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

March 2 & 3, 2017
UAB | The University of Alabama at Birmingham

**LOCATIONS:**

**DAY 1** Thursday 3/2: **UAB Hill Center** *Theater*, 11:00 AM – 5:30 PM (1400 University Blvd, Birmingham, AL)

**DAY 2** Friday 3/3: **UAB Alumni House**, 8:00 AM – 11:30 AM (1301 10th Ave S, Birmingham, AL)

**Thursday, March 2, 2017** 11:00 AM – 5:30 PM

**LOCATION: UAB Hill Center** *Theater* (1400 University Blvd)

**Opening Remarks** – 11:00 – 11:20 AM

**Jianyi (Jay) Zhang, MD, PhD**
Chair, Department of Biomedical Engineering
Professor of Medicine, of Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham

**Denis Buxton, PhD**
Director, Basic and Early Translational Research Program
Division of Cardiovascular Sciences
National Heart, Lung, and Blood Institute (NHLBI)
NIH | National Institutes of Health

**Victor J. Dzau, MD**
Professor of Medicine, of Pathology
Duke University School of Medicine
President, National Academy of Medicine (NAM)

**Selwyn M. Vickers, MD**
Senior Vice President for Medicine
Dean, School of Medicine
Professor of Surgery
School of Medicine
UAB | The University of Alabama at Birmingham
Cardiovascular Stem Cells & Regenerative Medicine  
11:20 AM – 12:20 PM

**MODERATORS:** Timothy J. Kamp, MD, PhD (University of Wisconsin); Gangjian “GQ” Qin, MD (UAB)

11:20 – 11:35 AM

*Paracrine Mechanism of Stem Cell Therapy*

**Victor J. Dzau, MD**
Professor of Medicine, Duke University
President, National Academy of Medicine

11:35 – 11:50 AM

*Endothelial Regeneration*

**John P. Cooke, MD, PhD**
Professor of Cardiovascular Sciences
Houston Methodist Hospital
Weill Cornell Medical College

11:50 AM – 12:05 PM

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

**Daniel J. Garry, MD, PhD**
Professor of Medicine
Department of Medicine – Cardiovascular Division
University of Minnesota Medical School

12:05 – 12:20 PM

*Cardiac Development and Regeneration*

**Sean Wu, MD, PhD**
Associate Professor of Medicine
Department of Medicine – Cardiovascular Medicine
Stanford University School of Medicine

12:25 – 1:25 PM  **Lunch**  (BALLROOM D, UAB Hill Center, floor 3)

**Mechanism of Actions**  
1:30 – 2:30 PM

**MODERATORS:** Michael E. Davis, PhD (Emory); Prasanna Krishnamurthy, MVSc, PhD (UAB)

1:30 – 1:45 PM

*Exosomes and Cardiac Repair*

**Raj Kishore, PhD**
Professor of Medicine and Pharmacology
Lewis Katz School of Medicine
Temple University

1:45 – 2:00 PM

*Exosomes and Materials for Assistance of Stem Cell-Mediated Cardiac Repair*

**Michael E. Davis, PhD**
Associate Professor of Medicine
Department of Biomedical Engineering
Georgia Tech College of Engineering –and- Emory University School of Medicine

2:00 – 2:15 PM

*Enhancing Stem Cell Metabolism for Cardiac Repair*

**Gangjian (GQ) Qin, MD**
Professor of Medicine and Biomedical Engineering
Department of Biomedical Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham
2:15 – 2:30 PM  
**Immune Cells and Cardiac Remodeling in Heart Failure**  
**Sumanth D. Prabhu, MD**  
Professor of Medicine and Cell, Developmental, and Integrative Biology  
Department of Medicine – Division of Cardiovascular Disease  
School of Medicine  
UAB | The University of Alabama at Birmingham

2:30 – 2:45 PM  
**Efferocytosis in Cardiac Repair**  
**Prasanna Krishnamurthy, MVSc, PhD**  
Associate Professor of Medicine and Engineering  
School of Medicine, School of Engineering  
UAB | The University of Alabama at Birmingham

2:45 – 3:00 PM  
**Break**

**Tissue Engineering: Vessels, Valves, Tissue Patches, and Organs**  
3:00–4:30 PM  
**MODERATORS:** Joel L. Berry, PhD (UAB); Nenad Bursac, PhD (Duke)

3:00 – 3:15 PM  
**Modeling, Experimentation, and Simulation: Design-Aid Tools For Cardiovascular Tissue Engineering**  
**João Silva Soares, Ph.D.**  
Research Scientist, Center for Cardiovascular Simulation  
Institute for Computational Engineering and Sciences  
University of Texas at Austin

3:15 – 3:30 PM  
**Prohealing Endothelium Mimicking Nanomatrix**  
**Ho-Wook Jun, PhD**  
Professor of Biomedical Engineering  
Department of Biomedical Engineering  
School of Engineering, School of Medicine  
UAB | The University of Alabama at Birmingham

3:30 – 3:45 PM  
**Mechanobiology of iPSC-derived Cardiovascular Progeny**  
**Adam Engler, PhD**  
Associate Professor of Bioengineering  
University of California - San Diego

3:45 – 4:00 PM  
**In Vitro 3D Bioreactor for Drug Development**  
**Joel L. Berry, PhD**  
Associate Professor of Biomedical Engineering  
Department of Biomedical Engineering  
School of Engineering, School of Medicine  
UAB | The University of Alabama at Birmingham

4:00 – 4:15 PM  
**Bioengineered System for Differentiation of iPSCs into Cardiomyocytes using Electro-Mechanical Stimulation**  
**Palaniappan Sethu, PhD**  
Associate Professor of Biomedical Engineering  
Department of Biomedical Engineering  
School of Medicine, School of Engineering  
UAB | The University of Alabama at Birmingham
4:15 – 4:30 PM
Mitochondria and Cardiac Metabolic Homeostasis
Robert S. Balaban, PhD
Scientific Director, Division of Intramural Research
National Heart, Lung, and Blood Institute (NHLBI)
National Institutes of Health (NIH)

Tissue Engineering and Cell Therapy Products 4:30 – 5:30 PM

MODERATORS: Joel L. Berry, PhD (UAB); Nenad Bursac, PhD (Duke)

4:30 – 4:45 PM
Vascularized Heart Tissues for Myocardial Repair
Nenad Bursac, PhD
Professor of Biomedical Engineering, of Medicine
School of Medicine
Duke University

4:45 – 5:00 PM
Optical Mapping of Cardiac Propagation and Deformation
Jack M. Rogers, PhD
Professor of Biomedical Engineering
Department of Biomedical Engineering
School of Engineering, School of Medicine
UAB | The University of Alabama at Birmingham

5:00 – 5:15 PM
Optical Mapping of Impulse Propagation in Engineered Cardiac Tissue
Vladimir G. Fast, PhD
Professor of Biomedical Engineering
Department of Biomedical Engineering
School of Engineering, School of Medicine
UAB | The University of Alabama at Birmingham

5:15 – 5:30 PM
Cardiac Organ Chips
Kevin Healy, PhD
Professor in Engineering
Departments of Bioengineering, Materials Science, and Engineering
University of California at Berkeley

Friday, March 3, 2017 8:00 AM – 11:30 AM

LOCATION: UAB Alumni House (1301 10th Ave S, Birmingham, AL 35233)

hPSC and Cardiovascular Cell Therapy 8:05 AM – 9:35 AM

MODERATORS: Joseph C. Wu, MD, PhD (Stanford); Anupam Agarwal, MD (UAB)

8:05 – 8:20 AM
Cell Therapy with Human ESC-Derived Cardiac Cells
Philippe Menasche, MD, PhD
Professor of Thoracic and Cardiovascular Surgery
University of Paris Descartes
Director, INSERM (National Institute of Health and Medical Research) Laboratory, Paris, France
8:20 – 8:35 AM
*Induced Cardiac Progenitor Cells*
Timothy J. Kamp MD, PhD
Professor of Medicine
School of Medicine and Public Health
University of Wisconsin – Madison

8:35 – 8:50 AM
*Using iPSC to Model Heart Disease in a Dish*
Joseph C. Wu, MD, PhD
Professor of Radiology
Department of Medicine – Cardiovascular Medicine
School of Medicine
Stanford University Medicine

8:50 – 9:05 AM
*Maturing iPSC Derived Cardiomyocytes in the Dish for Disease Modeling and Cell Therapy*
Bjorn C. Knollmann, MD, PhD
Professor of Medicine and Pharmacology
Division of Clinical Pharmacology
School of Medicine
Vanderbilt University

9:05 – 9:20 AM
*Gene Therapy for Heart Failure*
Roger Hajjar, MD
Professor of Medicine
Icahn School of Medicine at Mount Sinai

9:20 – 9:35 AM
*Repeated Cell Therapy: A Paradigm Shift Whose Time Has Come*
Roberto Bolli, MD
Professor of Medicine, Physiology, and Biophysics
Department of Medicine – Division of Cardiovascular Medicine
University of Louisville – Kentucky School of Medicine

**Cardiovascular Sciences** 9:35 – 11:15 AM

**MODERATORS:** Rakesh P. Patel, PhD (UAB); Mark Sussman, PhD (UCSD)

9:35 – 9:50 AM
*Therapeutic use of NO in the Heart*
Stefan Janssens, MD
Professor of Medicine
Department of Cardiovascular Sciences
Centre for Molecular and Vascular Biology
Leuven, Belgium

9:50 – 10:05 AM
*Novel Regulation of Vascular Calcification*
Yabing Chen, PhD
Professor of Pathology
Department of Molecular and Cellular Pathology
School of Medicine
UAB | The University of Alabama at Birmingham

10:05 – 10:20 AM
*Mitochondrial LncRNAs in Cardiovascular Biology and Disea*
Kevin (Chunxiang) Zhang, MD, PhD
Professor of Medicine and Engineering
School of Medicine, School of Engineering
UAB | The University of Alabama at Birmingham
10:20 – 10:35 AM
Endogenous Cardiac Stem Cells
Mark Sussman, PhD
Professor of Biology
Chief Research Scientist
SDSU Heart Institute

10:35 – 10:50 AM
Progress of Pig Xenotransplantation toward the Clinic
Joseph Tector, MD, PhD
Professor of Surgery
Department of Surgery
School of Medicine
UAB | The University of Alabama at Birmingham

10:50 – 11:05 AM
Simply Complex: Building Hearts
Doris A Taylor, PhD
Director, Regenerative Medicine Research
Director, Center for Cell and Organ Biotechnology
Texas Heart Institute

Concluding Remarks – 11:05 AM
J. Iwan D. Alexander, PhD
Dean, School of Engineering
Professor of Engineering, of Biomedical Engineering
UAB | The University of Alabama at Birmingham

For additional information, please contact Mindy Robbins at minrob@uab.edu.
## 2017 NIH NHLBI PCBC CVTE WORKSHOP PARTICIPANTS & SYMPOSIUM SPEAKERS

### PCBC / PCTC Scientists:
- Denis Buxton, PhD  
  NIH | National Institutes of Health
- Nenad Bursac, PhD  
  Duke University
- John P. Cooke, MD, PhD  
  Houston Methodist DeBakey Heart & Vascular Center
- Victor J. Dzau, MD  
  NAM | National Academy of Medicine
- Daniel J. Garry, MD, PhD  
  University of Minnesota – Twin Cities
- Timothy J. Kamp, MD, PhD  
  University of Wisconsin – Madison
- Philippe Menasche, MD, PhD  
  University of Paris Descartes, France
- Sumanth D. Prabhu, MD  
  UAB | The University of Alabama at Birmingham
- Jack M. Rogers, PhD  
  UAB | The University of Alabama at Birmingham
- Joseph C. Wu, MD, PhD  
  Stanford University
- Sean Wu, MD, PhD  
  Stanford University
- Jianyi (Jay) Zhang, MD, PhD  
  UAB | The University of Alabama at Birmingham

### Non-PCBC Scientists:
- Anupam Agarwal, MD  
  UAB | The University of Alabama at Birmingham
- J. Iwan D. Alexander, PhD  
  UAB | The University of Alabama at Birmingham
- Robert S. Balaban, PhD  
  NIH | National Institutes of Health
- Joel L. Berry, PhD  
  UAB | The University of Alabama at Birmingham
- Roberto Bolli, MD  
  University of Louisville, Kentucky
- Yabing Chen, PhD  
  UAB | The University of Alabama at Birmingham
- Michael E. Davis, PhD  
  Georgia Tech & Emory University
- Adam Engler, PhD  
  University of California at San Diego
- Vladimir G. Fast, PhD  
  UAB | The University of Alabama at Birmingham
- Roger Hajjar, MD  
  Mount Sinai
- Kevin Healy, PhD  
  University of California at Berkeley
- Shijun Hu, PhD  
  Soochow University Institute for CV Science, China
- Stefan Janssens, MD  
  University of Leuven, Belgium
- Ho-Wook Jun, PhD  
  UAB | The University of Alabama at Birmingham
- Raj Kishore, PhD  
  Temple University
- Bjorn C. Knollmann, MD, PhD  
  Vanderbilt University
- Prasanna Krishnamurthy, MVSc, PhD  
  UAB | The University of Alabama at Birmingham
- Elizabeth A. Lipke, PhD  
  Auburn University
- Brenda M. Ogle, PhD  
  University of Minnesota – Twin Cities
- Rakesh Patel, MD  
  UAB | The University of Alabama at Birmingham
- Gangjian (GQ) Qin, MD  
  UAB | The University of Alabama at Birmingham
- Palaniappan Sethu, PhD  
  UAB | The University of Alabama at Birmingham
- João Silva Soares, PhD  
  The University of Texas at Austin
- Mark Sussman, PhD  
  SDSU Heart Institute
- Doris A. Taylor, PhD  
  Texas Heart Institute
- Joseph Tector, MD, PhD  
  UAB | The University of Alabama at Birmingham
- Selwyn M. Vickers, MD  
  UAB | The University of Alabama at Birmingham
- Lei Ye, MD  
  National Heart Research Institute, Singapore
- Kevin (Chunxiang) Zhang, MD, PhD  
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