



American Heart Association®

# Vascular Discovery: From Genes to Medicine

## INVITED LECTURE SERIES

# CONFERENCE HIGHLIGHTS – LECTURES & AWARDS

**Saturday, May 13, 2023**

**9:00 a.m.**

Jeffrey M. Hoeg Arteriosclerosis,  
Thrombosis and Vascular Biology  
Award for Basic Science and  
Clinical Research Lecture

**9:30 a.m.**

Keynote Lecture

**10:00 a.m.**

Distinguished Lecture



## JEFFREY M. HOEG ARTERIOSCLEROSIS, THROMBOSIS AND VASCULAR BIOLOGY AWARD FOR BASIC SCIENCE AND CLINICAL RESEARCH



### Masanori Aikawa, MD, PhD

Systems Approach to Target Discovery for Macrophage Activation and Vascular Disease

Dr. Aikawa has worked on vascular biology since the 1990s. After he received his MD degree and finalized his clinical training at Juntendo University in Tokyo, Dr. Aikawa's PhD work focused on SMC differentiation under the supervision of Dr. Ryozo Nagai at the University of Tokyo. His cDNA cloning of human myosin heavy chain isoforms SM1 and SM2 (encoded by the Myh11 gene) helped him provide molecular bases for SMC diversity during the arterial development and disease progression. In 1995, he joined Dr. Peter Libby's laboratory at Brigham and Women's Hospital and Harvard Medical School as Research Fellow. Since then, Dr. Aikawa has focused on macrophage biology in vascular disease. His initial studies provided mechanistic evidence for the concept

of "plaque stabilization" by lipid lowering. After he became a faculty member, he used genetically altered mouse strains to provide in vivo evidence for the role MMP-collagenases play in collagen remodeling and contributed to establishing in vivo molecular imaging of macrophages. He then began exploring signaling mechanisms for macrophage activation. In the past decade, Dr. Aikawa has actively implemented or developed innovative technologies (e.g., multi-omics, bioinformatics programs, network medicine, single cell analysis, in silico drug screening, machine learning) to establish a systems approach to target discovery. His research is a dynamic interface between vascular biology and data science. Dr. Aikawa is Professor of Medicine at Harvard. At Brigham, he is Yoshihiro Miwa Distinguished Chair and Founding Director of the Center for Interdisciplinary Cardiovascular Sciences. He has held editorial positions in major medical journals, including ATVB, Circulation, Circulation Research, JACC, and Cardiovascular Research, and currently is Chief Editor of Frontiers in Cardiovascular Medicine. He has also served as a grant reviewer for various federal and foundations (e.g., AHA and NIH).

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### Jeffrey M. Hoeg Arteriosclerosis, Thrombosis and Vascular Biology Award for Basic Science and Clinical Research – Award History

The Jeffrey M. Hoeg Arteriosclerosis, Thrombosis and Vascular Biology Award for Basic Science and Clinical Research was established in 1999. The award recognizes an established investigator in the prime of their career who has made an outstanding contribution to furthering understanding of the pathophysiology of atherosclerosis and/or the development of treatment strategies for its prevention through basic science and clinical research efforts. This award honors the memory of Jeffrey M. Hoeg, MD, chief of the Section of Cell Biology within the Molecular Disease Branch of the National Heart, Lung, and Blood Institute, NIH. He was an extraordinary research scientist and physician who, in the prime of his career, was working in the field of lipoprotein metabolism and atherosclerosis. Dr. Hoeg died in July 1998 after a courageous battle with cancer.

## KEYNOTE LECTURE



### **Karen K. Hirschi, PhD**

Regulation of Endothelial Cell Specification  
in Development and Disease

Dr. Hirschi is the Alumni Endowed Professor of Cell Biology at the University of Virginia (UVA) School of Medicine and the Associate Director of Scientific Programs for the UVA Medical Scientist Training Program. She is also the founding Director of the Developmental Genomics Center that aims to bridge developmental biologists with clinical investigators to identify genetic mutations that cause developmental defects in pediatric patients. Dr. Hirschi initially studied nutritional biochemistry, receiving an Honors BS from the Pennsylvania State University and her PhD from the University of Arizona. She then pursued postdoctoral training in vascular cell and developmental biology at Harvard Medical School and began her first tenure-track faculty

position at Baylor College of Medicine, where she became a tenured Professor and was the founding Deputy Director of the Stem Cell and Regenerative Medicine Center. Dr. Hirschi then moved to Yale University School of Medicine as a Professor in the Departments of Medicine and Genetics and became the Co-Director of the Yale Cardiovascular Research Center. She moved her lab to UVA in 2019 and remains an Adjunct Professor at Yale.

The Hirschi lab is primarily interested in vascular and hematopoietic development, and they have made significant contributions to our understanding of the molecular regulation of these processes. They are specifically focused on elucidating regulators of endothelial and blood cell commitment, differentiation and specialization as well as modulators of endothelial cell cycle state during vascular development. The Hirschi lab uses the mouse model system to study the regulation of these processes in vivo. Insights gained are applied to the modulation of pluripotent human stem cell commitment toward vascular and blood cell fates, and to the genesis and optimization of clinically relevant strategies to promote endogenous vascular regeneration and treat vascular pathologies.

Dr. Hirschi is very active and dedicated to service in the vascular biology community and beyond. She has served as former President of the North American Vascular Biology Organization and former Council Member for the NIH National Institute for Bioimaging and Bioengineering. Dr. Hirschi also regularly participates in the organization of national and international conferences, and is committed to mentoring and promoting junior scientists, and a diverse, inclusive scientific community.

## DISTINGUISHED LECTURE



### Deepak L. Bhatt, MD, MPH, FACC, FAHA, FESC, MSCAI

Advances in Omega-3 Fatty Acid Research

Dr. Bhatt is Director of Mount Sinai Heart and the Dr. Valentin Fuster Professor of Cardiovascular Medicine at the Icahn School of Medicine at Mount Sinai Health System. After graduating as valedictorian from Boston Latin School, Dr. Bhatt obtained his undergraduate science degree as a National Merit Scholar at the Massachusetts Institute of Technology. He received his MD from Cornell University and a master's degree in public health with a concentration in clinical effectiveness from Harvard University. He did an internship and residency in internal medicine at the Hospital of the University of Pennsylvania and his cardiovascular training at the Cleveland Clinic. He also did fellowships in interventional cardiology and cerebral and peripheral vascular intervention and served as Chief Interventional Fellow at the

Cleveland Clinic, where he was an interventional cardiologist and Associate Professor of Medicine for several years. He was also Director of the Interventional Cardiology Fellowship, Associate Director of the Cardiovascular Medicine Fellowship and Associate Director of the Cardiovascular Coordinating Center. Dr. Bhatt then became Chief of Cardiology at the VA Boston Healthcare System for several years.

Brigham and Women's Hospital selected him as the 2014 Eugene Braunwald Scholar. He has been listed in Best Doctors in America from 2005 to 2020. He received the Eugene Braunwald Teaching Award for Excellence in the Teaching of Clinical Cardiology from Brigham and Women's Hospital in 2017, ACC's Distinguished Mentor Award in 2018, AHA's Distinguished Scientist Award in 2019, NLA's Honorary Lifetime Mentorship Award in 2021 and SCAI's Master designation in 2022.

Dr. Bhatt's research interests include acute coronary syndromes, preventive cardiology and advanced techniques in cardiac, cerebral and peripheral intervention. He has authored or co-authored more than 1,900 publications and has been listed by the Web of Science Group as a Highly Cited Researcher from 2014 to 2022.

He is the Senior Associate Editor for News and Clinical Trials for ACC.org, and Editor of the peer-reviewed Journal of Invasive Cardiology.



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