



American Society of Biomechanics Newsletter

Vol. 3

December, 1990

No.2

From Our President - George T. Rab -

Greetings! On the heels of a most successful annual meeting in Miami, ASB enters 1991 with a larger-than-ever membership and an exciting future. Our society is truly unique because of its multi-disciplinary nature. Where else can so many interested and "interesting!" scientists from all disciplines sit down and share their ideas, techniques, and research findings and yet maintain an informal and comfortable atmosphere that has made ASB membership so valuable?

This year, the society explored a new method of cross-fertilization - the institution of "tutorials" at the annual meeting. These were very well received, and I anticipate a gradual increase in this program over the next few years. We are all so subspecialized that it is a great treat to hear one of our knowledgeable members bring us up to date on a slightly different discipline.

Which brings me to a point, and a challenge: lets each try to entice a colleague in another discipline to get interested in biomechanics this year. Get interested in their field, and let them get interested in yours. Do a collaborative project. Write it up and submit it for next year's annual meeting in Arizona. If we can each draw in one participant from "outside", we will do ourselves and that person a favor, and strengthen our society and its scientific program.

Best regards for 1991 - see you in Arizona!

15th ASB Annual Meeting October, 1991 in Tempe, AZ

The 15th ASB Annual Meeting will be held in Tempe, Arizona from October 16-18, 1991. These dates have changed since the initial planning to avoid a conflict with Yom Kippur in September. The meeting will be hosted by Arizona State, with Phil Martin acting as the meeting chairperson. The meetings will be held in the Sheraton Tempe Mission Palms Hotel adjacent to the ASU campus, and tours of Bioengineering and Exercise and Sport Science labs are planned.

Tutorials will once again be a part of the Annual Meeting after a successful inauguration this year. Mary Rodgers, Education Committee Chairperson, and her committee are working on developing topics for the 1991 meeting. A list of past topic suggestions is reported elsewhere in the newsletter in the Education Committee Report. If you have any suggestions, send them to Mary Rodgers, committee chair.

(see 15th ASB Meeting on page 10)

Huiskes Wins Borelli Award Kuo, Hughes Get Young-Scientist Awards

At the recent ASB annual meeting held in Miami, Rik Huiskes, the Director of Biomechanics at the Katholieke Universiteit in Nijmegen, The Netherlands was selected as the Borelli award winner for 1990. Dr. Huiskes was honored at a luncheon during the meeting and presented a lecture entitled 'Optimization Methods for Bone Remodeling and Hip-Prosthetic Design'.

Also selected were two young-scientist award winners. Rong-Fu Kuo from the Biomechanics Laboratory at the Mayo Clinic in Rochester, Minnesota was selected as the post-doctoral winner. Dr. Kuo's presentation was entitled 'Effect of Defect Size on the Stress Concentration and Fracture Characteristics for a Tube with a Transverse Hold Under Torsion'. Special recognition should also be given for being able to fit that title onto a single slide.

The young scientist award winner in the pre-doctoral category was Richard E. Hughes from the Center for Ergonomics at the University of Michigan. His presentation was entitled 'Lumbar EMG Activity During Static Asymmetric Loading of the Torso'. Congratulations to all three award winners for their excellent research efforts.

Election '90 Results

New ASB Officers

Congratulations are in order to Tom Andriacchi, the President-elect for 1990-91, and Joan Bechtold, the Program Chairperson-elect who will organize the ASB program for the 1992 meeting. Forty percent of the members cast their votes in the election earlier this year. Dr. Andriacchi is the Director of the Section of Orthopedic Research, Department of Orthopedic Surgery at Rush-Presbyterian-St. Luke's Medical Center in Chicago. He has been active in research in the biomechanics of lower extremity joints, locomotion, and the spine. Many ASB members will remember sending him money each year when he was the ASB Secretary-Treasurer from 1983-86.

Dr. Bechtold is the Director of the Orthopaedic Biomechanics Laboratory at Hennepin County Medical Center and Metropolitan-Mount Sinai Medical Center in Minneapolis and also teaches at the University of Minnesota. She earned her Ph.D. from the University of Minnesota in mechanical engineering studying intramedullary implant design.

Bylaws Changes Approved

Members of ASB voted to change the bylaws of the society to formalize the procedures used by the Executive Board to operate the

(see Election Results on page 7)

**ASB 1990-1991
Officers and Committees**

President

George T. Rab
Dept. of Ortho. Surgery
Univ. of Cal., Davis Med. Ctr.
2230 Stockton Blvd.
Sacramento, CA 95817
916-453-2958

President-Elect

Thomas P. Andriacchi
Dept. of Orthopedic Surgery
Rush-Presbyterian-St. Luke's
Medical Center
1653 West Congress Parkway
Chicago, IL 60612
312-942-5813

Past-President

Roger M. Enoka
Dept. of Exerc. and Sport Sci.
Gittings Building
University of Arizona
Tucson, AZ 85721
602-621-4702

Secretary/Treasurer

Melissa G. Hoy
(before March 1, 1991)
Rehab. Research and Devel.
Center. (153)

Veterans Admin. Med. Center
3801 Miranda Ave.
Palo Alto, CA 94304-1200
415-493-5000-x4479

(after March 1, 1991)
Dept. of Movement Science
The University of Michigan
401 Washtenaw Avenue
An Arbor, MI 48109-2214
313-747-2699

Education Committee

Mary Rodgers, Chair
Dept. of Rehab. Med. and
Restorative Care
School of Medicine
Wright State University
3171 Research Boulevard
Dayton, OH 45420
513-259-1326

Mark D. Grabiner
Cleveland Clinic Foundation
216-444-7276

Harcharan S. Ranu
New York College of
Osteopathic Medicine
516-626-6926

Newsletter Editor

Keith R. Williams
University of Calif., Davis
916-752-3337

Program Chair

Christopher "Kit" L. Vaughan
Motion Analysis Laboratory
Kluge Children's Rehab. Center
2270 Ivy Road
Charlottesville, VA 22901
804-982-0849

Program Chair-Elect

Joan E. Bechtold
Hennepin Co. Med. Center
Metropolitan-MLsinai Med. Ctr.
Orthop. Biomech. Lab CBO-LL
900 South Eighth Street
Minneapolis, MN 55404
612-336-6609

1991 Meeting Chair

Philip E. Martin, Ph.D.
Department of H.P.E.R
Arizona State University
Tempe, AZ 85287-0404
602-965-1023

Nominating Committee

Roger M. Enoka, Chair

Steve Goldstein
Univ. of Michigan
313-763-9674

Subrata Saha
LSU Medical Center
318-674-6187

Awards Committee

Roger M. Enoka, Chair

R. Bruce Martin
Univ. of Calif, Davis
916-752-3333

Don B. Chaffin
Univ. of Michigan
313-763-2245

Membership Committee

Thomas D. Brown, Chair
Biomechanics Laboratory
Dept. of Orthopaedic Surgery
Univ. of Iowa
Iowa City, IA 52242
319-335-7528

Sean Gallagher
U.S. Bureau of Mines
412-892-6445

Jill McNitt-Gray
University of Southern Calif.
213-743-7360

Clinton T. Rubin
St. Univ. of N.Y., Stony Brook
516-444-1485

ASB Travel Fellowship

APPLICATIONS DUE April 30, 1991

Intent: To enable travel for the purpose of conducting research.

Guidelines:

1. All ASB members are eligible to apply.
2. Travel and lodging costs are covered, and budget requests may be up to \$1000. Matching funds (from host's or candidate's institution or grants) are desirable, but not required. The funding period is from September 1, 1991 through August 31, 1992.
3. The Education Committee will judge the applications and forward the name and the award amount to the executive board for approval. The ASB President will notify the recipient.
4. Applications for the Travel Fellowship must be received by the Chair of the Education committee by April 30, 1991. Send applications to:
Mary M. Rodgers
Dept. of Rehabilitation Medicine
Wright State University
3171 Research Blvd.
Dayton, OH 45420
(513) 259-1326
5. Notice of the award will be given by July 31, 1991, to allow at least 30 days before the earliest date of the proposed travel.
6. Applications must include:
 - * Current curriculum vita
 - * Candidate's cover letter
 - * Letter from host indicating support for travel
 - * Synopsis (2 pages maximum) describing purpose and significance of travel
 - * Detailed budget with justification (when appropriate, matching funds should be indicated.)
7. Fellows will be sent a check for the amount of the award from the ASB Secretary/Treasurer.
8. A short report (2 pages maximum) explaining the significant outcomes of the travel must be submitted to the Education Committee prior to August 31, 1992, or at the end of the fellowship.
9. At the annual meeting following the completion of the travel, Fellows will be expected to present a 5 minute presentation to all attenders at the meeting; the presentation should emphasize the significant outcomes of the travel.

Secretary/Treasurer Address Change

Please note that the address for Melissa Hoy, the Secretary/Treasurer of the American Society of Biomechanics will change on March 1, 1991. The new address where you should send all your money is:

Melissa G. Hoy, Ph.D.
ASB Secretary/Treasurer
Dept. of Movement Science
The University of Michigan
401 Washtenaw Avenue
Ann Arbor, MI 48109-2214
313-747-2699

Call For Borelli, Young Scientist Award Nominations

Borelli Award

The American Society of Biomechanics annually awards the **Giovani Borelli Award** to an investigator who has conducted exemplary research in any of the many areas of Biomechanics. The Awards Committee will consider submissions by individuals or groups in the form of (a) original unpublished research paper, or (b) a series of up to 5 published research papers on a single topic or theme. Also, ASB members may nominate others for consideration within the second category. If a nomination is to be made, the member making the nomination must obtain permission of the nominee before submitting his or her name. Competition for the Borelli Award is open to all scientists except members of the ASB Awards Committee and officers of the society. Membership of the ASB is not a prerequisite for eligibility.

Criteria for selection of the awardee will include originality, quality, depth of the research, and its relevance to the field of Biomechanics as a whole. The Award consists of a \$500 cash prize and an engraved plaque. The winner of the Award will be expected to present the research at the **Giovani Borelli Lecture** at the 15th Annual Meeting of the Society in Tempe, Arizona, October 16-18, 1991.

Young Scientist Awards

One Post-Doctoral and one Pre-Doctoral ASB Young Scientist Award will be given annually. ASB Young Scientists will receive an award certificate, a \$200 cash prize, and a waiver of conference fees for the annual meeting in which they present their research. Eligibility criteria for the two awards are similar, with the information specified below in bold print for the Pre-Doctoral Award.

Candidates may be self-nominated or nominated by an ASB member, must be a current or pending member of ASB, and must have completed a doctoral degree within the past four years (**Pre-Doc: must not have completed a doctoral degree prior to the annual meeting at which the award is given**). Candidates must supply a current copy of their curriculum vita (**Pre-Doc: provide a short description of research involvement at undergraduate and/or graduate levels**). The candidate must be the first author or only author of the paper(s) and must present the research (if accepted) at the annual meeting. His or her work may be in several formats; e.g. unpublished doctoral dissertation (**Pre-Doc: a letter endorsing the candidate and support of his or her research from the department head or graduate research advisor must also be submitted**). The candidate must also submit both a short and long abstract according to the ASB annual meeting format.

Award Submissions

Nominations must be received by May 15, 1991. Requests for information, or nominations with supporting materials (6 copies) should be sent to

Roger M. Enoka, Ph.D.
Department of Exercise Science
University of Arizona
Tucson, AZ 85721
(602) 621-4702

Education Committee Report

From Mary Rodgers, Mark Grabiner, and Harcharan Ranu

Travel Fellowship Award

The award was divided between two people: Phil Martin (\$400) and Anita Bagley (\$600). In both cases, the money is to be used for travel related to research projects. Phil Martin is travelling from Arizona State University to the University of British Columbia for collaboration on a study of amputee gait, and Anita Bagley is travelling from Salt Lake City to Vermont for filming of a competition of the U.S. Olympic Ski Team. Be sure to scan the announcement elsewhere in the newsletter for this year's application procedure.

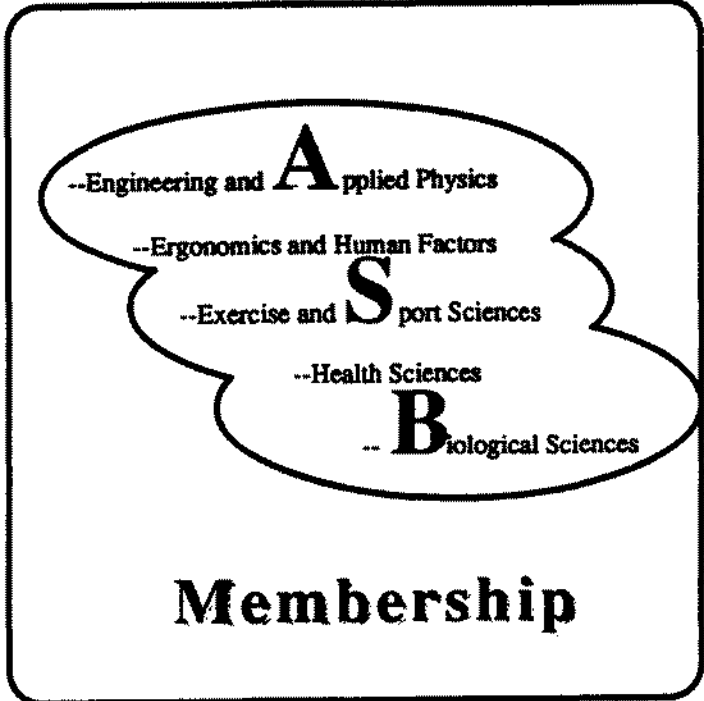
Tutorials at the Annual Meeting

This year's ASB conference included tutorials for the first time. The tutorials were well-attended, and feedback was positive. Our thanks to Felix Zajac, Steve Gordon, and Al Schultz for their efforts. Feedback was obtained from those attending the tutorials, and suggestions and comments were as follows: that tutorials should be separate from other activities (not overlap with lab tours); sessions chairs need to do a better job of keeping speakers on the time schedule; most thought the conference should be extended to three days, and some think a weekend day should be included; most felt that the current membership classifications are adequate, though some suggested consolidating categories; most think ASB should agree to co-sponsorship of other conferences provided the goals/objectives are consistent with those of ASB.

Several members have made suggestions for future tutorial topics, and further suggestions from the membership, especially regarding possible tutors, are welcome and should be sent to Mary Rodgers, Education Committee Chair. Past topics suggestions have included the following:

- Low back pain / rehabilitation
- Problems and developments in gait analysis
- Job opportunities in biomechanics in different areas
- Fracture mechanics
- Introduction to finite element analysis
- Muscle strength and H reflexes
- Overview of neurosensory hypothesis
- Biomechanics of aging, falling
- Analysis of variance
- History of biomechanics
- In vivo strain gaging
- Photoelastic stress analysis
- Collagen / muscle structure and mechanics
- Research methods / design
- Overview of EMG problems and suggestions for resolving
- Animal use / role of animal research
- Marine animal biomechanics
- Motor control
- Osteoporosis (physiological/ mechanical)
- Workplace design / employee screening / work physiology
- Work / energy relationships
- Data / signal processing in biomechanics
- Laboratory management

(See Education Committee on Page 7)



New Members In 1990 & 1991

—Regular members—		—Student Members—	
Rick D. Rabbit	—	Doris McCubbrey	EAP
Raymond P. Vito	—	Randall F. Beer	EAP
Tatsuo Motokawa	BS	S. Maria Oden	EAP
Tarek M. Khalil	EAP	M. Barbara Silver-Thorn	EAP
W.A. Hodge	EAP	Karl Jepsen	EAP
L. Russell Alberts	EAP	Mary L. Bouxsein	EAP
Edward J. Cheal	EAP	John Janevic	EAP
Kevin G. Abeldeck	EAP	W. Paul Smutz	EAP
Rong-Fu Kuo	EAP	Anita Bagley	EAP
K.A. Athanasiou	EAP	Gail L. Blomstrom	EAP
Mohamad Parnienpour	EHP	Hongwei Hsiao	EHP
Gene Dennis Bell	EHP	Richard W. Schoenmarklin	EHP
Patrick Hammon	EHP	Jerry P. Purswell	EHP
Lyle Knudson	ESS	John Chow	ESS
Glenn Fleisig	ESS	John A. Miller, Jr.	ESS
Robert Daryl Phillips	HS	J.C. Andersen	ESS
Timothy Jon Koh	HS	Philip K. Schot	ESS
Margaret Schenkman	HS	Di-An Hong	ESS
Eileen Greenan Fowler	HS	Francios Prince	HS
Lee J. Sanders	HS	Margaret Henderson	HS

—Sustaining Members—	
Richard D. Nikolaev	Julie A. Simon
Tom Whitaker	Joan Abbott
Peter B. Van Syckle	John P. Ryaby
Vittorio Pietropoli	Todd S. Smith
	David A. Schieb

- EAP - Engineering and Applied Physics
- ESS - Exercise and Sport Sciences
- HS - Health Sciences
- EHP - Ergonomics and Human Factors
- BS - Biological Sciences
- - Not available

SUSTAINING MEMBERSHIP

Two new sustaining members have become involved with ASB since the last newsletter, and we are pleased to welcome DePuy and Kistler. Apologies are also extended to the sustaining members because the list of sustaining members was inadvertently left out of the Conference Proceedings of the Miami meeting.

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 ten. We are happy to acknowledge and thank the following companies for their support as Sustaining Members:

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

We invite all members of the Society to suggest names of potential sustaining members. Please send your suggestions to Tom Brown (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.

The Newsletter Needs Your Contribution!

Members are encouraged to contribute to the newsletter. 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:

Keith R. Williams
 Newsletter Editor, ASB
 Physical Education Department
 University of California, Davis
 Davis, CA 95616
 (916) 752-3337
 Fax: (916)752-6681

Next Newsletter
Publication Date April, 1991
Deadline for Submission
Of Materials March 15, 1991

The Art (Science?) of Making an Effective (Deceptive?) Presentation

Everyone is sometimes faced with having to make a scientific presentation where the main objective is to confuse the audience to the point that they believe you actually have something useful to say. Recent developments in computer technology and desktop publishing have raised the possibilities for presenting superfluous information at scientific meetings to new levels. The evidence of such technological achievements is there to see at every scientific meeting, though it is sometimes difficult to discern whether the presenter is successfully trying to hide a poor study or, using the same techniques, is inadvertently making a good study difficult to understand. A great deal has been written on how to make a good presentation. Here we will focus on how to make a confusing one, something that should be a part of every graduate curriculum.

With a moderate expenditure anyone can produce dazzling slides, overheads, and even animations that can focus the audience in any direction desired. While these enhanced capabilities have the theoretical possibility of making a good presentation even better (there have been unsubstantiated reports that it has happened), the more appropriate use is to hide a poorly done study. Through clever manipulation you can direct the listener to pay attention to the wrong information. He or she will then assume they missed key points that would have explained what was unclear. In the pre-personal-computer-era, if one wanted to camouflage the content of a study it had to be done with poor slides or overheads, mumbled narration, and pages of equations. The audience came away with a bad impression. Now the same lousy data can be presented spectacularly, and with the proper mix of misdirection, improper emphasis, and understatement, a good impression is easy to make. While the audience may have a nagging sensation that something was missing, they will be inhibited from making any comments because of the highly-technical impression of the presentation.

Key Factors to Insuring You Give a Confusing Presentation

Stress the method of presentation, not the content.

Use/display the slash (/) character/symbol as often/frequently as possible/feasible, and be sure not to put/place any spaces between/around the two/three/four words being slashed - it makes it harder/more difficult to pick out each individual word and generally adds to the confusion/aura. For example:

Use Of The Slash/Common Mistakes

is pleasantly confusing, while the following is unnecessarily clear:

Use Of The Slash / Common Mistakes

Try to make headings for slides wrap around from one line to the next, usually by having a wordy title. For example:

The Most Effective Methods For Slide Presentations

is more difficult to grasp than:

Effective Slide Presentation Methods

and leaves less time for the important material.

Better yet, leave the title of the slide off completely. This forces the audience to listen to you to find out what the slide is showing. Giving a title makes it too easy for them to get directly to the main point.

Plan to leave out some obvious and important information during the talk, particularly key methodology. This gives the viewers something to puzzle over while you continue saying anything you want. Often it leads to simple questions following the presentation, preventing more difficult questions from being asked, avoiding that uncomfortable silent period, and best of all, keeping the session chairperson from saying: "Well, since there are no other questions, there is something I was desperately hoping I would be able to ask you...."

U v s a o a p - i h t b u t f o t t
s e l s f s o t e o r p h l f h a
e r i t s l e e o e l
t d e s p a w k
i e n i s k
c s b
a l
l e

Make frequent use of narrow fonts and never use boldface. Narrow fonts make it much harder to distinguish characters when viewed from afar. For example:

Narrow Fonts Are Really More Difficult To View And Make The Audience Listen Rather Than Look At What You Have Put On The Slide

is more difficult to read than this:

Thicker And Better Spaced Fonts Are Easier To Read And Give The Audience The Chance To Think More Closely About What You Say

Make all of your slides with pink lettering on a dark background. If you use small letters and a soft pink color the effect is enhanced even more and it is guaranteed that 68% of the audience will not be able to read more than four words.

Assume that WYSOTCSIWYGOS (what you see on the computer screen is what you get on slides). The color combinations that you get on the computer screen look smashing, but when they are made into slides often they don't mix well. Why let that bother you? Don't waste time trying to find a combination that gives you a clear and sharp slide, it costs \$\$\$ and you don't get the thrill of realizing that your slide is indecipherable the first time you see it on the big screen.

(continued from previous page)

Rather than make up a slide especially for a presentation, photo a figure from a manuscript. The title will be so small no one will be able to read it, the accompanying text too long for anyone to be able to finish reading, and you can often cram 4 or 5 figures on the same slide, saving wear and tear on the slide changing mechanism.

Ιφ μακινγ α πρεσεντατιον ατ αν Εγγλιση λανγυαγε χονφερενχε, μιξ ιν α φεω σλιδες ατη φορειν λανγυαγε τεξτ. (If making a presentation at an English language conference, mix in a few slides with foreign language text). Ιτ αλλ πρεσεντ τη αυδιενχε φορμ βεινγ αβλε το δεχιπηρ ομηατ που ηαυε πρεσεντεδ, (φορ πρεσεντινγ χονφουσινγ ταλκοσ?) (It will prevent the audience from being able to decipher what you have presented, prolong the talk while you explain each symbol, and let them know that you have an international reputation (for presenting confusing talks?)).

When possible use an overhead projector rather than slides. It gives the impression that the material is hot off the presses, especially if written by hand. If possible, write the overheads while presenting so that you can show how quickly you can think on your feet. Slides are still warranted when you want the room dark to hide your complexion.

One of the most effective methods of losing the audience is to talk very rapidly. They cannot keep up with what you are saying and you can get a 15 minute talk done in 10 minutes, minimizing the time you need to spend making a talk fit the allotted time.

Continually apologize for your slides. (Oops, sorry, I just noticed I misspelled poor). It shows that you are overworked and only pay attention to the important global aspects of research, not to trivial details or to the trivial task of communicating findings (Sorry, the last sentence wasn't really meant to be here, my secretary forgot to delete it - just ignore it). Readily acknowledge that your slides do not rate with the production numbers put up by others (I know the ISB newsletter is better, but what can you do on a limited budget) - it is possible that someone from NIH will be there (Sorry, I don't mean to single out NIH, it could also be NSF) and in sympathy will give you a favorable review on your next proposal.

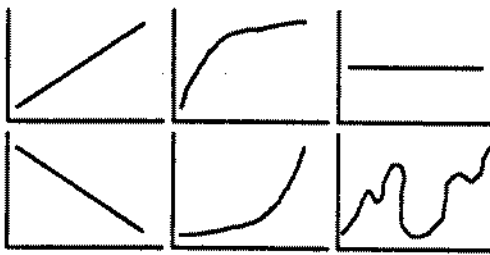
Don't worry about leaving large gaps in the slides rather than filling in most of the area. It takes time to organize a slide appropriately and you might devote an inappropriate amount of time to preparing for the presentation.

The accepted ratio for inclusion of cartoons in your presentation is every 4 slides, regardless of whether or not they are appropriate. More often than that and everyone will think you are trying to hide your data - less frequently and everyone will think you do not read the comics.

Cram as many of the 16,000,000 colors available on computers as you can onto a slide, altering color with each letter if you have the patience. Using only 3 or 4 colors to give clear crisp contrasts makes data too easy to follow. The world record for number of different colors used on a slide for text and line drawings is only 37. Certainly we can do better than that.

The same can be said for fonts. Show that you know how to use them in-effectively

Leave the axes labeling off of slides so you do not unnecessarily confuse your audience with details. The added benefit is that you can use the slides for other talks without having to change the labeling. Preparing slides of the six graphs shown below will set you up for a lifetime of presentations.



Be selective with the data you provide for statistical analysis. Including the sample size will only give the listeners the opportunity to judge the basis for your conclusions and should be avoided at all costs. Put standard error bars on graphs but don't mention what they are - many will think they are standard deviations and think your data is great.

It's Ok to hand draw a few slides. The poor quality will hardly be noticed.

Spend a couple of hundred dollars for a laser pointer. With appropriate practice you can perfect the art of distraction by moving the pointer around the room when it really shouldn't be on. Don't be afraid to intimidate someone with a difficult question by pointing the laser at them - many still think a laser can hurt them and they will turn their question quickly into a comment.

Be sure to point out all errors (1) on slides, even if they are unimportant. Out of a room full of people at least one watchdog will be scrutinizing the slide for errors rather than overall content, and you do not want to give the impression that you have not realized your errors. Only if the wrong data is important to your presentation should you not point it out - that will give someone something to ask about during the question and answer session.

Perfect the art of line confusion. Use multiple combinations of dots and dashes and make the legend small. Most charting programs will put on small symbols that cannot be distinguished on the big screen. Don't be foolish and look for some other more definitive alternative.



Put several figures on one slide - its cheaper and if you forget to collect your slides at the end of the talk you only lose a few slides.

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If you really do not have enough data to fill out your presentation, consider including results from a newer pilot study. You may distract the audience away from the main purpose of your presentation and you can get some results presented that would never make it past reviewers.

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Modern technology lets you put text and data over picturesque slides of your town, lab, or family. When effectively used the background can obscure information you do not want the audience to note.

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Show single trial data when you can - people are impressed by the number of points on a graph and it can effectively distract them from the lack of significant summary results. Summary data is too concise and to the point and you may end up with the green light still on when you are ready to conclude.

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Use lots of equations with very small symbols. Unless you really want to make a clear presentation, do not emphasize only those quantitative aspects most relevant to the study. Presenting a series of complex equations will let speed thinkers understand all the nuances of your elegant procedures and ensures that those with interest but inappropriate backgrounds will quit paying attention.

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Use two slide projectors whenever possible - it impresses the audience. Many still don't believe it is impossible to give a good presentation with one projector but it's true. It is easier to make the transition between two unrelated slides if they are both on the screen at the same time. Be sure to put the slides you do not want scrutinized carefully in the

second projector. Many will continue looking at the first slide and not listen to what you say about the second. While two projectors can enhance a well-planned talk, they are most effective for cramming more information into ten minutes than would otherwise be possible, preventing anyone from keeping up with you.

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Realize that there are many people (27,357,658) who thrive on numbers - include as many (>25) as you can on a slide regardless of whether you plan to talk about them. Carefully planned overuse of numbers (e.g. 245, 35,446, or 2,356) can effectively hide much of the real data (e.g. $p=0.87$, $F=0.002$) making it difficult for anyone to realize you do not make any major points.

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White on black slides can be very gloomy and set the tone for your presentation. The room is depressingly dark and it keeps everyone from taking notes you could be held responsible for

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Multimedia is the current buzzword in the computer industry. See if you can outdo everyone else at your next conference by including the most different presentation methods - slides, video, computer animation, sound, smell. No problem if it doesn't add anything to the scientific content of the paper - artistic impression is an important part of your overall presentation evaluation score.

Readers Speak Out!

The foregoing was derived from observations at the 1st World Congress of Biomechanics in San Diego. While it has the potential to push presentation quality, (though not necessarily scientific quality) to new heights, there are probably many of you out there who have devised alternative innovative methods for confusing presentations, or at least have seen some effectively used. Send your comments to the newsletter editor and we'll let the world know of other trend-setting techniques.

Education Committee

(cont. from Page 3)

ASB Brochure

ASB has had several general inquiries about biomechanics, educational programs for biomechanics, etc. A subcommittee is looking into the possibility of putting together a brochure form that can be sent out when requested. Several options are available. The definition and history of biomechanics could be summarized and locations of educational programs offering biomechanics could be listed. Suggestions from the membership regarding what specifically should be included in the brochures are welcome.

ASB Liaison for International Symposium on 3-D Analysis of Human Movement

ASB is co-sponsoring the International Symposium on 3D Analysis of Human Movement. Mary Rodgers is serving on the scientific committee of the conference in her role as ASB liaison. The conference takes place July 28-31, 1991 in Quebec, Canada.

Election Results

(cont. from Page 1)

Membership, Education, and Award Committees. The changes include:

- Formal acknowledgement of the Membership, Education, and Awards Committees.
- Inclusion of the chairpersons of the Membership and Education Committees as members of the Executive Board.
- Specification of the selection process (appointment by the Executive Board) and term of office (at the discretion of the Executive Board but a maximum of three years) for the Membership and Education Committee Chairpersons.

Jobs! Jobs! Jobs!

University of California, Davis

Assistant/Associate Professor in Biomechanics with a primary research interest and expertise in human biomechanics. **Responsibilities:** Contribute to current offerings in the area of biomechanics and neuromuscular function, including development of independent research program, development of additional UG and G courses in these areas, and advising of students. **Qualifications:** Earned doctorate in biomechanics, bioengineering, or an equally appropriate area. **Application:** Send a cover letter describing interests and qualifications, a vita, copies of three relevant research publications, and the name, phone number, and address of three individuals who will be submitting letters of recommendation to E. Dean Ryan, Chair, Department of Physical Education, University of California, Davis, CA 95616. Deadline: February 15, 1990.

First World Congress on Biomechanics

A Report by Roger Enoka

The first World Congress of Biomechanics was held at the University of California at San Diego on August 31-September 4, 1990. The meeting was attended by about 1400 participants. Roger Enoka served as a representative of the American Society of Biomechanics. Many other ASB members also participated in the Congress, including some who organized symposia. Some areas of biomechanics were particularly well represented in the program, such as muscle and movement, cardiovascular and microcirculation, diarthroidal joints, image-based motion measurements, and respiratory biomechanics. Particularly impressive was the involvement of participants from very diverse areas, many of which are not normally represented at ASB meetings. Tom Brown (Membership Chairperson) and Kit Vaughan (Program Chairperson) are attempting to involve some of these people and areas in future ASB meetings.

The original proposal to organize a World Congress was made in 1984 by the U.S. National Committee on Biomechanics, which is an association of fifteen professional societies. In 1986, the National Committee developed a Steering Committee, chaired by Y.C. Fung, to be responsible for the World Congress. At the time of the Congress, the Steering Committee consisted of 43 members from 21 countries. The Congress, which was held on the University of California at San Diego campus, was organized by Shu Chien, Richard Skalak, and Geert Schmid-Schoenbien.

Given the interest in the World Congress, the Steering Committee decided to continue these meetings and to establish a more formal basis by which these events can be organized. There was unanimous support for the Second World Congress to be held in Amsterdam during July, 1994. This Congress will be organized by Colin Caro (United Kingdom), Rik Huijskes (The Netherlands), and Michel Jaffrin (France). In addition, the Steering Committee has been renamed the World Committee of Biomechanics with the primary purpose of investigating possibilities for forming an international group (e.g. federation, union) for promoting all aspects of biomechanics and for the continuation of the World Congress. The World Committee of Biomechanics is chaired by Y.C. Fung (U.S.A.) with Gunter Rau (Germany) as the Vice Chairman and Kozaburo Hayashi (Japan) as the Secretary. Roger Enoka will represent ASB on this Committee.

Electronic Mail

? ASB-Net ?

To encourage electronic interaction among ASB members, we would like to collect E-Mail addresses for any ASB member interested. 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

ASB members are also encouraged to join BIOMCH-L, the electronic mail discussion list for biomechanics and human/animal movement science overseen by A.J. van den Bogert and H.J. Woltring of The Netherlands. This system allows users of EARN/BITNET/NETNORTH systems free exchange of information with

Need Something To Read?

If you missed ASB in Miami or ISB in Los Angeles, you are in luck. You have the opportunity to pick up the proceedings from each of these conferences for a nominal charge. Once on your shelf, no one will know whether you were there or not, and you can put out the image of being a well-traveled biomechanist. To get them, make out your checks as follows:

ASB Proceedings of the 14th Annual Meeting, Miami, Nov. 1991 - Send \$25 to Melissa Hoy, ASB Secretary Treasurer (address elsewhere in the newsletter).

ISB XIIth Proceedings, UCLA, June 1989 - \$30 for ISB members, \$40 for non-members (+\$2.50 for US and Canada postage, \$10 elsewhere for postage/handling). Send to Dr. Richard C. Nelson, ISB Treasurer, Penn State University, 200 Biomechanics Laboratory, University Park, PA 16802, USA.

Biomechanics Project Applications Barcelona Summer Olympic Games 1992

The Medical Commission of the International Olympic Committee will sponsor biomechanical research studies during the Barcelona 1992 games. The specific projects will involve 3D studies of selected Olympic sports. The Sub-Committee for Biomechanics and Sports Physiology requests project applications from various scientific laboratories and institutes which have experience in biomechanics research and interest in conducting research in these specific sport events during the Summer Olympic Games in 1992. The project application should specify the purpose and methodology according to normal scientific procedure as well as personnel, technical and financial means and needs. The length of the proposal should not exceed 10 pages. The deadline for submission is February 1, 1991. The I.O.C. Medical Sub-Commission will review the proposals and will make the final selections in March, 1991. Each research group is expected to finance the major portion of

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fellow-members on the list. As of August 1990 there were 185 subscribers across the world. You can subscribe interactively or by electronic mail by sending the following command to LISTSERV@HEARN

SUBSCRIBE BIOMCH-L <name>

where <name> should be the user's initials and last name. When sending the request interactively, it might be advisable to place <name> within double quotes, as in "<name>", since some systems will otherwise convert the text into capitals only. Further information on LISTSERV facilities can be obtained by sending the request HELP to LISTSERV@HEARN. Postings can be submitted to the list by sending the message in mail format to BIOMCH-L@HEARN. The list's world-wide subscription distribution can be studied by sending the request REVIEW BIOMCH-L (COUNTRIES) to LISTSERV@HEARN.

XIIIth INTERNATIONAL CONGRESS ON BIOMECHANICS
THE UNIVERSITY OF WESTERN AUSTRALIA
PERTH, WESTERN AUSTRALIA, DECEMBER 9-13, 1991

G'Day. The XIIIth biennial congress of the International Society of Biomechanics (ISB) will be held in Perth, Australia from December 9-13, 1991. The conference will be held on the campus of the University of Western Australia and a number of satellite meetings, mentioned briefly below, have been planned. Residents of snow country should note that these dates are in the summer in Australia with average day temperatures of 297°K, reason enough for attending the conference. Papers dealing with the biomechanics of kangaroos, koalas, or boomerang throwing have been assured spots on the program. Note that abstracts must be postmarked by March 1, 1990.

Keynote speakers include several ASB members: Jim Hay, giving the Wartenweiler Lecture; Peter Cavanagh, "Biomechanics and special populations"; Felix Zajac, "Muscle coordination in movement"; Carol Putnam, "Segment interaction in accuracy and velocity based sporting movements"; Marten Shorten, "Energetics and the Design of Sports Equipment"; and Mont Hubbard, "Computer simulation and optimisation in sport and industry". Completing the list of speakers are: Toshio Moritani, "Neuromuscular adaptations during the acquisition of muscle strength, power, and motor tasks"; Robert Jensen, "Human morphology: its role in the mechanics of movement", and Charles Oxnard, "Architecture and stress in hard tissues".

Things To Know About ISB-Australia

- Abstracts must be postmarked by March 1, 1990. Notification of acceptance will be made by June 16, 1991.
- Abstracts can be submitted on disk as an ASCII (text) file in DOS or Macintosh format (in Australia is it Macintosh, and not Macjntosh?).
- Paper use is not completely obsolete - abstracts are also accepted written in the designated format.
- Abstracts will be 15 minutes in length with 5 minutes for questions.
- If you fail to get a visa (not Visa) from your nearby Australian diplomat before arriving you may spend all your trip in immigration.
- Take metropolitan Los Angeles and New York City and put them in an area almost as big as the entire United States and you have Australia.
- 70 US\$ will get you in the neighborhood of 100AU\$.
- Registration fees must be paid in Australian dollars by bank draft.
- It is free to enter Australia, but they charge you 10A\$ to leave.
- Tipping is not the general custom in Australia.
- There are pre- and post-congress sightseeing tours - one to the South-West Forests and Farmland, and the other to the South-West Wineries.
- The metric system is used, better start practicing.

Barcelona

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expenses, the I.O.C. Medical Sub-Commission and the COOB'92 can provide partial support in some cases where appropriate. The accreditations, room reservations as well as local transportation will be arranged by COOB'92 in Barcelona. The proposals should be sent to:

Joan Antoni Prat
Centre D'Alt Rendiment
Apt. 129
08190 Sant Cugat Del Valles
Barcelona, Spain

Satellite Events

The following are satellite meetings to the ISB Congress. See 'Coming Events' for information concerning who to contact.

- Dec. 4-5, in Melbourne: International Symposium on Occupational Electromyography. Topics on instrumentation and recording techniques, theory and methodology and applications in occupational investigations.
- Dec. 5-6, in Sydney: Human Propulsion - an Integration of Man and Machine. Integration of the physiology, biomechanics, and motor control of Rowing, Cycling, and Wheelchair Propulsion.
- Dec. 5-6, in Perth: Third International Symposium on Computer Simulation in Biomechanics. Presentations of original research, and workshop/demonstrations sessions with symposium participant's software.
- Dec. 6, in Shenton Park: Isokinetic Dynamometers - An Introduction. Workshop examining the biomechanical features of both electro-mechanical and hydraulic isokinetic dynamometers, as well as dealing with testing protocols and *in vivo* muscle predictions.
- Dec. 16-17, in Wollongong: The Teaching of Biomechanics. Several themes, both in terms of technology (Computer-aided Instruction; Motion Analysis) and content (Occupational Biomechanics; Sports Biomechanics; Clinical Biomechanics; Biomechanics for the Physical Educator/Coach).

Coming Events

January 27-30, 1991

International Conference on Traffic Safety, New Delhi, India. Theme: The Vulnerable Road User. (c/o ICOTS '91, Attn: Renee Chandola, Abercrombie & Kent India Pvt Ltd, Ground Floor 1&2, Chiranjiv Tower, 43 Nehru Place, New Delhi 110019, India. Tel:91-11-6463867 Fax: 91-11-6444966)

April 16-20, 1991

International Congress and Exposition on Sports Medicine and Human Performance, Vancouver, British Columbia, Canada. Central theme is "The Science of Human Performance in Health, Disease and Injury", focusing on physiology, biochemistry, diagnostics, surgery, rehabilitation, nutrition, training and other components of Sports Medicine. (c/o Rochelle Bisnaire-trask, Project Manager, 4285 Canada Way, North Burnaby, B.C. Canada V5G 1H2 Tel: (604) 433-5121 Fax: (604) 433-9549)

Coming Events (cont.)

April 18-19, 1991

1991 Biomechanics Seminar - Covering the entire field of biomechanics with special emphasis on the head and neck. (c/o Gunilla Ekman, Centre for Biomechanics, Chalmers Univ. of Technology, S-412 96 Göteborg, Sweden. Tel: 46-31-721616, Fax: 46-31-721192)

May 22-25, 1991

Second World Congress on Science and Football, Eindhoven, The Netherlands. (c/o M.C.J.S. Frand-Rooovers, Univ. Hospital Maastricht, PO Box 1918, 6201 BX Maastricht, The Netherlands. Tel: 31-(0)43-862101/258344, Fax: 31-(0)43-258355)

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 24-27, 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)

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 Park, WA 6008, Australia, Tel.:61-9-381-0600, Fax:61-9-381-1496)

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, Grenoble Session, France. (c/o Cerna, B.P. 35, 73202 Albertville Cedex, France)

15th ASB Meeting

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Information concerning the meeting, accommodations, and a "call for papers" packet may be obtained from:

Philip E. Martin, Ph.D.

Phone: (602)965-1023

1991 Meeting Chair

Fax: (602)965-8108

Department of H.P.E.R.

Arizona State University

Tempe, AZ 85287-0404

Call For Papers

Christopher 'Kit' Vaughan will be the program chairperson for this meeting. He is in the process of developing the program and identifying keynote speakers and welcomes any suggestions concerning topics, issues, or format for the presentations. Contact him at the address listed below.

Two (2) abstracts are required for each paper. A short (100-150 word) abstract for inclusion in the *Journal of Biomechanics* must be included using the lay sheet (mat with blue border lines) and format instructions provided in meeting announcement packets that should be in the mail shortly. A long (maximum of two pages) abstract for inclusion in the Conference Proceedings must be received in the following camera-ready form:

- single-spaced, typed
 - left-justified and ragged right margin
 - left margin of 1 1/4" to allow the book to open properly
 - right, top, and bottom margins of 1"
 - double spaced between paragraphs, flush left (no indent)
 - title includes authors and affiliations
 - page numbers on back of each page in pencil
 - no staples or paper clips
- Deadline: Abstracts must be received by May 15, 1991
—Notification of acceptance or otherwise by July 1, 1991

If accepted, the short and long abstracts will be published in the *Journal of Biomechanics* and Conference proceedings, respectively. Please send copies of both abstracts including authors with their affiliations and six (6) blinded copies of both abstracts to:

Christopher L. Vaughan, Ph.D.

1991 Program Chair

Phone: (804)982-0848

University of Virginia

Fax: (804)982-1727

Motion analysis Laboratory

Kluge Children's Rehabilitation Center

2270 Ivy Road

Charlottesville, VA 22901