NIH Progenitor Cell Biology Consortium (PCBC)
Cardiovascular Tissue Engineering (CVTE) Symposium

Monday, March 28, 2016
11:00 AM – 5:00 PM
The University of Alabama at Birmingham
UAB National Alumni Society House
1301 10th Avenue South, Birmingham, AL 35205

Opening Remarks – 11:00 - 11:10 AM

Jianyi “Jay” Zhang, MD, PhD
Chair, Department of Biomedical Engineering
T. Michael and Gillian Goodrich Endowed Chair of Engineering Leadership
Professor of Medicine, of Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham

J. Iwan D. Alexander, PhD
Dean, School of Engineering
Professor of Engineering
UAB | The University of Alabama at Birmingham

Cell Therapy – 11:10 AM - 12:26 PM

MODERATOR: Timothy J. Kamp MD, PhD – University of Wisconsin

11:10 - 11:22 AM

Endothelial Regeneration with Small Molecules

John P. Cooke, MD, PhD
Joseph C. “Rusty” Walter and Carole Walter Looke Presidential Distinguished Chair in Cardiovascular Disease Research, Department of Cardiovascular Sciences
Professor of Cardiovascular Sciences, Institute for Academic Medicine
Center for Cardiovascular Regeneration, DeBakey Heart & Vascular Center
Houston Methodist Hospital, Weill Cornell Medical College
11:22 - 11:35 AM

Chemical Genetics and Molecular Technologies for Rebuilding and Repairing the Injured Heart

Daniel J. Garry, MD, PhD
Professor of Medicine
St. Jude Medical Endowed Chair in Cardiology
Director, Lillehei Heart Institute
University of Minnesota Medical School

11:35 - 11:47 AM

Induced Cardiac Progenitor Cells: A New Tool for Cardiac Repair

Timothy J. Kamp MD, PhD
Professor of Medicine
Co-director, Stem Cell and Regenerative Medicine Center
Cellular and Molecular Arrhythmia Research Program
UW-Madison School of Medicine and Public Health

11:47 AM - 12:01 PM

Where are we with Cardiac Cell-Based Repair for Human Heart Failure?

Joshua M. Hare, MD
Senior Associate Dean for Experimental and Cellular Therapeutics
Louis Lemberg Professor of Medicine, Molecular and Pharmacology, and BME
Director, Interdisciplinary Stem Cell Institute
University of Miami Miller School of Medicine

12:01 - 12:14 PM

Cell Therapy with Embryonic Stem Cell-Derived Cardiomyocytes Encapsulated in Injectable Nanomatrix Gel Enhances Promotes Cardiac Repair

Young-sup Yoon, MD, PhD
Professor of Medicine and Biomedical Engineering
Director of Stem Cell Biology
Emory University School of Medicine

12:14 - 12:26 PM

Redox Regulation of Cardiomyocyte Renewal

Hesham A. Sadek, MD, PhD
J. Fred Schoellkopf, Jr. Chair in Cardiology
Associate Professor of Cardiology
Associate Director for Cardiac Regeneration, Center for Regenerative Science & Medicine
UT Southwestern Medical Center

12:30 - 1:30 PM Lunch
Tissue Engineering – 1:30 – 3:16 PM

MODERATOR: Joel L. Berry, PhD – Associate Professor, Department of Biomedical Engineering, UAB

1:30 - 1:42 PM

**Human Model Systems of Heart Disease using Tissue Engineering Technologies**

**Ibrahim Domian, MD, PhD**
Assistant Professor of Medicine
Staff Cardiologist, Cardiovascular Research Center, Massachusetts General Hospital
Harvard Medical School

1:42 - 1:54 PM

**Vascularization Platform for Organ-on-a-Chip Engineering and Direct Surgical Anastomosis**

**Milica Radisic, PhD**
Professor & Canada Research Chair, Functional Cardiovascular Tissue Engineering
Institute of Biomaterials & Biomedical Engineering
University of Toronto

2:04 - 2:16 PM

**Engineering a Platform for Enhanced Maturation and Evaluation of hiPSC-Derived Heart Tissue**

**Andrea Leonard, PhD**
Postdoctoral Researcher
Cell Biomechanics Lab
University of Washington

2:16 - 2:28 PM

**Human Myocardial Patch for Heart Repair**

**Nenad Bursac, PhD**
Rooney Family Associate Professor of Biomedical Engineering
Associate Professor of Medicine
Duke University School of Medicine

2:28 - 2:40 PM

**Stem Cell Differentiation and Fusion with Cardiomyocytes for Myocardial Repair**

**Brenda Ogle, PhD**
Associate Professor of Biomedical Engineering
Department of Biomedical Engineering
University of Minnesota
2:40 - 2:52 PM

Functional Assays of Single hiPSC-CMs

Beth L. Pruitt, PhD
Associate Professor of Mechanical Engineering, of Molecular and Cellular Engineering
Stanford Microsystems Lab
Stanford University

2:52 - 3:04 PM

Epicardial FSTL1 Reconstitution Regenerates the Adult Mammalian Heart

Vahid Serpooshan, PhD
Postdoctoral Research Fellow, Sean Wu Lab
Stanford Cardiovascular Institute
Stanford University School of Medicine

3:04 - 3:16 PM

Smooth Muscle Cell and Endothelial Cells for Cardiovascular Tissue Engineering

Y. Eugene Chen, MD, PhD
Frederick Huetwell Professor of Cardiovascular Medicine
Professor of Cardiac Surgery, Physiology, and Pharmacology
Vice-Chair for Basic and Translational Research, Department of Cardiac Surgery
Director, Center for Advanced Models for Translational Sciences and Therapeutics
University of Michigan Medical Center

3:16 - 3:35 PM  Break

Cardiovascular Physiology – 3:35 – 4:36 PM

MODERATOR: Sumanth D. Prabhu, MD – UAB

3:35 - 3:47 PM

Optical Mapping of Cardiac Propagation and Deformation

Jack M. Rogers, PhD
Professor of Biomedical Engineering
Department of Biomedical Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham
3:47 - 4:00 PM

**Cardiac Micro-Impedance Measurements between Grafts and Recipient Heart**

Andrew E. Pollard, PhD  
Professor of Biomedical Engineering  
Department of Biomedical Engineering  
School of Medicine, School of Engineering  
UAB | The University of Alabama at Birmingham

4:00 - 4:12 PM

**Mechanisms of Cardiac Remodeling and Stem Cell-Mediated Repair in Heart Failure**

Sumanth D. Prabhu, MD  
Professor of Medicine and Cell, Developmental and Integrative Biology  
Mary Gertrude Waters Chair of Cardiovascular Medicine  
Director of the Division of Cardiovascular Disease  
UAB | The University of Alabama at Birmingham

4:12 - 4:24 PM

**A Novel Role for the Apoptosis Inhibitor ARC in Suppressing TNFα-induced Regulated Necrosis**

Richard N. Kitsis, MD  
Professor of Medicine (Cardiology), Professor of Cell Biology  
The Dr. Gerald and Myra Dorros Chair in Cardiovascular Disease  
Director, Wilf Family Cardiovascular Research Institute  
Albert Einstein College of Medicine  
Yeshiva University

4:24 - 4:36 PM

**Mitochondria as Arbiters of Cardiomyocyte Fate**

Gerald W. Dorn, II, MD  
Philip and Sima K. Needleman Professor of Medicine  
Associate Chair for Translational Research  
Director, Center for Pharmacogenomics  
Washington University School of Medicine

Concluding Remarks – 4:55 - 5:00 PM

*Moderator: Jianyi “Jay” Zhang, MD, PhD – UAB*