



American Society of Biomechanics Newsletter

Vol. 4

June, 1991

No.1

From The President - George T. Rab -

Even though it is only Summer, many of us are already looking forward to the Annual Meeting this Fall in Arizona. The local hosts have promised us a combination of fine weather, stimulating lab tours, and the great camaraderie that makes ASB such a unique society. I'm sure there will be an outstanding scientific program to serve as the backbone of the meeting, and Tutorials will again be offered for those of us who want to brush up on a topic or wish to find out what our colleagues are doing. Elsewhere in this newsletter you will find more detailed information.

ASB is interested in involving our student members more in the business of the Society. Encouraging students to attend and present research keeps both our scientific and social functions fresh and interesting. In the report from the Education Committee in this newsletter, Mary Rogers describes our plans. Please encourage your students to attend, and to aim for the ASB as a forum in the future.

The Executive Committee will be looking at potential meeting sites for the 1993 Annual Meeting this year. If your institution is interested in putting on the meeting, contact the Society with your proposals. Arranging an ASB meeting is a big but rewarding task that seems to bring out the very best in an institution.

Be sure to vote for your choice of officers for your society. Included in the ballot is a survey about the timing for the Annual Meeting which we'd like you to fill out. See you in Tempe!

EDUCATION COMMITTEE REPORT MARY M. RODGERS, CHAIR

Committee members: Mark Grabiner and Harcharan Ranu
Interim student representative member: Norman Murphy

I. Survey of participants

Many thanks to 1990 ASB conference attendees for your feedback via the evaluation forms. Your suggestions/criticisms were summarized and presented to the board so that changes could be incorporated in the 1991 conference planning. These changes include the following: expanded breaks and discussion times, strict instructions to session chairs to adhere to time limits, expanded time for Borelli talk so that meal is more separate from the talk, more diversity in the poster session, limit of talks per session to seven or less, symposia organized around the keynote lecture, and encouragement of student interaction. Improved evaluation forms are also being developed for the 1991 conference. Your feedback provided via the evaluations is essential for the continued high quality of ASB conferences.

(continued on Page 3)

1991 American Society of Biomechanics Annual Meeting

Arizona State University
Tempe, Arizona

Meeting dates: Wednesday, Oct. 16-Friday, Oct. 18
Meeting site: Sheraton Tempe Mission Palms Hotel
(adjacent to the ASU campus and downtown Tempe)

Program Highlights Wednesday

Tutorials: H.J. Sommer III, Penn State Univ.
Primer on 3-D Kinematics
Roger Enoka, University of Arizona
Neurobiology of Muscle Fatigue

Lab tours: Exercise and Sport Research Institute
Dept. of Exercise Science and Physical
Education
Bioengineering Research Laboratories
Dept. of Chemical, Bio, and Materials
Engineering
Harrington Arthritis Center
Phoenix, AZ

Thursday-Friday

Keynote Symposia:

Biomechanics at the Cellular Level

Stephen Alexander, Wadsworth Center, Albany, NY
Scott Kuo-Duke University
Robert Hand, SUNY at Buffalo

Biomechanics and Olympic Sports: Farther, Higher, Stronger

Jesus Dapena, Indiana University
Ralph Mann, CompuSport, Orlando, FL
Keith Williams, University of California, Davis
Peter McGinnis, SUNY at Cortland

Reg fees:	Prior to	After
	September 1, 1991	September 1, 1991
Member	\$ 90	\$ 120
Non-member	125	160
Student	60	70

Registration, hotel, and preliminary program information will be mailed in mid-June. For more information, contact the 1991 Meeting Chair:

Philip E. Martin Phone: (602) 965-1023
Department of Exercise Science FAX: (602) 965-8108
and Physical Education
Arizona State University
Tempe, AZ 85287-0404

**ASB 1990-1991
Officers and Committees**

President

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916-453-2958

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2270 Ivy Road
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804-982-0849

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602-965-1023

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313-763-9674

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318-674-6187

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513-259-1326

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Carol Putnam
George Zahalak

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916-752-3337

1991 ASB Elections

The nominating committee has announced candidates for elected offices in ASB for the coming year, and included in this mailing is information about the candidates. Nominated for President-Elect are Mary Rodgers and Ron Zernicke and for Program Chairperson-Elect, Zvi Ladin and Andy Biewener. Be sure to exercise your voting rights by sending in the ballot.

Notes & News

--Roger Enoka reports that the Awards Committee received a number of nominations for the Predoctoral Young Scientist, Post-doctoral Young Scientists, and Borelli Awards. The deadline for submission was May 15. The Awards will be made at the Annual Meeting in Tempe, AZ. (The state of Evan Mechan, the Martin Luther King non-holiday, and the 12 legislators indicated in a sting operation on legalized gambling).

--The Executive Board has (yet again) discussed the idea of extending the Annual meeting to Saturday. The reason is essentially financial in that we can obtain the cheapest airfare if we stay over a Saturday night. This has been proposed for the 1993 meeting. A survey question has been included with the election ballots. Be sure to cast your vote.

--The 1991 ASB Annual Meeting will be held in conjunction with the Canadian Society of Biomechanics in Chicago from August 24-28, 1992. Lou Draganich estimates that 500 persons will attend the NACOB meeting.

--No site has been chosen for the 1993 meeting. Any member interested in hosting the meeting should contact George Rab. The 1994 meeting will be held on the West Coast and will be later in the fall in order to minimize the conflict with the Second World Congress to be held in Amsterdam on July 28-31, 1994.

--The Society finances seem to be in good shape. Secretary-Treasurer Melissa Hoy reports that income has exceeded expenses by \$3500 over the last 4 years. The Annual Meeting in Miami showed a slight net profit. The average income for the Society now exceeds \$25,000 each year.

--The Awards Committee reports that Jim Andrews, Carol Putnam, and George Zahalak have been approved by the Executive Board for the committee.

--In 1988-89 there were 447 ASB members and 475 in 1989-90. The totals for this year, described in more detail on page 4, are up to 498. Thirty members dropped their membership in 1990, but the total membership increased by 28.

--Roger Enoka is interested in organizing a symposium for the next World Congress meeting in Amsterdam in 1994. Anyone interested in helping should contact him.

Education Committee News

(continued from Page 1)

II. Tutorials

A. Tutors for the past ASB meeting included Felix Zajac, Stephen Gordon and Al Schultz. Feedback from evaluations was very positive, with the overwhelming consensus being that tutorials were worthwhile and should be continued. The 2-hour time slots and position within the conference schedule seemed to be appropriate.

B. Two tutorials are scheduled for the 1991 ASB conference.

1) Tutor: Roger Enoka, Ph.D.

Title: "Neurobiology of Muscle Fatigue"

Summary: The notion that the neuromuscular system can be stressed to the point of exhaustion has intrigued numerous investigators, particularly in recent years. While many studies have been undertaken in an attempt to identify a single fatigue factor, there seems to be little doubt that the concept of fatigue refers to a class of acute effects that can impair motor performance and not a single mechanism that can, under all conclusions, account for the decline in performance. From these studies on fatigue have emerged at least four themes that seem to provide a reasonable basis for future work in this area. The purpose of the tutorial is to describe these four themes, review the literature and concepts on which they are based, and describe their utility as a focus for subsequent studies on fatigue. The theses are task dependency, muscle wisdom, force-fatigability relationship, and sense of effort.

2) Tutor: Joe Sommer, Ph.D.

Title: "Primer on 3D Kinematics"

Summary: This tutorial will present matrix methods for two- and three-dimensional kinematics. Several applications in the areas of gait analysis and joint motion will be presented as examples. The intent is to demonstrate the utility of these methods for actual applications.

C. Forms are being developed for proposals for the 1992 tutorials.

These forms will be available to those attending the 1991 ASB conference and will be sent to members. These proposals will be reviewed by the Education Committee and presented to the

executive board at the mid-year meeting. Based on the executive board recommendations, the tutors will be selected and notified immediately following the mid-year meeting.

III. Interim Student Member

In response to a request for increased student participation in ASB, the board approved a student representative member for the Education Committee. Norman Murphy has agreed to assume this position as an interim person (5/91-9/92). His primary responsibility will be to institute a method of selection for the position so that student members are represented fairly. All ASB members (especially student members) are invited to voice their opinions and suggestions concerning the method of selection for the position of student representative of the Education Committee, as well as any other concerns to:

Norman Murphy
Human Motion Laboratory
Pediatric Research Center
3rd Floor, Block 7
Sainte-Justine Hospital
3175 Cote Sainte-Catherine
Montreal, Quebec, Canada
H3T, 1C5

Phone: (514) 345-4740

Fax: (514) 345-4801

IV. ASB Brochure

A review of past requests to ASB for information was performed. These inquiries have included requests for a wide variety of instructional materials, research resources, and information related to undergraduate/graduate studies. For the next year, any inquiries will be handled by the Education Committee so that number and variety can be more closely documented. Recommendations for ASB information materials will then be made. Member input is welcome.

V. International Symposium on 3-D Analysis of Human Motion

We are aware that some controversy has arisen in regard to the Symposium and the co-sponsorship role of ASB. ASB's liaison with this conference served as a member of the Scientific Committee. The intent of the committee was that those having both scientific or technical and commercial interests would attend the symposium while maintaining an appropriate distinction between these interests. We sincerely hope that this will remain an open scientific meeting, as was the original purpose of the committee.

International Symposium on 3-D Analysis of Human Movement

The meeting will be held at 1' Hôtel des Gouverneurs, Place Dupuis in Montreal on the 27 to 30 July, 1990. There are five sessions consisting of Data Capture, Joint Motion, Joint and Muscle Modeling, 3-D representation and Applications and Interpretations. The list of keynote speakers is completed. There is Thomas Huang (University of Illinois), Thomas Andriacchi (Rush-Presbyterian-St. Lukes Medical Center), Jack Lewis (University of Minnesota), Felix Zajac (Stanford University), Michael Whittle (University of Tennessee) and Thomas Calvert (Simon Fraser University).

Papers accepted for oral presentation have been grouped within their respective sessions and will be discussed. It is intended that the discussor base his presentation on these papers to elaborate on the common theme. A round table entitled "Towards Standardization" is being planned. There will also be a full scale demonstration of the Motion analysis ExpertVision System. The registration fee is \$370 prior to May 1st, and \$450 afterwards. It includes meeting material, welcoming reception, banquet, refreshments and possibly another social activity. This meeting is sponsored by both the American Society of Biomechanics and the Canadian society of Biomechanics.

Secretariat

International Symposium on 3-D Analysis of Human Movement
Centre de recherche pédiatrique

Hospital Sainte-Catherine
Montreal, Quebec
H3T 1C54, Canada

SUSTAINING MEMBERSHIP

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. ~~The number of sustaining members is maintained at a level of approximately 400.~~ We are happy to acknowledge and thank the following companies for their support as Sustaining Members:

Motion Analysis Corporation	DePuy
Electro-Biology, Inc.(EBI)	DonJoy
Human Kinetics Publishers	Aircast
Interpore Orthopaedics	Zimmer
Orthofix Srl	Protek
Howmedica	Kistler

We invite all members of the Society to suggest names of potential sustaining members. Please send your suggestions to ~~Tom Brown~~ ^{Melissa} (Membership Committee Chairperson) at the address indicated elsewhere in the newsletter. If you have a particular contact person at the company, please make sure to include his/her name.

New Members

—Regular members—

Abelbeck, Kevin
 Adams, Douglas J.
 Belford, Lauren M.
 Brainerd, Elizabeth
 Crago, Robert E.
 Davis III, Roby B.
 Gharapuray, Vasanti M.
 Halpern, Alan A.
 Hawkins, David A.
 Hobatho, Marie Christine
 Kulig, Kornelia
 Latour Jr., Robert A.
 Lieber, Richard
 Low, Hong-Tong
 Mann, Ralph
 McClay, Irene S.
 Meglan, Dwight
 Miller, Mark C.
 Prassas, Spiros S.
 Shirzai-Adl, A.
 Siegel, Karen Lohmann
 Suh, Jun-Kyo

Thompson, Kent N.
 Wasserman, Jack F.
 Waters, Thomas R.
 Winters, Jack M.
 Yoganandan, Narayan

—Student Members—

Boxman, Donald
 Chengaluar, Somadeepti N.
 Closkey, Robert F.
 Gabrial, Robert J.
 Guldberg, Robert
 Hickcox, Charlotte
 Jhoun, Janet H.
 Lanigan, Edward P.
 Lidtke, Roy H.
 Mansoura, Monique
 Mirka, Gary Allan
 Moran, Daniel W.
 Nebgen, Denise
 Peterson, William
 Sawa, Anna
 Schmitz, Thomas J.
 Speers, Rosemary
 van der Meulen, Marjolein

—Engineering and **A**ppplied Physics

—Ergonomics and Human Factors

—Exercise and **S**port Sciences

—Health Sciences

—**B**iological Sciences

Membership

Emeritus Members

The Board has approved the first Emeritus members for the Society. They are Eugene Bahniuk and Betty Roberts, both founding members who have since retired. Congratulations to both of them and we look forward to their continued involvement with ASB.

Needed - Two More Members

Melissa Hoy reports that there are currently 498 members in ASB, distributed as shown below. As treasurer, she will be mounting a multimillion dollar campaign to try to locate an additional two members so that the tally will come to an even 500. Anyone who knows any prospective members should send them to her as quickly as possible. Affirmative action guidelines suggest that these new members should be female, in Biological Sciences, and should be either emeritus or gift members. Where do you apply to be one of these gift memberships, anyway?

	Number	Percent
Emeritus	2	1%
Gift	2	1%
Regular	377	76%
Regular (No Journal)	22	4%
Student	62	12%
Student (No Journal)	21	4%
Sustaining	12	2%
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Male	411	82%
Female	87	18%
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Biol Sciences	42	8%
Engr/Apppl Phys	223	45%
Ergon/Hum	43	9%
Exer/Sport Sci	97	20%
Health	60	13%
Undeclared	23	5%

Electronic Mail

? ASB-Net ?

To encourage electronic interaction among ASB members, we would like to collect E-Mail addresses for any ASB member interested. The list of members who sent in addresses after the last newsletter was underwhelming, but we'll try again. A list of addresses will be published in the next ASB newsletter. If you would like your mail-drop listed, send the appropriate information to Keith Williams, Newsletter editor at the address indicated elsewhere in the newsletter, or E-mail your E-mail address to Mont Hubbard at MHUBBARD@UCDAVIS.EDU

Left-Hand-Rule for ISB in Australia?

Unofficially it has been heard that ISB organizers in Australia are considering mandating that all three-dimensional mathematical presentations at the next ISB meeting be done using a left-hand-rule convention rather than the right-hand-rule. The reason has something to do with the direction that water swirls south of the equator.

Jobs! Jobs! Jobs!

This location will be used to advertise any positions that might be of interest to ASB members. Forward a copy of the position announcement and it will be included in the next issue of the newsletter.

Auburn University - Asst. Professor, Health and Human Performance. Tenure track position. **Responsibilities:** Teaching will include Biomechanics/Kinesiology and other appropriate areas. Develop strong research programs in one or more of the following areas: Biomechanics, Exercise Physiology, Motor Learning/Control/development, Ergonomics. Publish in premiere journals, seek extramural support, direct student research. **Application:** Submit by July 15, 1991 a letter of application with statement of research interests and professional goals, vitae, and three letters of reference to Dr. L. Bruce Gladden, Search Coordinator, Department of Health and Human Performance, 2050 Joel H. Eaves-Memorial Coliseum, Auburn University, Alabama 36849-5323. tel: 205-844-1473.

University of Otago, New Zealand - Lecturer in Physical Education (equivalent to a tenure-track assistant professor). In the area of Exercise Testing and Prescription in the School of Physical Education. **Responsibilities:** Teaching students theoretical basis for exercise initiation, participation and adherence, and practical skills for testing and prescribing exercise. Academic scholarship and research are necessary. **Application:** Inquiries should be made to the Acting Dean, Professor LRT Williams, electronic mail to psed11@otago.ac.nz or Tel: 64-3-479-8995, Fax: 64-3-477-8811.

Coming Events

June 29-July 7, 1991

Momentum for the Future, the 9th International Symposium on Biomechanics in Sports and 3rd National Symposium on teaching Kinesiology and Biomechanics in Sports. (c/o Cynthia Tant, Dept. of Physical Education, Leisure Studies, PEB 246, Ames Iowa, 50011. (515)294-8364 Fax: (515)294-0907)

July 28-31, 1991

International symposium on 3-D Analysis of Human Movement. Abstract submission by October 1, 1990. (c/o Secretariat, International symposium on 3-D Analysis of Human Movement, Laboratoire d'étude du mouvement, Centre de recherche pédiatrique, Hôpital Sainte-Justine, 3175 Côte Ste-Catherine, Montréal, PQ, H3T 1C5, Canada. Tel. (514)345-4740 Fax: (514)345-4801)

July 28-August 2, 1991

11th International Congress of the World Confederation for Physical Therapy. Barbican Centre, London. (c/o Congress Secretariat, Conference Assn. WCPT, 27 A Medway Street, London SW1P 2BD, England. Tel: 01-222-9493)

September 24-26, 1991

BIOMED 91 - 1st International Conference on Computers in Biomedicine. (c/o Biomed Conference Secretariat, Computational Mechanics Institute, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO4 2AA, UK. Tel: 44 703 293223, Fax: 44 703 292853)

October 26, 1991

The Scientific Basis of Back Injury Prevention, Queen's University, Kingston, Ontario. (c/o Dr. Joan Stevenson, Ergonomics Research Group, School of P.H.E., Queen's University, Kingston, ON, K7L 3N6, Canada. Tel: 613-545-6288, Fax: 613-545-6478.

October 26-31, 1991

Second IOC World Congress on Sport Sciences, Barcelona. (c/o Josena Cambra, Organizing Committee Secretariat, Edifici Hèlios, C/ Meija Lequerica s/n., 080287 Barcelona. Tel. (343) 410 19 92/490 19 92 Fax: (343)411 20 92).

November 6, 1991

Symposium on Characterization and Testing of Composite Materials for Implant Applications in the Human Body. (for information, contact Russell D. Jamison, Smith & Nephew Richards Inc., 1450 Brooks Road, Memphis, TN 38116, Tel: 901-396-2121)

December 4-5, 1991

Occupational Electromyography, Ergonomics Research and Design Centre, Melbourne, Australia. (c/o Owen M. Evans, Department of Human Biosciences, LaTrobe University, Carlton Campus, 625 Swanson St., Carlton 3053, Australia, Tel.:61-3-342-0311, Fax:61-3-347-9939)

December 5-6, 1991

Computer Simulation in Biomechanics, University of Western Australia, Perth. Original presentations and workshop/ demonstrations of participant's software. Abstracts postmarked by April 1, 1991. (c/o Robert Marshall, Department of Human Movement Studies, The University of Western Australia, Nedlands, W.A. 6009 Australia, Tel.:61-9-380-2360, Fax:61-9-380-1039)

December 5-6, 1991

Human Propulsion - An Integration of Man and Machine. Integration of physiology, biomechanics, and motor control of rowing, cycling and wheelchair propulsion. (c/o Greg Gass, Director, Rehabilitation Research Centre, Cumberland College of Health, PO Box 170, Lidcombe, NSW 2141, Australia, Tel.:61-2-646-6403, Fax:61-2-646-4853)

December 6, 1991

Isokinetic Dynamometers - An Introduction (c/o Geoffrey R. Strauss, School of Physiotherapy, Curtin University of Technology, Selby St., Shenton Part, WA 6008, Australia, Tel.:61-9-381-0600, Fax:61-9-381-

December 9-13, 1991

ISB XIII Congress, University of Western Australia, Perth. Abstracts postmarked by March 1, 1991. (c/o Graeme Wood, XIIIth ISB Congress Secretariat, Department of Human Movement Studies, The University of Western Australia, Nedlands, W.A. 6009 Australia, Tel.:61-9-380-2360, Fax:61-9-380-1039, Telex No. AA92992)

December 16-17, 1991

The Teaching of Biomechanics (c/o Peter D. Milburn, Dept. of Human Movement Science, PO Box 1144 (Northfields Ave.), Wollongong, NSW 2500, Australia, Tel.:61-42-27-0881, Fax:61-42-27 0486)

February 3-4, 1992

Mountain Sports and Sciences, International Scientific Congress, Winter Games 1992, Genoble Session, France. (c/o Cerna, B.P. 35, 73202 Albertville Cedex, France

May 12-14, 1992

International Scientific Conference on Prevention of Work-Related Musculoskeletal Disorders, Stockholm, Sweden. (c/o Ms. Gun Carlsson, National Institute of Occupational Health (IU), S-171 84 Solna, Sweden. Tel: +46 8 730 91 00, Fax: +46 8 730 19 67).

May 23-27, 1992

XIth International Symposium on Posture and Gait. (c/o Posture & Gait Symposium Coordinator, Good Samaritan Hospital & Medical Center, 1015 NW 22nd Avenue, N300, Portland OR, USA, 97210-5198 Fax: 1-503-790-1201).

June 28-July 2, 1992

9th International Congress of ISEK, Florence, Italy. (c/o CE.S.P.R.I, Fondazione Pro Gnocchi, Via Imprunetana 124-50020 Monte Oriolo, Florence-Italy Tel: 39-055-208322/208426, Fax: 39-055-208428)

The Newsletter Needs Your Contribution!

Members are encouraged to contribute to the newsletter. A note, a letter to the editor, a lead to an interesting story, information about a scientific meeting, an opinion, or a feature article - anything that might be of interest to others in the Society. There is particularly a need for contributions specific to the various subdivisions within ASB, including information about upcoming meetings. Send information scrawled in longhand or on disk via Macintosh or IBM Microsoft Word or text format. **Anyone interested in contributing on a one-time or regular basis should send suggestions to:**

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Next Newsletter Publication Date: November, 1991
Deadline for Submission Of Materials: October 25, 1991

Where Have All the Award Winners Gone?

Melissa Hoy, Secretary-Treasurer, is attempting to compile complete information on ASB award winners. Below is a list of award winners that have been recorded. If anyone knows of award winners in years prior to 1984, she would appreciate you sending her the names of recipients. She would also like to have a copy of the Proceedings of all ASB annual meetings for the archives. She has Proceedings for each meeting from 1984 to the present, but not before. If you have Proceedings before 1984, contact her and see if it is one she is still missing.

Borelli Award

- 1990 Rik Huiskes
- 1989 Maury Hull
- 1988 Krishnan Chandran
- 1987 Alan Grodzinski
- 1986 M.R. Yeadon
- 1985 A.E. Engin
- 1984 Tom Brown

Postdoctoral Young Scientist Award

- 1990 Rong-fu Kuo
- 1989 Kenton R. Kaufman
- 1988
- 1987 Jay D. Humphrey
- 1986

Predoctoral Young Scientist Award

- 1990 Richard Hughes
- 1989 Donald D. Anderson
- 1988 Bruce Beynon
- 1987 Tony S. Keller
- 1986

Travel Fellowships

- 1990 Phil Martin; Anita Bagley
- 1989
- 1988 M.R. Yeadon
- 1987

Special Citations

- 1987 Harold Frost "Career Research Contributions in Biomechanics