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

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
www.keystonesymposia.org/18B2
The Nature of Atherosclerotic Disease

Daniel J. Rader, University of Pennsylvania, USA

Requiem for the Vulnerable Plaque, Challenging Current Concepts

Peter Libby, Brigham and Women's Hospital, USA

Sekar Kathiresan, Massachusetts General Hospital, USA

Gerard Pasterkamp, University Medical Center Utrecht, Netherlands

Philippe Boucher, University of Strasbourg, France

Sumeet A. Khetarpal, University of Pennsylvania, USA

Workshop 1

Laura 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

Anne Tybjerg-Hansen, Copenhagen University Hospital, Denmark

Lipoprotein Risk Factors

Laura F. Michael, Eli Lilly and Company, USA

Kiran Musunuru, University of Pennsylvania, USA

Annie Tybjerg-Hansen, Copenhagen University Hospital, Denmark

Daniel J. Rader, University of Pennsylvania, USA

Functionalizing HDL Cholesterol

Poster Session 1

TUESDAY, FEBRUARY 6

Diabetes, Obesity and Atherosclerosis

Siddharta Jaiswal, Stanford University, USA

J. Mark Brown, Cleveland Clinic, USA

Sekar Kathiresan, Massachusetts General Hospital, USA

Gerard Pasterkamp, University Medical Center Utrecht, Netherlands

Pharmaphorum, Netherlands

Katey Rayner, University of Ottawa, Canada

Ziad Mallat, University of Cambridge, UK

Jan Nilsson, Lund University, Sweden

直属医学中心 Utrecht, 荷兰

Anna Kerstin Emy Hultgardh, Lund University, Sweden

Jan Nilsson, Lund University, Sweden

Ashok Kumar Kumawat, Orebro University, Sweden

Mulugeta Melkie Zegeye, Orebro University, Sweden

Sean Allen, Northwestern University, USA

Targeted Inhibition of NF-xB in Mouse Models of Atherosclerosis Results in Sex-Dependent Immunomodulation

Anna Mathew, University of Michigan, USA

Myeloperoxidase-Derived Oxidants Damage Artery Wall Proteins in an Animal Model of Chronic Kidney Disease-Accelerated Atherosclerosis

Lipoprotein Risk Factors

Laura F. Michael, Eli Lilly and Company, USA

Kiran Musunuru, University of Pennsylvania, USA

Annie Tybjerg-Hansen, 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

Poster Session 1

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

Beyond Hyperglycemia: Novel Mediators of Diabetes-Associated Cardiovascular Disease

Seppo Yla-Herttuala, University of Eastern Finland, Finland

Robert E. Gerszten, Beth Israel Deaconess Medical Center, USA

Translating Exercise into Reduced Atherosclerosis Burden

Brian Bennett, US Department of Agriculture, USA

Short Talk: Genetic and MicroRNA Association with the Cardiovascular Disease Risk Factor TMAO

* Session Chair † invited but not yet accepted  Program current as of August 22, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit www.keystonesymposia.org/18B2.
KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Atherosclerosis: Lessons Learned and Concepts Challenged (B2)
February 4-8, 2018 • Sagebrush Inn & Suites • Taos, New Mexico, USA
Scientific Organizers: Laura F. Michael, Gerard Pasterkamp and Sekar Kathiresan
Sponsored by Amgen Inc., MedImmune and Novo Nordisk A/S

Atherosclerosis: Lessons Learned and Concepts Challenged (B2)
February 4-8, 2018 • Sagebrush Inn & Suites • Taos, New Mexico, USA
Scientific Organizers: Laura F. Michael, Gerard Pasterkamp and Sekar Kathiresan
Sponsored by Amgen Inc., MedImmune and Novo Nordisk A/S


THURSDAY, FEBRUARY 8

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

**Workshop 2**

*Dominique P.V. de Kleijn*, University Medical Center Utrecht, Netherlands

**Camilla Gustafsen**, Aarhus University, Denmark

_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 PPAP2B 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. Schuman*, 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

_Upregulation 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 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 Björkøgren*, 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

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

_Marys 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