ASME International

BIOENGINEERING DIVISION

Editor's Message

Dan NICOLELLA

I would like to introduce myself as your new Newsletter editor for the next three years. I join the BED membership in thanking Chris Jacobs for his outstanding service to the BED over the past three years as the previous Newletter editor. Past editors, most recently Chris and Farsh Guilak, have set a high standard as demonstrated by the quality of past Newsletter issues and I will endeavor to continue this tradition. Firstly, I would like to thank all of those who have contributed to this issue, especially the committee chairs and ASME staff. In this issue, we have reports from our technical committees on happenings within the Division and an editorial from the new editor of the Journal of Biomechanical Engineering. In a change from previous years, the bi-annual Summer Bioengineering meeting will be held on a tropical island sunny Florida rather than the traditional mountain resort. As always, an outstanding program is planned with Plenary Speakers, Symposia, Technical Sessions, and Student Competitions that indicate the breadth of current research in Bioengineering. With the recent increase in the number of Biomedical Engineering programs around the country, I would like to invite all of you to encourage students to get involved in their local ASME chapters, as this is an excellent opportunity for growth in the Bioengineering Division. The recent interest in Biomedical Engineering programs is also paralleled at the NIH. In this issue, you will find an article from the director of the new National Institute of Biomedical Imaging and Bioengineering (NIBIB) describing its mission and current program and technology areas. Finally, this is your Division and as such, I would like to hear from you regarding things you would like to see in future issues of the Newsletter.

I look forward to hearing from you in the upcoming years. ■

Please send your comments to
Daniel P. Nicolella
Editor, BED Newsletter
Southwest Research Institute
P.O. Drawer 28510
San Antonio, TX, 78228-0510
or email: dnicolella@swri.org.

SPRING NEWS 2003

National Institute of Biomedical Imaging and Bioengineering (NIBIB) 3
Roster 2002–2003 3
Solid Mechanics Committee 3
Journal of Biomechanical Engineering 4
2003 ASME International Mechanical Engineering Congress and RD&D Expo 5
2003 Summer Bioengineering Conference 6
Student Competition News 7
Design and Rehabilitation Committee 7
Honors Committee 8

A Message From Vijay Goel (PAST CHAIR 2001–2002)

Vijay GOEL

It was an honor to serve you all during the 2001–2002 term. It is a pleasure to report that the Bioengineering Division continues to enjoy a healthy status. The annual scientific meeting at the ASME International Mechanical Engineering Congress & Exposition went well despite the aftermath of the Sept. 11, 2001 disaster. Thanks to Jennifer Wayne and her colleagues on the program committee, technical committee chairs, session organizers and reviewers for their efforts. As we have just entered the new millennium, it is a good time to reflect on our past, assess the present and ponder the issues that we face in the future.

We have served our membership in the past quite well. Besides the annual winter meetings, the division has been hosting summer bioengineering conferences every other year. These conferences have turned out to be the biggest success story of our division; something we should all be proud of. The finances of the division continue to be sound. Oversight on the parts of David Butler and Gerard Ateshian (past and current Treasurers, respectively) has ensured that we continue to be in good financial shape. An efficient management of the past summer meetings has created the opportunity to make investments in the future of the division. One of our upcoming initiatives is to honor past recipients of the Lissner Award at the 2003 Summer Bioengineering Conference. The Lissner Award was elevated to the ASME society level in 1987, but it was only in 1998 that awardees started receiving a medal along with their award certificate. A special ceremony will be held to honor the 1987-1997 recipients with a medal. As another initiative, the division will start awarding three best paper awards for podium presentations starting with the 2002 annual winter meeting. Additionally, the finance committee is working on a proposal to establish a mid-career award, similar to the Y. C. Fung Young Investigator Award. The education committee has

CONTINUED ON PAGE TWO

Past Chair's Message

CONTINUED FROM PAGE 1

sponsored its own sessions and the division was able to provide partial support for the keynote speaker(s) in these sessions. The Cell and Tissue Engineering Committee was established to increase interaction between biology and engineering, responding to the changes in research emphasis occurring within our field. The division has agreed to work with the ASME staff to develop continuing educational seminars for professionals. They have approached the Whitaker Foundation for start-up funds.

Students are a vital part of our division. The Society has done well in encouraging students to attend the annual meeting through student paper competitions, no registration fees, and other incentives. The quality of the abstracts in these sessions is exceptional and reflects the seriousness with which students undertake their research. The informal atmosphere at the conference allows students to interact with icons in our area. We are delighted that they have been coming to the meetings and hope they will continue do the same. At present, the Whitaker Foundation is co-sponsoring the student competitions (BS, MS and doctoral). However, we need to diversify our funding sources in the future.

The Journal of Biomechanical Engineering provides us with a vital connection to the rest of the world. I would like to thank Ken Diller on behalf of the division membership for his outstanding leadership as Technical Editor of the journal. He has stepped down this year, and he will be missed. Frank C-P Yin, Washington University, St. Louis, is the new Technical Editor. We offer our sincere thanks to him for accepting this responsibility. We all wish him good luck and look forward to his leadership in the coming years. The division newsletter editor, Chris Jacob has stepped down, effective last November. Please join me in expressing our gratitude for a job well done. Daniel Nicolella, Southwest Research Institute, San Antonio, TX, has taken over as the newsletter editor. We extend our thanks to Dan for accepting this responsibility. In the past year, the division's by-laws were changed with regard to the membership of the Executive Committee, which now consists of the Chair, Secretary (Chair-elect), past Chair, members in charge of technical, external and membership affairs, and Treasurer as voting members; and the Secretary-elect as a nonvoting member.

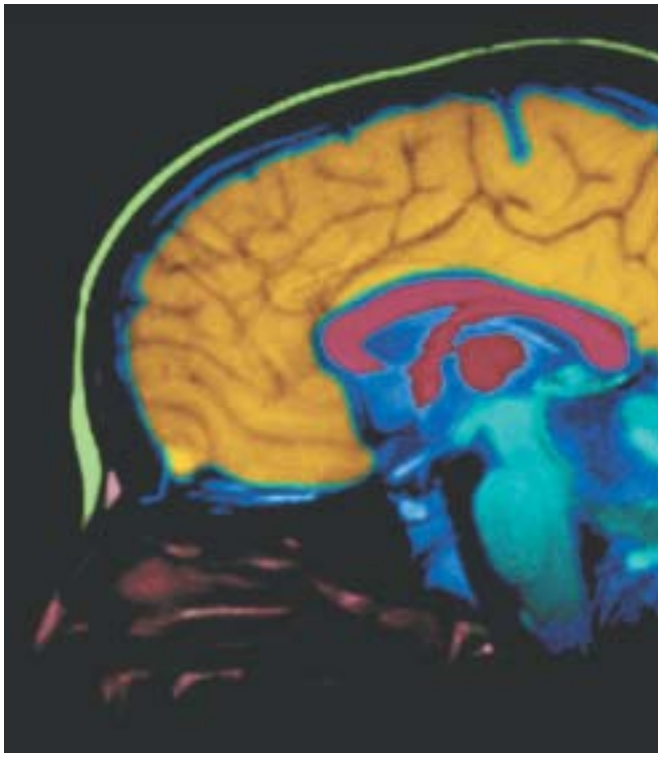
Under the leadership of Lou Soslowsky, the arrangements for the 2003 Summer Bioengineering Conference are well underway (June 25-29, 2003, Sonesta Resort Hotel, Key Biscayne, FL). Please plan on submitting abstracts and attending the conference.

Although our achievements are great, there are numerous challenges that remain. Internal and external factors have contributed to a decline in attendance at the annual meetings. Within ASME, the membership feels that the registration fee is high and the "benefits" do not match. Externally, due to an exponential growth in our field, the venues to present our work have also increased. Accordingly, all of us are forced to make choices. ASME has set up a task force to look into these issues. The society has introduced the track concept to provide further opportunities for us to interact with members from other divisions. One of our own members, Gerald Miller, is leading this effort. At the division level we have taken several steps to rectify the situation as stated above. We must embrace the advances in other disciplines (e.g. biology) and encourage their practitioners to join our ranks, either as a full members or as associate members.

Finally, I remember that as an engineer, this division is the only home I have. I must make efforts to bring about the changes from within. We should encourage submissions from scientists in other disciplines, create special sessions, invite speakers of repute from other fields, create education workshops/programs, and start playing a more prominent role in the accreditation of bioengineering programs through ABET. The time is fast approaching where we need to think about our involvement in the area of continuing education by hosting special seminars throughout the year at various locations both nationally and internationally. Do we need to initiate another journal in our area? I do not know. But we should be on the lookout for new and challenging opportunities, just like the summer bioengineering conference initiative. We need to explore the possibility of putting the conference proceedings on a CD to increase accessibility to the written papers. Additionally, we must improve the level of industry involvement in the activities of the division.

Finally, I take this opportunity to thank each and everyone who has helped me during my term as chair. Elaine Scott, as our program representative, and her team have done a marvelous job in putting this year's program together. Drs. A. Patwardhan and M. Samir Hefzy step down from the executive committee, having completed their terms. Both of them served the division with great enthusiasm and we hope they will continue to be active in the coming years. Noshir Langrana, as our past Chair, represented the division very effectively. The division is well poised for further growth under the leadership of current Chair, Sohi Rastegar. I am certain you will give him your full support and will continue to provide feedback to him and to the others on the Executive Committee. As I have heard said, ASME-BED is a bio-entity that derives its life from the passions of its members. Thank you all. ■

Vijay GOEL
BED Past Chai



National Institute of Biomedical Imaging and Bioengineering (NIBIB)

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) supports and conducts interdisciplinary research and training in biomedical imaging and bioengineering, and supports the development and translation of emerging technologies that enable fundamental discovery and facilitate early disease detection and management. To accomplish these goals, the NIBIB has identified program and technology areas in which new research will be fostered. Of considerable interest to the Institute are program areas such as biomaterials, nanoscience, platform development, surgery, bioinformatics, multimodality imaging, imaging devices and agents, image guided therapies and interventions, imaging reconstruction, and physics and mathematics. Areas of interest in the technology arena include sensors, nanotechnology, microtechnology, micro and macro materials, computer applications, and biomedical imaging.

The NIBIB recently issued several Requests for Applications (RFAs) that focus on research areas such as operation of sensors in vivo, systems and methods for small animal imaging, telemedicine, imaging informatics, image-guided interventions, optical imaging, biomaterials/tissue engineering, cellular/molecular imaging, and career development and training. Interested individuals are encouraged to examine the detailed information on the RFAs available on the NIBIB website at www.nibib.nih.gov. ■

Roster 2002 - 2003

EXECUTIVE COMMITTEE

Chair
ohi Rastegar, Ph.D., P.E.
mail: srastega@bme.jhu.edu

Finance
erard A. Ateshian, Ph.D.
mail: ateshian@columbia.edu

Past Chair
ijay Goel, Ph.D.
mail: vijay.goel@utoledo.edu

Member
ouis J. Soslowsky, Ph.D.
mail: soslowsk@mail.med.upenn.edu

Secretary
laury L. Hull, Ph.D.
mail: mlhull@ucdavis.edu

Secretary- Elect
jit Yoganathan, Ph.D.
mail: ajit.yoganathan@bme.gatech.edu

External Affairs
ames E. Moore, Ph.D.
mail :james@eng.fiu.edu

Incoming Member
ruce R. Simon, Ph.D.
mail: simon@ame.arizona.edu

Member Affairs
homas P. Andriacchi, Ph.D.
mail: tandriac@leland.stanford.edu

ASME Staff
Edison Aulestia, Snr. Prog. Mgr.
Email: aulestiae@asme.org

ASME Staff
Carol Griffin, Admin. Asst.
Email: griffinc@asme.org

ADMINISTRATIVE COMMITTEE

International Congress Program Representative
Barry B. Lieber, Ph.D.
Email: lieber@eng.buffalo.edu

Honors & Awards
Peter Torzilli, Ph.D.
Email: torzillip@hss.edu

Journal Editor
Frank C. Yin, Ph.D.
EMail: yin@biomed.wustl.edu

Representative to BED Summer Meeting
Louis J. Soslowsky, Ph.D.
Email: soslowsk@mail.med.

U.S. National Committee on Biomechanics Representative
Louis J. Soslowsky, Ph.D.
Email: soslowsk@mail.med.upenn.edu

Lissner Award Committee Chair
Albert I. King, Ph.D.
Email: king@rrb.eng.wayne.edu

New Directions Committee
Robert L. Spilker, Ph.D.
Email: spilker@rpi.edu

Newsletter Editor
Daniel P. Nicolella Ph.D.
Email: daniel.nicolella@swri.org

Membership Development Committee
Tae-Hong Lim
Email: thlim@msn.com

Webmaster
Tae-Hong Lim
Email: thlim@msn.com

Program Chair
Ted Conway
Email: tconway@mail.ucf.edu

New Directions Committee
Robert L Spilker, Ph.D.
Email:spilker@rpi.edu

Y.C. Fung Young Investigator Chair
Bruce R. Simon, Ph.D.
Email: simon@ame.arizona.edu

TECHNICAL COMMITTEE

Design & Rehabilitation
Rita M. Patterson, Ph.D.
Email: rita.patterson@utmb.edu

Heat & Mass Transfer in Biotechnology
Thomas C. Bischoff
Email:thomas.bischoff@medtronic.com

Tissue and Cellular Engineering
Farshid Guilak
Email: guilak@duke.edu

Solid Mechanics
Jennifer S. Wayne, Ph.D.
Email: jswayne@vcu.edu

Fluid Mechanics
B. Barry Lieber, Ph.D.
Email: blieber@miami.edu

Solid Mechanics Committee

The Solids Mechanics Committee continues its commitment to inform the scientific community of recent developments in our field. Scientific programming in traditional areas maintains a strong and vital presence. Interdisciplinary collaborations with other technical committees within the Bioengineering Division and other ASME divisions are also a strength of the Committee and expand program relevance for our membership. Our members supported outstanding sessions at the 2001 IMECE in New York City and the 2002 IMECE in New Orleans and are excitedly anticipating the 2003 Summer Bioengineering Conference. Special thanks are also due to many members of the Bioengineering Division for the considerable amount of work that go into organizing these conferences and publishing the proceedings.

For the 2001 IMECE, the Solid Mechanics Committee sponsored 12 sessions. These sessions covered a wide range of topics, including Cartilage Mechanics, Soft Tissue Mechanics, Bone Mechanics, Micro Injury/Surgical Biomechanics, Joint Biomechanics, Implant Biomechanics, Spine Biomechanics, Vehicular and Pediatric Biomechanics. The Committee highlighted a panel discussion on Implant Technology with representatives from industry. A session on Biomechanics Education attracted many individuals interested in hearing new ideas for exciting undergraduates in our field. The Committee also continued its fruitful collaboration with the Fluid Mechanics Committee, cosponsoring 2 sessions on Cardiovascular Solid Mechanics and Cardiovascular Solid/ Fluid Interactions. Finally, it established collaborations with the newly formed Cellular & Tissue Engineering Committee of the Division with 4 cosponsored sessions on Tissue Engineering, Cell Mechanics, and Nano/Micro Mechanics.

For the 2002 IMECE held in New Orleans, the organization of sessions on Bone Mechanics, Joint Biomechanics, Soft Tissue Mechanics, Spine Biomechanics, and Vehicular Biomechanics continues an important part of the research efforts. A session on Constitutive Modeling and Computational Implementation attracted a large audience.

An excellent and exciting program is in the works for the 2003 Summer Bioengineering

CONTINUED ON PAGE 7

Journal of Biomechanical Engineering

Over its first twenty-five years, the ASME Journal of Biomechanical Engineering has taken its place among the most respected journals in the field of biomechanics. Much of this success has been due to the dedicated efforts of its previous editors and associate editors. John Brighton and Yuan-Cheng Fung showed the way by emphasizing the need for the Journal to "…serve as an excellent forum for the literature…" while highlighting the many promising areas of research for what was deemed a field that was "…still in its infancy, it is beginning to move into adolescence". Those early years firmly established the valuable contributions of engineers in addressing many areas of medicine and biology. Richard Skalak and Robert Nerem continued this tradition of excellence as this field matured in the last two decades of the last century. Under their guidance and leadership, they showed how engineers could further contribute to and provide fundamental insights into the many new discoveries in cell biology. Under Ken Diller's guidance over the recent five years, the Journal has continued to improve as exemplified by expanded to six issues per year, thereby eliminating the backlog and considerably shortening the time from submission to publication.

To all of these distinguished editors, the many associate editors who served under them and the dedicated publications staff at ASME, led by Phil DeVietro and Constance Monahan, the entire biomechanics community and I express our deepest appreciation. The strong and dedicated commitment of these key people is the foundation for the visibility, vitality and high quality the journal enjoys today. I am particularly grateful to Ken and his editorial assistant, Jenni Cork, for making the transition from his leadership to mine smooth and virtually seamless.

As I begin my tenure, I see both challenges and opportunities. As we gain more and better tools to probe the immense complexity of biology, as the amount of data expands to nearly incomprehensible volumes, and as engineering principles and practice become ever more integrated into biomedical research and medicine, the role of biomedical engineering should become increasingly important and better-appreciated. In this rapidly-changing landscape, however, it will be a continuing challenge for engineers to demonstrate, highlight and enunciate their unique skill sets, approaches and contributions. This challenge has to be met while still maintaining high standards and rigorous approaches — and while seeking new areas in which to make contributions.

For JBME to thrive and increase its impact, it will be essential to evolve to serve an ever-growing, increasingly diverse constituency. Again, the best way to do this is to ensure quality and balance. Quality derives from the editor and editorial board ensuring that each paper has a clear and rigorous engineering component and focuses on a timely and important topic. A balanced view of biomechanics has been one of the attractive features of JBME. We will strive to maintain such a balance while, at the same time, responding to the changing landscape of discovery. In particular, as the relationship of structure and biomechanical function permeate to the subcellular and molecular levels, we need to seize the opportunity to publish first-rate works showing the role of rigorous mechanical approaches in furthering our understanding at the ultrasmall scale while continuing to publicize more traditional biomechanics.

In addition to broadening the length scales, there are a few specific initiatives I would like to implement. First, within a short time we must implement an online submission and review process. Several of our competitors have already done so and we must follow suit to stay abreast – to say nothing of increasing our impact. Second, in keeping with the ever-increasing breadth of discoveries, we need to become more global in our reach – both internationally and domestically. One way to do this is to engage more foreign authors and associate editors. Another way is to invite leading scientists from other fields to contribute comprehensive reviews. This will not only help our readers better understand how their expertise could be applied in that field but also make other top scientists more aware of our journal. Finally, to make the table of contents easier for readers to identify articles of interest, I plan to cluster papers into major category headings. Over the past three plus years, 99% of all published articles in JBME could have been put into just six major categories. This organizational rather than fundamental structural change will hopefully make our Journal more accessible and attractive.

I look forward to meeting the challenges and exploring opportunities as your editor for the next five years. I, together with the dedicated and technically expert panel of Associate Editors, are committed to maintaining the high quality and doing our utmost to increase the impact of the Journal. ■

Frank C.P. YIN ***Editor 2002–200***

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Biofluids Committee:

The chairmanship of the division rotates on a three-year basis. The current chair is B. Barry Lieber, University of Miami 2002-2004. In order to provide continuity in the activities of the Committee, during the last election, the committee decided to elect a vice-chair concurrent with the election of the chair, with the intent to have the vice-chair assume the chair position in the succeeding term. The current vice chair of the committee is David Vorp from the University of Pittsburgh. In IMECE 2001, the fluids committee hosted 8 sessions of which one hosted biofluid papers from the MEMS subdivision, one session was hosted jointly with the Fluids Engineering Division and two sessions jointly with the Solids committee of BED. The fluids committee also contributed to the student paper competition.

The nature of biofluids is changing. In addition to the classical application of fluid mechanics to elucidate flow in the circulation it is witnessing diverse applications of fluid mechanics to micro and nano biofluidic systems (e.g., BioMEMS and BioNEMS); application of fluid mechanics to molecular and cellular transport, and its application to drug delivery. This diversification leads to a large number of proposed new tracks in addition to more traditional biofluid ones in the upcoming summer 2003 meeting. The proposed new directions include a track in Biomolecular transport, a joint track with the BioMEMS subdivision, joint sessions with the heat transfer committee of BED and joint sessions with the newly formed Tissue and Cellular Engineering Committee of BED. ■

Barry LIEBER

Chair, Fluid Mechanics Committe

2003 ASME INTERNATIONAL MECHANICAL ENGINEERING CONGRESS AND RD&D EXPO

■ November 16–21, 2003 ■ Washington, DC

Bioengineering

Join us and participate in this event to expand international cooperation, understanding and promotion of efforts and disciplines in the area of bioengineering. Dissemination of knowledge by research results, new developments, and novel concepts in this area will serve as the foundation of the conference program.

A variety of sessions will allow flexibility to the authors and audience. Although the majority are paper sessions, there will also be panel discussions, open forums, and posters. All sessions are quality driven. Some of the areas that will be covered are:

- Biomedical Application of Microfluidics
- Bone Mechanics
- Cardiovascular Fluid Mechanics
- Cellular Engineering and Mechanics
- Hemodynamics of Cardiovascular Devices
- Joint Biomechanics
- Medical Applications of Microsystems
- Orthopaedic Implants
- Soft Tissue Mechanics
- Spine Biomechanics
- Tissue Engineering
- Bioreactor Design
- Biofluid Mechanics Education
- Biomechanics in Sports
- Bio-Heat and Mass Transfer
- Modeling Across Scales for Heterogeneous Systems
- Mechanics of Heterogeneous
- Biomechanics Education
- Bioheat and Mass Transfer Education
- Biomedical Engineering Research Funding
- Occupant Protection/Vehicular Biomechanics
- Cardiovascular Solid Mechanics
- Computational Biomechanics
- Heat Transfer in Medicine and Biology
- Injury Biomechanics
- Hand Biomechanics
- Soft Tissue Biomechanics
- Special Symposia: Applications of X-rays in Biomechanics
- Special Symposium: Mechanics of Biological Materials
- Student Competition: BS, MS and PhD levels

INTERNATIONAL ME 2003 CONGRESS

DEFENSE RESEARCH & ENGINEERING

RD&D EXPO

Get technical program details now: www.asme.org/congress

2003 SUMMER BIOENGINEERING CONFERENCE

Sonesta Beach Resort Key Biscayne, Florida

June 25 – June 29, 2003

The Bioengineering Division of the American Society of Mechanical Engineers cordially invites your attendance at the 2003 Summer Bioengineering Conference.

This biennial meeting has been a wonderful scientific and social success in the past.
This year, the meeting will be co-sponsored by BMES, AIChE, IEEE EMBS, and the USNCB.
An outstanding scientific program is being finalized based on a record number of abstract submissions,
including student paper competitions, in spectacular surroundings.

The Sonesta Beach Resort is a four-diamond resort on a tropical island, home to beautiful beaches, tranquil sea breezes, and a charming village, just minutes from downtown Miami.

Additionally, a special event at the banquet will honor all past recipients of the prestigious ASME H.R. Lissner Award.
Thematic tracks and sessions will be represented in all areas of bioengineering.
Due to the overwhelming record number of abstract submissions for this year's meeting,
we strongly recommend that you register and book your hotel arrangements as soon as possible.

For further information, please visit our web site at:
http://www.asme.org/divisions/bed/events/summer03.html

Program Chair:
Thomas C. Skalak, Ph.D
Department of Biomedical Engineering
University of Virginia
tskalak@virginia.edu

Conference Chair:
Louis J. Soslowsky, Ph.D.
Departments of Orthopedic Surgery and Bioengineering
University of Pennsylvania
soslowsk@mail.med.upenn.edu

Student Competition News

The Bioengineering Division (BED) of the American Society of Mechanical Engineers has a very successful Student Paper Competition at each year's IMECE (International Mechanical Engineering Congress and R&D Expo) as well as at the semi-annual Summer Bioengineering Conference. In 1998, David Butler along with the Bioengineering division submitted to and received a grant from the Whitaker Foundation to fund the winter student competition. These funds support a portion of the student's travel as well as provide an honorarium for the first, second, and third place winners in each of the sessions, B.S., M.S., and PhD.

A sub-committee of the Honors Committee runs the Student Paper Competition. Four people each year are charged with the daunting task of selecting the finalists that are chosen to give an oral presentation during the IMECE. The committee consists of a chair plus organizers of the B.S., M.S., and Ph.D. sessions. In 2002, the three session chairs were Gerard Ateshian (Ph.D.), Naomi Chesler (M.S.) and Amy Lerner (B.S.). Each session organizer is charged with assembling an ad hoc group of reviewers for their set of abstracts and reporting the 6 finalists to the chair. Once the finalists are chosen, each student receives specific instructions from their chair regarding their presentation time and session date. At the meeting, each student is again judged on their oral presentation by another ad hoc set of judges. The scores from the original abstract and the oral presentation are summed to determine the 1st, 2nd, and 3rd place winners. The winners are announced by the chair of the student competition at the annual BED banquet.

The student competition has been a source of pride for the BED members and has proved to be extremely competitive over the last several years. Early on, the acceptance rate of abstracts submitted to the student competition was nearly 100%, but it has been decreasing steadily in recent years. In the last competition, it was as low as 50%! Because, student papers are solicited from all areas of bioengineering it is a difficult task to judge. The session chairs should be congratulated on a job well done.

As outgoing chair, I would like to thank all the session organizers for all of their help and hard work making the student competition a success. Now, I pass the baton to Gerard Ateshian and move on to help chair the student competition for this year's summer meeting with Sohi Rastegar. Finally, it is with much excitement that I announce that Lou Soslowsky has just received a Whitaker conference grant for the 2003 Summer Bioengineering Conference that includes money for student awards. Great job Lou!

Rita PATTERSON
Co-chair Student Competition

The 2002 Student Competition Winners Are:

Ph.D.	**M.S.** (there was a tie for first)	**B.S.**
1st Ramaswamy Krishnan	1st Rebecca Coulson	1st Andrea L. Kirkendall
2nd Dorothy Claire Gloeckner	1st Jonathan P. Vande Geest	2nd Darryl Athos Dickerson
3rd Steven Day	3rd Travis Shultz	3rd William Newman

Design and Rehabilitation Committee

The Design and Rehabilitation Committee continues to focus on all aspects of Mechanical Engineering related to medical devices, human movement and rehabilitation. The committee organized three Biomedical Technology Tack sessions and two regular sessions at the IMECE in New Orleans in November 2002.

One Biomedical Technology track session was titled "Educational Needs for the Medical Device Industry". Talks included are on intellectual property issues, special educational needs related to industry (Orthopaedics, Cardiovascular and Implants), and risk based analysis as applied to the medical field. Thanks to Tom Andriacchi for organizing this session.

A second Biomedical Technology Track session was titled "Assistive Technology and Rehabilitation Education". Talks in this session focused on technical issues related to assistive devices and their roles in rehabilitation. Thanks to Mohamed Semir Hefzy for organizing this session.

The third Biomedical Technology Track session was titled "Biomechanics in Sports" co-sponsored by the design division. Talks in this session focused on the design aspects of training and of equipment to enhance performance. Thanks to Art Erdman for organizing this session.

The committee has also organized two other sessions titled Orthopaedic Implants and Joint Mechanics. These sessions focus on various aspects of state of the art Orthopaedic applications and joint mechanics. We look forward to continued successful programming at the winter meeting as well as organizing sessions, for the first time, at the upcoming 2003 summer meeting in Florida.

I would like to thank all of the members who have worked to organize sessions related to design and rehabilitation. At the 2002 meeting, the committee selected Mike Murphy as vice-chair elect. Mike will take over leadership of the committee at the 2003 IMECE in Washington DC. As I step down as chair, I look forward to increasing participation in all efforts of the design and rehabilitation committee especially in this summer's conference. ■

Rita PATTERSON
Chair, Design and Rehabilitation Committee

Anyone interested in participating in the Design and Rehabilitation committee can contact Rita Patterson at rita.patterson@utmb.edu.

Solid Mechanics

CONTINUED FROM PAGE 3

Conference at the Sonesta Beach Resort in Florida. Not only will the gorgeous beach surroundings be a draw for participants, but the scientific program is sure to showcase emerging ideas within our community. Be on the lookout for impending updates. If you would like to participate, please contact Ed Guo (exg1@columbia.edu).

Many thanks to all the individuals who continue to strengthen the activities of the Committee.

Any input that you would like to share on the Solid Mechanics Committee or programming for our conferences, please contact Jennifer Wayne (804.828.2595; jswayne@vcu.edu). ■

Jennifer WAYNE
Chair, Solid Mechanics Committee

Honors Committee

The Honors Committee is responsible for administering the awards activities of the Bioengineering Division (BED) of American Society of Mechanical Engineers (ASME). These duties include the awarding of the ASME H.R. Lissner Award, ASME Y.C. Fung Young Investigator Award, BED Richard Skalak Best Paper Award (ASME Journal of Biomechanical Engineering), BED Student Paper Awards (presented at the International Mechanical Engineering Congress and Exposition, IMECE), ASME Fellow Awards, and interacting with the Basic Engineering Technical Operating Board (BETGOP) in awarding the ASME R.H. Thurston Lecture Award and the ASME Dedicated Service Award.

2001 IMECE Awards

At the 2001 IMECE, awards were presented to the following individuals: Lissner Award was presented to Michael Lai, Columbia University; Y.C. Fung Award to David F. Meaney, University of Pennsylvania; Skalak Best Paper Award (JBME, v. 122, 2000) to Barclay Morrision III, David.F. Meaney, Susan S. Marguiles and Tracy K. McIntosh, University of Pennsylvania; and Fellow Awards to Duane F. Bruley, University of Maryland, Steven A.. Goldstein, University of Michigan, Roger C. Haut, Michigan State University, Allen H. Hoffman, Worcester Polytechnic Institute, Bhamidipat K. Rao, International Scientific Research and Testing Inc and Process Research Analysis and Design Inc, and John M. Tarbell, Penn State University. In addition, the Thurston Lecture Award was presented to John W. Hutchinson, Harvard University.

2002 IMECE Awards

At the 2002 IMECE, awards were presented to the following individuals: Lissner Award was presented to Kenneth R. Diller, University of Texas; Y.C. Fung Award to Jeffrey A. Weis, University of Utah; Skalak Best Paper Award (JBME, v. 122, 2000) to Barclay Morrision III, David.F. Meaney, Susan S. Marguiles and Tracy K. McIntosh, University of Pennsylvania; and Fellow Awards to Duane F. Bruley, University of Maryland, Steven A. Goldstein, University of Michigan, Roger C. Haut, Michigan State University, Allen H. Hoffman, Worcester Polytechnic Institute, Bhamidipat K. Rao, International Scientific Research and Testing Inc and Process Research Analysis and Design Inc, and John M. Tarbell, Penn State University. In addition, the Thurston Lecture Award was presented to Elias P. Gyftopoulos, Massachusetts Institute of Technology.

Kenneth R. Diller — 2002 Recipient of the H.R. Lissner Medal.

Peter A. TORZILLI
Chair, Honors Committee

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