

## TRACK CHAIRS & SUBTOPICS

### Cardiovascular Engineering

Track Chairs:

Michael Sacks, *University of Pittsburgh* - [msacks@pitt.edu](mailto:msacks@pitt.edu)  
Jane Grande-Allen, *Rice University* - [grande@rice.edu](mailto:grande@rice.edu)

- Heart Valve Structure-Function Relations and Computational Simulation
- Myocardial Mechanics
- Cardiac Electrical Structure and Contraction
- Microvasculature, Angiogenesis, and Capillary Patches
- Cerebrovasculature and Blood-Brain Barrier
- Vascular Structure and Function
- Vascular Permeability
- Cardiovascular Devices
- Vascular Mechanosignal Transduction
- Cardiovascular Modeling
- Thrombosis and Hemostasis
- Cardiovascular Fluid Mechanics
- In Vitro and Multi-scale Models of Cardiovascular Disease

### Neural Engineering

Track Chairs:

Warren Grill, *Duke University* - [warren.grill@duke.edu](mailto:warren.grill@duke.edu)  
Erin Lavik, *Case Western University* - [elavik@case.edu](mailto:elavik@case.edu)

- Neural Electrode Tissue Interface
- Brain-Computer Interfaces
- Neural Modeling
- Motor Neural Prosthetics
- Sensory Neural Prosthetics
- Translational Neural Engineering
- Neural Engineering: Technology Development
- Neural Optogenetics
- Circuit Models of The Nervous System: Chips that Learn
- Drug Delivery and Tissue Engineering in the Nervous System
- Neural Control of Movement

### Biomedical Imaging and Optics

Track Chairs:

Katherine Ferrara, *University of California Davis* - [kwferrara@ucdavis.edu](mailto:kwferrara@ucdavis.edu)  
Rebekah Drezek, *Rice University* - [drezek@rice.edu](mailto:drezek@rice.edu)

- Imaging in Cardiovascular Medicine
- Imaging in Regenerative Medicine
- Imaging in Cancer
- Neuroimaging
- Imaging in the Enhancement or Assessment of Therapeutic Delivery
- Molecular Imaging
- Imaging Technology Development (including Biophotonics)

### Systems Biology, Bioinformatics and Computational Biology

Track Chairs:

Jeremy Gunawardena, *Harvard University* - [Jeremy@hms.harvard.edu](mailto:Jeremy@hms.harvard.edu)  
Orly Alter, *University of Texas at Austin* - [orlyal@mail.utexas.edu](mailto:orlyal@mail.utexas.edu)  
Pengyu Ren, *University of Texas at Austin* - [pren@mail.utexas.edu](mailto:pren@mail.utexas.edu)

- Modeling of Biomolecules and Their Interactions
- Multiscale Modeling
- Biological Systems and Control Dynamics
- Molecular and Cellular Design and Evolution
- Systems Cell Biology
- Signals and Networks in Cancer and Disease
- Systems Neuroscience

### Tissue Engineering

Track Chairs:

Tony Mikos, *Rice University* - [mikos@rice.edu](mailto:mikos@rice.edu)  
Jennie Leach, *University of Maryland* - [jleach@umbc.edu](mailto:jleach@umbc.edu)

- Novel Biomaterials and Scaffolds
- Nano- and Micro- Engineering in Tissue Engineering\*
- Bioinspired Materials
- Cell-Biomaterial Interfaces
- Bioreactors and Bioprocessing
- Biosensors and Tissue Engineering
- Printing and Patterning in Tissue Engineering
- Controlled Release in Tissue Engineering\*
- Engineered Models of Tissue Disease
- Stem Cells and Tissue Engineering
- Cell Delivery and Cell-Based Therapeutics
- Host Response to Biomaterials
- Cardiovascular Tissue Engineering\*
- Musculoskeletal Tissue Engineering\*
- Skin and Adipose Tissue Engineering\*
- Neural Tissue Engineering\*
- Tissue Engineering and Gene Therapy
- Tissue Engineered Models for Drug Discovery
- Translational Tissue Engineering and Clinical Experience\*

\*Jointly with other tracks

To submit an abstract for presentation  
consideration, go to:  
<http://submissions.miracl.com/bmes2010>

## TRACK CHAIRS & SUBTOPICS

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### Biomedical Engineering Education

Track Chairs:

Monty Reichert, *Duke University* - [reichert@duke.edu](mailto:reichert@duke.edu)

Melissa Micou, *University of California San Diego* - [mmicou@ucsd.edu](mailto:mmicou@ucsd.edu)

- Education Assessment
  - Learning Modules/Instructional Materials
  - Teaching Tools and Strategies
  - Graduate Education
  - Mentoring
  - "Community Partnerships: Innovation in Engineering Education"
  - Student projects in global health
  - Instructional strategies in global health
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### New Frontiers in Bioengineering

Track Chairs:

Melody Swartz, *EPFL* - [melody.swartz@epfl.ch](mailto:melody.swartz@epfl.ch)

Christina Smolke, *Stanford University* - [Christina.smolke@stanford.edu](mailto:Christina.smolke@stanford.edu)

- Synthetic Biology in Health and Medicine
  - Immunobioengineering
  - Biological Engineering in Cancer
  - Cell and Subcellular Mechanics
  - Systems-level Approaches in Bioengineering
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### Devices: Nano to Micro

Track Chairs:

Tejal Desai, *University of San Francisco* - [tejal.desai@ucsf.edu](mailto:tejal.desai@ucsf.edu)

John Zhang, *University of Texas at Austin* - [john.zhang@engr.utexas.edu](mailto:john.zhang@engr.utexas.edu)

- Nano to Micro: Fluidic Technologies
  - Drug Delivery Technologies: Nano to Micro Devices
  - Medical Diagnostics: Nano to Micro Devices
  - Biomems and Nanotech for Cellular Engineering
  - Micro and Nanostructured Biomaterials
  - Biosensors, Bio-Interfaces and Implantable Devices
  - Miniature Energy Generation & Harvesting for Bio
  - Emerging Concept of Medical Micro Devices
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### Cellular and Molecular Engineering

Track Chairs:

Andres Garcia, *Georgia Tech* - [Andres.garcia@me.gatech.edu](mailto:Andres.garcia@me.gatech.edu)

Laura Segatori, *Rice University* - [segatori@rice.edu](mailto:segatori@rice.edu)

- Molecular Engineering
  - Cell Mechanics, Adhesion, and Motility
  - Cellular Engineering and Modeling
  - The Physics and Engineering of Cancer Cells and Their Microenvironment
  - Cellular and sub-cellular imaging
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### Orthopedic and Rehabilitation Engineering

Track Chairs:

Rena Bizios, *University of San Antonio* - [rena.bizios@utsa.edu](mailto:rena.bizios@utsa.edu)

John Fisher, *University of Maryland College Park* - [jpfisher@umd.edu](mailto:jpfisher@umd.edu)

- Orthopaedic Bioengineering
  - Skeletal Biomechanics
  - Orthopaedic Hard Tissue Biomechanics
  - Orthopaedic Soft Tissue Biomechanics
  - Musculoskeletal Cell Mechanotransduction
  - Orthopaedic Biomaterials
  - Orthopaedic Applications of Noninvasive Assessment and Imaging
  - Orthopaedic Cellular Engineering
  - Rehabilitation Engineering
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### Respiratory Engineering

Track Chairs:

Jim Grotberg, *University of Michigan* - [grotberg@umich.edu](mailto:grotberg@umich.edu)

Geoffrey Maksym, *Dalhousie University* - [Geoff.maksym@dal.ca](mailto:Geoff.maksym@dal.ca)

- Multi-scale Behavior and the Lung
  - Complexity and Heterogeneity in Lung Behavior
  - Mechanobiology in the Lung
  - Lung Computational Fluid Dynamics and Particle Deposition
  - Microfluidics and Tissue Engineering Constructs for the Lung
  - Upper Airway Function
  - Imaging the Lung – The New Frontier
  - Acute Lung Injury from Cell to System
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### Drug Delivery and Intelligent Systems

Track Chairs:

Suzie Pun, *University of Washington* - [spun@u.washington.edu](mailto:spun@u.washington.edu)

Justin Hanes, *Johns Hopkins/University of North Carolina* - [hanes@jhu.edu](mailto:hanes@jhu.edu)

- Targeted Drug Delivery
  - Nucleic Acid Delivery
  - Novel Materials and Self-Assembling Systems
  - Non-Parental Delivery
  - Translation Drug Delivery and Clinical Trials
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### Translational Biomedical Engineering

Track Chair:

Dan Anderson, *MIT* - [dgander@mit.edu](mailto:dgander@mit.edu)

- Intracellular delivery: Translating nucleic acid therapies to the clinic
  - Islet generation/Transplantation: A translational perspective
  - Human Nerve Repair: Clinical aspects
  - Translating tissue engineering products: from bench to bedside
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### Undergraduate Sessions

Track Chairs:

James Sweeney, *Florida GCU* - [jsweeney@fgcu.edu](mailto:jsweeney@fgcu.edu)

Rebecca Kuntz Willits, *St. Louis University* - [willits@slu.edu](mailto:willits@slu.edu)

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