



# Atherosclerosis: Lessons Learned and Concepts Challenged

February 4–8, 2018 | Sagebrush Inn & Suites | Taos, New Mexico | USA

## Scientific Organizers:

**Laura F. Michael**, Eli Lilly and Company, USA

**Gerard Pasterkamp**, University Medical Center Utrecht, Netherlands

**Sekar Kathiresan**, Massachusetts General Hospital, USA

*Atherosclerosis is a chronic, systemic disease process whereby fatty deposits, inflammation and fibrosis accumulate in arterial vessel walls. Organ systems, including heart, brain, kidneys, as well as extremities, can be damaged, leading to atherosclerosis-driven clinical outcomes. According to the American Heart Association, 15.5 million Americans have coronary heart disease, of which 7.6 million experienced myocardial infarction. These statistics are reflective of global incidence. Treatment of atherosclerosis often begins with robust cholesterol-lowering treatments, yet many patients continue to experience cardiovascular events. Recent attempts to provide cardiovascular protection to such patients have included anti-inflammatory and HDL-raising therapeutic approaches that have yielded little benefit. Building knowledge of atherosclerosis disease etiology, defining unique attributes of patient differences as simple as sex or genetic inheritance, and using technology to identify patients with early disease is foundational for the scientific community to develop urgently needed therapeutics. The current concept of acute coronary syndrome (“the vulnerable plaque”) and widely applied animal models are debated because clinical presentation, underlying pathology and pathogenetic mechanisms are subject to change due to improved medical treatment. The goals of this meeting are to: 1) Challenge current dogma of atherosclerosis etiology and explore intra-organ cross-talk that may underlie disease evolution; 2) Consider emerging risk factors and their origins as intervention targets; and 3) Explore cutting-edge technologies to discover new therapeutic targets and approaches for drug development. By bringing together scientists from preclinical to clinical settings and from industry to academic institutions, this conference will nurture discussions to translate breakthrough discoveries into therapeutics.*

## Session Topics:

- The Natural History of Atherosclerotic Disease
  - Lipoprotein Risk Factors
  - Diabetes, Obesity and Atherosclerosis
  - The Inflammation Hypothesis
  - The Milieu Extérieur
  - Crosstalk Among Organs
  - Models and Biomarkers for Atherosclerotic Disease
  - Emerging Fields of Research
- plus three workshops*

**Scholarship Application & Discounted Abstract Deadline: October 5, 2017**

**Abstract Deadline: November 7, 2017**

**Discounted Registration Deadline: December 7, 2017**



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSathero

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# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

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### SUNDAY, FEBRUARY 4

#### Arrival and Registration

### MONDAY, FEBRUARY 5

#### The Natural History of Atherosclerotic Disease

**Peter Libby**, Brigham and Women's Hospital, USA  
*Requiem for the Vulnerable Plaque, Challenging Current Concepts*

**Sekar Kathiresan**, Massachusetts General Hospital, USA  
*Inherited basis for myocardial infarction*

**Gerard Pasterkamp**, University Medical Center Utrecht, Netherlands  
*Geno-Phenotyping of the Vulnerable Plaque and Patient*

#### Short Talk(s) Chosen from Abstracts

#### Workshop 1

##### Short Talks Chosen from Abstracts

#### Lipoprotein Risk Factors

**Kiran Musunuru**, University of Pennsylvania, USA  
*Therapeutic Genome Editing as a Cure for Atherosclerosis*

**Anne Tybjærg-Hansen**, Rigshospitalet, Copenhagen University Hospital, Denmark  
*Triglyceride-Rich Lipoproteins and Atherosclerotic Cardiovascular Disease: New Insights from Epidemiology, Genetics, and Biology*

**Daniel J. Rader**, University of Pennsylvania, USA  
*Functionalizing HDL Cholesterol*

**Marlys L. Koschinsky**, Western University, Canada  
*Lipoprotein(a): Ready For Prime Time?*

#### Poster Session 1

### TUESDAY, FEBRUARY 6

#### Diabetes, Obesity and Atherosclerosis

**Ruth McPherson**, University of Ottawa Heart Institute, Canada  
*Is Obesity a Causal Risk Factor for Atherosclerosis?*

**Sudha B. Biddinger**, Boston Children's Hospital, Harvard Medical School, USA  
*Beyond Hyperglycemia: Novel Mediators of Diabetes-Associated Cardiovascular Disease*

**Joerg Heeren**, University Medical Center Hamburg-Eppendorf, Germany  
*Protective Role of Brown Adipose in Atherosclerosis Development*

**Laura F. Michael**, Eli Lilly and Company, USA  
*Diabetes and Atherosclerosis: Anti-Diabetic Agents that Improve Cardiovascular Outcomes*

#### Short Talk(s) Chosen from Abstracts

#### The Inflammation Hypothesis

**Ziad Mallat**, University of Cambridge, UK  
*Immune Modulation in Atherosclerosis*

**Jan Nilsson**, Lund University, Sweden  
*Autoimmunity, Injury and Repair as Potential Targets for Intervention in Atherosclerosis*

**Paul M. Ridker**, Brigham and Women's Hospital, Harvard Medical School, USA  
*Anti-inflammatory Therapies for Chronic Atherosclerosis*

#### Short Talk Chosen from Abstracts

#### Poster Session 2

### WEDNESDAY, FEBRUARY 7

#### The Milieu Exterieur

**J. Mark Brown**, Cleveland Clinic, USA  
*Selective Small Molecule Inhibition of Gut Microbial Enzymes for the Treatment of Cardiometabolic Disorders*

**Seppo Yla-Herttuala**, University of Eastern Finland, Finland  
*Epigenetics, VEGFs and Non-coding RNAs in Atherosclerosis and Angiogenesis*

**Robert E. Gerszten**, Beth Israel Deaconess Medical Center, USA  
*Translating Exercise into Reduced Atherosclerosis Burden*

**Salim Yusuf**, McMaster University, Canada  
*How can we Reduce Premature CVD Globally in a Generation?*

#### Short Talk(s) Chosen from Abstracts

#### Workshop 2

##### Short Talks Chosen from Abstracts

#### Crosstalk Among Organs

**Viktoria Gusarova**, Regeneron Pharmaceuticals, USA  
*ANGPTL3 Blockade as a Therapeutic Approach for Treatment of Dyslipidemia and Atherosclerosis*

**Lilach O. Lerman**, Mayo Clinic, USA  
*New Concepts in Atherosclerotic Renovascular Disease: Current Status*

**Joachim Herz**, University of Texas Southwestern Medical Center, USA  
*Multitasking Therapeutics: What Brain Development, Alzheimer's disease and Atherosclerosis Have in Common*

**Johan Lars Markus Björkegren**, Icahn School of Medicine at Mount Sinai, USA  
*Cardiometabolic Risk Loci Share Downstream Cis- and Trans-Gene Regulation Across Tissues and Diseases*

#### Poster Session 3

### THURSDAY, FEBRUARY 8

#### Keynote Address

**George D. Yancopoulos**, Regeneron Pharmaceuticals, Inc., USA  
*The Impact of PCSK9 on Treating Atherosclerosis*

#### Models and Biomarkers for Atherosclerotic Disease

**Jacob Fog Bentzon**, Centro Nacional de Investigaciones Cardiovasculares, Spain  
*Gene-Modified Minipigs: Applications in Atherosclerosis Imaging*

**Lesca Miriam Holdt**, University Hospital, LMU Munich, Germany  
*Circular RNA in Atherosclerosis*

**Katey Rayner**, University of Ottawa Heart Institute / University of Ottawa, Canada  
*New Inflammatory Drivers and Biomarkers of Atherosclerosis*

#### Short Talk(s) Chosen from Abstracts

#### Workshop 3

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### Short Talks Chosen from Abstracts

#### Emerging Fields of Research

**Siddhartha Jaiswal**, Stanford University, USA

*Clonal Hematopoiesis in Aging and Atherosclerotic Cardiovascular Disease*

**Hester den Ruijter**, UMC Utrecht, Netherlands

*Sex Differences in Cardiovascular Disease*

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

### FRIDAY, FEBRUARY 9

#### Departure