

# ASME INTERNATIONAL BIOENGINEERING DIVISION

FALL 2007

## FALL NEWS 2007

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## MESSAGE FROM CURRENT CHAIR



**James E. Moore, Jr.**

This is certainly an exciting time to serve as chair of the ASME Bioengineering Division. We recently held our third Summer Bioengineering Conference in its new annual format, and all indications are that it was a great success. The division is also working with ASME to initiate a number of exciting new publications in our area. Whether through our own efforts as BED, with other ASME divisions, or with ASME staff, the theme remains the same: Insist on change when it improves our service to the membership, while at the

same time maintaining the high quality services the community has come to expect from BED. While we can certainly be proud of the high quality of our primary functions such as the Summer Bioengineering Conference, there is always room for improvement and thus plenty to keep us busy.

The proud legacy of the BED can be attributed to the previous leadership; most recently to past chair Gerard Ateashian. It has been a pleasure to work with Gerard in making a smooth transition in leadership. I will do my best to follow in his tradition of productivity while providing a collegial atmosphere. I have worked closely with

*(Continued on page 2)*

## EDITOR'S MESSAGE

I have the distinct honor of bringing you the second newsletter of 2007. The Bioengineering Division has been quite active during the summer and fall of 2007 and the 2007 Summer Bioengineering Conference was a huge success.

In this issue, we have reports from our technical committees, honors committees and the Journal of Biomechanical Engineering, as well as articles on the division's major accomplishments. I would like to

thank all of those individuals who have contributed to the news bulletin and welcome input for future issues.

Please send your comments to:

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Editor, BED Newsletter  
Musculoskeletal Research Center  
405 Center for Bioengineering  
300 Technology Drive  
Pittsburgh, PA 15219  
or email: genesis1@pitt.edu

## UPCOMING EVENTS

**2008 Summer Bioengineering Conference**  
Marco Island, FL  
June 25-29, 2008



See Page 19 for Additional Details

**2009 Summer Bioengineering Conference**  
Lake Tahoe, CA  
June 14-22, 2009

**MESSAGE FROM CURRENT CHAIR (CONT)**

Gerard and the previous chair, Lou Soslowsky, for more than ten years now as we have risen through the ranks of the BED technical and executive committees. While I count this among my most enjoyable professional activities, the friendships I have formed are far more valuable.

The SBC is now in a steady annual rhythm, and for now we plan to maintain alternating between mountain and beach sites. We also wish to maintain the aspects of the meeting that have made it THE conference for biomechanics since its first modern manifestation in 1993. I attended that conference as a post-doc, and appreciated the informal atmosphere and ample opportunities to interact with biomechanicians from around the world. The enthusiasm and attendance exhibited by the international participants is a great indication of the respected excellence of this conference. One of the unique aspects of this conference is the degree to which it relies on volunteer efforts in all aspects of the organization. We can all be proud that the SBC remains the top annual conference in biomechanics, and that our efforts help insure high quality and low participant costs. I should take this opportunity to express my sincere thanks to those who lend their efforts to the SBC.

As we move forward with the SBC, we plan to continue new initiatives such as the leadership development lunch. This is an opportunity for the next generation of BED leaders to learn more about the division from the current leadership, and was a great success at the 2006 and 2007 conferences. Our conference organizers will also do everything they can to ensure that the registration costs remain affordable (especially for student attendees), even in the face of increasing expenses. Grants from the NIH and NSF have been crucial in this regard. Given the size of our conference, there are not many sites that are large enough and that suit our criteria. We may therefore have to consider going back to some of the best previous SBC sites. I hope that we will embrace this opportunity to experience the great natural wonder of these sites again. From the administrative point of view, we hope to streamline the abstract submission and registration processes even further, in particular the copyright assignment process that requires so much volunteer effort in its current state.

The production of high-quality publications represents another important division activity. The Journal of Biomechanical Engineering now has a new editor and a largely revamped editorial board.

We should all thank Michael Sacks for his willingness to take on this important and challenging leadership role. We are also nearing the end of the first year of existence of the Journal of Medical Devices, co-sponsored by the ASME Design Division. ASME is currently considering a third journal in the bio area, and BED has been asked to be involved. These developments are a sign of the degree to which ASME recognizes the importance of bioengineering, and the respect that BED has gained through its history of excellent volunteer efforts.

Finally, I would like to remind you all of the great need for your efforts in BED activities. There is a wide variety of ways in which you can serve the division. BED is a great organization in a growing field, but yet under the umbrella of society with over 125 years of history and over 100,000 members. While we can be proud of the fact that BED has provided leadership in the development of modern biomechanics, we should be mindful of the challenges ahead of us.

*James E. Moore, Jr.*

## 2007 H.R. LISSNER MEDAL



1977 Robert W. Mann  
 1978 Y.C. Fung  
 1979 Robert F. Rushmer  
 1980 F. Gaynor Evans  
 1981 Max Anliker  
 1982 R.M. Kenedi  
 1983 Henning E. von Gierke  
 1984 Perry L. Blackshear  
 1985 Richard Skalak  
 1986 Albert H. Burstein  
 1987 Van C. Mow  
 1988 Alf Louis Nachemson  
 1989 Robert M. Nerem  
 1990 Albert B. Schultz  
 1991 Savio Lau-Yuen Woo  
 1992 John C. Chato  
 1993 Don P. Giddens  
 1994 Sheldon Weinbaum  
 1995 Robert E. Mates  
 1996 Albert I. King  
 1997 Ajit P. Yoganathan  
 1998 Malcolm H. Pope  
 1999 Stephen C. Cowin  
 2000 Morton H. Friedman  
 2001 W. Michael Lai  
 2002 Kenneth R. Diller  
 2003 Vijay K. Goel  
 2004 John M. Tarbell  
 2005 Steven A. Goldstein  
 2006 Peter A. Torzilli  
 2007 Maury L. Hull



Maury L. Hull

The Lissner Medal (Award) was created in 1977 by the Bioengineering Division of ASME. It became a Society-wide award in 1987 through a donation of funds from Wayne State University and the University of California San Diego. It is named in honor of Professor H. R. Lissner of Wayne State University for his pioneering work in biomechanics that began in 1939.

Maury L. Hull, PhD is Professor of Mechanical Engineering at the University of California at Davis. He received his BS degree in mechanical engineering from Carnegie-Mellon University in 1969 and MS and PhD degrees in mechanical engineering from the University of California at Berkeley in 1970 and 1975, respectively. Following a postdoctoral position at the University of California at Berkeley, Dr. Hull became a faculty member in the Mechanical Engineering Department at the University of California at Davis in 1976. In 1993 he became Chair of the Biomedical Engineering Graduate Program, a position which he held until 2000. As Chair, Professor Hull expanded the biomedical engineering program by adding new programmatic

areas, increasing graduate student enrollment, and playing an essential role in founding a new Department of Biomedical Engineering. Professor Hull's research activities encompass orthopedic biomechanics with emphasis on the human knee, musculoskeletal system modeling and simulation of movement, and sports biomechanics and equipment design. His research contributions have been described in more than 150 articles (excluding abstracts) published in scientific journals. As a result of his research contributions, he received the Giovanni Borelli Award from the American Society of Biomechanics in 1989, was elected to Fellow in the American Society of Mechanical Engineers in 1993, and received the West Peak Award from the off-road bicycle industry in 1998. He has served on the editorial board of the Journal of Biomechanics and has served multiple terms as Associate Editor of the Journal of Biomechanical Engineering. He has been active in the Bioengineering Division of ASME in various positions of leadership for 15 years and served as Chair of the Division in 2003. He has been honored as an educator when he received the UC Davis Engineering Alumni Distinguished Teaching Award in 2002.

*Albert I. King, Chair*

## 2007 VAN C. MOW MEDAL



2005 Kyriacos A. Athanasiou

2006 Robert Lie-Yuan Sah

2007 Lori A. Setton



**Lori A. Setton**

The Van C. Mow Medal is bestowed upon an individual who has made significant contributions to the field of bioengineering through research, education, professional development, leadership in the development of the profession, as a mentor to young bioengineers, and with service to the bioengineering community. The individual must have earned a Ph.D. or equivalent degree between ten and twenty years prior to June 1 of the year of the award. The award was established by the Bioengineering Division in 2004.

Dr. Setton is the Mary Milus Yoh and Harold L. Yoh Jr. Bass Professor of Biomedical Engineering, and Associate Research Professor of Surgery at Duke University. She received her B.S.E. from Princeton University in Mechanical and Aerospace Engineering in 1984, and her Ph. D. in Mechanical Engineering in 1993 from Columbia University. Dr. Setton studies the role of mechanical factors in governing function and biological responses of cartilaginous tissues, and has contributed knowledge of how compromised mechanical

function regulates disease progression in osteoarthritis. Recent work in Dr. Setton's laboratory is focused on the development of novel materials for cartilage tissue regeneration and drug delivery. Dr. Setton has over 95 peer-reviewed publications and book chapters in bioengineering and is an inventor on three US patents. Dr. Setton has served as an Associate Editor for the Journal of Biomechanical Engineering and is currently on the Editorial Advisory Boards of the Journal of Biomechanics and Osteoarthritis and Cartilage. Dr. Setton has served on Boards of the Orthopaedic Research Society, the Biomedical Engineering Society and World Council on Biomechanics, and also served as a Member of the Solid Mechanics Committee for the Bioengineering Division of the ASME. In 1997, Dr. Setton was awarded the Presidential Early Career Award for Scientists and Engineers (PECASE) from the NSF, and in 2005 was elected to Fellow in the American Institute for Medical and Biological Engineering. Dr. Setton's contributions to research and teaching of graduate and undergraduate students has also been recognized with the Dean's Award for Outstanding Research in 2001 and Graduate School Excellence in Mentoring, Duke University, received in 2004.

*John M. Tarbell, Chair*

## 2007 Y.C. FUNG YOUNG INVESTIGATOR AWARD



- 1986 Mark H. Holmes
- 1987 Steven A. Goldstein
- 1989 David N. Ku
- 1990 Jay D. Humphrey
- 1991 Michael Kwan
- 1992 Cheng Zhu
- 1993 John A. Frangos
- 1994 Mehmet Toner
- 1995 Cheng Dong
- 1996 Antony Keaveny
- 1997 Gerard A. Ateshian
- 1998 Louis J. Soslowsky
- 1999 Rebecca Richards-Kortum
- 2000 Farshid Guilak
- 2001 David F. Meaney
- 2002 Jeffrey A. Weiss
- 2003 Sangeeta N. Bhatia
- 2004 Richard E. Debski
- 2005 Jeffrey W. Holmes
- 2006 Beth Winkelstein
- 2007 Stavros Thomopoulos



**Stavros Thomopoulos**

The Y.C. Fung Young Investigator Award is given to a young investigator who is under 36 on or before June 1 of the year of the nomination, and has received a Ph.D. or equivalent bioengineering degree within seven years prior to their nomination. The individual must be committed to pursuing research in and have demonstrated significant potential to make substantial contributions to the field of bioengineering. Such accomplishments may take the form of, but are not limited to, design or development of new methods; equipment or instrumentation in bioengineering; and research publications in peer-reviewed journals. The award was established by the Bioengineering Division in 1985 and operated as a division award until 1998 when it was elevated to a Society award.

Stavros Thomopoulos is an Assistant Professor of Orthopaedics at Washington University and holds a joint appointment in the Department of Biomedical Engineering. He received his B.S. in Mechanical Engineering from Columbia Uni-

versity in 1995 and earned a Ph.D. in Biomedical Engineering from the University of Michigan in 2001. He joined the faculty at Washington University in 2003 following a postdoctoral fellowship at Columbia University in Biomedical Engineering. Dr. Thomopoulos' research interests include tendon and tendon-to-bone development, biomechanics, and healing. He has received research grants from the National Institutes of Health, the Orthopaedic Research and Education Foundation, and the inSCOPE Foundation. He has published over 24 full-length scientific papers, 49 abstracts, and 2 book chapters, and served as primary research mentor for 20 undergraduate students, graduate students, medical students, and postdoctoral fellows. Dr. Thomopoulos' research has been recognized by awards from the American Shoulder and Elbow Surgeons Society, the American Orthopaedic Society for Sports Medicine, and the Bioengineering Division of the ASME. Dr. Thomopoulos has been involved in organization of scientific sessions for meetings of the ASME-BED, the International Symposium on Ligaments and Tendons, and the Orthopaedic Research Society.

*Bruce R. Simon, Chair*



Jimmy Moore, Karen Hull, Maury Hull,  
Ajit Yoganathan, and Ross Ethier



Jimmy Moore, Barbara Mow, Van C. Mow, Lori Stetton,  
Ross Ethier, Ajit Yoganathan, and Gerard Ateshian



**Jimmy Moore, Bruce Simon, Kelly Thomopoulos, Steve Thomopoulos, Ross Ethier, Ajit Yoganathan, and Gerard Ateshian**

## SBC2007—STUDENT PAPER COMPETITION

The 2007 Student Paper Competition (SPC) at the Summer Bioengineering conference again represented a significant contribution to the success of the meeting overall. A total of 205 papers were submitted to the SPC for each of the three degree levels, BS, MS and PhD. In each degree level, the papers were further subdivided into relevant theme groupings, and the abstracts were reviewed by three judges. Based on the Composition, Structure and Technical Merit, 184 abstracts were selected for presentation at the meeting. All selected papers were presented at the meeting in poster format, except for the highest scoring abstracts in the doctoral level. The six authors of the doctoral level having the highest scores in each theme category were asked to present their work in three concurrent, highlighted podium sessions. Top presentations,

both podium and poster formats, were scored by a minimum of three judges. The total score from the abstract and the on-site presentation determined the winners. In each degree level, and in each theme category, cash prizes totaling \$7,900 were awarded at the Summer Bioengineering Conference Banquet.

Historically, the SPC abstracts have represented approximately a third of the total submitted abstracts to the SBC. In 2007, nearly 35% of the submitted abstracts were for the SPC. This represents a tremendous amount of work on the behalf of the judges who volunteered to review the numerous abstracts and presentations. This year, a total of 92 judges from 62 institutions graciously gave their time to the SPC.

The review of the 2008 SPC abstracts will begin shortly, and if you would like to contribute to judging these papers, please contact Beth Winkelstein ([winkelst@seas.upenn.edu](mailto:winkelst@seas.upenn.edu)), the overall Chair of the 2008 Student Paper Competition.

2007 SPC Committee:

PhD Chair

Beth Winkelstein  
University of Pennsylvania

MS Chair

David Shreiber  
Rutgers University

BS Chair

Ender Finol  
Carnegie Mellon University

*Matthew Gounis, Chair*



**Doctoral Level Podium Competition – Biofluids and Imaging**

1st Place	Nanfeng Sun	Imperial College of Science, Technology and Medicine, University of London
2nd Place	Alex Barker	University of Colorado at Boulder
3rd Place	Gilwoo Choi	Stanford University
Honorable Mention	Chantal van den Broek	Eindhoven University of Technology
Honorable Mention	Vernella Vickerman Kelley	Massachusetts Institute of Technology

**Doctoral Level Podium Competition – Solid Mechanics, Design, and Rehabilitation**

1st Place	Bruce Wu	Massachusetts Institute of Technology
2nd Place	Justin Deuerling	University of Notre Dame
3rd Place	Gregory Fomovsky	Columbia University
Honorable Mention	Ling Dong	University of Pennsylvania
Honorable Mention	Eran Linder-Ganz	Tel-Aviv University
Honorable Mention	Jason Maikos	Biomedical Engineering Society

**Doctoral Level Podium Competition – Tissue Engineering and Cellular Biomechanics**

1st Place	Christopher Wilson	Georgia Institute of Technology
2nd Place	Niamh Nowlan	University of Dublin, Trinity College
3rd Place	Roman Natoli	Rice University
Honorable Mention	Lachlan Smith	Institute of Medical and Veterinary Science
Honorable Mention	Rebecca Long	University of Pittsburgh
Honorable Mention	Harini Sundararaghavan	Rutgers University



**Doctoral Level Poster Competition – Biofluids and Imaging**

1st Place	Yun Liang	Duke University
2nd Place	Matthew Ford	Robarts Research Institute
3rd Place	Leonie Rouleau	McGill University
Honorable Mention	Chander Sadasivan	University of Miami
Honorable Mention	Andrea Les	Stanford University

**Doctoral Level Poster Competition – Tissue Engineering and Cellular Biomechanics**

1st Place	Najmuddin Gunja	Rice University
2nd Place	Christopher Revell	Biomedical Engineering Society
3rd Place	Evren Azeloglu	Columbia University
Honorable Mention	Eric Lima	Columbia University
Honorable Mention	Paul Briant	Stanford University

**Doctoral Level Poster Competition – Solid Mechanics, Design, and Rehabilitation**

1st Place	Kristin Myers	Massachusetts Institute of Technology
2nd Place	Oluseeni Komolafe	Drexel University
3rd Place	Rachel Clipp	North Carolina State University
Honorable Mention	Matthew Landrigan	University of Notre Dame
Honorable Mention	Jeremy Suggs	Massachusetts Institute of Technology
Honorable Mention	Suzanne Ferreri	State University of New York at Stony Brook



**Master's Level Competition – Biofluids and Imaging**

1st Place	Bradford Smith	Tulane University
2nd Place	Benjamin Filas	Washington University - St. Louis
3rd Place	Ga Young Suh	Stanford University
Honorable Mention	Helen Lentzakis	McGill University
Honorable Mention	David Bark	Georgia Institute of Technology

**Master's Level Competition - Solid Mechanics, Design, Rehabilitation**

1st Place	Ingrid Field	University of Calgary
2nd Place	Justin Fisk	Virginia Commonwealth University
3rd Place	Shruti Pai	Worcester Polytechnic Institute
Honorable Mention	Jessica Kupper	University of Calgary
Honorable Mention	Craig Goergen	Stanford University

**Master's Level Competition – Tissue Engineering and Cellular Biomechanics**

1st Place	Karla Wyatt	City College of New York
2nd Place	Kirsten Kinneberg	University of Cincinnati
2nd Place	Brendon Baker	University of Pennsylvania
Honorable Mention	Paul Dungal	University of South Florida
Honorable Mention	Sevan Oungoulian	California Polytechnic State University, San Luis Obispo

**Bachelor's Level Competition – Biofluids, Imaging, and Cellular Biomechanics**

1st Place	Robert Metter	University of Pennsylvania
2nd Place	Andrea Tan	University of Pennsylvania
3rd Place	Adam Bernstein	Stanford University
Honorable Mention	Benjamin Cooper	Pennsylvania State University
Honorable Mention	Sayan Mondal	Worcester Polytechnic Institute

**Bachelor's Level Competition – Solid Mechanics, Design, and Rehabilitation**

1st Place	Abigail Eldridge	Cleveland Clinic Foundation
2nd Place	Corrine Adams	University of Denver
3rd Place	Jenny Finkbiner	Rose-Hulman Institute of Technology
Honorable Mention	Benjamin Pruden	Purdue University
Honorable Mention	Alvin Yew	University of Maryland—College Park

## PROMOTION TO ASME FELLOW

The division has been successful in promoting two more BED members to fellowship grade. "Fellow Grade" is the highest elected grade of membership within ASME, the attainment of which recognizes exceptional engineering achievements and contributions to the engineering profession. The basic requirement is a minimum of 10 years of active service to ASME.

The nomination form is easy to fill out. If you know of someone who qualifies please go to the ASME fellow website at <http://www.asme.org/Governance/Honors/Fellows/Fellows.cfm>

In addition, please let me know of your nomination so that I can follow up with an announcement of the members upgrade in the news-

letter and at the Annual Summer meeting.

I am pleased to announce the members listed below have been promoted to ASME Fellow.

*Rita Patterson  
Chair, Members Affairs*

Rita Patterson, Ph.D. – 2007



Rita M. Patterson, Ph.D., collaborates with hand surgeons, using engineering concepts to increase knowledge about the human musculoskeletal system.

Dr. Patterson investigates the bio-

mechanics and kinematics of the wrist and upper extremity. She has published 61 refereed journal papers, 148 conference proceedings, and six book chapters. She is an Associate Editor of the Journal of Hand Surgery and a grant reviewer for NIH. Patterson has trained numerous students, whose research has won Best Scientific exhibit at the Annual American Society for

Surgery of the hand. She was awarded Outstanding Young Scientist Award in recognition of her contributions to research and education in biomedical Engineering from the Houston Society for Engineering in Medicine and Biology. Ph.D. (1995) University of Texas Medical Branch.

Jennifer S. Wayne, Ph.D. – 2007



Dr. Wayne, as Professor of Biomedical Engineering and Orthopaedic Surgery, is an outstanding leader, innovative scientist, and exceptional

teacher in the field of biomedical engineering. She has made numerous contributions specifically to cartilage mechanics and joint me-

chanics in both computational modeling as well as experimental testing. She has served the ASME in many capacities, including Chair of the Bioengineering Division's IMECE, Chair of the 2005 Summer Bioengineering Conference, Chair of the Solid Mechanics Technical Committee, and will become the first female chair of the Bioengineering Division. She also serves on the editorial board of the Journal of Biomechanical

Engineering. The American Institute of Medical and Biological Engineering elected her as a Fellow in 2004. Her commitment to education is evident in her course development and training of numerous MS and PhD engineering students and over 30 orthopaedic residents. University of California at San Diego, Ph.D., 1990 Engineering Sciences/Bioengineering

## 2007 SUMMER BIOENGINEERING CONFERENCE—FINAL REPORT

We are pleased to report that the 2007 Summer Bioengineering Conference, held June 20-24, 2007 at the Keystone Resort and Conference Center, Colorado, continued the tradition of outstanding summer meetings run by the Bioengineering Division. This was the second year of the new annual format for the meetings, and the strong attendance (645 registered participants, including 321 students) shows clearly that the annual format is successful. This is a testament to the growth of the field of Biomechanics and the leading role that BED plays within this field. In addition to 252 podium papers in 6 parallel sessions, we had 18 PhD competition papers in 3 parallel sessions and 261 posters. The very strong student participation, which has been a long-standing feature of our Summer Meetings, continued in 2007 and confirms that Biomechanics has a bright future. There were four workshops: 1) BioMEMS I - Mi-

cro/NanoTechnology Fabrication; 2) Industrial versus Academic Perspectives on Bioengineering Education; 3) BioMEMS II - Applications of Micro/Nanotechnology in Medicine and Biology; and 4) Bioengineering Ethics. Additionally, NIBIB put on a well-attended grants writing workshop, AIMBE hosted an excellent public policy workshop, and NIBIB ran a workshop for Diversity trainees. Finally, we had two excellent keynote addresses: Professor Carlos Bustamante (UC Berkeley) spoke on “Recent Advances of Single Molecule Manipulation Methods in Biophysics”, while Professor Robert Malkin (Duke) spoke on “Engineering Barriers to Health Care Technology in the Developing World”. As in previous years, the Bioengineering Division honored its membership at the Summer Bioengineering Conference by presenting several awards that recognize the recipients’ contributions to Bioengi-

neering. These include the H.R. Lissner Award; Y.C. Fung Young Investigator Award; Van C. Mow Medal; Skalak Best Paper in the Journal of Biomechanical Engineering for the previous year; and winners of the student paper competition. Further details of the awards are provided in the newsletter.

We would like to take this opportunity to thank the members of the organizing committee for their hard work, as well as the Technical Committee Chairs and Vice Chairs and their reviewers for helping to shape the scientific program.

*James E. Moore, Jr.  
Conference Chair*

*C. Ross Ethier  
Program Chair*



Jimmy Moore,  
Noami Chesler



Professor & Student  
Working Hard



Todd Doehring, Mark Miller  
and Maury Hull

## NEW DIRECTIONS COMMITTEE

The New Directions Committee met at the 2007 SBC and a record of 10 was set for attendance. From this group, several useful suggestions were made. One of particular note concerned maximizing the benefit of attending the SBC for junior faculty members. Because the SBC is a relatively long meeting for the amount of scientific content and because junior faculty members must use their time as effectively as possible, the SBC should be structured to provide this group with a strong return on their time investment. For example, activities could be instituted which strengthen the interactions between senior members and junior members. Possible activities include having sessions where senior members make short presentations on various topics important to success followed by extended time for a panel discussion.

A second important suggestion

was to take advantage of the experience of the past chairs of the BED. Past chairs serve one more year on the Executive Committee after which they are put out to pasture. In fact, some past chairs do not regularly attend the SBC. This seems to be a wasted resource for the BED. To take advantage of this resource, a Senior Advisory Committee might be formed which would consist of all past chairs once they have rotated off the Executive Committee. The members of the Senior Advisory Committee would be welcome to attend any committee meetings if interested to provide any committee with the benefit of their input.

A topic of continued discussion has been methods to strengthen the Journal of Biomechanical Engineering. The most recent ideas concern the review process. On average the turn around time of

papers has been reduced. However there is inconsistency in the time to complete reviews which is governed by the Associate Editors. Hence the following two suggestions were made: 1) standardize the time to complete reviews among the Associate Editors, and 2) consider having the administrative assistant monitor the review process of each manuscript and send reminders to late reviewers.

As a final note to the membership, if anyone has any ideas for either new directions or changes in the operations of the BED, then please pass them along to this committee. The input of all is encouraged and will be appreciated.

*Maury Hull, Chair*

## TISSUE AND CELLULAR ENGINEERING COMMITTEE

For the 2007 SBC, we reviewed 60 papers and rejected 12%. Three reviewers were assigned to each abstract with the mean score of  $2.4 \pm 0.6$  using a scale of 1 (best) to 5 (worst). The papers were distributed to six podium sessions and various poster sessions. Podium sessions included:

Tissue Engineering I; Tissue Engineering II; Cell & Molecular Bio-

mechanics I; Cell & Molecular Biomechanics II; Cell & Molecular Biomechanics III; and Physical Effects on Cells.

Philip LeDuc helped to organize two workshops on BioMEMs (BioMEMS I: Micro/NanoTechnology Fabrication; BioMEMS II: Application of Micro/NanoTechnology in Medicine and Biology) with Rob Keynton

and Michael Murphy. For comparison, we had 55 papers (6 podium and 2 poster sessions) for the 2006 SBC in Amelia Island.

*Clark T. Hung, Chair*

## SOLID MECHANICS COMMITTEE

The Solid Mechanics Committee continues to have strong participation in the Summer Bioengineering Conference. At the 2007 SBC in Keystone Colorado our committee had 178 abstract submissions. Of these 72% (129) were accepted as podium papers, 17% (31) were accepted as posters, and 11% (18) were rejected or withdrawn. Twenty-one sessions were organized. I would like to thank outgoing Solids Committee Chair Mohamed Samir Hefzy for his leadership over the last three years. I would also like to thank the many reviewers, without whom these abstracts could not be evaluated and programmed into sessions.

As the incoming Solids Chair, I am looking forward to working with the Committee over the next three years. There are several initiatives that are ongoing.

I have created "Theme Leader" positions in each of the major themes of our committee. The Theme Leaders will be working with me to manage the abstract review process in their areas and to put together sessions. I would like to thank the following individuals for agreeing to take on this critical

role. 1) Cardiovascular Tissue Mechanics: Jeff Holmes, 2) Musculoskeletal Tissue Mechanics – Soft Tissues: Richard Debski, 3) Musculoskeletal Tissue Mechanics – Bone and Joints: Elise Morgan, 4) Injury, Trauma, and Occupational Biomechanics: Cindy Bir, 5) Design: Sara Wilson, and 6) Other Tissues: Victor Barocas. Please work with these folks and respond to their emails when they request your contributions to reviewing.

We are developing a more complete Solids membership list and trying to increase our membership. In the near future, those of you on the Solids email list will be getting a message from me requesting updated information. Importantly, we need your area of expertise. My intent is to link this with the Themes and Subthemes already established. Also, the current membership list seems to be limited to those who attended the Solids technical committee meeting the day before the conference over the last couple of years. Anyone who is interested is welcome to be part of the Solids Committee and I encourage you to email me if you want to be a member ([delliott@mail.med.upenn.edu](mailto:delliott@mail.med.upenn.edu)). If you know of colleagues, particu-

larly New Investigators, who may be interested in membership in the Solids Committee, please have them get in touch with me. It is through the participation of our members that we develop the outstanding programming at the Summer Conference.

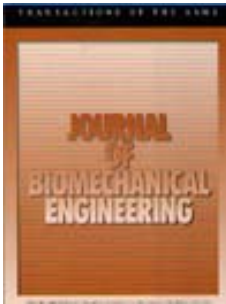
The election of a Vice Chair of the Solids Committee will be happening soon. Watch for an email call for nominations and for voting.

If you have ideas for Workshops or Plenary Speakers for the 2009 meeting that represent the interests of the Solids Committee, please send them to me.

I invite all interested in Solid Mechanics to participate in the next meeting which will be held the day prior to the 2008 SBC. I am looking forward to working with you all! If you have any questions or suggestions, please contact me, Dawn Elliott at [delliott@mail.med.upenn.edu](mailto:delliott@mail.med.upenn.edu).

*Dawn Elliot, Chair*

## JOURNAL OF BIOMECHANICAL ENGINEERING



One of the greatest strengths of JBME is its unifying concept of biomechanics in the broadest sense: kinematics, biological and bio-materials, heat transfer, modeling/simulation, all over the complete range of length scales. My goal for JBME is straightforward: To make JBME a more widely read, higher impact journal in the Biomechanics, Biomedical Engineering, Biomaterials, and related biomedical/life science communities. My overall concept is thus not to limit JBME to any one length scale or problem area, but rather broaden its appeal to both those already within the Biomechanical Engineering community and in closely related scientific fields. This will be accomplished by making JBME a more attractive venue by focusing high profile special issues, invited reviews of recent and future trends, fast review times, rapid on-line publishing, featured front cover art, and in the longer term, an increase of the number of issues.

Already in the works for JBME are the following 11 new Associate Editors who will start their terms in 2008 to help streamline the review process:

Gang Bao, Ph.D.

Professor, Wallace H. Coulter Dept. of Biomedical Engineering, Georgia Institute of Technology  
Areas of Research: Biomolecular

Engineering, Bionanotechnology, Molecular Imaging, Molecular Biomechanics

John C. Criscione, M.D., Ph.D.

Associate Professor, Department of Biomedical Engineering, Texas A&M University  
Areas of Interest: Nonlinear Solid Mechanics, Cardiac Mechanics, Constitutive Modeling, Computational Mechanics, Cellular Mechanics, Applications of Soft Tissue Biomechanics in Industry and Medicine

David Elad, D.Sc.

Professor, Department of Biomedical Engineering, Faculty of Engineering, Tel-Aviv University  
Areas of Interest: Reproductive Biomechanics

Mohamed Samir Hefzy, Ph.D.

Associate Dean of Graduate Studies and Research Administration, Professor of Mechanical, Industrial and Manufacturing Engineering, University of Toledo  
Areas of Interest: Knee biomechanics, Ligaments and tendons, Joint Biomechanics, Orthopedic biomechanics

Jeffrey W. Holmes, M.D., Ph.D.

Associate Professor of Biomedical Engineering and Medicine, Columbia University  
Area of Interest: Interactions between mechanics, function, and growth and remodeling in the heart.;mechanical properties of normal and diseased myocardium

David Ku, M.D., Ph.D.

Lawrence P. Huang Chair Professor of Engineering Entrepreneurship and Regents' Professor  
Areas of Interest: Cardiovascular disease pathophysiology and treatment; commercialization of novel medical devices through start-up companies; and efficient methods of product development

Philip R. LeDuc, Ph.D.

Associate Professor Mechanical Engineering, Carnegie Mellon University  
Areas of Interest: Molecular and Cellular Biomechanics, Biological/Medical Micro- and Nanotechnology, Computational Biology

Richard R. Neptune, Ph.D.

Associate Professor, Mechanical Engineering, The University of Texas at Austin  
Areas of Interest: Musculoskeletal Modeling and Simulation of Human Movement, Neuromuscular Function and Adaptation, Sports Biomechanics and Equipment Design, Acute and Overuse Injury Mechanisms, Rehabilitation Engineering

Jeffrey H. Omens, Ph.D.

Professor of Medicine and Bioengineering, University of California, San Diego  
Areas of Interest: Cardiac Mechanics and Cardiac Physiology

Yoed Rabin

Professor, Department of Mechanical Engineering, Carnegie Mellon University  
Areas of Interest: Biothermal tech-

## JOURNAL OF BIOMECHANICAL ENGINEERING (CONT)

nology, energy modalities in medicine, heat and mass transfer in biological systems, thermal stress, sensors and instrumentation.

### Dimitrije Stamenovic Ph.D.

Associate Professor, Biomedical Engineering, Boston University  
Areas of Interest: Cellular mechanics, Rheology of soft tissues and cells, Respiratory mechanics, Mechanics of foam-like structures

On the “outbound” side, I am pleased to report that the ASME Journal Program is:

1) Starting the “e-First” publishing model with the 2008 issues of all

Transactions journals so that publication will occur as rapidly as possible after the completion of peer review.

2) JBME back issues will be online for 1995-2000 by January 2008

3) JBME back issues will be online for 1990-1995 by June 2008. Earlier issues are planned.

I will be also be working with the ASME staff to implement other initiatives, such as featured cover art, within the next year (or sooner).

To achieve the goals will take much hard work and dedication from our great team of Associate Editors, Reviewers, and the ASME staff. I very much look forward to working with the new and existing Associate Editors, along with colleagues in the Biomechanical and the larger Bioengineering and sister disciplines to make JBME the “go-to” Journal for all Biomechanical Engineering related topics.

*Michael Sacks, Editor*

## HEAT & MASS TRANSFER IN BIOTECHNOLOGY COMMITTEE (K17)

The final 2007 SBC program included two podium sessions organized by K17 (12 papers). In addition ten papers were accepted as posters in the general poster sessions and nine papers were in the Ph.D., two in the M.S., and three in the B.S. Student Poster Competition. The podium sessions were: Biothermal Therapy, and Biotransport and Delivery of Drugs and Biotherapeutics.

Dr. John Bischof presented the outline of Biotransport 2008, which is planned to be held within the 2008 SBC. The intention is to arrange an “Allerton Workshop” style discussion among researchers in bioheat and biomass transport community. Dr. Bischof has done

an excellent job in planning the meeting, which includes inviting keynote speakers and securing funding for the workshop. It is expected that Biotransport 2008 will bring more senior researchers in our field back to the SBC and provide a platform for intellectual interactions between junior faculty and established senior researchers.

Liang Zhu (University of Maryland Baltimore County) assumed the chair of the committee. At the 2007 SBC, the Committee discussed the upcoming co-Chair nominations and elections for 2008. Dr. Kenneth Diller at University of Texas at Austin was later elected as co-Chair of K17.

We continue our efforts to increase the active membership of the K17 committee. We encourage all K17 members to participate in our future SBC meetings. Co-sponsoring sessions and integrating with other technical sessions were proposed and encouraged. An archive of K17 proceedings articles has been posted at: <http://www.me.umn.edu/info/links/asme/archive.html> and is available to all K17 members. An updated member directory was also sent to all members in August 2007.

*Liang Zhu, Chair*

## DESIGN & REHABILITATION COMMITTEE

With the efforts of a number of reviewers, session chairs and co-chairs, and participants, the 2007 Summer Bioengineering Conference program in Design and Rehabilitation was a success. Programming for the conference included sessions on forward dynamic modeling and simulation, design of orthopaedic implants, design of medical devices, implants and prosthetics, and cardiovascular device design. The four technical sessions and three poster sessions included 24 podium presentation and 12 poster presentations. The acceptance rate for papers in these groups was 75%. In addition, the committee co-sponsored two workshops with Bio-Fluids and Cell Mechanics.

For the 2008 Summer Bioengineering Conference, an exciting program is planned. We will be looking for submissions in the analysis of human movement, device and implant design, computer- and robotic-assisted surgery and rehabilitation in particular. In addition, planning is underway for a session honoring Dr. Kevin Granata, a researcher in low back stability, dynamics of gait, and neuromotor control, who was lost in the events at Virginia Tech. The plan for this session is to include work that has been influenced by or would have inspired Dr. Granata. We invite those of you who knew Dr. Granata or his work to submit papers for this special session. Finally, we would like to encourage industry involvement in the committee and in the conference by putting together a session

or workshop on some of the design and surgical issues in industry.

On November 11-15th, the ASME International Mechanical Congress and Exposition (IMECE) was held in Seattle. In conjunction with a number of other divisions in ASME, a track in biomedical and biotechnology engineering was successfully organized by track chair Dr. Gerald Miller, co-chairs Dr. Mike Murphy, Dr. Xiaopeng Zhao, Dr. Roy Hogan, and Dr. Arthur Erdman, and symposium chairs Dr. Ahmed Al-Jumaily, Dr. Assimina A. Pelegri, and Dr. Theodore J. Heindel. Seventy papers were presented within this track in a number of areas including Composites in Biomaterials and Bioengineering, Biotechnology, Micro and Nano Systems in Medicine and Biology, Vibration and Acoustics in Biomedical Applications, Modeling and Simulation and Design and Analysis. These sessions included a strong contingent of international presenters from a number of countries including Japan, the Republic of Korea, China, New Zealand, Canada, Singapore, and the United Kingdom.

The 2008 IMECE will be November 2nd - 8th in Boston, MA. Dr. Ahmed Al-Jumaily will be chairing the biomedical and biotechnology engineering track for this congress. Dr. Al-Jumaily is a professor of Mechanical Engineering at the Auckland University of Technology in New Zealand. His research interests include respiratory system dynamics, medical devices,

and vibrations in biological systems. Dr. Al-Jumaily has been active in organizing a number of symposia on medical applications of vibration at previous IMECE congresses and is excited to develop an interesting program for 2008 that will encourage interaction between biomedical engineering and other divisions of ASME. Symposia currently proposed include Medical Application of Vibration and Acoustics, BioMEMS, Micro and Nano Systems in Medicine and Biology, Biomedical Design and Analysis, Tissue Engineering and Biomedical Modeling and Simulation.

Anyone interested in organizing a symposium, proposing sessions, or participating in the review process for this congress is encouraged to contact Dr. Al-Jumaily at (ahmed.aljumaily@aut.ac.nz) or track co-chair, Dr. Sara Wilson at sewilson@ku.edu. The abstract submission deadline for this congress will be March 3, 2008.

Finally, special thanks goes to our outgoing committee chair, Dr. Mike Murphy for his efforts on behalf of the committee over the past three years. Dr. Sara Wilson will be taking over as chair of the committee and Dr. Lorin Maletsky will assume the role of co-chair. If you have any suggestions for committee activities, conference planning, or future goals of the committee, feel free to contact Dr. Wilson (sewilson@ku.edu).

*Sara Wilson, Chair*



Preliminary Announcement

# Mark Your Calendars!

**2008 Summer Bioengineering Conference**

**Marco Island, Florida**

**June 25-29, 2008**



The Bioengineering Division of the American Society of Mechanical Engineers cordially invites you to attend the 2008 Summer Bioengineering Conference. An outstanding scientific program has been planned, including Plenary Lectures, Symposia, Workshops, and Student Competitions. Both oral and poster sessions will be presented in spectacular surroundings. Marco Island is a world-class resort with miles of pristine beaches, archaeological sites, several National Parks and the Everglades in its vicinity (<http://www.marco-island-florida.com/>).

Further information about the meeting will be available via: <http://divisions.asme.org/bed/events>

**Student Paper Competition:** Abstracts are solicited for student paper competitions at the levels of BS, MS and PhD. Students selected for the competition will be able to present their work in sessions where only student presentations are given – both in dedicated student poster sessions and in highlighted PhD oral sessions. Cash awards will be made to the top papers at each level in multiple technical areas. Funds are being sought that would allow for reduced conference registration for Student Paper Competition participants. In addition, conference organizers are currently negotiating for reduced lodging costs for all students attending the conference. Further information and instructions for the submission process is available at: [http://divisions.asme.org/bed/events/stu\\_comp07.htm](http://divisions.asme.org/bed/events/stu_comp07.htm)

### **Important dates:**

**Anticipated Submission deadline for two-page abstracts: January 31, 2008**

**Conference Chair:**

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University of Miami

**Program Chair:**

David Vorp, Ph.D.  
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**BIOENGINEERING DIVISION**

Fall 2007

News Bulletin

American Society of Mechanical Engineers

**ASME BED ROSTER 2007-2008**

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