



ANNUAL MEETING CO-CHAIRS:

Shelly Sakiyama-Elbert, *The University of Texas at Austin* - sakiyama@utexas.edu

Kevin Otto, *University of Florida* - Kevin.Otto@bme.ufl.edu

To submit an abstract go to: <http://submissions.mirasmart.com/BMES2017>

BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

Track Chair: Tamara Kinser-Ursem, *Purdue University* - tursem@purdue.edu

Track Chair: Pam Kreeger, *University of Wisconsin* - kreeger@wisc.edu

- Analysis of Cell Signaling
- Analysis of Multi-Cellular Systems
- Computational Modeling of Cancer (*Cancer)
- Computational modeling of cell motility and proliferation (*Cell & Molecular)
- Metabolic Models
- Omics Data and Analysis
- Single-Cell Measurements and Models
- Stem Cell Systems Biology & Bioinformatics (*Stem Cell)
- Systems Approaches to Therapy, Therapeutics, and Precision Medicine
- Theory and Practice of Synthetic Biology
- Other / Non-specified

BIOMATERIALS

Track Chair: Ben Keselowsky, *University of Florida* - bkewelowsky@bme.ufl.edu

Track Chair: Angela Pannier, *University of Nebraska* - apannier2@unl.edu

- 3D Printing and Advanced Biomaterial Manufacturing
- Advanced Characterization and imaging of Biomaterial Environments
- Biomaterials for Immunoengineering
- Biomaterials for Regenerative Medicine
- Biomaterials Scaffolds
- Biomechanics of Biomaterials (*Biomechanics)
- Drug Delivering Biomaterials (*Drug Delivery)
- Engineering the Stem Cell Microenvironment (*Stem Cells)
- Hydrogel Biomaterials
- Integration of Biomaterials with Chips and Devices (*Nano & Micro)
- Natural and Bioinspired Biomaterials
- Other / Non-specified

BIOMECHANICS

Track Chair: Brent Hoffman, *Duke University* - brenton.hoffman@duke.edu

Track Chair: Jessica Wagenseil, *Washington Univ* - jessica.wagenseil@wustl.edu

- Advances in Biomechanical Testing of Medical Devices
- Biofluid Mechanics
- Biomechanics in Cell and Tissue Engineering (*Tissue Engineering)
- Biomechanics of Biomaterials (*Biomaterials)
- Biomechanics of Rehabilitation/Injury
- Brain Biomechanics
- Cardiovascular Biomechanics (*Cardiovascular)
- Computational and Multiscale Modeling in Biomechanics
- Hemodynamics and Vascular Mechanics (*Cardiovascular)
- Human Performance/Sports Biomechanics
- Imaging Techniques in Biomechanics (*Imaging)
- Injury Biomechanics
- Mechanobiology of Cardiac and Smooth Muscle (*Cardiovascular)
- Orthopedic: Mechanobiology and Mechanotransduction (*Orthopedic & Rehab)
- Substrate Effects in Mechanobiology (*Cell & Molecular)
- The Nucleus and Cytoskeleton in Mechanobiology (*Cell & Molecular)
- Other / Non-specified

BIOMEDICAL ENGINEERING EDUCATION (BME)

Track Chair: Michael Caplan, *Arizona State Univ* - michael.caplan@asu.edu

Track Chair: Jean-Michel Maarek, *Univ of Southern CA* - jmaarek@bmsr.usc.edu

- Design and Curriculum (*Undergraduate Research, Design & Leadership)
- Entrepreneurship and Innovation
- Industry Preparation (*Undergraduate Research, Design & Leadership)
- Technological Enhancements
- Dual & Pluri- Institution Programs
- Outcomes Assessment
- Other / Non-specified

BIOMEDICAL IMAGING AND OPTICS

Track Chair: Andrew Dunn, *University of Texas* - adunn@utexas.edu

Track Chair: Ramin Pashaie, *Univ of Wisconsin Millwaukee* - pashaie@uwm.edu

- Applications of MRI and Focused Ultrasound
- Imaging in Cardiovascular Systems (*Cardiovascular)
- Imaging in Neuroscience and Brain Initiatives (*Neural Engineering)
- Imaging Strategies and Molecular Profiling in Cancer (*Cancer)
- Imaging Techniques for Musculoskeletal System (*Orthopedic and Rehab)
- Imaging Techniques in Biomechanics (*Biomechanics)
- Imaging Techniques in Clinical Translation
- Imaging Techniques in Tissue Engineering (*Tissue Engineering)
- Imaging Technologies in Clinical Translation (*Translational)
- Imaging the Respiratory System (*Respiratory)
- Molecular Imaging
- MRI
- NanoTheranostics
- Optical Imaging & Microscopy
- Ultrasound Imaging
- Other / Non-specified

CANCER TECHNOLOGIES

Track Chair: Claudia Fischbach, *Cornell University* - cf99@cornell.edu

Track Chair: Shannon Stott, *Mass General / Harvard Medical School* - sstott@mgh.harvard.edu

- Cancer Cell Motility and Migration (*Cellular and Molecular)
- Cancer Drug Delivery (*Drug Delivery)
- Cancer Immunoengineering
- Cancer Mechanobiology (*Biomechanics)
- Circulating Biomarkers: CTCs, Extracellular Vesicles and DNA
- Computational Modeling of Cancer (*Comp & Systems Bio)
- Drug Delivery for Immunomodulation and Immunotherapy (*Drug Delivery)
- Imaging Strategies and Molecular Profiling in Cancer (*Imaging)
- Metastasis, Dormancy & Treatment Response
- Microfluidic Cancer Models
- Microscale Cancer Cell Analysis (*Nano & Micro)
- Precision Medicine and Biomarkers in Cancer
- Tumor Microenvironment
- Other / Non-specified

CARDIOVASCULAR ENGINEERING

Track Chair: Adam Feinberg, *Carnegie Mellon Univ* - feinberg@andrew.cmu.edu

Track Chair: Elizabeth Lipke, *Auburn University* - eal0003@auburn.edu

- Angiogenesis and Engineered Vascularization
- Cardiac Electrophysiology
- Cardiovascular Biomechanics (*Biomechanics)
- Cardiovascular Devices
- Cardiovascular Regeneration and Stem Cells (*Stem Cells)
- Cardiovascular Tissue Engineering (*Tissue Engineering)
- Computational Modeling in Cardiovascular Systems
- Heart Valve Structure, Function, and Disease
- Hemodynamics and Vascular Mechanics (*Biomechanics)
- Imaging in Cardiovascular Systems(*Imaging)
- Mechanobiology of Cardiac and Smooth Muscle (*Biomechanics)
- Thrombosis and Hemostasis
- Other / Non-specified

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CELLULAR AND MOLECULAR BIOENGINEERING

Track Chair: Stacey Finley, *Univ of Southern CA* - sfinley@usc.edu

Track Chair: Jordan Green, *Johns Hopkins University* - green@jhu.edu

- Cancer Cell Motility and Migration (*Cancer)
- Cell Migration
- Cellular and Molecular Biomechanics: Mechanobiology (*Biomechanics)
- Computational Modeling of cell Motility and Proliferation (*Comp & Systems Bio)
- Engineering Multi-cellular systems (*Tissue Engineering)
- Experimental and Computational Studies of Mechanotransduction
- Gene Delivery and Genome Bioengineering
- Mechanobiology of Cell Adhesion
- Mechanobiology of the Vascular and Nervous Systems
- Micro/Nano Tools in Molecular Biology (Genomics, Proteomics) (*Nano & Micro)
- Molecular and Cellular Engineering Functional Materials and Sensors
- Molecular and Cellular ImmunoEngineering
- Molecular Bioengineering (*Biomechanics)
- Reprogramming/Direct Differentiation in Stem Cell Engineering (*Stem Cell)
- Substrate Effects in Mechanobiology (*Biomechanics)
- Topics in Mechanobiology (*Biomechanics)
- Other / Non-specified

DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

Track Chair: Levi Hargrove, *Northwestern Univ* - l-hargrove@northwestern.edu

Track Chair: Richard Weir, *University of Colorado* - richard.weir@ucdenver.edu

- Affordable Health Devices and Frugal Innovation
- Biosensors
- Design and Control of Prostheses and Exoskeletons
- Implantable Devices and Implantable Electronics
- Musculoskeletal Robotics and Biomechanics in Rehabilitation (*Orthopedic and Rehab)
- Translation of Devices from the Lab to the Clinic/Market
- Wearable Sensors and Devices
- Other / Non-specified

DRUG DELIVERY

Track Chair: Evan Scott, *Northwestern Univ* - evan.scott@northwestern.edu

Track Chair: Ankur Singh, *Cornell University* - as2833@cornell.edu

- Cancer Drug Delivery (*Cancer)
- Delivery Systems for Proteins and Vaccines
- Drug Delivering Biomaterials (*Biomaterials)
- Drug Delivery for Immunomodulation and Immunotherapy (*Cancer)
- Drug Delivery in Tissue Engineering & Medicine (*Tissue Engineering)
- Nano to Micro Devices in Delivery (*Nano & Micro)
- Novel Materials and Self Assembly
- Nucleic Acid Delivery
- Targeted or Responsive Delivery Systems
- Topics in Drug Delivery
- Other / Non-specified

NANO AND MICRO TECHNOLOGIES

Track Chair: Matt Kinsella, *McGill University* - joseph.kinsella@mcgill.ca

Track Chair: Jonathan Viventi, *Duke University* - j.viventi@duke.edu

- Advances in Micro/Nano Manufacturing
- Advances in Pathogen Detection
- Applications of Nanopores and Nanoparticles
- Integration of Biomaterials with Chips and Devices (*Biomaterials)
- Micro and Nanoscale Tools for Monitoring Inflammation
- Micro/Nano Tools in Medicine (*Translational)
- Micro/Nano Tools in Molecular Biology (Genomics, Proteomics)(*Cell & Molecular)
- Micro/Nano Tools in Neurosciences (*Neural)
- Microfluidics for the Diagnostic and Monitoring of Viral Infections
- Microscale Cancer Cell Analysis (*Cancer)
- Nano to Micro Devices in Delivery (*Drug Delivery)
- Organ-on-Chip Models for Study of Disease and Drug Discovery (*Tissue Eng.)
- Other / Non-specified

NEURAL ENGINEERING

Track Chair: Matt Johnson, *University of Minnesota* - John5101@umn.edu

Track Chair: Sarah Stabenfeldt, *AZ State Univ* - Sarah.Stabenfeldt@asu.edu

- Glial Cell Engineering
- Imaging in Neuroscience and Brain Initiatives (*Imaging)
- Micro/Nano Tools in Neurosciences (*Nano and Microtechnologies Track)
- Neural Cell Model Systems
- Neural Decoding and Control
- Neural Device Interfaces
- Neural Disease: Model Systems and Therapeutics
- Neural Progenitor and Neural Stem Cell Engineering (*Stem Cell)
- Neuromodulation: Brain and Spinal Cord
- Neuromuscular Biomechanics (*Biomechanics)
- Peripheral Nerve Stimulation and Repair
- Regenerative Rehabilitation Engineering
- Rehabilitation Engineering: Implantable Devices (*Orthopedic and Rehab)
- Rehabilitation: Blast Injury and Spinal Cord Injury (*Orthopedic and Rehab)
- Repair and Regeneration of the Injured Brain
- Spinal Cord Tissue Engineering & Repair
- Stroke and Neurovascular Disease and Models (*Biomechanics)
- Traumatic Brain Injury Biomechanics (*Biomechanics)
- Other / Non-specified

ORTHOPAEDIC AND REHABILITATION ENGINEERING

Track Chair: Bolu Ajiboye, *Case Western Reserve Univ* - bolu.ajiboye@case.edu

Track Chair: Sarah Calve, *Purdue University* - scalve@purdue.edu

- Articular Cartilage, Meniscus and Joints
- Bone
- Imaging Techniques for Musculoskeletal System (*Biomedical Imaging Track)
- Musculoskeletal Robotics and Biomechanics in Rehabilitation (*Devices)
- Musculoskeletal Stem Cell Engineering (*Stem Cell)
- Musculoskeletal Tissue Engineering (*Tissue Engineering)
- Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics (*Biomechanics)
- Orthopedic Biomechanics (*Biomechanics)
- Orthopedic: Mechanobiology and Mechanotransduction (*Biomechanics)
- Rehabilitation Engineering: Implantable Devices (*Neural Engineering)
- Rehabilitation: Blast Injury and Spinal Cord Injury (*Neural Engineering)
- Spine and Intervertebral Disc
- Other / Non-specified

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RESPIRATORY BIOENGINEERING

Track Chair: James Abbas, *Arizona State University* - james.abbas@asu.edu

Track Chair: Dan Tschumperlin, *Mayo* - Tschumperlin.Daniel@mayo.edu

- Bioengineering Approaches to Lung Development, Regeneration, Repair and Replacement
- Imaging the Respiratory System (*Imaging)
- Mechanics of the Respiratory System (*Biomechanics)
- Modeling of the Respiratory System
- Respiratory Mechanobiology (*Biomechanics)
- Translational Respiratory Engineering
- Other / Non-specified

STEM CELL ENGINEERING

Track Chair: Randy Ashton, *University of Wisconsin* - rashton2@wisc.edu

Track Chair: Ben Cosgrove, *Cornell University* - bdc68@cornell.edu

- Advanced Biomanufacturing and Translation of Stem Cell-Derived Therapies and Tissues
- Cardiovascular Regeneration and Stem Cells (*Cardiovascular)
- Engineering Organoid Development & Morphogenesis
- Engineering the Stem Cell Microenvironment (*Biomaterials)
- Gastrointestinal Stem Cell Engineering
- Hematopoietic Stem Cell Engineering
- Mechanobiology of Stem Cell Engineering
- Musculoskeletal Stem Cell Engineering (*Orthopedic and Rehab)
- Neural Stem/Progenitor Cell Engineering (*Neural Engineering)
- Reprogramming/Direct Differentiation in Stem Cell Engineering (*Cell & Molecular)
- Respiratory Stem Cell Engineering
- Stem Cell Systems Biology & Bioinformatics (*Bioinformatics & Systems Biology)
- Stem Cells in Tissue Engineering (*Tissue Engineering)
- Other / Non-specified

TISSUE ENGINEERING

Track Chair: Aaron Baker, *Univ of Texas at Austin* - abbaker@austin.utexas.edu

Track Chair: Cherie Stabler, *University of Florida* - cstabler@bme.ufl.edu

- Advanced Biomanufacturing in Tissue Engineering
- Biomechanics in Cell and Tissue Engineering (*Biomechanics)
- Cardiovascular Tissue Engineering (*Cardiovascular)
- Drug Delivery in Tissue Engineering & Medicine (*Drug Delivery)
- Engineering multi-cellular systems (*Cellular and Molecular)
- Engineering Replacement Tissues
- Engineering Tissue Interfaces
- Imaging Techniques in Tissue Engineering (*Imaging)
- Immunoengineering and Immunomodulation in Tissue Engineering
- Integration of Developmental Biology and Morphogenesis in Tissue Engineering
- Mechanobiology in Cell and Tissue Engineering (*Biomechanics)
- Musculoskeletal Tissue Engineering (*Orthopedics and Rehab Engineering Track)
- Naturally-Derived and Extracellular Matrix Biomaterials in Tissue Engineering
- Neural and Neurovascular Tissue Engineering
- Organ-on-a-Chip Models for Study of Disease and Drug Discovery (*Nano & Micro)
- Printing and Patterning in Tissues
- Stem Cells in Tissue Engineering (*Stem Cell)
- Other / Non-specified

TRANSLATIONAL BIOMEDICAL ENGINEERING

Track Chair: Pedro Irazoqui, *Purdue University* - pip@purdue.edu

Track Chair: Walter Voit, *University of Texas Dallas* - Walter.voit@utdallas.edu

- Cell Therapeutics Biomanufacturing (*ABioM SIG)
- Imaging Technologies in Clinical Translation (*Imaging)
- Micro/Nano Tools in Medicine (*Nano & Micro)
- Preclinical Models, GMP, GLP, FDA, and Unexpected Challenges
- Tissue/Organoid Biofabrication (*ABioM SIG)
- Other / Non-specified

UNDERGRADUATE RESEARCH, DESIGN & LEADERSHIP

Track Chair: Jeff LaBelle, *Arizona State University* - jeffrey.labelle@asu.edu

Track Chair: Michael Rust, *Western New England Univ* - Michael.rust@wne.edu

- Summer research submissions opens - July 1, 2017
- Submission deadline – July 31, 2017
- Undergraduates are welcome to submit for consideration in both the general program in addition to the special undergraduate (REU) program

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