Illinois State University, the only job I have held since earning my doctorate from the University of Oregon in 1989. My undergraduate degree is in Physical and Health Education from Lakehead University, Thunder Bay, Canada, and my masters degree is in Biomechanics from McGill University in Montreal, Canada. I teach 6-9 hours per semester at ISU, and serve as the Graduate Program Coordinator for our 85 graduate students. My research program is modest compared to many in ASB, and includes publications in the *Journal of Biomechanics*, *Medicine and Science in Sports and Exercise*, *Research Quarterly*, and *Journal of Strength and Conditioning Research*. Instrumentation used in my research was funded through the National Science Foundation *Instrumentation and Laboratory Improvement Program*, and regular funding from the Illinois Association for Health, Physical Education, Recreation and Dance allows for laboratory support of undergraduate and graduate students through stipends and conference travel. I have served as chair on over 30 masters theses at ISU, and am extremely proud that four of these students have gone on to pursue doctoral degrees. My service leadership is extensive, including an Associate Editor role with *Medicine and Science in Sports and Exercise*, the Executive Board of the Biomechanics Interest Group of the American College of Sports Medicine, and, most relevant to my qualifications to serve as ASB president, three years as the Education Committee Chair of ASB. In this latter role, I worked with the Executive Board to reinvigorate the Grant in Aid (GIA) program and to increase the number of Student Research Meetings supported by ASB. As chair, I have worked with outstanding ASB student representatives to introduce the mentoring program at the annual ASB meeting, enhance the student luncheon, and to ensure the ASB meeting provides the "most bang for the lowest buck" of all professional biomechanics meetings by minimizing student registration costs. My objective if elected president is to continue working to make ASB the society of choice for biomechanists. This would include further enhancing the student experience to develop loyalty to the society, and working to maintain the strength of ASB through its diverse membership and the availability of interdisciplinary offerings.

# ANYBODY

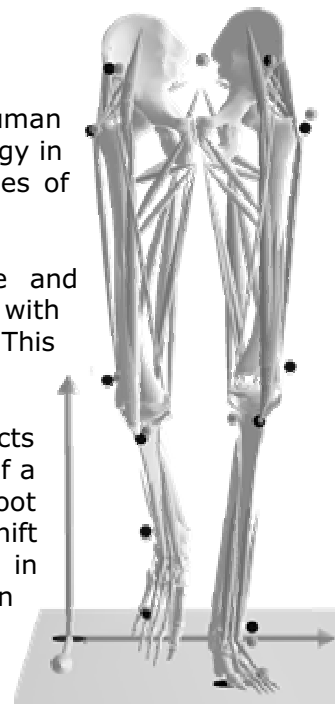
## TECHNOLOGY

AnyBody is a software system for modeling the mechanics of the human body. It computes forces in individual muscles, joint forces, elastic energy in tendons, antagonistic muscle actions, and many other useful properties of the working human body.



And most important of all: Using standard inverse and inverse-inverse dynamics AnyBody can handle models with hundreds of muscles on ordinary personal computers. This ability alone makes AnyBody unique.

AnyBody models not just the body, but also the objects it interfaces to; the seat and the crank mechanism of a bicycle, the floor during gait, the backrest and foot support of a chair, the steering wheel and gearshift of a car. With AnyBody, you can investigate in detail the ergonomic consequences of design parameters.



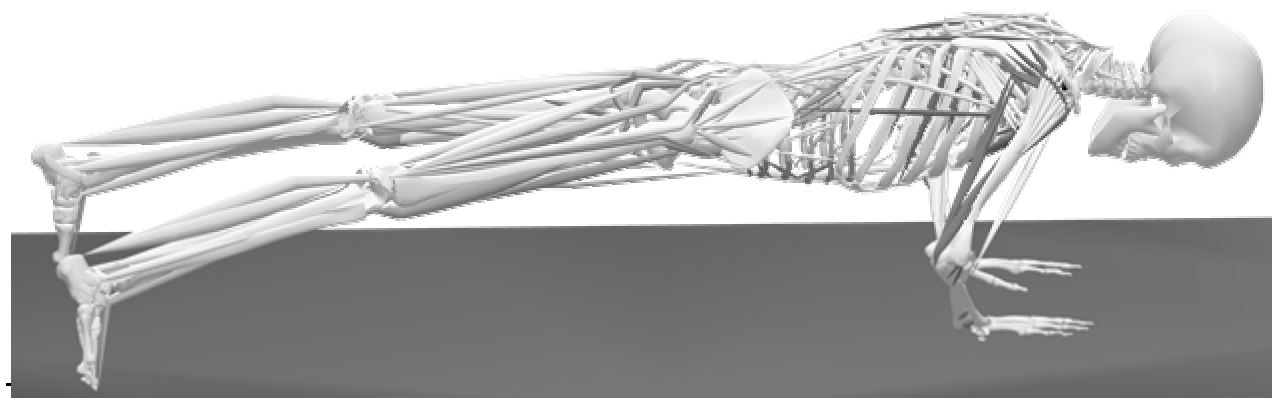
Free demo licenses are available.

Demo licenses have full functionality but a limited duration.

### Join our free web casts:

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- June 21, 2005: Gait Modeling

For more information, please visit [www.anybodytech.com](http://www.anybodytech.com) or email [anybody@anybodytech.com](mailto:anybody@anybodytech.com).



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# These Go to Eleven

Andy Karduna

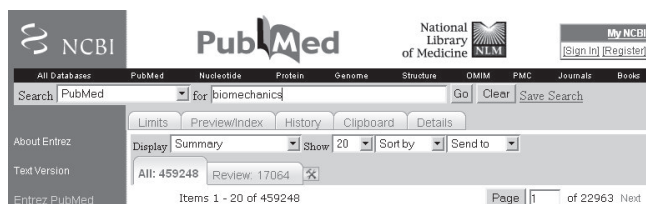
Got Biomechanics?

What is the best way to get information about biomechanics? For most of us, the answer is probably from colleagues, books, journal articles, classes and the like. However, what about the rest of the world? I suspect that an increasingly large percentage use the internet. That's probably the first place I would probably go if I wanted to find out something about a topic new to me. So what does that get you? Type biomechanics into Google and you end up with about 1.6 millions hits. There it is, right there on your computer screen, everything biomechanics – journals, books, companies, jobs, classes, research labs, conferences, degree programs, societies and of course, the ubiquitous sponsored link to eBay. You can find information on traditional biomechanics disciplines, as well as some less traditional ones, such as hoof biomechanics, plant biomechanics, silk biomechanics, soil biomechanics, cockroach biomechanics, dinosaur biomechanics, fossil biomechanics and even theatre biomechanics.

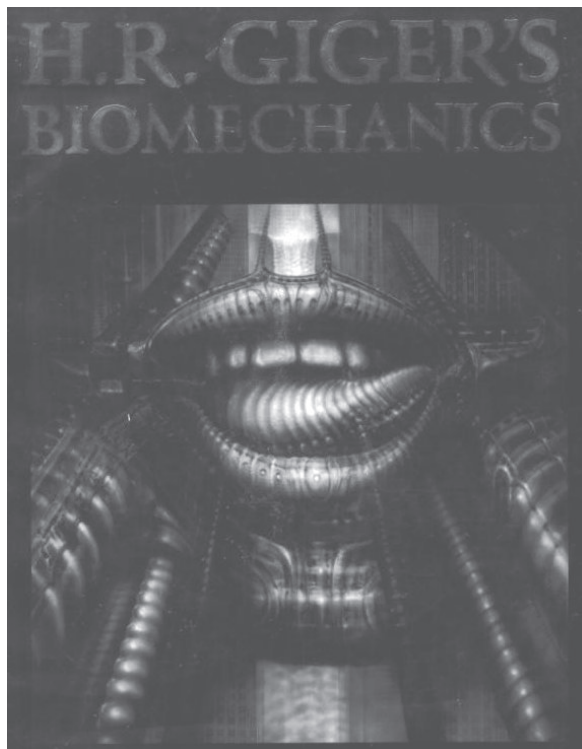


Certainly, this much information would give a person a reasonable approximation of what the field of biomechanics is all about. But is good information? I was actually surprised to find out that many of these pages contain links to university research laboratories. So maybe despite the concerns of our campus librarians, searches like Google might actually be a good starting place for getting information.

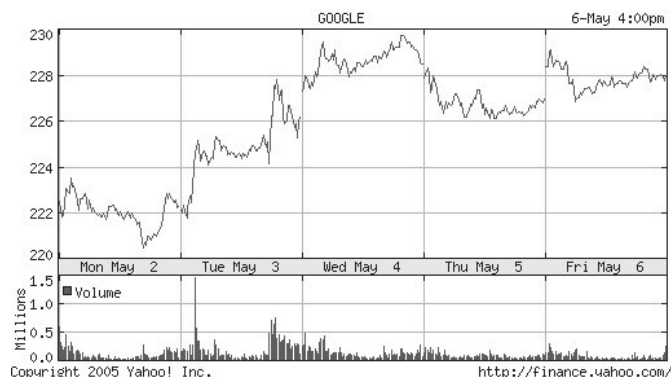
Another place to go would be peer review publications, arguably the most accurate information on biomechanics. So we can cruise on over to NIH's free PubMed site, type in biomechanics, and be rewarded with over 450,000 articles. Unfortunately, if you are not affiliated with a university that has on-line subscriptions to these journals, you probably have access to less than 10% of these articles from your computer. So unless you are interested in a trip to the local biomedical library, your information is quite limited. (Even for some of us at research universities, our on-line access is quite limited, but that is a topic for another day.)



What's next? You can always go to Amazon.com and order one of the 536 books that result from a search of biomechanics. With the exception of texts like HR Giger's Biomechanics, most of what comes up are textbooks that we would use in our classes. So this is actually a pretty good option, if you are willing to spend the money and take the time to read the material (a problem that I have with my own students). Another approach would be to use one of the many on-line medical sites, like WebMD or medicineNet.com, where there is some information, but not much.



So maybe Google is the best place to send someone if they want to find out a little more about biomechanics. And just in case anyone is interested, Google is currently trading at \$228 a share.



## Y-ROBOTS Award

Savio L-Y Woo

The International Centre of Orthopaedic Research, Education and Treatment (I.C.O.R.E.T.) is pleased to announce a special award for young researchers of orthopaedics, biomechanics/biology, operative techniques, and sports – the **Y-ROBOTS Award**. Manuscripts in the areas of orthopaedic biomechanics, orthopaedic biology, operative techniques in orthopaedics or sports medicine are being accepted for consideration of this outstanding research award. The first author must be less than 40 years or within no more than 8 years after his/her last academic degree (Ph.D. or M.D.) at the time of submission.

All applications will be reviewed and up to **ten (10)** finalists will be selected and invited for presentation at the 9<sup>th</sup> International Conference on Orthopaedics, Biomechanics, Sports Rehabilitation in Assisi/Perugia, Italy, between 11-13 November 2005. The winner of the Y-ROBOTS Award will be selected following the presentations by the finalists.

The award consists of a cash prize of 5.000,00 Euro, an award certificate and consideration for publication in *Knee Surgery, Sports Traumatology, Arthroscopy* after the peer review process. The deadline for receipt of manuscripts will be **October 1, 2005**. Six (6) copies of the completed application and manuscript should be submitted to:

Savio L-Y. Woo, Ph.D.  
c/o Let People Move  
Via G.G. Pontani, 9  
06128 Perugia – Italy  
Phone: 011-39-075-500-3956  
Fax: 011-39-075-501-0921  
Email: letpeoplemove@tin.it  
Website: www.letpeoplemove.com

The Members of the Award Committee are Savio L-Y. Woo, Ph.D. (Chair), Giuliano Cerulli, M.D., Mario LaMontagne, Ph.D., Ejnar Eriksson, M.D., Ph.D. and Ronny Lorentzon, M.D.

Please note that submissions, including papers, photographs, illustrations, etc. submitted will not be returned unless a self-address stamped envelope is included. In addition, members of the research groups of the Award Committee are **not** eligible. We look forward to receiving your applications.



## Commercial Members

Commercial membership categories are aimed at encouraging affiliation by commercial organizations that market products which are used by the biomechanics research community, or companies that are otherwise engaged in activities that fall within the Society's general interest areas. Based on the level of financial support required and upon benefits provided, commercial membership categories in decreasing order are Sustaining Member, Supporting Member, Contributing Member, and Corporate Member. Companies wishing to become a Commercial Member are encouraged to contact Julianne Abendroth-Smith, Membership Committee Chairperson. The ASB Executive Board is pleased to recognize:

### CORPORATE MEMBERS

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## Jobs Postings

### RESEARCH FELLOW – DEPT OF MECHANICAL ENGINEERING, UNIVERSITY OF MELBOURNE

The Department of Mechanical Engineering at The University of Melbourne has an immediate opening for a Research Fellow in the area of Computational Biomechanics. The appointee will have a PhD in mechanical engineering, biomedical engineering, or a related field, and will carry out research on advanced computational modeling and simulation of human gait. The position is part of a new Center of Excellence in Clinical Gait Analysis based in Melbourne, and it represents an excellent opportunity to apply state-of-the-art techniques in computational modeling to clinical problems related to gait. The successful candidate must be able to demonstrate knowledge and experience in the areas of dynamic systems, control theory, and numerical modelling and simulation. Experience in Fortran, C, and Matlab programming is highly desirable. Excellent oral and written communication skills are required. Salary and benefits are commensurate with experience. Please forward applications to Ms. Dillan Golightly c/o Professor Marcus Pandy, Department of Mechanical and Manufacturing Engineering, The University of Melbourne, Victoria 3010, AUSTRALIA or by email to dillang@unimelb.edu.au

# Calendar of Events

William Ledoux

## **Meeting of the American College of Sports Medicine**

June 1 - 4, 2005, Nashville, Tennessee

Abstract deadline - past

[www.acsm.org/meetings/annualmeeting.htm](http://www.acsm.org/meetings/annualmeeting.htm)

## **Summer Bioengineering Conference**

June 22 - 26, 2005, Vail, Colorado

Abstract deadline - past

[divisions.asme.org/bed/events/summer05.html](http://divisions.asme.org/bed/events/summer05.html)

## **International Conference on Rehabilitation Robotics**

June 28 - July 1, 2005, Chicago, Illinois

Abstract deadline - past

[www.smpp.nwu.edu/ICORR2005](http://www.smpp.nwu.edu/ICORR2005)

## **Annual Meeting of the International Functional Electrical Stimulation Society**

July 5 - 9, 2005, Montreal, Canada

Abstract deadline - past

[www.ifess2005.org](http://www.ifess2005.org)

## **Congress of the International Society of Biomechanics in conjunction with the annual meeting of the American Society of Biomechanics**

**August 1 - 5, 2005, Cleveland, Ohio**

**Abstract deadline - past**

**[www.isb2005.org](http://www.isb2005.org)**

**[www.asb-biomech.org](http://www.asb-biomech.org)**

## **International Symposium on Biomechanics in Sports**

August 22 - 27, 2005, Beijing, China

Abstract deadline - past

[www.cssb2001.net/isbs2005](http://www.cssb2001.net/isbs2005)

## **Biomechanics of Lower Limb in Health, Disease and Rehabilitation**

September 5 - 7, 2005, England

Abstract deadline - past

[www.healthcare.salford.ac.uk/crhpr/biomech2005.htm](http://www.healthcare.salford.ac.uk/crhpr/biomech2005.htm)

## **IASTED International Conference on Biomechanics**

September 7 - 9, 2005, Benidorm, Spain

Abstract deadline - June 1, 2005

[www.iasted.org/conferences/2005/spain/biomech.htm](http://www.iasted.org/conferences/2005/spain/biomech.htm)

## **European Society of Movement Analysis of Adults and Children**

September 22 - 24, 2005, Barcelona, Spain

Abstract deadline - past

[www.esmac.org/esmac\\_annual\\_congresses.htm](http://www.esmac.org/esmac_annual_congresses.htm)

## **Annual Meeting of the Human Factors and Ergonomics Society**

September 26 - 30, 2005, Orlando, Florida

Abstract deadline - past

[hfes.org/Meetings/05annualmeeting.html](http://hfes.org/Meetings/05annualmeeting.html)

## **International Conference on Mechanics of Biomaterials & Tissues**

December 11 - 15, 2005, Waikoloa, Hawaii

Abstract deadline - past

[www.icmobt.elsevier.com](http://www.icmobt.elsevier.com)

## **Conference of the Society for Physical Regulation in Biology and Medicine**

January 11 - 13, 2006, Cancun, Mexico

Abstract deadline - November 18, 2005

[www.stanford.edu/group/sprbm](http://www.stanford.edu/group/sprbm)

## **Annual Meeting of the Orthopaedic Research Society**

March 5 - 8, 2006, New Orleans, LA

Abstract deadline - August 22, 2005

[www.ors.org](http://www.ors.org)

## **International Symposium on the 3-D Analysis of Human Movement**

July 4 - 5, 2006, Valenciennes, France

Abstract deadline - January 30, 1996

[www.univ-valenciennes.fr/congres/3D2006/dates.htm](http://www.univ-valenciennes.fr/congres/3D2006/dates.htm)

## **6th Conference on Engineering of Sport**

July 11 - 16, 2006 Munich, Bavaria, Germany

Abstract deadline - tbd

[www.sportkreativwerkstatt.de/isea2006.de.htm](http://www.sportkreativwerkstatt.de/isea2006.de.htm)

## **World Congress of Biomechanics**

July 29 - August 4, 2006, Munich, Germany

Abstract deadline - January 15th, 2006

[www.wcb2006.org](http://www.wcb2006.org)

## **Joint ESMAC - GCMAS Meeting (JEGM06)**

September, 25 - 30, 2006

Abstract deadline - March 15, 2006

[www.jegm06.org](http://www.jegm06.org)

NOTE: For a more comprehensive international listing, please visit ISB's website at: [www.isbweb.org/conferences](http://www.isbweb.org/conferences)



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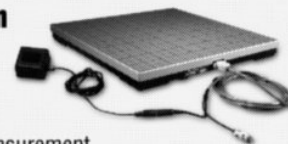
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