Organizing Committee:

**Chairs:**

Mauro Ferrari | Professor and Director of the Division of Nanomedicine; Deputy Chairman of the University of Texas Department of Biomedical Engineering; The University of Texas Health Science Center; President of the Alliance for NanoHealth.

Thomas J. R. Hughes | Professor, Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin

Wing Kam Liu | Professor, Northwestern University, Department of Mechanical Engineering. ASME NanoCouncil Chair. Co-Director of the NSF Summer Institute on Nano Mechanics, Nano Materials and Nano/Micro Manufacturing

**Technical Chairs:**

Paolo Decuzzi | Associate Professor, University of Texas Health Science Center Houston and University of Magna Gracia – Italy.

Jian Cao | Professor, Northwestern University, Department of Mechanical Engineering

**Important Dates:**

- **July 27, 2009:** Submission of Extended Abstract (2-4 pages).
- **September 28, 2009:** Author Notification of Acceptance and Abstract Review.
- **October 5, 2009:** Submission of Copyright Form (1903).
- **November 6, 2009:** Submission of Final Extended Abstract (2-4 pages).

**Accommodations**

Special sleeping room rates have been arranged for attendees of the NEMB 2010. Mention ASME-NANO 2010 when making your reservation to ensure that you receive the discount rate. THE CUT-OFF DATE FOR RESERVATIONS IS FRIDAY, JANUARY 15, 2010. After this date, reservations will be accepted based upon availability. To reserve at the JW Marriott Houston call: 800-228-9290 (Toll-free).


**Supporting Organizations**

- ANH - Alliance for NanoHealth
- ASME - American Society for Mechanical Engineers
- IACM - International Association for Computational Mechanics
- IEEE - Institute of Electrical and Electronics Engineers
- NSF Summer Institute on Nanomechanics, Nanomaterials and Micro/Nanomanufacturing
- USACM - United States Association for Computational Mechanics

**Contact:**

Iana Aranda | Program Manager, Technical Programming & Development Knowledge & Community Sector
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New York, NY, 10016-5990
212-591-7281 (phone)
212-591-7856 (fax)
arandai@asme.org

For information on the technical program, special events, special sessions and general conference inquiries.

Suzette C. Hewitt, CMP | Meetings Manager
ASME International
Three Park Avenue
New York, NY, 10016-5990
212-591-7231 (phone)
212-591-7856 (fax)
hewitts@asme.org

For information on registration, hotels/reservations, exhibits, A/V equipment and presentations.

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### Registration Fees

Please see the table below for the number and type of fee.

**Full Advanced Registration**

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**Full Late/On-Site Registration**

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Objective
The ASME 2010 Congress on NanoEngineering for Medicine and Biology (NEMB 2010) focuses on the integration of Engineering Sciences and Nanotechnology to aid in addressing fundamental problems in Biology and medicine in developing devices for the early detection, imaging and cure of diseases. The technical program comprises three main thematic areas:
(i) NanoEngineering applied to Biomedical Sciences;
(ii) Manufacturing and Biomaterials in Medicine;
(iii) BioEngineering Sciences.

Topics such as NanoEngineering for medical diagnosis, therapy and imaging; Nano/Microfluidics; Regenerative Medicine; Manufacturing and Materials for Nanomedicine; Multiscale modeling in Biological systems; Biological NanoMechanics are addressed. Furthermore, specific tutorials are offered by clinicians, basic scientists and industrial experts on the current medical challenges in the diagnosis and cure of diseases; on computational modeling for biomedicine; and on the commercialization and regulation of medical devices. Cancer and cardiovascular, inflammatory, infection, degenerative and neurological diseases are considered, amongst others.

The target audience for NEMB2010 comprises scientists and clinicians involved in the development of new tools and materials in nanomedicine, experts from industry in the field of life sciences and all those investigating the potential of future emerging technologies. The inherent overlap of topics combined with multidisciplinary attendees from around the world presents significant opportunities for idea cross-fertilization among engineering professionals, scientists and clinical researchers.

Location and Research Environment
The NEMB2010 conference will be held in Houston (TX) in proximity of the largest medical center in the country: the Texas Medical Center (TMC). With 46 not-for-profit institutions dedicated to the highest standards of patient care, education and patient care, TMC has about 6 million patient visits each year, US $1.2 Billion in patient care and US $1.0 Billion in research.

Located in Houston is also the Alliance for NanoHealth (ANH), the first multi-disciplinary, multi-institutional collaborative research endeavor aimed at using Nanotechnology to bridge the gaps between Medicine, Biology, Material Science, Computer Technology and Public Policy. The ANH comprises eight world-class research institutions: Baylor College of Medicine, M.D. Anderson Cancer Center, Rice University, the University of Houston, the University of Texas Health Science Center at Houston, Texas A&M University, University of Texas Medical Branch and The Methodist Hospital Research Institute.

7 major Research Centers have been recently appointed within the TMC with the objective of integrating NanoEngineering and Biomedical Sciences. These are the Center for Biological and Environmental Nanotechnology (Rice University); National Center for Macromolecular Imaging and Center for Protein Folding Machinery (Baylor College of Medicine); Rice University; National Center for Nanotechnology in Molecular Biomedicine and Advanced Technologies (Rice University); National Cancer Research Program Innovator Award and Center for BioNano Scaffolds.

Houston is also the home of the NASA Johnson Space Center and its Space NanoHealth Laboratory (SNL), established in 2006, with the objective to be of service in the solution of problems concerning the health care of astronauts in space exploration missions as from the “Bioastronautics Critical Path Roadmap”.

Plenary Speakers:
- Mauro Ferrari, University of Texas Health Science Center at Houston
- Andrew C. von Eschenbach, Former Director NCI, Commissioner FDA
- Charles A. Poppas, The University of Texas at Austin
- Paolo Dario, Scuola Superiore Sant’Anna – Italy
- Eiji Osawa, Nanocarbon Research Institute – Japan
- Michael Teitell, University of California Los Angeles
- Albert van den Berg, University of Twente – The Netherlands
- Viola Vogel, Swiss Federal Institute of Technology ETH Zurich

Nobel Laureate Panel with
- Robert F. Curl, Rice University
- Ferid Murad, University of Texas Health Science Center at Houston

Conference Topics:
Papers are solicited in the following areas:

Track 1: NanoEngineering for Medical Diagnostics
Track Chairs:
- Scott Manalis Massachusetts Institute of Technology
- Thomas G. Thundat Oak Ridge National Laboratory (ORNL)
- Vijay K. Varadan University of Arkansas Fayetteville

Track 2: NanoEngineering for Imaging
Track Chairs:
- Ananth Annappragada University of Texas Health Science Center Houston
- Katherine W. Ferrara University of California at Davis
- John D. Hazel The University of Texas M. D. Anderson Cancer Center
- Massoud Motamedi The University of Texas Medical Branch

Track 3: NanoEngineering for Medical Therapeutics
Track Chairs:
- Paolo Decuzzi The University of Texas Health Science Center Houston and University of Magna Graecia – Italy
- Joseph DeSimone The University of North Carolina at Chapel Hill
- Omid Farokhzad Harvard Medical School / Brigham and Women’s Hospital
- Ramanan Krishnamoorti University of Houston
- Vijay K. Varadan University of Arkansas Fayetteville

Track 4: Nano-/Micro-fluidics for Medical Diagnostics and Therapeutics
Track Chairs:
- Rashid Bashir University of Illinois at Urbana-Champaign
- Albert van den Berg University of Twente – The Netherlands
- Michael Hughes University of Surrey – UK

Track 5: NanoEngineering for Regenerative Medicine
Track Chairs:
- Antonios G. Mikos Rice University
- Michael Sacks University of Pittsburgh
- Samuel I. Stupp Northwestern University

Track 6: Manufacturing for Nanomedicine
Track Chairs:
- Shaochen Chen The University of Texas at Austin
- Wei Li University of Washington
- Jack Zhou Drexel University

Track 7: Materials for NanoMedicine
Track Chairs:
- Dean Ho Northwestern University

Track 8: Multiscale modeling in biological systems
Track Chairs:
- Paolo Decuzzi The University of Texas Health Science Center Houston and University of Magna Graecia – Italy
- Martin-Jojo Starzweugs University of Illinois at Urbana-Champaign
- Constantine Pozrikidis University of Massachusetts at Amherst

Track 9: Biological NanoMechanics
Track Chairs:
- Nadrian C. Seeman New York University
- Viola Vogel Swiss Federal Institute of Technology ETH Zurich

Track 10: Bio-NanoRobotics
Track Chairs:
- Paolo Dario Scuola Superiore Sant’Anna – Italy
- Sylvain Martel École Polytechnique de Montréal – Canada

Special Track: Nanomedicine in Space
Track Chairs:
- Neal R. Pellel NASA
- Scott Parazynski NASA Astronaut

Tutorials:
NanoEngineering tools for Biomedicine
Modeling, design and fabrication of medical devices such as cantilever beams; nanoparticle based systems for drug delivery, biomedical imaging and physical therapy; microfluidic devices and biosensors.
Speakers: J. DeSimone, P. Decuzzi, M. Ostoja-Starzewski, T. Thundat

Challenges in Biomedicine for Engineers
Clinical applications of nanotechnological tools in fields as oncology (breast, liver, ovarian/prostate cancer), cardiology, glycogenoma, trauma and orthopedics.

Regulation and Commercialization of NanoEngineered Medical Devices and Materials
Early and midterm industrial developments of nanotechnological tools for biomedical applications and regulatory procedures for the bench-to-bedside translation.
Speakers: C. Arzashone, R. Goodall, S.E. McNeil, W.R. Sanbui

NanoEngineered Theranostics & Therapeutics I & II
Novel approaches towards theragnostic nanosystems and active drug release from devices and nanoparticles induced by external stimuli, e.g. Light, pH, US, etc.

Computational Methods for the Cardiovascular System
Application of computational mechanics to the study of blood flow, vessel dynamics, and growth and remodeling in cardiovascular health and disease.
Speakers: Charles A. Taylor, Jay D. Humphrey