



16th Annual Biomedical Engineering Student Research Symposium

Friday, April 25th, 2008 • MR-5, Room 1041

8:00 BREAKFAST MIXER
8:30 OPENING REMARKS

8:40 Moriel Vandsburger

8:50 Linsey Phillips

9:00 Kevin Owen

9:10 Abhay V. Patil

9:20 – 9:30 BREAK

9:30 Rebekah Neal

9:40 Matthew A. Oberhardt

9:50 Bryan Thorne

10:00 – 10:10 BREAK

10:10 Jason T. Glaw

10:20 Lydia Silbajoris Glaw

10:30 Michael B. Simmers

10:40 Annika Hedin

10:50 – 11:00 BREAK

11:00 Kristina Maria Little

11:10 Ryan Feaver

11:20 Rachel Evans

11:30 Anthony Lau

11:40 – 12:40 LUNCH

12:40 Caren Elizabeth Petrie Aronin

1:00 Kristen Anne Wieghaus

1:20 Megan Doyle

1:40 Alexander M. Bailey

2:00 – 2:10 BREAK

2:10 Elizabeth Anne Browning

2:30 Brian J. Schmidt

2:50 Nicole Elizabeth Hastings

3:10 John Edwin Pickard

3:30 – 3:40 BREAK

3:40 Drake Andrew Guenther

4:00 Rob Janiczek

4:20 Yinbo Li

4:40 Erwin P. Gianchandani

5:00 – AWARDS PRESENTATION

Session 1: Medical Imaging

Investigating the Role of nNOS in Myocardial Structure, Function, Perfusion, and L-type Calcium Channel Function using Magnetic Resonance Imaging

Focused Ultrasound Triggered Delivery of Rapamycin and DNA from Microbubbles for Vascular Smooth Muscle Inhibition

Beamformer Enhancement by Post-Processing for Improved Spatial Resolution and Signal-to-Noise Ratio

Molecular Imaging and Monitoring of Drug Delivery in Large Vessels

Session 2: Tissue Engineering/Integrative Systems Biology

Biomimetic Basement Membrane Protein Nanofiber Scaffolds for Peripheral Nerve Repair

Genome-Scale Metabolic Network Reconstruction and Analysis of the Opportunistic Pathogen *Pseudomonas Aeruginosa* PAO1

Development and Initial Validation of an Agent-Based Model for Leukocyte Trafficking in the Microvasculature

Session 3: Biomechanics and Cardiovascular Engineering A

Wnt Inhibition by Dickkopf-1 Induces Capillary Lengthening in a Rat Mesentery Model of Microvascular Remodeling

Diminished PDGF-B Expression by Bone Marrow-Derived Cells in a Novel Chimeric Mouse Model

β -catenin Regulates Endothelial Permeability and Polarity in Response to Fluid Shear Stress

Modulation of the Integrin Very Late Antigen-4 Affinity via Signaling through the Chemokine Stromal Cell Derived Factor-1 α

Session 4: Biomechanics and Cardiovascular Engineering B

Spectral Counts from Mass Spectrometry for Biomarker Discovery

GRP78/BIP Upregulation by Atheroprone Flow via P38-, P38-, α 2b1- Dependent Mechanism

Mechanisms Controlling Integrin Mechanoactivation

Material Characterization of the Costo-Chondral Junction

Session 5: Graduating PhD Candidates A

Cranial Bone Regenerations: A Novel Tissue-Engineering Approach

Mechanistic Interrogation of Phthalimide Neovascular Factor 1

Marrow-Derived Cell Delivery on Microvascular Network Structure and Function: Role of Progenitor Cell Enrichment and Cell Residence Time

Informing Strategies for Manipulation of the Adhesion Cascade Aimed at Increasing Effectiveness of Progenitor Cell-Based Therapies

Session 6: Graduating PhD Candidates B

Hemodynamic Regulation of Androgen Receptor Promotes Inflammatory Signaling in Endothelial Cells

Computational Modeling and Three-dimensional Microparticle Velocimetry for the Analysis of Leukocyte Homing Receptor Bond Formation kinetics and Rolling in a Multifunctional Catch Strip Assay

A Hemodynamic Role for Endothelial-derived Interleukin-8 to Limit an Inflammatory Smooth Muscle Cell Phenotype in Atherosclerosis

Fluid Shear Stress Acting on Rolling Leukocytes

Session 7: Graduating PhD Candidates C

Synthetic Aperture Angular Scatter Imaging

Spiral Phase Contrast in the Mouse Aorta at 7T

Serial 3D Echocardiographic Evaluation of Left Ventricular Contractile Dyssynchrony in Mice after Myocardial Infarction

Predicting Objectives of Biological Systems

Otis and Mary Updike Award, GTA Award, Closing Remarks

