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

“Engineering the Failing Heart”

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, M.D., Ph.D.
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, Ph.D.
Dean, School of Engineering
Professor of Engineering
UAB | The University of Alabama at Birmingham

Cell Therapy – 11:10 AM - 12:22 PM

MODERATOR: Timothy J. Kamp, M.D., Ph.D. – University of Wisconsin

11:10 - 11:22 AM
Endothelial Regeneration with Small Molecules

John P. Cooke, M.D., Ph.D.
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
Director, Center for Cardiovascular Regeneration, DeBakey Heart & Vascular Center
Houston Methodist Hospital, Weill Cornell Medical College

11:22 - 11:34 AM
Chemical Genetics and Molecular Technologies for Rebuilding and Repairing the Injured Heart

Daniel J. Garry, M.D., Ph.D.
Professor of Medicine
St. Jude Medical Endowed Chair in Cardiology
Director, Lillehei Heart Institute
University of Minnesota
11:34 - 11:46 AM

Induced Cardiac Progenitor Cells: A New Tool for Cardiac Repair

Timothy J. Kamp, M.D., Ph.D.
Professor of Medicine
Co-director, Stem Cell and Regenerative Medicine Center
Cellular and Molecular Arrhythmia Research Program
University of Wisconsin-Madison School of Medicine and Public Health

11:46 - 11:58 AM

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

Joshua M. Hare, M.D.
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

11:58 AM - 12:10 PM

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

Young-sup Yoon, M.D., Ph.D.
Professor of Medicine and Biomedical Engineering
Director of Stem Cell Biology
Emory University School of Medicine

12:10 - 12:22 PM

Redox Regulation of Cardiomyocyte Renewal

Hesham A. Sadek, M.D., Ph.D.
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

12:25 - 1:25 PM Lunch

Tissue Engineering – 1:30 – 3:06 PM

MODERATOR: Joel L. Berry, Ph.D. – Associate Professor, Department of Biomedical Engineering (UAB)

1:30 - 1:42 PM

Human Model Systems of Heart Disease using Tissue Engineering Technologies

Ibrahim Domian, M.D., Ph.D.
Assistant Professor of Medicine
Staff Cardiologist, Cardiovascular Research Center, Massachusetts General Hospital
Harvard University Medical School
1:42 - 1:54 PM

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

Milica Radisic, Ph.D.
Professor and Canada Research Chair, Functional Cardiovascular Tissue Engineering
Institute of Biomaterials & Biomedical Engineering
University of Toronto

1:54 - 2:06 PM

Engineering a Platform for Maturation and Evaluation of hPSC-Derived Heart Tissue

Andrea Leonard, Ph.D.
Postdoctoral Researcher
Cell Biomechanics Lab and Murry Lab
University of Washington

2:06 - 2:18 PM

Human Myocardial Patch for Heart Repair

Nenad Bursac, Ph.D.
Professor of Biomedical Engineering
Associate Professor of Medicine
Duke University School of Medicine

2:18 - 2:30 PM

Stem Cell Differentiation and Fusion with Cardiomyocytes for Myocardial Repair

Brenda Ogle, Ph.D.
Associate Professor of Biomedical Engineering
Department of Biomedical Engineering
University of Minnesota

2:30 - 2:42 PM

Functional Assays of Single hiPSC-CMs

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

2:42 - 2:54 PM

Epicardial FSTL1 Reconstitution Regenerates the Adult Mammalian Heart

Vahid Serpooshan, Ph.D.
Instructor, Stanford Cardiovascular Institute
Stanford University School of Medicine
Smooth Muscle Cells for Cardiovascular Tissue Engineering

Y. Eugene Chen, M.D., Ph.D.
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

Cardiovascular Physiology – 3:25 – 4:49 PM

MODERATOR: Sumanth D. Prabhu, M.D. – University of Alabama at Birmingham (UAB)

Novel Regulators of Ischemic Injury and Repair

Gangjian Qin, M.D.
Associate Professor of Medicine, Molecular Pharmacology, and Biological Chemistry
Feinberg Cardiovascular Research Institute
Department of Medicine – Cardiology, Department of Pharmacology
Northwestern University Feinberg School of Medicine

Optical Mapping of Cardiac Propagation and Deformation

Jack M. Rogers, Ph.D.
Professor of Biomedical Engineering
Department of Biomedical Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham

Pro-healing Multifunctional Endothelium Mimicking Nanomatrix

Ho-Wook Jun, Ph.D.
Associate Professor of Biomedical Engineering
Department of Biomedical Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham
4:01 - 4:13 PM

Cardiac Micro-Impedance Measurements between Grafts and Recipient Heart

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

4:13 - 4:25 PM

Immune Cells and Cardiac Remodeling in Heart Failure

Sumanth D. Prabhu, M.D.
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

4:25 - 4:37 PM

Linking Cell Death and Autophagy Programs in the Heart

Richard N. Kitsis, M.D.
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

4:37 - 4:49 PM

Mitochondria as Arbiters of Cardiomyocyte Fate

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

Concluding Remarks – 4:50 - 5:00 PM

Sumanth D. Prabhu, M.D.
Professor of Medicine and Cell, Developmental, and Integrative Biology
Mary Gertrude Waters Chair of Cardiovascular Medicine
Director of the Division of Cardiovascular Disease
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PARTICIPANTS

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Timothy J. Kamp M.D., Ph.D.  University of Wisconsin
Richard N. Kitsis, M.D.  Albert Einstein College of Medicine
Brenda Ogle, Ph.D.  University of Minnesota
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PCBC Trainees:
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Vahid Serpooshan, Ph.D.  Stanford University

Symposium Planning Committee:
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