Announcing Keystone Symposia’s 2015 conference on:

Heart Disease and Regeneration: Insights from Development

joint with the meeting on: Cell Biology of the Heart: Beyond the Myocyte-Centric View

March 1–6, 2015
Copper Mountain Resort, Colorado, USA

Scientific Organizers: Vincent M. Christoffels, James F. Martin and Deborah L. Yelon

This meeting highlights new concepts in cardiovascular development, regeneration and repair and emphasizes common molecular mechanisms with therapeutic potential for cardiovascular regeneration. Emerging technologies for genome editing and imaging will be discussed with the aim of facilitating new research directions and translational approaches. This meeting gathers researchers with expertise in cardiac development, molecular biology, stem cell biology, genetics and epigenetics to facilitate our understanding of heart development and homeostasis and to explore scientific directions and therapeutic approaches for the treatment of heart disease in children and adults.

Session Topics:
• Potential and Pitfalls of Cell Reprogramming (Joint)
• Epigenetics of Cardiac Development
• Regulatory Networks for Cardiac Rhythm
• Gene Regulatory Networks
• Renewal and Plasticity
• Signaling Pathways: Integration and Crosstalk
• Morphogenesis and Biomechanics
• Heart Repair: Make New Muscle or Better Scars? (Joint)
• Workshop 1: Emerging Technologies – Genomics and Genome Editing
• Workshop 2: Emerging Technologies – Imaging

Discounted Abstract/Scholarship Deadline: Nov 4, 2014
Abstract Deadline: Dec 3, 2014
Discounted Registration Deadline: Jan 6, 2015

To see the full program and for additional details, visit www.keystonesymposia.org/15X1.
Heart Disease and Regeneration: Insights from Development (X1)

Scientific Organizers: Vincent M. Christoffels, James F. Martin and Deborah L. Yelon

Sponsored by AstraZeneca and Bayer HealthCare Pharmaceuticals

Cell Biology of the Heart: Beyond the Myocyte-Centric View (X2)

Scientific Organizers: Peter Kohl, Robert G. Gourdie and Stefanie Dimmeler

March 1-6, 2015 • Copper Mountain Resort • Copper Mountain, Colorado, USA

Supported by the Directors’ Fund


www.keystonesymposia.org/15X1

www.keystonesymposia.org/15X2
Cardiac Non-Myocytes as Signaling Hubs: Biochemical Signals

**Session Chair**  † Invited but not yet accepted  
**Program current as of October 4, 2019. Program subject to change. Meal formats are based on meeting venue.**

For the most up-to-date details, visit  [www.keystonesymposia.org/15X1](http://www.keystonesymposia.org/15X1) and [www.keystonesymposia.org/15X2](http://www.keystonesymposia.org/15X2)
Heart Disease and Regeneration: Insights from Development (X1)

Scientific Organizers: Vincent M. Christoffels, James F. Martin and Deborah L. Yelon

Supported by the Directors’ Fund


Keynote Speakers:

Michaela Patterson, University of Southern California, USA
Short Talk: Genetic Determinants of Adult Mammalian Heart Regeneration

Cardiac Non-Myocytes in Tissue Structure and Function in the Adult Heart (X2)

*Merry L. Lindsey*, University of Mississippi Medical Center, USA

Doris A. Taylor, Texas Heart Institute, USA
ECM Clues for Cardiac Re-Popularization: Lessons from the De-Cellularized Heart

Nadia A. Rosenthal, The Jackson Laboratory, USA
Immune Cell Regulation of Cardiac Regeneration

Shahin Rafii, Weill Cornell Medical College, USA
Angiocrine Contribution of the Vascular Niche to Regeneration and Fibrosis

Mario Delmar, New York University, USA
Heterocellular Mechanical Junctions and Arrhythmogenesis: A Visual Proteomics Approach to the Study of Intercellular Communication in the Heart

Manuel Mayr, King's College, University of London, UK
Short Talk: Glycoproteomics Analysis of the Human Cardiac Extracellular Matrix

Workshop 2: Disease Models, Regeneration and Plasticity (X1)

*Jeroen Bakkers*, Hubrecht Institute, Netherlands

*Charles E. Murry*, University of Washington, USA

Mauro W. Costa, The Jackson Laboratory, USA
A Novel Understanding of a Complex Disease: The Interplay of Congenital Heart Disease and Obesity

Gaetano D’Amato, Centro Nacional de Investigaciones Cardiovasculares CNIC, Spain
Sequential Notch Activation Underlies Ventricular Chamber Development

Diane Fatkin, Victor Chang Cardiac Research Institute, Australia
Genetic Variants in the Left-Right Asymmetry Gene LEFTY2 May Contribute to AF Susceptibility

C. Geoffrey Burns, Harvard Medical School, Massachusetts General Hospital, USA
The AP-1 Transcription Factor Component Fosl2 Potentiates Myocardial Differentiation from the Zebrafish Second Heart Field

Ge Tao, Baylor College of Medicine, USA
Paired-Like Homeodomain Transcription Factor 2 Promotes Mouse Myocardial Regeneration

Christina V. Theodoris, University of California, San Francisco, USA
iPSC-Based Modeling of Human NOTCH1 Mutations Reveals Novel Pathways Regulating Aortic Valve Disease

Chi-Chung Wu, Ulm University, Germany
BMP Signaling Is Essential for Zebrafish Heart Regeneration

Workshop 2: Epigenetic and RNA Regulation of the Hetero-Cellular Heart (X2)

*Manuel Mayr*, King's College, University of London, UK

*Katarzyna A. Cieslik*, Baylor College of Medicine, USA

Burcu Duygu, Maastricht University, Netherlands
Regulation of Pathological cardiac Remodeling following Myocardial Infarction: The Role of miR-199b

Jan Fiedler, Hannover Medical School, Germany
Functional Relevance of Endothelial Hypoxia-Sensitive Long Non-Coding RNAs (lncRNAs)

Jörg Heineke, Medizinische Hochschule Hannover, Germany
Impact of the Transcription Factor GATA2 in Endothelial Cells on Cardiac Failure through Regulation of Two Secreted Long Non-Coding RNAs

Peng Zhang, Rhode Island Hospital and Alpert Medical School of Brown University, USA
A Novel Regulatory Role of MicroRNA-145 in Cardiac Fibroblasts

Stephane Heymans, Maastricht University Medical Centre, Netherlands
MicroRNA-146a Rewires Cardiac Metabolism and causes Cardiac Dysfunction in Hypertensive Heart Disease

Hyun Kook, Chonnam National University, South Korea
Posttranslational Modifications of Histone Deacetylase 2 in Cardiac Hypertrophy

Jesung Moon, University of Texas Southwestern Medical Center, USA
Improving Adult Muscle Tissue Regeneration Using Small Molecule Antagonists of Wnt-Mediated Signaling

Emily K. Pugach, University of Colorado, USA
Cre Expression Driven by the alpha-Myosin Heavy Chain Promoter Induces DNA Damage and Cardiotoxicity

Signaling Pathways: Integration and Crosstalk (X1)

*Stacey L. Rentschler*, Washington University School of Medicine, USA

Steven J. Kattman, USA
Harnessing Cardiac Development for Cell Manufacturing

Katherine E. Yutzey, Cincinnati Children's Hospital Medical Center, USA
Regulation of Postnatal Cardiomyocyte Proliferation

Jonathan A. Epstein, University of Pennsylvania, USA
Cardiac Myocyte Lineage Commitment

Gabriele D'Uva, Weizmann Institute of Science, Israel
Short Talk: ERBB2 Triggers Mammalian Heart Regeneration by Promoting Cardiomyocyte Dedifferentiation and Proliferation

* Session Chair † Invited but not yet accepted Program current as of October 4, 2019. Program subject to change. Meal formats are based on meeting venue.
For the most up-to-date details, visit www.keystonesymposia.org/15X2 and www.keystonesymposia.org/15X1.
Cardiac Non-Myocytes as Targets of Interventions (X2)

*Thomas Thum*, Medical School Hannover, Germany

**Stefan Engelhardt**, Technical University of Munich, Germany

miRNAs as Modulators of Cardiac Fibrosis: Myocyte–Fibroblast Cross-Talk

**John A. Baugh**, University College Dublin, Ireland

Short Talk: Epigenetic Therapy for the Treatment of Cardiac Hypertrophy and Fibrosis

**Natalia Trayanova**, Johns Hopkins University, USA

Image-Based Computer Modeling of Cardiac Scar Effects and their Interventional Correction

**Bernd K. Fleischmann**, Bonn University, Germany

Modulating the Myocardial Scar and Anti-Arrhythmogenesis

Poster Session 3

THURSDAY, MARCH 5

Morphogenesis and Biomechanics (X1)

*Katherine E. Yutzey*, Cincinnati Children's Hospital Medical Center, USA

**Hiroshi Hamada**, Osaka University, Japan

Role of Cilia and Fluid Flow in Left-Right Symmetry Breaking

**Deborah L. Yelon**, University of California, San Diego, USA

Extracellular Interactions that Sculpt Cardiac Morphology

**Jeroen Bakkers**, Hubrecht Institute, Netherlands

Mechanisms Driving Cardiac Left-Right Asymmetry

**Robert Fischer**, NHLBI, National Institutes of Health, USA

Shaping Endothelial Cells by Curvature Regulation

**Jay W. Schneider**, University of Texas Southwestern Medical Center, USA

Short Talk: Cardiac Regeneration: Robust, Versatile and Tunable Myocardial Responses to Implanted Biomaterial Hydrogels

**Alexia Vite**, Thomas Jefferson University, USA

Short Talk: Role of Cytoskeletal Tension in the Regulation of Yap Activity in the Heart

Responses to Cardiac Injury: Who Does What? (X2)

*Nadia A. Rosenthal*, The Jackson Laboratory, USA

**Richard T. Lee**, Harvard University, USA

Nerve Dependence of Cardiac Regeneration

**Merry L. Lindsey**, University of Mississippi Medical Center, USA

Proteomics of Post-Infarct Extracellular Matrix Remodeling

**Joshua M. Hare**, University of Miami Miller School of Medicine, USA

Therapeutic Stem Cell Interactions for Heart Disease

Jeffrey W. Holmes, University of Virginia, USA

Scar Structure and Mechanics: Therapeutic Implications of Fibroblast Mechanosensitivity

Jennifer M. Davis, Cincinnati Children's Hospital Medical Center, USA

Short Talk: MBNL1 Globally Regulates the Maturation of mRNAs that Promote Cellular Differentiation Programs

Heart Repair: Make New Muscle or Better Scars? (Joint)

*Peter Kohl*, Imperial College London, UK

*Deborah L. Yelon*, University of California, San Diego, USA

Kenneth D. Poss, Duke University Medical Center, USA

Natural Cardiac Repair Strategies

Paul R. Riley, University of Oxford, UK

Epigenetic Reactivation of Adult Epicardium Underpins Endogenous Heart Repair

Roger R. Markwald, Medical University of South Carolina, USA

The Living Scar: Engineering to Benefit Patient Health

Keynote Address (Joint)

**Stefanie Dimmeler**, University of Frankfurt, Germany

Noncoding RNAs and Cardiac Repair

FRIDAY, MARCH 6

Departure