

# American Society of Biomechanics Newsletter

Vol. 8

December, 1995

No. 2

## From the President

Kai-Nan An

Greetings from Mayo Clinic, Rochester, Minnesota. I would like to thank you all for your confidence in choosing me to serve as President for the Society in the upcoming year. I assumed this position at the 19th Annual Meeting held at Stanford University in August 1995. The annual meeting this year was another big success. There were more than three hundred registrants and close to one hundred and fifty papers presented. On behalf of the Society, I would like to express sincere appreciation to Gary Beaupre, Meeting Chair, and his staff for local arrangements; to Keith Williams, Program Chair, for organizing such a memorable event; and to Michael Torry, Student Representative, for arranging an excellent program for the students during the meeting.

This year has been one with great turnover of the members serving on the Society's executive board. We greatly appreciated Mark Grabiner's tremendous contribution to the society by serving as Secretary-Treasurer for three years. He conscientiously kept all the Society's books and taxes straight and the minutes documented. Melissa Gross has been in charge of our Membership committee for the past three years. We appreciated her dedication in reviewing several hundred applications with her committee members. Currently, the society has close to seven hundred members. To continue the growth and vigor of our society, as Melissa said, "we need to encourage more colleagues and students to apply for membership." Our newsletter editor, Kit Vaughan, has done a superb job in the past three years of editing and publishing a most informative as well as organized newsletter for the society. He has resigned from this position as he returned to South Africa in August. We wish him the best in his new job and thank him for his great contribution. Fortunately, we have three capable individuals elected to continue on in these important tasks for the society: Joan Bechtold, Secretary-Treasurer; Trey Crisco, Membership Chair; and Joe Hale, Newsletter Editor.

Our Past-President, Phil Martin, not only provided excellent leadership during the past year, but also devoted tremen-

dous effort and thought to the future of our society. He initiated the modification of the Mission Statement of the Society to reflect the expansion and broader scope of the society; encouraged the formation of a Budget and Finance Committee (Chaired by the Secretary-Treasurer) to oversee the society assets and growing financial strength; and fostered the idea of a graduate student research program. I would like to thank Phil for his dedication and I am looking forward to his continued support on the executive board.

The executive board is constantly planning to improve the services available for our members as well as the general community of biomechanics. With the help of Jill McNitt-Gray, Education Chair, the society has created an ASB home page on the electronic mail network of the World Wide Web. We plan to have all the information on our current hardcopy brochure and other pertinent data available on this service. Our new student representative, Peter Vint, recently created a novel program named "Virtual Mentor" on electronic mail which will provide an information network between professionals and the students throughout the various disciplines in the field of biomechanics. These are a few examples of the creativity and dedication we would like to encourage in the members of our society. Our society has recently become a member society of the Council of Societies of the American Institute of Medical and Biological Engineering (AIMBE). This is an organization whose purpose includes promoting public awareness of medical and biological engineering and establishing important liaisons with government agencies and other professional groups. We are expecting mutual benefits with this affiliation between these two societies.

Finally, I would like to remind you that the annual meeting for 1996 will be held October 17-19 at Georgia Tech, Atlanta, Georgia. I am confident that Bob Gregor (Meeting Chair, also President Elect), David Fyhrie (Program Chair) and Mary M. Rogers (Program Chair-Elect) will organize an enjoyable meeting for us. Let us make and keep the ASB annual meeting THE meeting for our scientific exchange of biomechanics studies in the disciplines of engineering, sport science, biology, or ergonomics. Best wishes for a great holiday season and a productive new year!!

## From the Secretary/Treasurer

Joan Bechtold

As I am learning the ropes as ASB's new Secretary/Treasurer, I am constantly reminded of my good fortune to follow such able and helpful predecessors such as Mark Grabiner and Melissa Gross. The good shape of the books and membership list is due to their diligence and good organizational skills. Thanks to all, and I hope to continue the tradition. I look forward to getting to know you all over the next few years (at least by the color and designs on the checks you write, and I hope too by the color of your eyes!).

A ballot is included with this mailing. The topic is very important to all of us — a rewording of the Purpose Statement of the American Society of Biomechanics. Our past President, Phil Martin has proposed the new wording, since he recognized that the current statement did not adequately reflect how our Society has grown, and the new activities we are involved in (e.g. education through tutorials). The Executive Board passed a motion to accept this new statement; to amend the By-Laws, the Society must also approve it. Please think seriously about the wording, and cast your vote thoughtfully. But, do vote! (Past motions have garnered only one third of the membership, for something as important as this, please register your opinion on the mission of our society).

**Current Statement:** The purpose of the Society is to provide a forum for the exchange of information and ideas among researchers in biomechanics.

**Proposed Statement:** The purpose of the Society is to encourage and foster the exchange of information and ideas among biomechanists working in different disciplines and fields of application and to facilitate the development of biomechanics as a basic and applied science.

Phil Martin also proposed the need for an Executive Board-level "Budget and Finance Committee", to oversee financial planning for the Society. The Secretary/Treasurer (that's me!) is chairing this committee, and some of the items we are considering for this year are (1) a graduate student fellowship program, (2) formation of an annual budget, and (3) assistance to annual meeting hosts in preparation of annual meeting budget. The graduate student fellowship program is an exciting new venture, with the intent to provide graduate students with seed money to aid them in performing their research. Our goals are modest

monetarily, but we hope that we can provide real and needed assistance to make a positive impact on new researchers in our field. Phil Martin has made an initial proposal for such a program, and the Budget and Finance committee will be working with him to finalize a trial protocol.

The Society has a new Membership chair, Trey Crisco. He replaces Melissa Gross, who has served the ASB for many years and in many capacities. We thank her very much for her generous and insightful contributions, and welcome Trey. Please direct any membership questions directly to Trey.

Before I end on a good note, I have to report that Elsevier Press has again raised our rates for the *Journal of Biomechanics*, by \$7 per year. This increase is reflected in the dues in your attached membership renewal letter. Although Mark Grabiner and associates made a valiant effort to sway Elsevier from their course, they were unyielding at this point. On that topic, please take care of paying your membership renewal right now, while you are thinking of it (and then finish reading the newsletter). Elsevier will only send one grace issue for 1996, so you have to move quickly to renew.

Finally (and you thought I'd never get to this), the Executive Board passed a proposal for ASB to join roughly a dozen other like organizations, and become an affiliate member of AIMBE. AIMBE (American Institute of Medical and Biological Engineering) is our presence in Washington, and will look out for biomedical research with our lawmakers and funding sources by emphasizing to Congress (1) the role of technology in improving health care, and (2) the role of American biological and medical product industries in maintaining worldwide visibility and competitiveness. We look forward to a productive relationship with AIMBE.

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## **Of Pagers and Pocket Protectors: Confessions of a Clinician in the Biomechanics Laboratory**

by Mark Baratz, M.D.

"Tom, I've got a case in the emergency room... Don, I've got to prepare a lecture... T.D., I'm going to be attending a conference all next week." Each a truthful excuse. Each met by my engineering colleagues with grace. Each an interruption in the few hours set aside to do basic science research in a week dominated by the demands of a clinical practice.

As an orthopaedic surgeon in an academic setting, my professional responsibilities have been, in order of priority: patient care, teaching, and administrative duties. Research was the garnish. A chance to plan, tinker, formulate great hypotheses, and argue their validity with the scientists in our laboratory. This time was a privilege when funding was plentiful and the duties listed above were my major concern. But medicine is changing, and research time is becoming a luxury. Grants are tougher to get. And I'm being asked to do more for less. With the decline in reimbursements to hospitals and physicians, every medical institution recognizes the need to be efficient and more productive. For a surgeon, that means see more patients and do more surgery in the same 70 hour work week. But wait, there's more. Health Maintenance Organizations (HMO's) are asking that we provide quality measures of our practices. Translated, that means document patient satisfaction and clinical outcomes for the many forms of care that you provide. If we like what we see we'll let you continue to treat your patients. Clinical research by conscription. Can I, or do I want to do all this? No. My solution? Try to maintain my clinical practice, accept the change in reimbursement, keep chasing existing grants, and let the HMO's do their own research. If they want me I'll be up in the lab.

Halfway through the experiment my vibrating pager erupts in a silent convulsion. Three-two-five-two, the emergency room. "Tom, there's an HMO administrator with a hangnail who insists on being seen immediately..." The pen returns to the pocket protector and he logs off the computer. Maybe next week.

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*Mark Baratz is an Orthopaedic Surgeon specializing in Upper Extremity who has been in practice now for roughly five years in Pittsburgh, PA. He is also an Assistant Professor in Orthopaedics in the Medical College of Pennsylvania & Hahnemann University. In his spare time he tinkers in the ASRI Biomechanics Research Laboratory.*

ASB Newsletter

## **Sustaining Members**

The sustaining membership category is 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. Each member contributes \$500 per annum to the Society. A significant benefit for companies is that the exhibitor's fee at the annual meeting is waived. We are happy to acknowledge and thank the following companies for their support as Sustaining Members:

**Aircast**

**DePuy**

**Howmedica**

**Kistler Instrument**

**Motion Analysis Corporation**

**MTS Systems**

**Noraxon U.S.A**

**Orthofix, S.R.L.**

**Peak Performance Technologies**

We invite all members of the Society to suggest names of potential sustaining members. Please send your suggestions to Trey Crisco (Membership Committee Chairperson) at the address indicated on page 4 of this newsletter. If you have a particular contact person at the company, please make sure to include his/her name.

**VOTE!!**



**On the proposed  
By-Laws Amendment**

# Executive Board

## 1995-1996

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## Education Committee Chair

Jill McNitt-Gray

Summary of Evaluations regarding the 1995 Annual ASB Meeting: Evaluations were received from 33 attendees at the 1995 Annual Meeting at Stanford. Response distribution among disciplines within biomechanics reflected ASB membership distribution (47% of responses were from student members). Good to outstanding evaluations were received regarding the content and presentation of the Borelli Lecture by W. Hayes, Running on Water by T. McMahon & J. Glasheen, and the symposium on comparative Locomotion by R. Shadwick, R. Full, and A. Biewener. The content of podium and poster presentations, award lectures, tutorials, business meeting, exhibits, and conference facilities were rated as good. In general, attendees enjoyed the atmosphere, food, weather, and campus, although the distance between housing, presentation rooms, and off campus food and entertainment was noted. Varied comments were directed towards logistics regarding the tours of the VA Rehabilitation R & D Center and NASA Ames Research Center and the arrangement of exhibits. Tutorials should continue to emphasize the teaching aspect in presentation format, handouts, and interaction. The basis for pre and post doctoral awards needs additional clarification. The use of video during presentations was appreciated and the need for timely correction of audio/visual problems was emphasized. The lack of questions during podium presentations and poor attendance during the Saturday poster session generated concern. October meeting dates were strongly encouraged over August dates in that biomechanists in academic environments are often unable to attend due to the start of classes. Their presence was missed. Gary Beaupre and colleagues deserve a great deal of credit for a successful meeting. Their effort is greatly appreciated by the ASB membership. Thank you.

ASB now has a homepage (<http://www.usc.edu/dept/biom/asb.html>) which includes general information regarding our mission, membership, past conference programs, contact information regarding executive board members, and access to the graduate program data base. Steps are underway to include the newsletter, the call for abstracts, and 1996 ASB Meeting information. Online publishing of the two page abstracts accepted for presentation at the 1996 ASB Meeting in Atlanta is also being considered.

Suggestions for tutorial teachers and topics are requested. Based on the 1995 ASB Meeting evaluation forms suggestions for future tutorials include: sampling frequency, filter-

ing techniques and error analysis; experimental design and statistical power; bone remodeling; EMG; and grant proposal preparation.

## Membership Chair's Report

Trey Crisco

A total of 90 applications for membership have been received between January and October, 1995. This is approximately the same number received during this time last year. The distribution of applicants among the various disciplines has remained the same over the years. Most of the applications are from Engineering/Applied Physics (53%). The next highest number of applicants were in the areas of Exercise/Sport Sciences (17%) and Health Sciences (18%). Biological Sciences and Ergonomics/Human Factors received 5% and 2% of the applications, respectively. Applications from students increased by almost 20% over last year, accounting for 54% of this year's total.

This past October the Membership Committee underwent their customary triennial remodeling process. Joining Claire Farley, representing Biological Sciences, Irene McClay, representing Health Sciences, and Mark Redfern representing Ergonomics/Human Factors were newcomers Joseph Hamill representing Exercise/Sport Sciences and Trey Crisco representing Engineering/ Applied Physics. Stepping aside after years of leadership and dedication, gratefully acknowledged by the Society, were Melissa Gross and Scott Delp.

To continue the growth and vigor of the Society, the Membership Committee reminds you to encourage your colleagues and students to apply for membership.

*Don't Forget  
to Pay your  
ASB Dues!*



## A View from the Blue Ridge

As Kai An mentioned in his report, Kit Vaughan has resigned from his position as editor of the ASB Newsletter. He and his family have decided to return to their native South Africa. Kit will have an adjunct faculty position in the Department of Biomedical Engineering at the University of Cape Town, but will be focusing his energies on starting a CD manufacturing business for audio and educational programs. I would like to take this opportunity to thank Kit for his contributions to the Society, and in particular for his efforts as Editor of the ASB Newsletter for the past three years.

As a brief introduction for those of you who may not know me, I am currently an assistant professor in the Departments of Orthopaedics and Biomedical Engineering and the director of the Orthopaedic Biomechanics Laboratory at The University of Virginia. I came to Charlottesville nearly four years ago as a post-doc after completing my graduate studies at Clemson University (under the supervision of Kit Vaughan!) and The University of Iowa. As a member of the ASB Newsletter editorial board for the past three years, I have been primarily responsible for compiling the summary of Job Opportunities. While I am pleased to have been asked to assume the position of Editor, I fully appreciate the challenge that I face in living up to the high standards established by my predecessors.

With the change in editors, you may notice a subtle 'change of view' in this issue of the ASB Newsletter. While Kit presented "A View from the Academical Village", I will deem my editorial space "A View from the Blue Ridge". Majestic and ancient, the Blue Ridge Mountains encircle both Charlottesville and Thomas Jefferson's Academical Village to the north and the west. As much as the University, they are a part of the fabric of the lives of the people in central Virginia and draw tourists to this area from every corner of the world. On a crisp fall day or a cool summer evening, I can think of no place I'd rather be (except maybe fishing!).

Aside from the change in the title of this editorial, several other changes have been implemented. These include the addition of a featured Guest Columnist (page 3) and the availability of an electronic version of the Newsletter (see Jill McNitt-Gray's article on the new ASB Homepage). While these changes will hopefully prove to be changes for

the better, most aspects of the Newsletter will not be noticeably different. Production of the Newsletter will continue to be based in Charlottesville with biannual issues to appear in June and December. In carrying out this responsibility, I will have the capable assistance of Stephanie Goar and Don Anderson. Stephanie and Don have both contributed to the success of the Newsletter over the past three years as members of the Editorial Board and I am extremely fortunate that both of them have agreed to continue in their roles.

One of my first challenges as the new editor of the newsletter has been to learn all of the ins and outs of putting the newsletter together. Although I will doubtless continue to learn (through trial and error!) what works and what doesn't, I thought I would briefly share with you some of the inner goings on as I presently understand them. The process begins about four to six weeks before the scheduled publication date with reminders (and more reminders) to all of the regular contributors and requests for features such as the guest column and book reviews. As the information is received, it is electronically compiled using a desktop publishing package. Then the fun begins! Juggling text submissions, advertisements and supplemental graphics and making them fit into the available 16 pages is a bit like putting together a jigsaw puzzle without the benefit of seeing the picture. Fortunately, as the editor, I am entrusted with the power to reshape those pieces so that the end result (hopefully) is an organized and visually appealing presentation. Copies of the completed layout are then professionally printed and sent to the Secretary/Treasurer for distribution to your mailbox. Admittedly, this process is not likely to generate unbridled enthusiasm among the general membership; however, you will be pleased to know that the Newsletter has been and will hopefully continue to be a financially self-supporting operation. The primary expense incurred in publishing each issue is the charge for printing, which is offset by revenue from advertisements appearing in the newsletter.

Because this is your newsletter, I would like to solicit the membership's input regarding the content and format of the Newsletter. Please take a few moments to consider the following questions and return your responses along with any additional comments or suggestions that you may have to me via email (see page 4):

*What features do you find the most useful? the least useful?*

*What features would you like to see added?*

*Should the Newsletter be published more/less frequently?*

*Do you prefer to receive the Newsletter in printed or electronic format?*

Thanks for your support. Best wishes for a Happy Holiday season!



# TESTING NEWS

Bionix Edition

Vol. XIII No. 1

## New Bio Testing Technologies from MTS Offer Lower Testing Forces

### Micro Bionix Is Designed for Very Low Force Tests

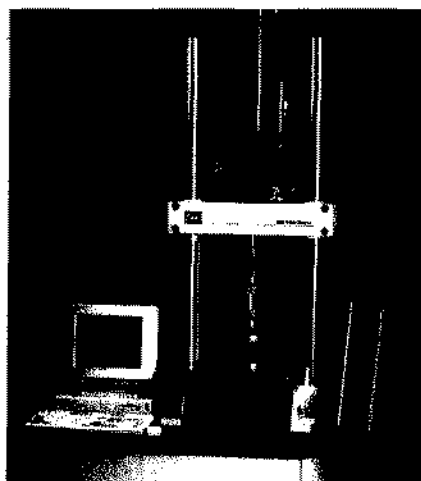
At last, the test system the medical device and component industry has been waiting for ... Micro Bionix from MTS. This table top materials test system is a newly engineered solution for those very difficult tests of small components and materials requiring low force testing.

How low can you go? How low do you want to go! Think about bend tests on specimens like rat bones or small components. Or compression and tensile tests on tiny wires, catheters, leads, sutures, fibers and bundles, or electronic components.

The new Micro Bionix is capable of forces from milligrams up to 50 kg. Total actuator stroke is 100 mm. with a displacement resolution as fine as 0.1 microns, when the system is properly configured.

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For your more demanding tests in the lower force range, consider the servohydraulic powered Mini-Bionix table top test system.

Now available with axial-torsional capability, this versatile highly capable system will meet your toughest testing needs. It was engineered for applications such as uniaxial tests on bone, complex biaxial-torsional tests on cervical spine segments or even torsion to failure (multi-rotation) tests of bone screws.

This powerful, flexible testing system is available in a variety of configurations so that you can specify a system ideally suited to your very specific needs.

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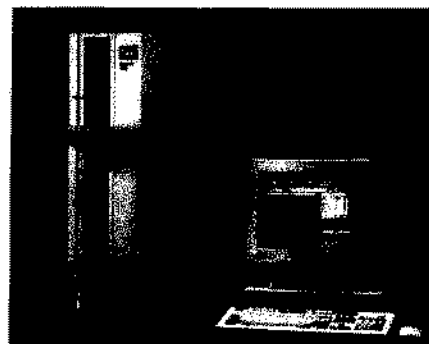
This ergonomically designed, table-top tester offers you economically priced low force tension, compression, flex, peel and shear testing.

It features a small load frame and complete computer control with the proven MTS TestWorks for Windows operating system. Thus, it promises you the features and capability you need for critical low force tests of paper, films, wire, tapes, sutures, fibers, packaging material, tissue, latex, and other products and materials that feature challenging applications in medical products and packages.

Maximum load of the system is 100 lb. Minimum is 50 g. The Bionix 100 features a minimum speed of 0.00002 in./min (0.005 mm/min) and a maximum speed of 40 in./min (1016 mm/min.) Total travel of the system is 19.7 inches (500 mm).

All of the test system electronics are contained within the table-top load unit. Nevertheless, the Bionix 100 has a very small footprint and is easily moved.

As with all MTS products, a full range of grips, fixtures and other accessories are available to help you perform your tests.



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# Calendar of Events

**18-22 Feb 1996** 42nd Annual Meeting of the Orthopaedic Research Society; Atlanta, GA; Orthopaedic Research Society, 6300 N. River Road, Suite 727, Rosemont, IL 60018-4226; Tel. 708-698-1625 Fax 708-823-0536

**29-31 Mar 1996** 15th Southern Biomedical Engineering Conference; Holiday Inn, Dayton Mall, Dayton, Ohio, USA; P.K. Bajpai, Ph.D., Conference Chair, 15th Southern Biomedical Engineering Conference, Dept. of Biology, Univ. of Dayton, Dayton, Ohio 45469-2320, USA; Tel. 513-229-2135 Fax 513-229-2021.

**3-4 Apr 1996** In-Vivo Pressure Measurement: Scientific, Commercial and Clinical Aspects; Manchester Metropolitan University, UK; Caroline Jordan or Dr Dabnichki (biomechanics@bbenc.org.uk)

**12-13 Apr 1996** 33rd Annual Rocky Mountain Bioengineering Symposium; U.S. Air Force Academy, Colorado Springs, CO; Program Chairman Harry Valenta, 19042 E Oxford Drive, Aurora, CO 80013; Tel. 303-690-9688 Fax 303-530-6277 e-mail: valenh@pfizer.com

**14-16 Apr 1996** SECTAM XVIII: 18th Southeastern Conference on Theoretical and Applied Mechanics; Tuscaloosa, AL; J. L. Hill, SECTAM XVIII Executive Chair, Department of Engineering Science and Mechanics, University of Alabama, Box 870278, 210 Hardaway Hall, Tuscaloosa, AL 35487-0278; Tel. 205-348-1628 Fax 205-348-7240 e-mail: jhill@ualvm.ua.edu <http://hamton.eng.ua.edu/college/orgs/esm/sectam.html>

**16-20 Apr 1996** Annual Meeting of The American Association for Health, Physical Education, and Recreation; Atlanta, GA, USA; Miriam Satern, Chair, Biomechanics Academy, Department of Physical Education, Western Illinois University, 211 Brophy Hall, Macomb, IL 61455-1390; satern@badlands.nodak.edu

**20-23 Apr 1996** 1st Annual North American Society of Gait and Clinical Movement Analysis Conference; The Children's Hospital of Alabama in Birmingham, AL U.S.A; Terry S. Horn, Ph.D, Program Chairman, Gait Analysis Center, 1600 7th Avenue South, ACC Suite 418, Birmingham, Alabama 35233 USA; Tel. 205-939-6051 Fax 205-939-6057 MEDT030@UABDPO.DPO.UAB.EDU (e-mail) <http://www.ortho.uab.edu/gait96.html>; Abstracts due December 19, 1995

**12-15 May 1996** ErgoCon '96: Silicon Valley Ergonomics Conference; organized by Human Factors and Ergonomics Society and Silicon Valley Ergonomics Institute; San Jose State University; Palo Alto, California; Abbas Moallem, Ph.D., Conference Chair, Silicon Valley Ergonomics Institute, San Jose State University, One Washington Square, San Jose, CA 95192-0180; Tel. 408-924 4132 Fax 408-924 4153 <http://www-engr.sjsu.edu/ergocon96/>

**20-23 May, 1996** 3RD International Workshop on Animal Locomotion; National Equestrian School of Saumur - Saumur, France; Secretariat of IWAL 3 - E. Barrey, INRA, SGQA, 78352 JOUY-EN-JOSAS CEDEX, France; Fax. + 33 1 34 65 22 10 E-mail: ugeneba@dgal.jouy.inra.fr; Deadline for abstract submission the 30th October 1995.

**21-22 May 1996** Spinal Implants — What Have We Learned from Testing, Failure Analysis, and Device Retrieval; Orlando, Florida; Mark N. Melkerson, FDA/Office of Device Evaluation, at (301) 594-2036; John S. Kirkpatrick, M.D., University of Alabama at Birmingham, (205) 934-5018; Jack M. Geiger, Ph.D., Electro-Biology, Inc., at (201) 299-9022 or James C. Bayley, M.D., (AAOS/BME Committee) University of Massachusetts (508) 856-2360.

**29 May-2 Jun 1996** World Biomaterials Congress; Toronto, ON, CA; Congress Canada, 191 Niagara Street, Toronto, Ontario, CANADA M5V 1C9; Tel. 416-860-1772 Fax 416-860-0380

**1-6 Jun 1996** Biomechanics & Neural Control of Movement IX Neural-Mechanical Control: Interaction Between Neural Circuits and Biomechanics; Deer Creek Resort and Conference Center, Mt. Sterling, Ohio; The Engineering Foundation e-mail: engfnd@aol.com Fax 212-705-7441

**25-29 Jun 1996** 14th International Symposium of Biomechanics in Sport; Funchal, Madeira, Portugal; ISBS'96 - Secretariat, R da Alfandega, 78-5, 9000 Funchal, Portugal; Tel. 351-91-233229 Fax. 351-91-233249 e-mail itma@dragoeiro.uma.pt

**28-30 Jun 1996** International Summer School: Three-Dimensional Analysis of Human Movement; Universite Claude Bernard, Lyon, FRANCE; Dr. Paul Allard, Ph.D., P.Eng., Permanent Secretariat, International Symposium on Three-Dimensional Analysis of Human Movement, Centre de recherche, Sainte-Justine Hospital, 3175 Cote Ste-Catherine, Montreal, PQ, H3T 1C5 CANADA; Tel. 514-345-4740 Fax 514-345-480; e-mail Allardp@ere.umontreal.ca



**3 Jul 1996** 4th International Symposium on 3-D Analysis of Human Movement; Grenoble, FRANCE; Dr. Paul Allard, Ph.D., P.Eng., Permanent Secretariat, International Symposium on Three-Dimensional Analysis of Human Movement, Centre de recherche, Sainte-Justine Hospital, 3175 Cote Ste-Catherine, Montreal, PQ, H3T 1C5 CANADA; Tel. 514-345-4740 Fax 514-345-4801 e-mail allardp@ere.umontreal.ca

**5 Jul 1996** 9th International Conference on Mechanics in Medicine and Biology; Ljubljana, Slovenia; ICMMB 96, A. Kregar, Cankarjev dom, Cultural and Congress Centre, Presernova 10, 61000 Ljubljana, Slovenia; Tel.: +386 61 223 988, Fax: +386 61 217 431 e-mail: icmbb@robo.fer.uni-lj.si; Submission of final camera-ready papers: February 1, 1996

**2-4 Jul 1996** The Engineering of Sport; The University of Sheffield, Sheffield, England; Dr S. J. Haake, Department of Mechanical and Process Engineering, The University of Sheffield, Mappin Street, Sheffield S1 3JD, UK; Tel. (0114) 282 5415 Fax. (0114) 275 3671 e-mail S.J.Haake@sheffield.ac.uk

**14-17 July 1996** Overtraining & Overreaching in Sport: Physiological, Psychological and Biomedical Considerations. Laura Wilhelm; University of Memphis, Memphis, Tennessee (800) 747-4457 or (217) 351-5076

**21-26 Jul 1996** Bioartificial Organs Science and Technology; Nashville, Tennessee; Engineering Foundation, 345 East 47th Street, New York, NY 10017; Tel. 212-705-7836 Fax. 212-705-7441 E-mail: engfnd@aol.com

**22-24 Aug 1996** 9th Canadian Society for Biomechanics Conference; Simon Fraser University, Burnaby, B.C.; Janice Eng, PhD, PT, School of Kinesiology, Simon Fraser University, Burnaby, BC, Canada, V5A 1S6; Tel. 604-291-5770 e-mail JJENG@SFU.CA

**23-25 Aug 1996** "Bernstein's Traditions in Motor Control" an International Conference paying tribute to Nikolai Bernstein. The Pennsylvania State University, 225 Penn State Scanticon, University Park, PA 16802-7002, (814) 863-5120 for registration and (814) 863-5374 for program content.

**28-31 Aug 1996** 10th Conference of the European Society of Biomechanics; Leuven, Belgium; 10th Conference of the European Society of Biomechanics, Katholieke Universiteit Leuven, Division of Biomechanics and Engineering Design, Dr. J. Vander Sloten,

Celestijnenlaan 200A, B-3001, Heverlee (Belgium); Tel. +321 632 7096 FAX. +321 629 2716; jos.vandersloten@mech.kuleuven.ac.be.

**18-21 Sep 1996** The 5th Meeting of the International Society for Fracture Repair, Ottawa, ON Canada. ISFR-1996, Secretariat, 5004-501 Smyth Road, Ottawa, ON, Canada K1H 8L6. Tel/Fax (613) 737-8837.

**17-19 Oct 1996** 20th Annual Meeting of the American Society of Biomechanics; Atlanta, GA; Robert J. Gregor, Ph.D., Department of Health and Performance Sciences, Georgia Institute of Technology, Atlanta, GA 30332-0110; Tel. 404-894-1028 Fax 404-894-7025 e-mail: robert.gregor@sac.gatech.edu. **Abstracts due April 15, 1996**

**2-4 January 1997** 5th Pan American Congress of Applied Mechanics PACAM V, San Juan, Puerto Rico, Prof. Luis E. Suarez, Department of General Engineering, University of Puerto Rico, Mayaguez, PR 00681-5000, U.S.A. Fax: (809) 265-3816, (809) 831-5224

**3-8 Aug 1998** The Third World Congress of Biomechanics; Hokkaido University, Sapporo, Japan; Biomechanics Laboratory, Department of Mechanical Engineering, Faculty of Engineering Science, Osaka University, Toyonaka, Osaka 560, Japan; Fax: +81-6-850-6171

### *We Need Your Contribution*

Members are encouraged to contribute to the newsletter. A note, a letter to the editor, a lead on an interesting story, information about a scientific meeting, in fact anything of interest to the ASB membership, would all be most welcome. Send information scrawled in long-hand, via e-mail, or on computer diskette (5.25" or 3.5") for IBM or Macintosh. If you have any other ideas, please get in touch. The next newsletter will be published in June, 1996. **Deadline for submission of material is 15 May 1996!**

# Job Opportunities in Biomechanics

## ASSISTANT/ASSOCIATE PROFESSOR POSITIONS

**Assist Professor** (tenure track) in musculoskeletal biomechanics. Experience in finite element analysis of biological materials and cellular biomechanics research preferred. Search Committee for Junior Faculty; Department of Mechanical Engineering; Room 220 Mudd Building; Columbia University; New York, NY 10027

**Assoc/Assist Professor** (Biomechanics) Earned doctorate with a specialization in biomechanics and university teaching experience required. Additional specialization area such as motor learning, athletic training, adapted physical education or research design/applied statistics preferred. Dean F. Anderson, Chair; 235 Physical Education Building; Department of Health and Human Performance; Iowa State University; Ames, IA 50011

**Assist/Assoc Professor** (tenure-track) in Bioengineering. Teaching and research responsibilities. Harvey S. Borovetz, Ph.D.; School of Medicine, Artificial Heart & Lung Program; University of Pittsburgh Medical Center; 420 Center for Biotechnology & Bioengineering; 300 Technology Drive; Pittsburgh, PA 15219

**Assist/Assoc Professor** (tenure-track, 9 month appt). Doctorate in motor control, biomechanics or related field required. Physical Therapy degree preferred. Priority given to candidates with proven track record in research on disabled populations. Kenneth G. Holt PhD, PT; Chairman, Search Committee; Boston University; Dept. of Physical Therapy; 635 Commonwealth Ave.; Boston, MA 02215

**Assist Professor** (tenure-track) in Biomaterials. Ph.D. or equivalent in Biomaterials, Bioengineering, Materials Engineering or related field. Teaching/research interests in dental biomaterials, surface science, cell-surface interactions, tissue engineering, implants and/or biomechanics. Walter Loesche, DMD, PhD; Chair, Biomaterials Search Committee; University of Michigan; School of Dentistry; Ann Arbor, MI 48109-1078

**Assist Professor in Biomechanics** (tenure-track) Responsibilities include: a) conducting nationally visible research program, b) teaching undergraduate/graduate biomechanics courses, c) supervising graduate research. Kathleen Williams; Department of Exercise and Sport Science; UNC Greensboro; Greensboro, NC 27412 tel: 910-334-3255 fax: 910-334-3238 k\_willia@hamlet.uncg.edu

**Faculty position in Biomedical Engineering.** - Applicants whose focus includes cell biomechanics, electrophysiology, or biomaterials are especially sought. Exceptionally well qualified candidates with expertise in other fields are also invited to apply. Dr. Richard T. Hart; Department of Biomedical Engineering; Boggs Center, Suite 500; Tulane University; New Orleans, LA 70118

**Faculty positions in Physical Therapy** Master's degree required, doctoral degree preferred. Persons with teaching or clinical experience in orthopedics, neurology, exercise rehabilitation, basic skills, or clinical education and strong research background are encouraged to apply. Search Committee; Department of Physical Therapy; Temple University; College of Allied Health Professions; 3307 N. Broad Street; Philadelphia, PA 19140

**Faculty position** (12 mo, tenure-track) to conduct research and teach as part of MS/PhD program in Orthopedics. Earned doctorate in Physical Therapy or a related field required. Neal Pratt, Ph.D., PT; Chair, Search Committee; Department of Physical Therapy; Medical College of Pennsylvania/Hahnemann University; Mail Stop 502; Broad and Vine Streets; Philadelphia, PA 19102-1192 tel: 215-762-4364 fax: 215-762-3886 prattn@hal.hahnemann.edu

**Bioengineering Faculty Position** - Earned doctorate in biomechanics, biomedical engineering, or a related field. Teaching/research responsibilities as well as collaborate and provide technical expertise for existing faculty. Sally Westcott, Ph.D., PT; Chair, Search Committee; Department of Physical Therapy; Medical College of Pennsylvania/Hahnemann University; Mail Stop 502; Broad and Vine Streets; Philadelphia, PA 19102-1192 tel: 215-762-3881 fax: 215-762-3886 westcotts@hal.hahnemann.edu

## RESEARCH/FELLOWSHIP POSITIONS

**Postgraduate Research Scholarship(s)** in Soft Tissue Mechanics. Research will include both mechanical testing and rheological modelling of the mechanical behaviour of soft biological tissues. Scholarship does not include overseas student fees of \$11,000US. Dr Lynne Bilston; Department of Mechanical and Mechatronic Engineering; Building J07; University of Sydney; NSW, 2006 AUSTRALIA tel: 02-351-2344 bilston@tiny.me.su.oz.au

**Graduate Research Assistant** in Biomechanics for project involving occupant safety in automobiles. Expertise in implicit and explicit finite element analysis; familiarity with UNIX-based workstations, I-DEAS and DYNA3D desirable. William O. Wray; Los Alamos National Laboratory; Bioscience and Biotechnology Group, CST-4; Mail Stop J586; Los Alamos, New Mexico 87545 tel: 505-667-4496 fax: 505-665-2137 wray@lanl.gov

**CAD/CAM Prosthetics Graduate Research Assistantship.** Development of ultrasonic transducers and mechanisms to record limb stiffness, finite element soft tissue models, and software to incorporate tissue stiffness measurements into prosthetic socket CAD/CAM systems. William M. Vannah, PhD; Shriners Hospital; 516 Carew Street; Springfield, MA 01104 tel: 413-787-2000 wvanah@aol.com

**Ph.D. Fellowships in Biomechanics, Bioprocessing and Environmental Engineering.** Program includes advanced coursework in biological sciences, monthly colloquia, apprenticeship in a biological laboratory and instructional mentoring. U.S. citizenship required. Tim Foutz, Ph.D.; Driftmier Engineering Center; The University of Georgia; Athens, GA 30602 tfoutz@bae.uga.edu

#### **LECTURER/POST DOCTORAL POSITIONS**

**Lectureship / Senior Lectureship In Sports Science** (Vacancy UAC.666) Doctoral qualification with research and teaching strengths in motor control required. Associate Professor R.N. Marshall; Sports Science; The University of Auckland; Private Bag 92019; Auckland, New Zealand tel: +64 9 373 7599 ext. 6630 fax: +64 9 373 7043 r.marshall@auckland.ac.nz

**Biomechanics specialist/Lecturer** to teach undergraduate and graduate biomechanics, including labs, starting September, 1996. MS in PE or Health required; PhD and college teaching experience preferred. Application deadline is March 1, 1996. Indicate recruitment code 63030 on all correspondence. Dr. Dwayne Head, Department Head; Physical Education and Kinesiology Dept.; Cal Poly State University, San Luis Obispo; San Luis Obispo, CA 93407

**Postdoctoral Fellowship.** Study of human movement and its disturbances in neurologic and musculoskeletal disorders. Must be US national or permanent resident. Applicants in engineering sciences (BME, EE, ME), neuroscience, kinesiology, or clinical disciplines are invited to apply. Zev Rymer, MD, PhD; Director of Research; Rehabilitation Institute of Chicago; 345 East Superior, Room 1406; Chicago, IL 60611 tel: 312-908-3381 fax: 312-908-2208 zevric@casbah.acns.nwu.edu

**Post-Doctoral Position** in Experimental Orthopaedic Biomechanics. Recent PhD with interest in orthopaedic implants and experience in experimental testing, implant design and function, and animal models. US citizenship required. Salary is \$24,000/year. Gary S. Beaupre, PhD; Rehabilitation R&D Center (153); Palo Alto CA; 3801 Miranda Avenue; Palo Alto, CA 94304 tel: 415-493-5000 ext. 62472 fax: 415-493-4919 beaupre@bones.stanford.edu

#### **OTHER POSITIONS**

**Director of Sports Biomechanics Research.** Ph.D. in engineering (with emphasis in biomechanics) to direct research on mechanisms of sports-related injuries; injury prevention, treatment, and rehabilitation; and functional outcome evaluation. Robert Finke, Executive Director; Minneapolis Sports Medicine Center; 701 25th Avenue South, #150; Minneapolis, MN 55454

**HEALTHSOUTH Eminent Scholar in Sports Medicine** (endowed chair) Doctorate in Exercise Physiology, Biomechanics, Human Performance, Rehabilitation or closely related field required. Additional expertise in such areas as physical therapy and athletic training desirable. Office of Personnel Services; ATTN: Dr. Sandra Greniewicki, Chair; Search Committee for the HEALTHSOUTH Eminent Scholar in Sports Medicine; Troy State University; Troy, AL 36082

**Chairperson,** Department of Physical Therapy Applicants must have an earned doctorate, clinical experience, and demonstrate experience in didactic teaching, administration and scholarship, and three to five years of academic and/or facility administrative experience. Search Committee; Department of Physical Therapy; Temple University; College of Allied Health Professions; 3307 N. Broad Street; Philadelphia, PA 19140

**Rehabilitation Research Fellowships.** Ph.D.'s or equivalent in rehabilitation related field. Choice of research focus: Epidemiology, Pain, or Biomechanics. Two year training period with 3rd year option. Karla Hemker; Mayo Clinic; Department of Physical Medicine and Rehabilitation; 200 1st Street S.W.; Rochester, MN 55905 tel: 507-284-2946 fax: 507-284-0920

**Research Opportunities** available with NIKE, Inc. in Beaverton, Oregon: Researcher - Development of innovative research concepts and testing protocols utilizing functional anatomy, biomechanics, exercise physiology, mechanical engineering and human factor engineering for sport shoe design. Ph.D. or equivalent, with a minimum of 3 years research experience required. And .....

**Research Technician** - Assist Researchers with mechanical testing of shoes and collecting, processing and analyzing laboratory data. Master's degree in science or engineering field and minimum of 1 year experience in a laboratory or research environment required. Ralph A. De Marco & Associates, Inc.; PO Box 1145; Fairfax, CA 94930 ralphd@hooked.net

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*NOTE: Applicants are strongly encouraged to contact the listing individual/institution directly to determine current status and obtain additional information.*

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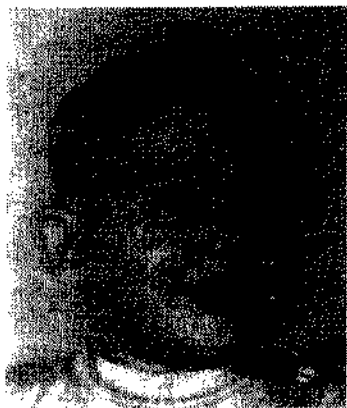
# The Fun of Biomechanics

by Brian Davis of the  
Cleveland Clinic Foundation

At the most recent ASB meeting held at Stanford University, there were instances where children had evidently been introduced to biomechanical research. Rick Hinrichs attended some of the sessions with his son, and during the Borrelli lecture, Tobie Hayes made reference to the fact that he sometimes shares his findings with his family at the dinner table. They are apparently of the opinion that it shouldn't require major federal funding to arrive at some of the conclusions he has shared with them—such as that if you fall and break your hip, it may be due to the fact that you have landed on your hip! With this as background I thought I should see whether my five year old son Sean had any interest in biomechanics. Instead of reading the usual Dr. Seuss books, I decided to share my ASB proceedings and some of my photographs with him.

BLD: How about this Sean? This book has some interesting things in it. Look at the organizing committee—they look just like your friends.

Sean: Yeah, but that one in the middle is just a baby (Figure 1). What happened to his hair?



BLD: Well, I think that is Dennis Carter. I guess his parents wanted him to look good.

Sean: What other stuff does this book have?

BLD: All kinds of things ranging from the way muscles work to the way skin moves.

Sean: There is a lady a church who has skin that bounces quite a bit.

BLD: Yes, but that's different to what the group in Calgary studied.

Sean: It would be great to study the lady at church.

BLD: That would be difficult to organize—you see, we have an Internal Review Board at work that only allows us to study some kinds of skin movement. They prefer us to look at movements of arms and legs during different tasks. Look here on page 59. This study deals with how much people sway back and forth during different tasks.

Sean: What tasks?

BLD: Let's see. It says that subjects stood on a platform and held a balloon that had a weight attached to it.

Sean: That's an easy task.

BLD: Yes, but the balloon was popped after a short time.

Sean: I bet that caused the person to sway!

BLD: Yes. It says here that popping a balloon is an uncommon task and that it probably presents a challenge to the nervous system.

Sean: That makes sense to me. What other fun tasks do people study?

BLD: Here on page 75 is a person making a bed.

Sean: That's not a fun task. I prefer popping balloons.

BLD: It says here that people can hurt their back if they are not careful when they lift up a mattress.

Sean: Did they study kids as well?

BLD: No.

Sean: Well it could happen that I might hurt my back when you tell me to make my bed! I'm going to tell Mom that I should only straighten my blankets every second day. That way I have an extra day to recover.

Hey Dad, look at page 106. There is a bug here. Do you study bugs?

BLD: Not me, but others do. The bug that you are looking at is walking on jello.

Sean: Why?

BLD: Well, they found out that if you shine light through the jello you can tell how the bug is pushing on the ground. However, if you choose the wrong flavor, the critter stops to eat the forceplate.

Sean: I would too.

BLD: One of the people at the meeting even studies the way some lizards can run on top of water! He even showed funny pictures of Bart Simpson drowning in quicksand.

Sean: Why is that funny?

BLD: I guess you had to be there to appreciate that. Look, on the next page there is a picture of a centipede. That's another thing people study.

Sean: This is cool!! I want to see how many legs I can pick off a centipede before it stops walking. I bet if I pull them all off it will move like a snake.

BLD: Don't tell your Mom that I gave you any of these ideas.

Sean: Do your friends take examples of their work to the meeting?

BLD: Sometimes. Often people make a big poster and take it with them. As this year's meeting there were posters that dealt with wrinkles on your face, space suits, one legged pedalling, and tripping over obstacles.

Sean: I don't know anyone who pedals with one leg, but you could study tripping every time Mom walks into my room. Tripping is easy. Here, let me show you.

BLD: Yeah, but when you fall, you land with both hands on the floor. Somehow old people sometimes land on their side.

Sean: I could do that!! I could even land on my side and then jump up and land on my other side!

BLD: Maybe you should teach old folks how to do that and not hurt themselves.

Sean: I could teach big people lots! I think the stuff you talk about at these meetings is just what I enjoy. Is there anything that is not for kids?

BLD: Well, we sometimes go out for discussions in the evening which would go past your bedtime. Look, here is a photo of some people grouped around a table at the banquet.

Sean: I recognize some of them! There sure are a lot of bottles on that table.

BLD: Yes, it was a hot day.

Sean: Some of the people look really tired.

BLD: Well, some of the guys had had many nights of these discussions.

Sean: Dad, I'm really tired too. It seems you are the lucky to work with people who study all those things. When I grow up I'm going to study bugs, space suits, people tripping and best of all—I want to watch that what happens when I pop a balloon behind that lady at church. I think I could explain it to the Infernal Review Board.



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*Dr. Fenton would often resort to "Street Lectures" to earn extra cash.*

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## Students' Corner

Peter Vint

Hello from the desert and the home of the 80 degree Winter! I hope this finds you well. I want to take a moment to thank Mike Torry and all of the professionals who contributed to the success of the 1995 Student Luncheon. Mike did an outstanding job in assembling the panel of guests who spoke about their various experiences in academia and the world beyond. Robert Whalen, Karen Ohland, George Lucas, George Miller, Mary Rogers, and Brian Davis did an excellent job in sharing some valuable information related to their professional development. Thanks again!

Among other things, students attending the 1995 ASB meeting expressed concern over their future in the field. Many of these concerns centered around the uncertainties of finding and securing external funding, opportunities for post-doctoral research, how to prepare an effective professional vita, and other professional issues. These concerns prompted me to develop the following two programs for the ASB student membership.

**(1) The "Virtual Mentor" program** -- With the comments and concerns of the student membership in mind, I have started a program which will provide an information network between professionals and the students throughout the various disciplines in the field of biomechanics. I have affectionately named this program the "Virtual Mentor".

The "Virtual Mentor" program will seek to establish lines of communication in an electronic forum for questions and answers. I have asked a number of professionals in our field to volunteer their time and experience so that interested students may write, via e-mail, inquiring about profession-related concerns. I have informed these professionals that student questions may range from general concerns about education or clinical experiences to questions about their individual area of expertise. In order to keep the program organized, I will personally moderate and disperse all e-mail requests to the appropriate Virtual Mentors. Upon receiving your inquiry, the Virtual Mentor will be asked to reply at his or her earliest convenience. A current list of the available Virtual Mentors is provided below.

Kai-Nan An	Mayo Clinic
Michael Feltner	Pepperdine University
Mark Grabiner	The Cleveland Clinic
Richard Hinrichs	Arizona State University
Kathleen Long	Whiplash Analysis, Inc.
Irene McClay	University of Delaware

Scott McLean  
George Miller  
Robert Neal

Iowa State University  
Peak Performance Technologies  
University of Queensland - Australia

**(2) The Job Resource Center** -- The Job Resource Center contains listings of job and post-doctoral research opportunities, an interview preparedness guide, and a sample of professional vitae templates.

I have been taking job postings from the BIOMCH-L, NEUROMUS, and SPORTS-SCI listservers. I have also written to a number of the major biomechanics-related companies to inform them that we (the ASB student members) are an excellent employee resource pool. In addition, I have also prepared a list of a number of highly regarded books related to writing theses, dissertations, and grants.

The interview preparedness guide contains a number of sample questions which can be used to prepare for your job interviews. This document contains things like which questions to ask and which should you not ask; how to dress; and what to expect during your interview.

To provide a variety of examples and formats, I have obtained vitae from professionals in several of the various disciplines in the field of biomechanics. They should serve as excellent examples.

**How These Programs Work** -- For now, I will be maintaining the Virtual Mentor and Job Resource Center from my personal computer. Therefore, all requests should be directed to me. If you would like to assist, please drop me a line. As of this writing, I have had more than a dozen requests for the Job Resource Center files and the Virtual Mentor program has resulted in some excellent responses to student concerns! These programs were created for you - please take advantage of them.

**To Contact a Virtual Mentor** -- To avoid excessive communications, send me a note with the following text:

Virtual Mentor Request: <Firstname Lastname>

If you would like to correspond to a particular Virtual Mentor, write their name on top of the note where it says <Firstname Lastname>. Otherwise, I will choose one for you. The body of the letter should contain your questions, comments, or concerns. I will forward the note to the Virtual mentor and inform you of the status of the note. You will receive their reply as soon as it becomes available.

**To Access the Job Resource Center** - Again, to avoid excessive communications, send me a note with the following text:



Job Resource Center Request: <jobs, vitae, interview, books, all>.

If you do not want all of the current information in the job resource center, just ask for one (or more) of the information files. If you would like to receive all available files, simply ask for "all".

If you know of others in the field which you would like to see as Virtual Mentors, please inform me and I will ask if they would be interested in volunteering their services. Also, if you have ideas for the job resource center, please drop me a line.

As always, we are always interested in bringing new student members into the Society. If you know of individuals who are interested in applying for student membership, please ask them to contact either myself or the membership committee chairperson, J.J. Trey Crisco. The application process is simple, the dues are relatively inexpensive, and the benefits for student members are excellent. Get involved!

If you have not heard from me via e-mail, please drop me a line at [VINT@ESPE1.LA.ASU.EDU](mailto:VINT@ESPE1.LA.ASU.EDU) so that I may add you to the student member list. My e-mail system has returned a number of postings which have been sent to incorrect addresses. If you have a new address or are a new student member, please let me know. Have a great semester!

### RESEARCH FUNDS AVAILABLE

Since its inception in 1969, The National Operating Committee on Standards for Athletic Equipment (NOCSAE) has been a leading force in the effort to improve the safety of athletic equipment. This effort includes the support of related research and the development of standards for protective athletic equipment. NOCSAE is soliciting scientific grant proposals on the mechanisms and the prevention of sports injuries, as related in some rational manner to protective equipment. The deadline for submission is April 1, 1996.

To request further details and an application form contact:

J.J. Trey Crisco, Ph.D.  
NOCSAE Director of Research  
Orthopaedic Research  
SWP - 3, Rhode Island Hospital  
593 Eddy Street, Providence, Rhode Island 02903  
[joseph\\_crisco\\_iii@brown.edu](mailto:joseph_crisco_iii@brown.edu)



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# ASB Twentieth Annual Meeting

October 17-19, 1996

Plans for the 1996 Annual Meeting to be held on the campus of The Georgia Institute of Technology in Atlanta, Georgia are progressing very well. A meeting of the Local Organizing Committee including faculty from the College of Engineering, the College of Computing, the Interactive Media and Technology Center and the College of Sciences was held during the fall quarter and resulted in some excellent ideas for lab tours, corporate sponsors and exhibitors and general meeting plans. The three day event will have a varied program and an opportunity for interaction across a broad range of scientific disciplines. Current plans also include a one day Satellite Symposium to be held on Sunday, October 20th in conjunction with the department of Physiology at Emory University. Specific content will be presented at a later date, but materials will focus on the interaction between the fields of neuroscience and biomechanics. Any questions regarding the meeting facilities at Georgia Tech can be addressed to Dr. Robert Gregor (see page 4 for contact information).



Planning for the program is also going on apace during this pre-Holiday season, with visions of hundreds of wonderful abstracts dancing in the head of the Program Chair. The first call for abstracts and much more detail will be sent to Society members sometime in January. Abstracts will be due April 15, 1996 with notification of acceptance given by June 1st. Preliminary plans are to have plenary presentations on in vivo experimentation involving both humans and animals, with an emphasis on invasive measurements. Two speakers with expertise in this area have been identified. Comments on this topic or suggestions for additional topics are welcomed and should be forwarded to Dr. David Fhyrie, Program Chairperson (see page 4).

## Remember:

**Abstracts due April 15, 1996**

Additional information about the meeting location can be found at the websites for Georgia Tech (<http://www.gatech.edu/TechHome.html>) and the city of Atlanta (<http://www.webguide.com>).

## Borelli Award

Awarded to an investigator who has conducted exemplary research in any of the many areas of biomechanics. Open to all scientists, including non-ASB members, except officers of the Society and members of the ASB Awards Committee. The award consists of a \$1,000 cash prize and an engraved plaque. Candidates may be self-nominated or nominated by others including non-ASB members. Criteria for selection will be based on originality, quality, depth of the research and its relevance to the field of biomechanics as a whole. Five published research papers on a single topic or theme must be included. The winner of the award will be expected to present the research at the Borelli Lecture at the 1996 Annual Meeting.

## Young Scientist Award

Awarded to one predoctoral and one postdoctoral scientist who are current or pending members of the ASB. Award includes a certificate, a \$200 cash prize, and a waiver of conference fees for the 1996 Annual Meeting. Candidates may be self-nominated or nominated by an ASB member. Requirements are: submission of an abstract of original research for presentation with candidate as first or only author; submission of the supporting materials: *Predocutorial* materials include: letter of support from the department head or graduate research advisor; short description of the candidate's research involvement and published papers or papers submitted for publication. *Postdoctoral* materials include: candidate CV; prior research presented in several formats (e.g. published papers, submitted papers or doctoral dissertation).

## Clinical Biomechanics Award

Awarded for outstanding new biomechanics research targeting a contemporary clinical problem. The award is co-sponsored by Butterworth-Heinemann, publishers of *Clinical Biomechanics*. Candidates need not be members of the ASB. The award includes a prize of \$250 and an engraved plaque. A cover letter and abstract submission is all that is required to be sent to the Program Chair. Award will be announced at the Annual Meeting.

## ASB Travel Award

A travel fellowship of up to \$1,000 to facilitate collaborative research and interaction among scientists will be awarded. All ASB members are eligible to apply. It is intended to cover travel and lodging costs and matching funds from the host's or candidate's institution (or grants) are desirable, but not required. The funding period is from July 1 through June 30.

Contact Philip E. Martin (page 4) for further information.

