Saturday, October 17, 2020

Platform Sessions – 2:00 PM - 3:15 PM including Q&A

Track: Nano and Micro Technologies
Micro and Nanotechnologies for Therapeutics

2:00 PM - 2:20 PM
**Engineering Materials at the Micro and Nanoscale for Immune Modulation and Cell Based Therapy** (Invited)
Tejal Desai¹
¹UCSF, San Francisco, CA

2:20 PM - 2:30 PM
**CCR2-targeted Micelles for Anti-cancer Peptide Delivery and Immune Stimulation**
Noah Trac¹, Leng-Ying Chen², Ailin Zhang², Chun-Peng Liao², Christopher Poon², Jonathan Wang², Yuta Ando², Johan Joo³, Carolina Garri², Keyue Shen², Kian Kani², Mitchell Gross², and Eun Chung²
¹University of Southern California, Covina, CA, ²University of Southern California, Los Angeles, CA, ³University of Southern California, Los Angeles, CA

2:30 PM - 2:40 PM
**2D Nanosilicates Stimulate Angiogenesis In Endothelial Cells**
Giriraj Lokhande¹, Meagan Makarczyk¹, Irtisha Singh¹, and Akhilesh Gaharwar¹
¹Texas A&M University, College Station, TX

2:40 PM - 2:50 PM
**Procoagulant Synthetic Platelets For Augmenting Hemostasis In Fibrinolytic Setting**
Anirban Sen Gupta¹, Ujjal Didar Singh Sekhon¹, Kelsey Swingle¹, Aditya Girish¹, and Norman Luc¹
¹Case Western Reserve University, Cleveland, OH

2:50 PM - 3:00 PM
**Core-Cross-Linked Nanoparticles Reduce Oxidative Stress Following Traumatic Brain Injury in Mice**
Aria Tarudji¹, Anthony Converte⁴, and Forrest Kievit¹
¹University of Nebraska-Lincoln, Lincoln, NE, ²Missouri University of Science and Technology, Rolla, MO

3:00 PM - 3:15 PM
Session Q&A

Track: Cellular and Molecular Bioengineering
Molecular and Cellular Engineering for Functional Materials and Sensors

2:00 PM - 2:20 PM
**Multifunctional Biomaterial-Based Systems for Immunotherapy of Autoimmune Diseases** (Invited)
Jamal Lewis¹
¹University of California, Davis, Davis, CA

2:20 PM - 2:30 PM
**Accessing And Assessing The Cell-Surface Glycocalyx Using DNA Origami Nanotiles**
Piyumi Wijesekara¹, Ying Liu¹, Elizabeth Johnston¹, Xi Ren¹, and Rebecca Taylor¹
¹Carnegie Mellon University, PITTSBURGH, PA
2:30 PM - 2:40 PM
**Engineering Chemogenetically Erasable Reporter Genes for Background-Free Magnetic Resonance Imaging**
Jason Yun¹, Charles Yue¹, Audrey Chow¹, Michelle Leong¹, and Arnab Mukherjee¹
¹University of California, Santa Barbara, Santa Barbara, CA

2:40 PM - 2:50 PM
**Substrate Stiffness Modulates Human Regulatory T Cell Metabolic Profile and Induction**
Lingting Shi¹ and Lance Kam¹
¹Columbia University, New York, NY

2:50 PM - 3:00 PM
**Logic-Gated Protease Sensors for Non-Invasive Monitoring of Immune Checkpoint Blockade Therapy**
Anirudh Sivakumar¹, Quoc Mac², Hathaichanok Phuengkham¹, Sofia Vainikos¹, and Gabriel Kwong¹
¹Georgia Institute of Technology, Atlanta, GA

3:00 PM - 3:15 PM
**Session Q&A**

Track: Biomedical Imaging and Instrumentation

**Computational Microscopy**

2:00 PM - 2:10 PM
**MR Elastography of the Intervertebral Disc: 3D Spin-Echo Echo-Planar Imaging Sequence Validation**
Megan Co¹, Huiming Dong¹, Prateek Karla¹, Brian Raterman¹, Arunark Kolipaka¹, and Benjamin Walter¹
¹The Ohio State University, Columbus, OH

2:10 PM - 2:20 PM
**Quantitative Phase Imaging and Machine Learning Predict Cancer Cell Functional Responses**
Christopher Raub¹, Van Lam¹, Thanh Nguyen¹, Pooja Sharma³, Lin-Ching Chang¹, Byung Min Chung¹, and George Nehmetallah¹
¹The Catholic University of America, Washington, DC

2:20 PM - 2:40 PM
**Computational Microscopy with Scattering Samples** (Invited)
Laura Waller¹
¹UC Berkeley, Berkeley, CA

2:40 PM - 2:50 PM
**Computationally Efficient Methods for Vascular Characterization with Super-resolution Ultrasound**
Scott Schoen Jr¹, Zhigen Zhao¹, Chengwu Huang², Shigao Chen², and Costas Arvanitis¹,³
¹Georgia Tech, Atlanta, GA, ²Mayo Clinic College of Medicine and Science, Rochester, MN, ³Georgia Tech & Emory University, Atlanta, GA

2:50 PM - 3:00 PM
**Multiparameter CODEX Imaging to Map the Human Colon and Small Intestine at the Single Cell Level**
John Hickey¹, Sarah Black¹, Vishal Gautham Venkataraaman¹, Christian Schuerch¹, and Garry Nolan¹
¹Stanford University, Stanford, CA

3:00 PM - 3:15 PM
**Session Q&A**
Track: Biomechanics

**Cardiovascular Biomechanics**

2:00 PM - 2:10 PM

**Elastic Fiber Contributions to the Biaxial Mechanical Behavior of Newborn Mouse Aorta**
Jessica Wagenseil\(^1\), Jungsil Kim\(^1\), Austin Cocciolone\(^1\), Marius Staiculescu\(^1\), Hiromi Yanagisawa\(^2\), and Robert Mecham\(^1\)
\(^1\)Washington University, St. Louis, MO, \(^2\)University of Tsukuba, Tsukuba, Japan

2:10 PM - 2:20 PM

**Cathepsin K Deficiency, but not Cathepsin L or S Deficiency Increases Relative Arterial Elasticity in Mice**
Victor Omojola\(^1\)
\(^1\)Georgia Institute of Technology, Atlanta, GA

2:20 PM - 2:30 PM

**Right Ventricular Remodeling in a Longitudinal Study of an Animal Model of PAH**
Ethan Kwan\(^1\), Xiaoyan Zhang\(^2\), Daniela Velez-Rendon\(^2\), Jennifer Stowe\(^1\), and Daniela Valdez-Jasso\(^1,2\)
\(^1\)University of California San Diego, La Jolla, CA, \(^2\)University of Illinois at Chicago, Chicago, IL

2:30 PM - 2:40 PM

**Fiber Crimp Confers Matrix Mechanical Nonlinearity, Regulates Endothelial Cell Mehanosensing, and Promotes Microvascular Network Formation**
Christopher Davidson\(^1\), Danica Jayco\(^1\), William Wang\(^1\), Ariella Shikanov\(^1\), and Brendon Baker\(^1\)
\(^1\)University of Michigan, Ann Arbor, MI

2:40 PM - 2:50 PM

**A Discrete Interface in Matrix Rigidity Creates an Oscillatory Pattern of Monolayer Disruption**
Jacob VanderBurgh\(^1,2\), Archit Potharazu\(^2\), Samantha Schwager\(^2\), and Cynthia Reinhart-King\(^1,2\)
\(^1\)Cornell University, Ithaca, NY, \(^2\)Vanderbilt University, Nashville, TN

2:50 PM - 3:00 PM

**Layer-Specific Mechanical and Collagen Microstructural Characterizations of Tricuspid Valve Leaflets**
Katherine Casey\(^1\), Mulan Tang\(^1\), Devin Laurence\(^1\), and Chung-Hao Lee\(^1\)
\(^1\)The University of Oklahoma, Norman, OK

3:00 PM - 3:15 PM

**Session Q&A**