

2004 BMES Annual Fall Meeting



Biomedical Engineering: New Challenges for the Future

October 13-16, 2004

Wyndham Philadelphia at Franklin Plaza
Philadelphia, Pennsylvania

Hosted by
**University of Pennsylvania
and Drexel University**
<http://www.seas.upenn.edu/be/bmes2004>

Biomedical Engineering Society
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Send inquiries to:
BMES2004@bmes.org

*The full service professional society for Biomedical
Engineering and Bioengineering*

**Call for Papers
and
Program Announcement**





Program Highlights

- The BMES Distinguished Lecture
- The Rita Schaffer Memorial Lecture
- International Distinguished Lecture
- Plenary Address in Biomedical Ethics by Art Caplan
- Mini-Symposia on Biodefense and Biopharmaceutical Industry
- Platform Sessions and Poster Sessions
- Jointly-listed Sessions with the Society for Biomaterials
- Student Paper and Design Competition
- Pre-Conference Workshops
- Career Development Workshops
- Meetings of BMES Student Chapters and Alpha Eta Mu Beta (national BME honor society)

Technical Tracks and Sessions

1. **Cardiovascular Engineering**
Thomas C. Skalak, tskalak@virginia.edu
Ajit P. Yoganathan, ajit.yoganathan@bme.gatech.edu
2. **Respiratory Bioengineering**
Daniel J. Tschumperlin, dtschump@hsph.harvard.edu
Steven C. George, scgeorge@uci.edu
3. **Orthopaedic Bioengineering**
Gerard A. Ateshian, ateshian@columbia.edu
Dawn M. Elliott, delliott@mail.med.upenn.edu
4. **Neural Engineering**
Nitish V. Thakor, nthakor@bme.jhu.edu
5. **Cellular Engineering**
Peter I. Lelkes, pilelkes@drexel.edu
David V. Schaffer, schaffer@cchem.berkeley.edu
6. **Tissue Engineering**
Robert T. Tranquillo, tranquillo@cems.umn.edu
Keith J. Gooch, kgooch@seas.upenn.edu
7. **Molecular Bioengineering**
Dennis E. Discher, discher@seas.upenn.edu
8. **BME Education**
Rebecca Richards-Kortum, kortum@mail.utexas.edu
Thomas R. Harris, thomas.r.harris@vanderbilt.edu
9. **Computational Bioengineering**
Jeff M. Hasty, jmhasty@ucsd.edu
Ron Weiss, rweiss@princeton.edu
10. **Biomedical Instrumentation: From the nano- to the micro- scale**
Christopher S. Chen, cchen@bme.jhu.edu
Sangeeta N. Bhatia, sbhatia@bioeng.ucsd.edu
11. **BME in Society and Industry**
Kristina M. Ropella, kristina.ropella@marquette.edu
12. **New Frontiers in BME**
Daniel A. Hammer, hammer@seas.upenn.edu
Banu Onaral, banu.onaral@drexel.edu
13. **Biomedical Imaging and Optics**
Mary-Ann Mycek, mycek@umich.edu
Douglas Noll, dnoll@umich.edu

Abstract Submission

Abstracts will be submitted and reviewed via a web-based program developed by the Community of Science, Inc. – the COS Abstract Management System. There is an abstract submission fee of \$35 and accepted abstracts will be published in the conference CD-ROM proceedings. Information for abstract submission can be found at the conference web site www.seas.upenn.edu/be/bmes2004 or the BMES home page www.bmes.org.

Critical Dates and Deadlines

- Final date for abstract submission: May 15, 2004
- Author notification and acceptance: July 31, 2004
- Early Conference registration deadline: September 10, 2004
- Hotel Reservation cutoff date: September 11, 2004

Student Awards

- The **Rita Schaffer Young Investigator Award** is offered each year by BMES to stimulate research careers in biomedical engineering.
- Up to five **Graduate Student Research Awards** and up to five **Undergraduate Student Research and Design Awards** are presented. BMES also recognizes outstanding Student Chapters with Meritorious Achievement and Commendable Achievement Awards. All awards are presented at the BMES Business Meeting. For information on these awards, please contact Pat Horner, BMES Executive Director, 301-459-1999, pat.horner@bmes.org.



Social Events

The social program includes a tour and reception at the Philadelphia Constitution Center on Friday evening, October 15. In addition, a welcome reception will be held at the Wyndham Hotel on Wednesday evening, October 13. Alpha Eta Mu Beta, the national honor society, will hold a banquet on Thursday, October 14.

Scientific and Technical Exhibits

An exhibit area will be offered at BMES 2004. Session breaks will be held in the exhibit area, as well as poster sessions and the computer café. For further information about the exhibition, including requests for exhibitor prospectus, please contact Diane Solomon at BMES.

Registration Information

Register via the BMES 2004 website, the BMES home page, or complete and mail or fax the registration form to BMES.

	<i>Before September 10</i>	<i>After September 10</i>
BMES Member	\$400	\$525
Nonmember	\$500	\$625
Student BMES Member	\$150	\$175
Student Nonmember	\$175	\$200
Accompanying Guest	\$100	\$125

Registration fees include three lunches, the welcome reception, the reception at the Constitution Center, and a CD-ROM of abstracts. Accompanying guest fees include the evening reception at the Constitution Center and the welcome reception.

For BMES members joining for the first time, the differential between nonmember and member registration fees will be credited towards the first year of membership in BMES upon completion of a BMES membership application form. An advance program will be available on the conference website in August.

Online registration is available via the BMES website at www.bmes.org or the conference website at www.seas.upenn.edu/be/BMES2004.

Hotel, Airline and Car Travel

The official conference hotel is the Wyndham Philadelphia at Franklin Plaza, 17th and Race Streets, Philadelphia, Pennsylvania 19103, 215-448-2000, Fax 215-448-2864. The toll free number for reservations at Wyndham Hotels is 877-999-3223 (U.S. or Canada); 972-915-7070 if calling from outside the U.S. or Canada. Reservations may also be made on the web at www.Wyndham.com. To reserve a room, please contact the hotel directly by telephone, mail, or online. Please indicate "BMES" when making reservations. *One night's deposit is due with your reservation and will be applied to your account.* Special conference rates are \$161 for single and \$171 double. Student rates for a triple are \$191 and for a quad is \$211. *Reservations must be made by September 11, 2004 to obtain group rates.*

BMES has selected Association Travel Concepts (ATC) as the official travel agency for the meeting. ATC offers these cost savings options:

- *Airline Discounts* – 10-15% off lowest available fare if purchased more than 60 days prior to the meeting; 5-10% off lowest available fare if purchased less than 60 days prior to the meeting (United, US Airways & Continental).

- *Web Only Fares* – Low fares found only on the web can be found using the BMES online Travel Center. Go to <http://www.atcmeetings.com/bmes> and follow Meeting Traveler links.
- *Car Discounts* – Discounted meeting rates for Alamo, Avis and Hertz.
- *Zone Fares* – Region-to-region flat rates.
- *Consolidator and Net Fares* – Reduces cost of high priced tickets with Saturday night stay.

You may also call your own agency or the vendors directly and refer to the BMES I.D. numbers: United, ID 510CK, 800-521-4041; Continental, ID VV4PWF, 800-468-7022; US Airways, ID GF70682976, 877-874-7687; Alamo, ID 926560GR, 800-732-3232; Avis, ID J998474, 800-331-1600; Hertz, ID CV#031C001, 800-654-2240.

The above discounts apply for travel October 10-19, 2004. Service fees apply. ATC is available for reservations from 9:00am until 7:30pm Eastern Time, Monday through Friday.

Make your reservation on the web at www.atcmeetings.com/bmes, email at reservations@atcmeetings.com, fax 858-362-3153, or toll free 1-800-458-9383.

For More Information

The latest conference news and technical program information is available at the conference web site at <http://www.seas.upenn.edu/be/BMES2004>. For more information, contact the BMES headquarters office, 8401 Corporate Drive, Suite 225, Landover, MD 20785-2224, 301-459-1999, fax: 301-459-2444 or go to <http://www.bmes.org>.



Conference Overview

	Wednesday October 13		Thursday October 14		Friday October 15		Saturday October 16				
8-9:00am			BMES Distinguished Lecture		Rita Schaffer Memorial Lecture		International Distinguished Lecture				
9-10:00am	<i>BME IDEA Working Group Meeting at Wyndham Hotel (8:30am-5:00pm)</i> Teaching of Innovation, Design & Entrepreneurship in BME	<i>Penn Bioengineering Symposium and Lunch at the University of Pennsylvania</i>	Plenary Lecture Bioethics by Art Caplan		Poster Session 1	Mini-Symposium on Biopharmaceutical Industry		Poster Session 3	Mini-Symposium on Bioengineering in Biodefense	Poster Session 5	
10-10:30am			Break			Break					Break
10:30 - Noon			Oral Sessions			Oral Sessions					
Noon-1:30pm			Box Lunch		Box Lunch <i>Career Development Workshop</i>		Box Lunch <i>Career Development Workshop</i>				
1:30-3:00pm	<i>BMES Board of Directors Meeting</i>	<i>Workshops at Wyndham Hotel (1:30-5:30pm)</i>	Oral Sessions		Poster Session 2	Oral Sessions		Poster Session 4	Oral Sessions	Poster Session 6	
3-3:30pm			Break			Break					Break
3:30-5:00pm			Oral Sessions			Oral Sessions					
5:00-6:00pm			Poster Viewing		Poster Viewing		Poster Viewing				
Evening	Welcome Reception at the Wyndham Hotel		BMES Business Mtg. Alpha Eta Mu Beta Banquet		Reception at the National Constitution Center		Society for Biomaterials Meeting				

Pre-Conference Workshops and Sessions

1. Force Measurements in Biology

1:30-5:30 pm, Wednesday, October 13, 2004

Registration: \$150 members, \$200 nonmembers

Faculty: Richard Superfine, University of North Carolina

Forces have long been appreciated in biomedical engineering in the context of structural stability of tissue and bone, the action of muscle, the circulatory and pulmonary systems. Over the past decade increasing attention has been paid to the forces at the cellular level that give rise to phenomena such as cellular motility, morphogenesis, and intracellular trafficking to name a few. Techniques have been developed to measure force generation at the single molecule level, to map forces at the cellular level, and to correlate force measurements with biochemical responses. This workshop will review the contexts where forces play an important role at the cellular level, and methods to measure those forces.

2. Computational Biology

1:30-5:30 pm, Wednesday, October 13, 2004

Registration: \$150 members, \$200 nonmembers

Faculty: Aydin Tozeren, Drexel University, and Susan Davidson, University of Pennsylvania; Co-Directors, Greater Philadelphia Bioinformatics Alliance (GPBA)

This workshop will cover modern techniques in computational and systems biology applied to biomedicine and bioinformatics. Topics will include applications from functional genomics, genomic computations, transcript and proteome analysis, flux and system pathway analysis, mechanistic disease modeling, and recent advances in bioinformatics.

3. VaNTH Education Workshop

1:30-5:30 pm, Wednesday, October 13, 2004

Registration: \$100 members, \$150 nonmembers

Faculty: Sean Brophy and Thomas R. Harris, Vanderbilt University

Basic concepts for the design of bioengineering instruction in a challenge-based format that integrates learning science, learning technology, assessment and the domains of bioengineering. The process of instructional design is based on principles from the book, *How People Learn* by Bransford JD, Brown AL, Cocking RR, ed. 1999, Nat Academy Press, Washington, DC. Educators and graduate students are invited to attend to gain experience in developing challenge-based modules in bioengineering courses.

By invitation only — BME-IDEA Working Group Meeting: Teaching of Innovation, Design and Entrepreneurship in BME

8:30am-5:00pm, Wednesday, October 13, 2004

Faculty: Daniel K. Bogen, Penn; Paul King, Vanderbilt; and Paul G. Yock, Stanford University

This working meeting of BME-IDEA (Innovation, Design & Entrepreneurship Alliance) will continue to explore new approaches for learning and assessment in the areas of innovation, design, and entrepreneurship. Topics include: new program “snapshots;” collaborative teaching resources; best practices in student and course assessment; intellectual property in project classes; national BME student design contest; new web portal for BME (bmesource.org); and brainstorming for the Whitaker Educational Summit in 2005. For more information see bme-idea.org.

Other workshops may be added at a later date; please check the conference website for updates.

Workshop registration fees are separate from BMES conference registration. Class size is limited and workshops require advance registration. Written cancellations received before September 10, 2004 are subject to a \$50 cancellation fee. No refunds after September 10. BMES reserves the right to cancel any workshop with insufficient advance registrants.



REGISTRATION FORM



BMES 2004 Annual Fall Meeting October 13-16, 2004

Registration will not be processed without payment information.

Please type or print clearly.

First Name	MI	Last Name	Highest Degree
Company/Organization			
Address			
City	State or Province		Zip or Postal Code
Country	Telephone	Fax	
E-mail Address		Name of Guest (for guest badge) if applicable	

Conference Registration Fees

Fees include 3 lunches, welcome reception and reception at Constitution Center.

	<i>Postmarked by Sept 10</i>	<i>Postmarked after Sept 10</i>	
BMES Member # _____	\$400	\$525	\$ _____
Nonmember	\$500	\$625	\$ _____
Student BMES Member # _____	\$150	\$175	\$ _____
Student Nonmember	\$175	\$200	\$ _____
Student ID # _____ Advisor Initials: _____			
Accompanying Guest	\$100	\$125	\$ _____

Pre-Conference Workshops

- | | | | |
|---|---------------|------------------|----------|
| <input type="checkbox"/> 1. Force Measurements in Biology | Members \$150 | Nonmembers \$200 | \$ _____ |
| <input type="checkbox"/> 2. Computational Biology | Members \$150 | Nonmembers \$200 | \$ _____ |
| <input type="checkbox"/> 3. VaNTH Education Workshop | Members \$100 | Nonmembers \$150 | \$ _____ |

Total Payment Enclosed (U.S. Dollars) \$ _____

Payment Method

- Check or money order payable in US dollars to the Biomedical Engineering Society or BMES
 VISA MasterCard American Express Discover

Card Number _____ First time attendee
Expiration Date _____ Please send BMES membership information
Name as it appears on card _____ Special needs due to disability _____

Mail or Fax completed form with payment to:

BMES 2004 Annual Fall Meeting, Biomedical Engineering Society
8401 Corporate Drive, Suite 225, Landover, MD 20785-2224

Fax: 301-459-2444 or On-line registration at www.bmes.org or www.seas.upenn.edu/be/BMES2004

For Office Use Only

Date Received _____	Amount \$ _____
<input type="checkbox"/> Cash <input type="checkbox"/> Check <input type="checkbox"/> VISA <input type="checkbox"/> MC <input type="checkbox"/> AMX <input type="checkbox"/> Discover <input type="checkbox"/> PO <input type="checkbox"/> Invoice	
No. _____	Date _____
Authorize _____	Payer _____

Society for Biomaterials – October 16-18, 2004 – Wyndham Philadelphia at Franklin Plaza

Biomaterials in Regenerative Medicine: The Advent of Combination Products

In collaboration with BMES, the Society for Biomaterials (SFB) is organizing a 2-day symposium immediately after the BMES meeting (October 16-18, 2004) and in the same hotel. A discount is available to BMES registrants who register for the SFB meeting. The symposium will focus on the scientific, commercial, and regulatory issues associated with combination products and regenerative medicine. The meeting will emphasize the underlying scientific and regulatory problems that transcend specific clinical applications: for example, the sessions will highlight the variety of interactions that materials have with drugs, cells, or the host as well as the frontiers in combination products. In addition to an FDA/industry forum, "Translation from Discovery to Development," there are several keynote speakers including Robert Langer, Jeffrey Hubbell, and Sam Stupp among several others. To submit an abstract or for more information please go to www.biomaterials.org. To the extent possible, relevant sessions in the BMES meeting will be scheduled as late as possible, so that attendees interested in biomaterials topics can attend both meetings efficiently.

BMES Conference Organizing Committee 2004

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Banu Onaral, Drexel University

Program Co-Chairs

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Peter I. Lelkes, Drexel University

Conference Coordinator

Joan S. Gocke, University of Pennsylvania

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Fred D. Allen, Drexel University

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Patricia I. Horner, pat.horner@bmes.org
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