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 Exterieur
- 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
SUNDAY, FEBRUARY 4
Arrival and Registration

MONDAY, FEBRUARY 5

The Natural History of Atherosclerotic Disease
- Daniel J. Rader, University of Pennsylvania, USA
- Peter Libby, Brigham and Women's Hospital, USA
- Sekar Kathiresan, Verte Therapeutics, USA
- Gerard Pasterkamp, University Medical Center Utrecht, Netherlands
- Philippe Boucher, University of Strasbourg, France
- Sumeet A. Khetarpal, University of Pennsylvania, USA

Workshop 1
- Ira G. Schulman, University of Virginia Health System, USA
- Liam Brunham, University of British Columbia, Canada
- Ruchi Gupta, MedImmune/AstraZeneca, USA
- Anna Kerstin Emy Hultgardh, Lund University, Sweden
- Ashok Kumar Kumawat, Orebro University, Sweden
- Mulugeta Melkie Zegeye, Orebro University, Sweden
- Sean Allen, Northwestern University, USA
- Anna Mathew, University of Michigan, USA
- Katey Rayner, University of Ottawa, Canada

Lipoprotein Risk Factors
- Laura F. Michael, Eli Lilly and Company, USA
- Kiran Musunuru, University of Pennsylvania, USA
- Anne Tybjerg-Hansen, Copenhagen University Hospital, Denmark

Posterior Session 1
- Daniel J. Rader, University of Pennsylvania, USA
Functionaliizing HDL Cholesterol

TUESDAY, FEBRUARY 6

Diabetes, Obesity and Atherosclerosis
- Siddhartha Jaiswal, Stanford University, USA
- J. Mark Brown, Cleveland Clinic, USA
- Joerg Heeren, University Medical Center Hamburg-Eppendorf, Germany
- Robert C. Bauer, Columbia University, USA
- Brian Parks, University of Wisconsin-Madison, USA

The Inflammation Hypothesis
- Katey Rayner, University of Ottawa, Canada
- Ziad Mallat, University of Cambridge, UK
- Jan Nilsson, Lund University, Sweden
- Paul M. Ridker, Brigham and Women's Hospital, Harvard Medical School, USA

WEDNESDAY, FEBRUARY 7

The Milieu Exterieur
- Gerard Pasterkamp, University Medical Center Utrecht, Netherlands
- Salim Yusuf, McMaster University, Canada
- Sudha B. Biddinger, Boston Children's Hospital, Harvard Medical School, USA
- Seppo Yla-Herttuala, University of Eastern Finland, Finland
- Robert E. Gerszten, Beth Israel Deaconess Medical Center, USA
- Brian Bennett, US Department of Agriculture, USA

For the most up-to-date details, visit www.keystonesymposia.org/18B2.
Michael C. Petriello, University of Kentucky, USA  
**Short Talk:** Serum Levels of Dioxin-Like Pollutants Are Positively Associated with the Cardiometabolic Disease Risk Biomarker Trimethylamine-N-oxide in Leaner Individuals

**Workshop 2**

*Dominique P.V. de Kleijn*, University Medical Center Utrecht, Netherlands  
**Camilla Gustafsen**, Aarhus University, Denmark  
**Regulation Across Tissues and Diseases**  
**Heparan Sulfate Proteoglycans Present PCSK9 to the LDL Receptor**  
**Fan E. Mo**, National Cheng Kung University, Taiwan  
**CCN1 and Its Receptor Integrin alpha6beta1 Instigate a Vicious Circle to Accelerate Disturbed Flow-Induced Atherosclerosis**  
**Andrew J. Morris**, University of Kentucky, USA  
**Functional Validation of PAP2B Gene Variants as Determinants of Coronary Artery Disease Risk**  
**Edward R. O’Brien**, University of Calgary, Canada  
**Natural Antibodies to HSP27 Are Novel Biomarkers for Cardiovascular Health: HSP27 Immunization Attenuates PCSK9 Transcription and Atherogenesis**  
**Ira G. Schulman**, University of Virginia Health System, USA  
**Regulation of HDL Function and Inflammation by Liver X Receptors**  
**Tapan Shah**, Rutgers New Jersey Medical School, USA  
**Sex Specific Differences in Post-Transcriptional Gene Regulation of BMP2 in Cardiovascular Calcification**  
**Vincent J. Venditto**, University of Kentucky, USA  
**Anti-ApoA-I Antibody Profiles Predict Cardiovascular Disease Outcomes in Patients and in a Mouse Model of Atherosclerosis**  
**Hong Yang**, Meharry Medical College, USA  
**Uregulation of ABCA1 Transcription and Inhibition of ABCA1 Protein Degradation by VLDLR/apoER2 Pathway**

**Crosstalk Among Organs**

* Jan Nilsson, Lund University, Sweden  
**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 AtheroRenovascular 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-Genie Regulation Across Tissues and Diseases**

**Poster Session 3**

**THURSDAY, FEBRUARY 8**

**Keynote Address**

*Sekar Kathiresan*, Verve Therapeutics, USA  
**Jesper Gromada**, Regeneron Pharmaceuticals, USA  
**PCSK9 and ANGPTL3 Inhibitors: A New Era of Lipid-Lowering Therapies**  
**Models and Biomarkers for Atherosclerotic Disease**  
* Viktoria Gusarova*, Regeneron Pharmaceuticals, USA  
**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, Canada  
**New Inflammatory Drivers and Biomarkers of Atherosclerosis**  
**Kelsey E. Jarrett**, Baylor College of Medicine, USA  
**Short Talk:** Somatic Genome Editing of Ldlr with AAV-CRISPR Is a Rapid Method for Atherosclerosis Investigation

**Workshop 3**

*Thomas Beyer*, Eli Lilly and Company, USA  
**Maria Ines Azambuja**, Universidade Federal do Rio Grande do Sul, Brazil  
**The Information that We Need to Advance Knowledge on Atherosclerosis Exists and It Is Stored as Levels and Trends of Mortality over the Last Century: Influenza is the Key to Retrieve It**  
**Dominique P.V. de Kleijn**, University Medical Center Utrecht, Netherlands  
**Diagnosis of Atherosclerotic Coronary Heart Disease using Plasma Extracellular Vesicle Proteins**  
**Trine Pagh Ludvigsen**, Novo Nordisk A/S, Denmark  
**Effect of Statin Treatment Compared to Dietary Cessation on Aortic Plaque Size and Inflammation in a Diet-Induced Atherosclerotic Göttingen Minipig Model**  
**Ananthi Rajamoorthi**, St. Louis University School of Medicine, USA  
**Therapeutic Silencing of CIDEC/Fsp27 Is Atheroprotective in Ldlr/-/- Mice**  
**Divya Sagar**, MedImmune, USA  
**Soluble LOX-1: A Potential Biomarker for SLE and Cardiovascular Comorbidity**  
**James Wingrove**, CardioDx, USA  
**The Added Value of a Multi-omics Approach for the Evaluation of Patients with Suspected Obstructive Coronary Artery Disease**  
**Jifeng Zhang**, University of Michigan, USA  
**Attenuated Atherosclerosis in Human Apolipoprotein A-Ii knockin Rabbits**

**Emerging Fields of Research**

*Sekar Kathiresan*, Verve Therapeutics, USA  
**Marlys L. Koschinsky**, Western University, Canada  
**Lipoprotein(a): Ready for Prime Time?**  
**Hester den Ruijter**, University Medical Center, Utrecht, Netherlands  
**Sex Differences in Cardiovascular Disease**  
**Siddhartha Jaiswal**, Stanford University, USA  
**Clonal Hematopoiesis in Aging and Atherosclerotic Cardiovascular Disease**  
**Meeting Wrap-Up: Outcomes and Future Directions (Organizers)**
FRIDAY, FEBRUARY 9
Departure