KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

RNA-Based Approaches in Cardiovascular Disease (X8)

Scientific Organizers: Thomas Thum and Roger J. Hajjar

Supported by the Directors' Fund

Molecular Mechanisms of Heart Development (X7)

Scientific Organizers: Benoit G. Bruneau, Brian L. Black and Margaret E. Buckingham

March 26-30, 2017 • Keystone Resort • Keystone, Colorado, USA

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Abstract & Scholarship Deadline: November 30, 2016 / Abstract Deadline: January 11, 2017 / Discounted Registration Deadline: January 26, 2017

SUNDAY, MARCH 26

Arrival and Registration

MONDAY, MARCH 27

Welcome and Keynote Address (Joint)

Eric N. Olson, University of Texas Southwestern Medical Center, USA
Mechanistic Aspects of Noncoding RNAs in Cardiovascular Development and Disease

Common RNA-Based Mechanisms in Cardiovascular Development and Pathology (Joint)

Stefanie Dimmeler, University of Frankfurt, Germany
Long Noncoding RNAs in Cardiovascular Cell Decisions and Aging

Leon Johannes De Windt, Maastricht University, Netherlands
Fetal miRNAs Play Large at Heart Failure

Laurie A. Boyer, Massachusetts Institute of Technology, USA
Long Noncoding RNAs in Heart Development and Differentiation

Short Talk(s) Chosen from Abstracts

Workshop 1: Basic and Novel Tools for RNA Research (X8)

Stuart A. Cook, Duke-NUS Graduate Medical School Singapore, Singapore
Combined Sequencing of all RNA Species and Genetic Studies of Human Heart Cells

Mark Mercola, Stanford University, USA
Massive Omics Approaches to Understand the Heart

Short Talks Chosen from Abstracts

Workshop 1: Gene Regulatory Mechanisms (X7)

Short Talks Chosen from Abstracts

Fundamentals in RNA Diagnostics and Paracrine Effects (X8)

Carlos Fernandez-Hernando, Yale School of Medicine, USA
Non-Coding RNAs as Paracine Players in Vascular Inflammation and Metabolism

Denise Hilfiker-Kleiner, Medizinische Hochschule Hannover, Germany
Modulation of miR146 and Therapeutic Approach in Post Partum Cardiomyophathy

Short Talk Chosen from Abstracts

Cardiac Lineages (X7)

Margaret E. Buckingham, Institut Pasteur, France
Early Cardiac Lineage Determination

Lionel Christiaen, New York University, USA
Regulation of Cardiopharyngeal Cell Fates and Behaviors in a Simple Chordate

Caroline E. Burns, Harvard Medical School, Massachusetts General Hospital, USA
Zebrafish Cardiovascular Development

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, MARCH 28

Keynote Address (X8)

Manuel Mayr, King's College, University of London, UK
A Systems Biology Approach: Circulating Non-Coding RNAs as Innovative Diagnostic and Prognostic Markers of Cardiovascular Disease

Noncoding RNA Therapeutics: What Have We Learned? (X8)

Susmita Sahoo, Icahn School of Medicine at Mount Sinai, USA
Exosomes as a Diagnostic and Therapeutic Tool in Cardiovascular Disease

Eva van Rooij, Hubrecht Institute, Netherlands
Advances in Targeting miRNAs in the Heart

Gianluigi Condorelli, Humanitas University, Italy
Epigenetic Approaches to Treat Heart Failure

Elizabeth M. McNally, Northwestern University, USA
Targeting Muscular Dystrophy

Short Talk Chosen from Abstracts

Epicardium and Coronaries (X7)

Kristy Red-Horse, Stanford University, USA
Progenitor Cell Differentiation during Coronary Vessel Development

Bin Zhou, Albert Einstein College of Medicine, USA
Developmental Mechanisms of Coronary Angiogenesis and Arteriogenesis

Paul R. Riley, University of Oxford, UK
The Epicardium in Cardiac Regeneration

Nadia Mercader, Institut of Anatomy, University of Bern, Switzerland
Epicardial Lineages in the Zebrafish

Short Talk(s) Chosen from Abstracts

Novel Approaches in RNA Detection and Networks (X8)

Silke R. Sperling, Charité - Universitätsmedizin Berlin, Germany
Cardiac Transcription Networks – A System Biology Approach to Understand Heart Failure

Stefan Engelhardt, Institut for Pharmacologie & Toxicologie der TUM, Germany
Library based Approaches to Identify Crucial miRNA Players in Cardiac Function

Short Talk Chosen from Abstracts

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Gene Regulatory Mechanisms (X7)

Vincent M. Christoffels, Academic Medical Center, Netherlands
Three-Dimensional Organization of Cardiac Genes

Benoit G. Bruneau, Gladstone Institute of Cardiovascular Disease, USA
Transcriptional Regulation of Heart Development

Brian L. Black, University of California, San Francisco, USA
Endothelial Gene Regulation

Short Talk Chosen from Abstracts

Poster Session 2

WEDNESDAY, MARCH 29

Non-Coding RNAs Going Looooong…. (X8)

Gerald W. Dorn, II, Washington University School of Medicine, USA
Long Noncoding RNAs Orchestrating Cardiac Development

Yibin Wang, University of California, Los Angeles, USA
An LncRNA Dependent Epigenetic Check-Point for Cardiac Hypertrophy and Remodeling

Thomas Thum, Medical School Hannover, Germany
lncRNAs in Cardiac Fibrosis

Short Talk(s) Chosen from Abstracts

Congenital Heart Disease: Genes and Pathways (X7)

Christine E. Seidman, Harvard Medical School, USA
Genetics of Human Congenital Heart Disease

Ivan P. Moskowitz, University of Chicago, USA
Modeling Human Disease Pathways

William T. Pu, Children's Hospital, Harvard Medical School, USA
Cellular Models of Congenital Heart Disease

Richard P. Harvey, University of New South Wales, Victor Chang Cardiac Research Institute, Australia
Transcriptional Targets and Off-Targets in Congenital Heart Disease

Short Talk(s) Chosen from Abstracts

Preclinical Approaches Using RNA Therapeutics (X8)

William S. Marshall, miRagen Therapeutics, USA
Pharmacokinetic/Dynamic Aspects of Oligonucleotide Therapeutics

Brian Sproat, Chemconsilium GCV, Belgium
Synthesis of RNA and Analogues applicable to the Therapy of Cardiovascular Disease

Christian Kupatt, Technical University Munich, Germany
Micro-RNAs based Therapeutics in Porcine Cardiac Disease Models

Short Talk Chosen from Abstracts

Mechanisms of Cardiac Growth and Morphogenesis (X7)

Anthony B. Firulli, Wells Center for Pediatrics Research, USA
Hand Gene Dosage Requirements in Left Ventricular Morphogenesis

Katherine E. Yutzey, Cincinnati Children's Hospital Medical Center, USA
Mechanisms of Valvulogenesis

James F. Martin, Baylor College of Medicine, USA
The Hippo Pathway in Heart Development and Regeneration

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, MARCH 30

Mechanisms of Cardiovascular Regeneration (Joint)

Deepak Srivastava, Gladstone Institute of Cardiovascular Disease and University of California, San Francisco, USA
Mechanisms of Cardiac Reprogramming

Kenneth D. Poss, Duke University Medical Center, USA
Cardiac Regeneration

William C. Sessa, Yale University School of Medicine, USA
Vascular Therapeutic Approaches Using miRNAs

Andrew H. Baker, University of Edinburgh, UK
Non Coding RNA Therapeutics in Cardiovascular Pathophysiology

Short Talk(s) Chosen from Abstracts

Workshop 2: Cardiovascular Repair Mechanisms (Joint)

Short Talks Chosen from Abstracts

RNA Therapeutics in Clinical Translation (X8)

Roger J. Hajjar, Mount Sinai School of Medicine, USA
SERCA2a: Pitfalls and Chances

Patrick Most, University of Heidelberg, Germany
S100: Targeting Calcium Handling in the Cardiomyocyte

Speaker to be Announced

Modeling Human Heart Development (X7)

Christine L. Mummery, Leiden University Medical Center, Netherlands
iPS Cell Models of Heart and Blood Vessel Disease

Charles E. Murry, University of Washington, USA
Networks Underlying Human Cardiomyocyte Differentiation

Gordon M. Keller, University Health Network, MaRS Centre, Canada
Programming Cardiovascular Cell Types in vitro

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X8)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X7)

FRIDAY, MARCH 31

Departure