

This brochure lists the papers, posters, and plenary talks presented by The University of Florida faculty and students at the 2013 BMES Meeting.

**You are invited to join us at our presentations, or also to visit us at our booth to learn more about our programs.**

## ORAL LISTINGS

### Thursday, September 26, 2013 8:00am-9:30am (OP Thursday-1)

- OP-Thurs-1-3 **A Microparticle-Based Vaccine for Prevention of Type I Diabetes**  
J. Lewis (University of Florida), M. Carstens (University of Florida), N. Dolgova (University of Florida), C. Qing Xia (University of Florida), M. Clare-Salzer (University of Florida), B. Keselowsky (University of Florida)
- OP-Thurs-1-12 **Associating Gait Abnormalities to Histological Features of Joint Destruction in a Rat Model of Knee Osteoarthritis**  
H. Kloefkorn (University of Florida), B. Jacobs (University of Florida), A. Loye (University of Florida), K. Allen (University of Florida)

### Thursday, September 26, 2013 4:00pm-5:30pm (OP Thursday-3)

- OP-Thurs-3-6 **Colonic Tissue Topography as a Key Player of Metastasis – A Diagnostic Model**  
S. Bharadwaj (University of Florida), R. Tran Son Tay (University of Florida), S. Glover (University of Florida)
- OP-Thurs-3-7 **Rotational Seeding and Flow Pre-Conditioning for Improved Endothelialization of Vascular Allografts**  
J. Uzarski (University of Florida), P. S. McFetridge (University of Florida)
- OP-Thurs-3-16 **Feed-Forward Information Propagation in Neuronal Assemblies From Defines *In Vitro* Cortical Networks**  
B. C. Wheeler (University of Florida), S. Alagapan (University of Florida), L. Pan (University of Florida), E. Franca (University of Florida), G. J. Brewer (University of California Irvine), T. B. DeMarse (University of Florida)

### Friday, September 27, 2013 8:00am-9:30am (OP Friday-1)

- OP-Fri-1-8 **Terminal Sterilization of a Decellularized Cartilage Scaffold Affects Cell Viability and Adhesion**  
A. Matuska (University of Florida), P. McFetridge (University of Florida)
- OP-Fri-1-14 **Local Thermal Effects on the Surface of Magnetic Nanoparticles**  
L. Polo-Corrales (University of Puerto Rico, Mayaguez), C. Rinaldi (University of Florida)
- OP-Fri-1-18 **A Customizable Biological Extracellular Matrix As An Arterial Substitute In A Rabbit Model**  
L. Goldberg (University of Florida), S. Amensag (University of Florida), S. Berceci (University of Florida), P. McFetridge (University of Florida)

### Friday, September 27, 2013 1:30pm-2:30pm (OP Friday-2)

- OP-Fri-2-14 **Photopatterned SU-8 Derived Carbon Nanofibers for Neural Engineering Applications**  
P-F. Jao (University of Florida), E. Franca (University of Florida), G.J. Kim (University of Florida), Y-K. Yoon (University of Florida), B. Wheeler (University of Florida)

### Saturday, September 28, 2013 8:00am-9:30am (OP Saturday-1)

- OP-Sat-1-12 **Quantification of 3D Pulmonary Vascular Morphology in Pediatric Patients with Pulmonary Vascular Disease**  
W. O'Dell (University of Florida), S. Prabhakaran (University of Florida), S. Hedhe (University of Florida)
- OP-Sat-1-16 **Microparticles and Hydrogels for Delivery of Biomolecules into the Spinal Cord after Injury**  
Z. Khaing (University of Florida), G. Plumton (The University of Texas at Austin), P. Allen (The University of Texas at Austin), A. Ellington (The University of Texas at Austin), C. Schmidt (University of Florida)

### Saturday, September 28, 2013 1:30pm-3:00pm (OP Saturday-2)

- OP-Sat-2-8 **Novel Method to Apply Controlled Forces to the Nucleus**  
S. Neelam (University of Florida), A. Mendonca (University of Florida), T. Chancellor (University of Florida), R. Dickinson (University of Florida), T. Lele (University of Florida)

## POSTER & PAPER LISTINGS

### Thursday, September 26, 2013 9:30am-1:00pm (Thursday-A)

- P-Th-A-3 **The Manipulation of Hydrogel Lumen Architecture for Potential Biomedical Applications**  
R.C. Thomas (University of Texas at Austin), P. Chung (University of Texas at Austin), C. Schmidt (University of Florida)
- P-Th-A-118 **A Mathematical Model of the Influence of Intra-abdominal Pressure on the Cardiovascular System**  
J. H. van Oostrom (University of Florida), M. Boers (Twente University), A. Gabrielli (University of Florida)
- P-Th-A-167 **Screening Combinatorial Drug Interactions on Primary Colon Cancer Stem Cells using Novel Drug-eluting Microarrays**  
M. Carstens (University of Florida), E. Huang (University of Florida), B. Keselowsky (University of Florida)
- P-Th-A-197 **Enhancing Magnetic Nanoparticle Based DNA Transfection: Intracellular-Active Cassette Features**  
M. Vernon (University of Florida), D. Dean (University of Rochester Medical Center), J. Dobson (University of Florida)
- P-Th-A-243 **Relating Osteoarthritis Biomarkers Collected Via Magnetic Harvesting to the Initial Concentration of the Biomarker Within Synovial Fluid**  
E. Yarmola (University of Florida), Z. Kaufman (University of Florida), B. Kozissnik (University of Florida), D. Arnold (University of Florida), J. Dobson (University of Florida), K. Allen (University of Florida)
- P-Th-A-244 **Extraction Osteoarthritis Biomarkers from Synovial Fluid Using Magnetic Nanoparticle Harvesting – Practical Validation of a Theoretical Model**  
E. Yarmola (University of Florida), Z. Kaufman (University of Florida), B. Kozissnik (University of Florida), D. Arnold (University of Florida), J. Dobson (University of Florida), K. Allen (University of Florida)

### Thursday, September 26, 2013 1:30pm-5:00pm (Thursday-B)

- P-Th-B-23 **Delivery of Acetylsalicylic Acid to Dendritic Cells Using Degradable Microparticles**  
E. Bracho-Sanchez (University of Florida), J. Lewis (University of Florida), B. Keselowsky (University of Florida)

P-Th-B-86 **Lysosome Disruption by Targeted Magnetic Nanoparticles**  
M. Domenech (University of Puerto Rico, Mayaguez),  
I. Marrero-Berrios (University of Puerto Rico, Mayaguez),  
C. Rinaldi (University of Florida)

P-Th-B-263 **Novel Seeding Technique to Incorporate Uniform Cell Density Through the Thickness of Lyophilized Laser Micro-Patterned Ex Vivo Derived Cartilage Scaffold**  
C. Juran (University of Florida),  
P. McFetridge (University of Florida)

**Friday, September 27, 2013**  
**9:30am-1:00pm (Friday-A)**

P-Fri-A-61 **Percolation Phenomena of Alginate and Hyaluronic Acid Blended Films**  
S. Mayes (UT Austin), J. Davis (UT Austin),  
C. Schmidt (University of Florida)

P-Fri-A-128 **Molecular Breast Imaging Using A Variable Angle Slant Hole Collimator**  
O. Gopan (University of Florida), D. Gilland (University of Florida),

P-Fri-A-249 **Self-regulation of Anterior Insula Cortex in Chronic Smokers Using Real-Time fMRI**  
M. Rana (University of Tuebingen), S. Ruiz (Pontificia Universidad Catolica de Chile), A. Muehleck (University of Tuebingen), K. Buyukturkoglu (University of Tuebingen), J. Dalboni da Rocha (University of Florida), S. Eck (University of Tuebingen), A. Batra (University of Tuebingen), N. Birbaumer (Tuebingen University), R. Sitaram (University of Florida)

P-Fri-A-264 **Layer by Layer Assembly of Uniaxially Aligned Biodegradable Nanofibers for Submillimeter Thick Scaffold Towards Guided Tissue Engineering**  
P-F. Jao (University of Florida), S-P. Fang (University of Florida), W.U. Hasanat (University of Florida), Y-K. Yoon (University of Florida)

P-Fri-A-277 **Collagen-Based Hydrogels Direct Spinal Progenitor Cell Differentiation Toward Oligodendrocytes**  
S. Geissler (University of Florida), Z. Khaing (University of Florida),  
C. Schmidt (University of Florida),

**Friday, September 27, 2013**  
**1:30pm-5:00pm (Friday-B)**

P-Fri-B-132 **Raman Micro-Spectroscopy Combined with Advanced Data Mining Methods for Improved Pre-Clinical Anti-Cancer Agent Development and Screening**  
M. Fenn (Florida Institute of Technology), M. Guarracino (National Research Council), S. Calhoun (University of Florida), J. Pi (University of Florida), M. Ferraro (National Research Council)

P-Fri-B-163 **Modulation of Nuclear Shape by Substrate Rigidity**  
D. Lovett (University of Florida), N. Shekar (University of Florida), J. Nickerson (University of Massachusetts Medical School), K. Roux (University of South Dakota), T. Lele (University of Florida)

P-Fri-B-259 **Controlled Nutrient Gradient Enhance Smooth Muscle Cell Repopulation of an Acellular Vascular Scaffold**  
A. B. van De Walle (University of Florida),  
P. McFetridge (University of Florida)

**Saturday, September 28, 2013**  
**9:30am-1:00pm (Saturday-A)**

P-Sat-A-52 **How Cytoskeletal Forces Determine Nuclear Shape**  
D. Lovett (University of Florida), R. Dickinson (University of Florida), T. Lele (University of Florida)

P-Sat-1-92 **Compressive Bioreactor Based Engineering of Ex Vivo Derived TMJ Disc Graft: Comparison of Three Defined Stimulation Profiles Efficacy to Modulate Cellular Integration and Functionalization**  
C. Juran (University of Florida), P. McFetridge (University of Florida)

P-Sat-A-127 **Evaluation of Immune Response to Subcutaneously Implanted Decellularized Liver Matrix**  
D. Sullivan (University of Florida), S-H. Mirmalek-Sani (Wake Forest University), C. Zimmerman (Wake Forest University), T. Shupe (Wake Forest University), B.E. Petersen (University of Florida)

P-Sat-A-197 **Effects of Detergent on the Biological Properties of Pig Liver Extract for Liver Regeneration Study**  
J.P. Repper (University of Florida), D. Sullivan (University of Florida), B.E. Petersen (University of Florida),

P-Sat-A-197 **Contribution of Age and Gender on Running Mechanics of the Hip at Different Running Speeds**  
A. Hua (University of Florida), E. Sheedy (University of Florida), A. Seay (University of Florida), C. Montero (University of Florida), L. Barnes (University of Florida), H. Vincent (University of Florida), B. Conrad (Nike Sports Research Lab)