



BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

Track Chair: Leonor Saiz - Univ of California, Davis - lsaiz@ucdavis.edu

Track Chair: Victor Rodgers – Univ of California, Riverside - victor.rodgers@ucr.edu

- Genomics, Transcriptomics, and Regulatory RNA Networks
- Proteomics, Posttranslational-omics, and Metabolomics
- Single-cell Measurements and Models
- Analysis of Cell Signaling
- Dynamics of Biological Systems
- Multiscale Modeling
- Systems Approaches to Therapy and Therapeutics
- Theory and Practice of Synthetic Biology
- Algorithms for Computational/Systems Biology
- Other / Non-specified

BIOMATERIALS

Track Chair: Leo Wan – Rensselaer Polytechnic Institute - gun.wan@gmail.com

Track Chair: Danielle Benoit – Univ of Rochester – benoit@bme.rochester.edu

- Bioinspired and Self Assembling Biomaterials
- Biomaterials Design
- Biomaterials Scaffolds
- Biomaterials for Controlling Cell Environment
- Biomaterials for Immunoengineering
- Intelligent/Multifunctional Biomaterials
- Micro and Nano Structured Materials
- Therapeutic and Theranostic Biomaterials
- Other / Non-specified

BIOMECHANICS

Track Chair: Joel Stitzel – Wake Forest University - jstitzel@wakehealth.edu

Track Chair: Phil LeDuc – Carnegie Mellon University - prl+@andrew.cmu.edu

- Biomechanics in Tissue Engineering and Regenerative Medicine
- Biomechanics of Biomaterials
- Cellular and Molecular Biomechanics: Cell and Tissue
- Cellular and Molecular Biomechanics: Organ and Organ System
- Orthopaedic Biomechanics
- Orthopaedic: Implant and Prosthetic Biomechanics
- Biomechanics of Rehabilitation
- Cardiovascular Biomechanics
- Biofluid Mechanics
- Human Performance/Sports Biomechanics
- Neuromuscular Biomechanics
- Injury Biomechanics
- Concussion and Head Injury Biomechanics
- Multiscale Modeling in Biomechanics
- Computational Modeling in Biomechanics
- Application of Imaging Methods to Biomechanics
- Other / Non-specified

BIOMEDICAL ENGINEERING EDUCATION (BME)

Track Chair: Craig Goergen – Purdue University – cgoergen@purdue.edu

Track Chair: Michealann Tartis – NM Institute of Mining and Technology - mstartis@nmt.edu

- Innovative Learning Modules and Instructional Materials
- Design in BME Education
- Professional Topics and Entrepreneurship in BME Education
- Laboratory Modules and Instructional Materials
- Innovative Assessment Strategies
- Biomedical Engineering Education Research
- Using Technology in the BME Classroom
- Immersive and Experiential Learning
- International Opportunities for Engagement
- Other / Non-specified

BIOMEDICAL IMAGING AND OPTICS

Track Chair: Joan Greve – University of Michigan - jgreve@umich.edu

Track Chair: Paul Dayton – Univ of North Carolina - padayton@email.unc.edu

- Application of Imaging Methods to Tissue Engineering
- Application of Imaging Methods to Biomechanics
- Molecular Imaging
- Image Guided Drug Delivery
- MRI Guided Focused Ultrasound Surgery
- Ultrasound Imaging
- MRI
- PET, SPECT, CT
- Optical Imaging
- Multi-modality Imaging
- Image Processing and Analysis
- Other / Non-specified

CANCER TECHNOLOGIES

Track Chair: Shay Soker – Wake Forest University - ssoker@wakehealth.edu

Track Chair: Marissa Nichole Rylander – UT Austin - mnr@austin.utexas.edu

- Engineered Models of Cancer and the Tumor Microenvironment
- Computation Modeling of Cancer Growth and Treatment
- Cancer Mechanobiology
- Personalized Medicine and Biomarkers in Cancer
- Imaging Strategies in Cancer
- Micro and Nanotechnologies for Cancer
- Cancer Drug Delivery
- Cancer Immunoengineering
- Other / Non-specified

CARDIOVASCULAR ENGINEERING

Track Chair: Manu Platt – Georgia Tech - manu.platt@gatech.edu

Track Chair: Mike Hess – Medtronic - mike.hess@medtronic.com

- Hemodynamics and Vascular Mechanics
- Angiogenesis
- Microcirculation
- Lymphatic system
- Cardiac Mechanics
- Cardiac Electrophysiology
- Cardiovascular Flow Modeling in Health and Disease
- Cardiovascular Assist Devices
- Heart Valves and Stents
- Cardiac Regeneration and Stem Cells
- Sickle Cell Disease
- Imaging in Cardiovascular Systems
- Other / Non-specified

CELLULAR AND MOLECULAR BIOENGINEERING

Track Chair: Abdul Barakat – Ecole Polytechnique (LadHyX) - Abdul.Barakat@ladhyx.polytechnique.fr

Track Chair: Melissa Knothe Tate – UNSW Australia - m.knothetate@unsw.edu.au

- Mechanotransduction
- Cell Motility
- Cell Adhesion and Interactions with the Extracellular Matrix
- Molecular Bioengineering
- Cellular and Molecular Immunoengineering
- Stem Cell Bioengineering
- Other / Non-specified

DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

Track Chair: Dan Moran – Washington University - dmoran@wustl.edu

Track Chair: Justin Williams – University of Wisconsin - jwilliams@enr.wisc.edu

- Biomedical Robotics
- Biosensors
- Prosthetics and Physical-assist Devices
- Implantable Devices and Implantable Electronics
- Cardiovascular Devices
- Wearable Sensors and Devices
- Medical Device Development and Computational Models
- Other / Non-specified

To submit an abstract for presentation consideration, go to:
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DRUG DELIVERY

Track Chair: Dean Ho – *University of California Los Angeles* - dean.ho@ucla.edu

Track Chair: Kim Woodrow – *University of Washington* - woodrow@uw.edu

- Cancer Drug Delivery
- Drug Delivery in Tissue Engineering
- Nano to Micro Devices in Delivery
- Novel Materials and Self Assembly
- Nucleic Acid Delivery
- Responsive Delivery Systems
- Targeted Delivery
- Multifunctional or Hybrid Systems
- Delivery Systems for Immune Modulation
- Translation to the Clinic / Personalized Medicine
- Other / Non-specified

NANO AND MICRO TECHNOLOGIES

Track Chair: Dan Kamei – *Univ of California Los Angeles* - kamei@seas.ucla.edu

Track Chair: Lim Chwee Teck – *National Univ of Singapore* - ctlim@nus.edu.sg

- Medical Diagnostics and Screening
- Nano/Microbiotechnology
- Micro and Nano Total Analysis Systems
- BioMEMS
- Microfluidics
- Paper Fluidics
- Cells, Tissues and Organs on a Chip
- Theranostics and Nanoparticles
- Other / Non-specified

NEURAL ENGINEERING

Track Chair: Ryan Gilbert – *Rensselaer Polytechnic Institute* - gilber2@rpi.edu

Track Chair: Karen Moxon – *Drexel University* - karen.moxon@drexel.edu

- Glial Cell Engineering
- Neural Progenitor Cell and Tissue Engineering
- CNS Disease: Addressing Degeneration
- Neural Interfaces: Compatibility, Recording and Stimulation
- CNS Injury: SCI, Stroke, TBI and Concussions
- Device-based Approaches for Axonal Growth and Guidance
- Neuro-rehabilitation
- Closed-loop Control of Neural Interfaces
- Networked Neural Sensors, Actuators, and Instrumentation
- Neural Coding and Modeling
- Other / Non-specified

NEW FRONTIERS AND SPECIAL TOPICS

Track Chair: Steve George – *Washington University* - scg@wustl.edu

Track Chair: Wajeeh Saadi – *Draper Laboratory* - wsaadi@draper.com

- Other / Non-specified

ORTHOPEDIC AND REHABILITATION ENGINEERING

Track Chair: Liyun Wang – *University of Delaware* - lywang@udel.edu

Track Chair: X. Lucas Lu – *University of Delaware* - xlu@udel.edu

- Bone
- Skeletal Muscle, Ligaments and Tendons
- Articular Cartilage and Joints
- Mechanobiology, Pain, and Tissue Development
- Musculoskeletal Tissue Engineering
- Musculoskeletal Imaging and Customized Approaches (Patient Specific Therapies and Diseases Specific Modeling)
- Customized approaches: patient specific therapies, disease specific models
- Rehabilitation Engineering: Rehab Robotics, Prosthetics, Wheelchair Mobility
- Other / Non-specified

RESPIRATORY BIOENGINEERING

Track Chair: Connie Hsia – *Univ of Texas Southwestern Medical Center* – connie.hsia@utsouthwestern.edu

Track Chair: Carrie Perlman – *Stevens Institute of Technology* – cperlman@stevens.edu

- Computational Modeling of the Respiratory System
- Upper Airway Mechanics and Mechanobiology
- Integrated Lung Function (I) - Mechanics of the Lung and Respiratory Muscles
- Integrated Lung Function (II) - Ventilation, Perfusion and Diffusion
- Lung Surfactant and Surface Tension
- Lung Cell and Matrix Biology
- Aging and the Lung
- Lung Regeneration and Replacement
- Lung Imaging - Advances and Applications
- Translational Respiratory Engineering
- Lung - Other
- Other / Non-specified

STEM CELL ENGINEERING

Track Chair: Jennifer Elisseeff – *Johns Hopkins University* - jhe@jhu.edu

Track Chair: Stephanie Willerth – *University of Victoria* - willerth@uvic.ca

- Scaling Up Stem Cell Production / Stem Cell Derived Progenitors
- Directing Stem Cell Differentiation
- Engineering Stem Cell Environments
- Stem Cell Technologies for Drug Development
- Stem Cells in Pre-clinical and Clinical Models
- Epigenetics of Stem Cells
- Engineering Tissue Morphogenesis
- Other / Non-specified

TISSUE ENGINEERING

Track Chair: Andy Putnam – *University of Michigan* - putnam@umich.edu

Track Chair: Kent Leach – *University of California, Davis* - jkleach@ucdavis.edu

- Application of Imaging Methods to Tissue Engineering
- Clinical Translation of Engineered Tissues
- Cardiovascular Tissue Engineering
- Musculoskeletal Tissue Engineering
- Neural Tissue Engineering
- Tissue Engineered Models for Study of Disease and Drug Discovery
- Bioreactor Systems for Tissue Engineering
- Printing and Patterning in Tissue Engineering
- Stem Cells in Tissue Engineering
- Engineering Replacement Tissues
- Engineering Tissue Interfaces
- Inflammation and Immunomodulation in Tissue Engineering
- Other / Non-specified

TRANSLATIONAL BIOMEDICAL ENGINEERING

Track Chair: Melinda Harman – *Clemson University* - harman2@clemson.edu

Track Chair: Mark Palmer – *Medtronic* - mark.palmer@medtronic.com

- Biomedical Device Design in Translational Research
- Imaging Technologies in Clinical Translation
- Experiences in Validation Studies
- Tissue Media and Tissue Phantoms and Surrogates for Device Validation
- Translational Therapeutics for Regenerative Medicine
- Bio-nanomedicine in Healthcare
- Translational Technology: Preclinical Models, GMP, GLP, FDA, and Unexpected Challenges
- Biomedical Products and Devices
- Other / Non-specified

UNDERGRADUATE RESEARCH, DESIGN & LEADERSHIP

Track Chair: Pam Vandeword – *Virginia Tech* - pvord@vt.edu

Track Chair: Hans van Oostrom – *University of Florida* - oostrom@ufl.edu

- Summer research submissions opens - July 1, 2015
- Submission deadline – July 31, 2015
- Undergraduates are welcome to submit for consideration in both the general program in addition to the special undergraduate (REU) program

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