

STANFORD-PENN

CARDIOVASCULAR

RESEARCH SYMPOSIUM

November 4-5, 2019
Li Ka Shing Conference Center
Paul Berg Hall
Stanford University



SCHEDULE

MONDAY, NOVEMBER 4, 2019

INTRODUCTORY REMARKS

1:00 pm *Conference Opening*

Joseph C. Wu, MD, PhD

Director, Stanford Cardiovascular Institute
Simon H. Stertzer, MD, Professor of Medicine and Radiology
Stanford University

Daniel P. Kelly, MD

Willard and Rhoda Ware Professor of Diabetes and Metabolic Diseases
Perelman School of Medicine
University of Pennsylvania

Erik Ingelsson, MD, PhD

Professor of Cardiovascular Medicine
Stanford University

1:05 pm *Introductory Remarks (Video)*

Lloyd B. Minor, MD

The Carl and Elizabeth Naumann Professorship for the Dean of the School of Medicine
Professor of Otolaryngology, and of Neurobiology and Bioengineering
Stanford University

1:10 pm *Welcome*

Robert A. Harrington, MD

Arthur L. Bloomfield Professor of Medicine
Chair, Department of Medicine
Stanford University

OPENING KEYNOTE

1:15 pm *Future in Health: Drugs, Devices, and Data*

Peter J. Fitzgerald, MD, PhD

Professor Emeritus of Cardiovascular Medicine
Professor Emeritus, Medicine & Engineering
Director, Center of CV Innovation
Stanford University
Co-founder and Managing partner, Triventures

SCHEDULE

NOVEL TECHNOLOGIES IN CARDIOVASCULAR MEDICINE

Session Chair: **Paul J. Wang, MD**, Professor of Cardiovascular Medicine, and, by courtesy, of Bioengineering, Stanford University

- 1:45 pm ***β 1IPKC inhibitor(s), heart failure and SAM β A***
Daria Mochly-Rosen, PhD
George D. Smith Professor in Translational Medicine
Stanford University
- 2:00 pm ***Engineering of Materials to Enable Regenerative Medicine***
Sarah Heilshorn, PhD
Associate Professor of Materials Science and Engineering
Stanford University
- 2:15 pm ***Anatomy of Reentrant Arrhythmias: Connecting Physiology to Imaging***
Saman Nazarian, MD, PhD
Associate Professor of Medicine
Perelman School of Medicine
University of Pennsylvania
- 2:30 pm **Coffee Break**

RECENT ADVANCES IN CARDIOVASCULAR SURGERY

Session Chair: **Elan Burton, MD**, Clinical Assistant Professor, Adult Cardiothoracic Surgery, Stanford University

- 3:00 pm ***Minimally Invasive Mechanical Circulatory Support***
William Hiesinger, MD
Assistant Professor of Cardiothoracic Surgery (Adult Cardiac Surgery)
Stanford University
- 3:15 pm ***Heart and Heart-Lung Transplantation***
Yasuhiro Shudo, MD, PhD
Clinical Assistant Professor, Cardiothoracic Surgery (Adult Cardiac Surgery)
Stanford University
- 3:30 pm ***Complex Endovascular Aneurysm Repair***
Shipra Arya, MD, SM
Associate Professor of Vascular Surgery
Stanford University

SCHEDULE

THE MANY FACES OF HEART FAILURE

Session Chair: **Sharon Hunt, MD**, Professor Emerita of Cardiovascular Medicine, Stanford University

- 3:45 pm *Genomics of Heart Failure*
Thomas P. Cappola, MD, ScM
Herbert C. Rorer Professor in Medical Sciences
Perelman School of Medicine
University of Pennsylvania
- 4:00 pm *Amyloidosis – Breaking Down the Myths*
Ronald Witteles, MD
Associate Professor of Cardiovascular Medicine
Stanford University
- 4:15 pm *Translational Insights into Cancer Therapy Cardiotoxicity*
Bonnie Ky, MD, MSCE
Associate Professor of Medicine
Perelman School of Medicine
University of Pennsylvania
- 4:30 pm **Conclusion of First Day and Departure**

TUESDAY, NOVEMBER 5, 2019

- 7:30 am **Arrival and Breakfast**
- 8:10 am *Welcome*
Erik Ingelsson, MD, PhD
Professor of Cardiovascular Medicine
Stanford University

KEYNOTE LECTURE

- 8:15 am *A Genome-First Approach to Cardiometabolic Disease*
Daniel J. Rader, MD
Seymour Gray Professor of Molecular Medicine
Perelman School of Medicine
University of Pennsylvania

SCHEDULE

NEW LANDSCAPE IN CARDIOPULMONARY DISEASES

Session Chair: **Edda Spiekerkoetter, MD**, Associate Professor of Pulmonary and Critical Care Medicine, Stanford University

8:45 am *Impact of Genetics on Metabolism and Epigenetics in Pulmonary Arterial Hypertension*

Marlene Rabinovitch, MD

Dwight and Vera Dunlevie Professor in Pediatric Cardiology
Stanford University

9:00 am *Endothelial Cells, Pericytes and Pulmonary Hypertension: WNT α is Coming!*

Vinicio de Jesus Perez, MD

Associate Professor of Pulmonary and Critical Care Medicine
Stanford University

9:15 am *Non-Invasive Monitoring for Heart Transplant Complications*

Kiran Khush, MD

Associate Professor of Cardiovascular Medicine
Stanford University

9:30 am **Coffee Break**

CARDIOVASCULAR DEVELOPMENT: WHAT'S WRONG AND HOW TO GET IT RIGHT?

Chair: **Sean M. Wu, MD, PhD**, Associate Professor of Cardiovascular Medicine, Stanford University

10:00 am *3D Genome Organization in Development and Disease*

Rajan Jain, MD

Assistant Professor of Medicine
Perelman School of Medicine
University of Pennsylvania

10:15 am *Polygenic Determinants of Aortic Diameter Predict Risk for Aneurysm and Dissection*

James R. Priest, MD

Assistant Professor of Pediatric Cardiology
Stanford University

10:30 am *Role of Coronary Vessels in Cardiac Development and Regeneration*

Kristy Red-Horse, PhD

Associate Professor of Biology
Stanford University

SCHEDULE

STEM CELLS AND REGENERATIVE MEDICINE: FROM DEVELOPMENTAL BIOLOGY TO PRECISION MEDICINE

Chair: **Patricia Nguyen, MD**, Assistant Professor of Cardiovascular Medicine, Palo Alto Veterans Affairs Health Care System, Stanford Medicine

- 10:45 am *The Silence of the LADs: Lamina-Genome Interaction in Cardiac Laminopathies*
Ioannis Karakikes, PhD
Assistant Professor, Department of Cardiothoracic Surgery
Stanford University
- 11:00 am *Application of iPSC-Derived Endothelial Cells for Treatment of Peripheral Arterial Disease*
Ngan F. Huang, PhD
Assistant Professor, Department of Cardiothoracic Surgery
Stanford University
- 11:15 am *Diagnosis, Prevention, and Treatment of Cardiovascular Diseases with Genome Editing*
Kiran Musunuru, MD, PhD, MPH
Associate Professor of Medicine
Perelman School of Medicine
University of Pennsylvania
- 11:30 am **Lunch, Mentor Tables, Poster Viewing**

CARDIAC METABOLISM: FROM BIOLOGY TO DISEASE

Chair: **Mark Mercola, PhD**, Professor of Medicine, Cardiovascular Medicine, Stanford University

- 1:00 pm *Deciphering the Metabolic Origins of Heart Failure*
Daniel P. Kelly, MD
Willard and Rhoda Ware Professor of Diabetes and Metabolic Diseases
Perelman School of Medicine
University of Pennsylvania
- 1:15 pm *Metabolic Underpinnings of Amyloid Cardiomyopathy*
Ronglih Liao, PhD
Professor of Cardiovascular Medicine
Stanford University
- 1:30 pm *Novel Players in Mitophagy*
Zoltan Arany, MD, PhD
Professor of Medicine
Perelman School of Medicine
University of Pennsylvania

SCHEDULE

NEW INSIGHTS INTO VASCULAR DISEASE: FROM BENCH TO BEDSIDE

Chair: **Alison Marsden, PhD**, Associate Professor of Pediatrics (Cardiology) and Bioengineering, Stanford University

- 1:45 pm *Clonal Smooth Muscle Cell Expansion in Atherosclerosis*
Nicholas Leeper, MD
Professor of Vascular Surgery and Cardiovascular Medicine
Stanford University
- 2:00 pm *Vascular Genetics at Scale: Lessons from the VA Million Veteran Program*
Scott Damrauer, MD
Assistant Professor of Surgery
Perelman School of Medicine
University of Pennsylvania
- 2:15 pm *The Use of Big Data and Machine Learning to Identify and Refine Important Cardiovascular Phenotypes*
Elsie Ross, MD, MSc
Assistant Professor of Vascular Surgery and of Medicine (BMIR)
Stanford University
- 2:30 pm **Coffee Break**

RAPID FIRE TALKS

Chair: **Joshua W. Knowles, MD, PhD**, Assistant Professor of Cardiovascular Medicine, Stanford University

- 3:00 pm *Molecular Insights from an In Vivo Model of Transthyretin Cardiac Amyloidosis*
Kevin Alexander, MD
Instructor in Cardiovascular Medicine, Stanford University
- 3:07 pm *Leaflet-Specific Contribution to Aortic Stenosis: Insights from Computed Tomography and Computer Simulation*
Ian Chen, MD, PhD
Instructor, Cardiovascular Institute, Stanford University
- 3:14 pm *Polygenic Determinants of Aortic Diameter Predict Risk for Aneurysm and Dissection*
Victoria Parikh, MD
Assistant Professor of Medicine, Cardiovascular Medicine, Stanford University
- 3:21 pm *Investigating the Mechanism of Trastuzumab-induced Cardiotoxicity Using Human iPSC-derived Cardiac Organoids*
June-Wha Rhee, MD
Instructor, Cardiovascular Medicine, Stanford University

SCHEDULE

- 3:28 pm *The Role of Friend of GATA2 (FOG2/ZFPM2) in Angiogenesis and Coronary Microvascular Disease*
Marie A. Guerraty, MD, PhD
Instructor, Division of Cardiovascular Medicine, University of Pennsylvania
- 3:35 pm *Cellular Models to Tailor Cardiac Drug Therapy*
Karim Sallam, MD
Assistant Professor of Cardiovascular Medicine, Stanford University
- 3:42 pm *Statins Improve Endothelial Function in LMNA-Related Dilated Cardiomyopathy: Clinical Trial in a Dish Using Human iPSCs*
Nazish Sayed, MD, PhD
Instructor, Cardiovascular Institute, Stanford University
- 3:49 pm *Cardiovascular Risk Prediction for Understudied Populations*
Fatima Rodriguez, MD, MPH
Assistant Professor of Cardiovascular Medicine, Stanford University
- 3:56 pm *Single Cell Analysis of Smooth Muscle Cell Phenotypic Modulation In Vivo Reveals a Critical Role for Coronary Disease Gene TCF21 in Mice and Humans*
Robert Wirka, MD
Instructor, Cardiovascular Medicine, Stanford University
- 4:03 pm *Gender Inequities in the Cardiology Profession*
Celina Yong, MD, MBA, MSc
Assistant Professor of Cardiovascular Medicine, Stanford University
- 4:10 pm *The Cardiac Surgeon-Scientist at the Crossroads of Basic Science, Engineering, and Clinical Translation*
Hanjay Wang, MD
Resident, Cardiothoracic Surgery, Stanford University

CLOSING REMARKS

- 4:17 pm *Conference Close - Final words*
Joseph C. Wu, MD, PhD
Director, Stanford Cardiovascular Institute
Simon H. Stertz, MD, Professor of Medicine and Radiology
Stanford University
- 4:20 pm **Wine and Cheese Reception and Poster Session with Presentation of Poster Awards**

For an online pdf of submitted abstracts scan this QR Code:





Peter J. Fitzgerald, MD, PhD

Dr. Peter J. Fitzgerald is Director of the Center for Cardiovascular Technology at Stanford University Medical School, and Co-founder/Managing Partner at Triventures. He is an Interventional Cardiologist and has a PhD in Engineering. He is Professor Emeritus in the Departments of Medicine and Engineering at Stanford. He has led or participated in over 150 clinical trials, published over 450 manuscripts/chapters, and lectures worldwide. Peter has been principle/founder of 18 healthcare companies in Silicon Valley, has transitioned 13 of these start-ups to medium/large-cap life science companies and remains on several of their advisory boards. He has been a consultant for the FDA for the past 15 years focused on medical technology and more recently, digital health. Prior, Dr. Fitzgerald was a co-founding partner of LVP capital in San Francisco, deriving his experience in venture capital from three funds focused on medical device and biotechnology start-ups. Dr. Fitzgerald heads the US Triventures office and travels to Israel monthly.



Daniel J. Rader, MD

Dr. Daniel J. Rader is the Seymour Gray Professor of Molecular Medicine at the Perelman School of Medicine at the University of Pennsylvania. He serves as the Chair of the Department of Genetics, as well as the Chief of the Division of Translational Medicine and Human Genetics in the Department of Medicine. He is also Associate Director of Penn's Institute for Translational Medicine and Therapeutics, and is co-director of the Penn Medicine Biobank.

Dr. Rader's research focuses on the human genetics and functional genomics of lipoprotein metabolism and atherosclerosis, as well as the translational implications for novel therapeutic approaches. He has had a long interest in novel therapeutic approaches to unmet medical needs in the treatment of severe dyslipidemia. He led the scientific and clinical development of a first-in-class inhibitor of microsomal transfer protein for the treatment of homozygous familial hypercholesterolemia. He also has a particular interest in HDL metabolism and function and in novel approaches to targeting HDL metabolism and reverse cholesterol transport in the treatment, prevention, and regression of atherosclerosis.

Dr. Rader trained in internal medicine at Yale-New Haven Hospital and in human genetics and physiology of lipoprotein metabolism at the National Institutes of Health. He has been on the Penn faculty since 1994. He is a recipient of several national awards, including the Clinical Research Award from the American Heart Association. He is currently the deputy editor of the journal *Arteriosclerosis, Thrombosis and Vascular Biology*, the Chief Scientific Advisor to the Familial Hypercholesterolemia Foundation, and serves on the Board of Directors of the International Society for Atherosclerosis, the Board of External Experts of the National Heart Lung and Blood Institute, and the Advisory Board for Clinical Research for the NIH. Dr. Rader has been elected to the American Society of Clinical Investigation, the Association of American Physicians, and the Institute of Medicine of the National Academy of Sciences (now the National Academy of Medicine).



Kevin Alexander, MD

Dr. Alexander received his medical degree from the University of Pennsylvania in 2011. During medical school, he received a Sarnoff Cardiovascular Research Fellowship and studied beta-adrenergic receptor signaling for 2 years in Dr. Howard Rockman's lab at Duke University. He completed internal medicine residency at Johns Hopkins Hospital and a cardiology fellowship at Brigham and Women's Hospital. He then finished a fellowship in advanced heart failure and transplant cardiology at Stanford in 2019 and joined Stanford's faculty. He is a member of the Stanford Amyloid Center and is mentored by co-directors Drs. Ronglih Liao and Ronald Wittles. Dr. Alexander's primary clinical and research interests lie in cardiac amyloidosis, in particular unraveling the molecular determinants of transthyretin amyloid cardiomyopathy.



Zoltan Arany, MD, PhD

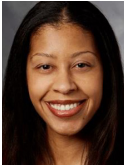
Zoltan "Zolt" Arany, MD, PhD, is Professor of Medicine and Director of the Cardiovascular Metabolism Program at the University of Pennsylvania Perelman School of Medicine. Dr. Arany's laboratory focuses on the mechanisms that underlie metabolic pathophysiology in the cardiovascular system. He focuses on linking investigations of cardiac and vascular physiology in model organisms to clinical data and observations, and takes a multidisciplinary approach, spanning from molecular biology and numerous -omic approaches to model organisms and human clinical studies. Recent focus in Dr. Arany's laboratory has included the role of the vasculature in the development of diabetes, and of maternal cardiac disease during and after pregnancy. Dr. Arany is also an active clinical cardiologist, teacher, and mentor. He is a recipient of several awards including the American Heart Association Established Investigator Award, the Hal Dvorak Young Investigator Award in Translational Research, and the Inaugural Yale Calabresi Prize. He is elected to the American Society of Clinical Investigators and the Association of American Physicians. Dr. Arany has published more than 120 research papers in prominent journals, and has also received a number of teaching and mentoring awards.



Shipra Arya, MD, SM

Dr. Shipra Arya is an Associate Professor of Surgery at Stanford and the Chief of Vascular Section at the Palo Alto Veterans Affairs Healthcare System. She has a Master's in Epidemiology from Harvard. She completed General Surgery Residency at Creighton followed by a Vascular Surgery Fellowship at University of Michigan. Dr. Arya received the Mentored Clinical and Population Research Award by the American Heart Association to develop novel risk prediction models for peripheral artery disease (PAD) patients to assess outcomes including cardiovascular morbidity and mortality, and reduce limb amputation. Her team has identified significant risk factors for limb loss in PAD. Dr. Arya has a lab at Stanford-Surgery Policy Improvement Research & Education Center (S-SPIRE) and is working to improve outcomes and enhance patient centered care in high risk vulnerable populations, broadly exploring vascular surgery and frailty. She is the site PI for multiple national trials including the CREST-2, CSP 599 TOP, and PROVE-AAA. She is also a co-I for the Million Veterans Program to study genome-wide associations in vascular conditions. Dr. Arya serves on the editorial board of the *Annals of Vascular Surgery*, and is the Chair of the leadership committee of the Association of Academic Surgery.

SPEAKER BIOS



Elan Burton, MD

Elan Burton, MD, is a clinical Assistant Professor in the department of Cardiothoracic Surgery at Stanford University. Before coming to Stanford, she earned her MD from Morehouse School of Medicine, completed her residency at University of Pittsburgh Medical Center Mercy, and then completed fellowships at the University of North Carolina Hospitals, University of Minnesota, and the University of Maryland. She is a practicing cardiothoracic surgeon and also holds a Masters in Healthcare Administration from the University of Minnesota.



Thomas P. Cappola, MD, ScM

Thomas P. Cappola, MD, ScM, is Herbert C. Rorer Professor in Medical Sciences and Chief, Cardiovascular Medicine, at the University of Pennsylvania Perelman School of Medicine. His research aims to uncover heart failure mechanisms in human subjects and to use these insights to improve treatment. This has involved diverse approaches, including applied genomics, population science, laboratory studies, and clinical trials. He has established and leads a multi-center cohort study of advanced heart failure (Penn Heart Failure Study, PHFS); co-leads a multi-center consortium for human myocardial transcriptomics and systems genetics (Myocardial Applied Genomics Network, MAGNet); serves as a Principal Investigator on the NHLBI Heart Failure Clinical Research Network; and is a contributing member of numerous international genomics consortia. Within the Cardiovascular Division, he has established collaborative leadership to create programs integrating science and clinical care, and has used these as a platform for research and training. In his clinical role, he treats patients with advanced heart failure on the inpatient and outpatient heart failure/transplant service.



Ian Chen, MD, PhD

Dr. Ian Chen is an Instructor (affiliated) of the Stanford Cardiovascular Institute and a staff cardiologist at the VA Palo Alto Health Care System. He received his MD and PhD in Bioengineering from Stanford University, where he also completed additional clinical training in internal medicine and general cardiology. His research program aims to develop novel imaging, computational, stem cell, and single-cell transcriptomic techniques to elucidate both the common and differential mechanisms underlying aortic valve and coronary artery diseases, with the goal to eventually develop both disease- and patient-specific therapies. His current translational research focuses on using computed tomography angiography to clinically phenotype patients with these diseases, as well as induced pluripotent stem cells to model the mechanisms by which endothelial heterogeneity and dysfunction contribute to their disease pathogenesis.



Scott Damrauer, MD

Scott Damrauer, MD, is a vascular surgeon and an Assistant Professor of Surgery at the University of Pennsylvania Perelman School of Medicine. His research utilizes genomic, proteomic, and metabolomic approaches to characterize the biological pathways and cellular mechanisms that are most relevant in the etiology, progression, and treatment of heart and vascular disease. Dr. Damrauer is also a clinically active vascular surgeon at the Corporal Michael J. Crescenz VA, and treat Veterans with vascular disease. He serves as Co-Chair of the VA Million Veteran Program, specifically heading the investigations into the genetics of peripheral artery disease. Dr. Damrauer earned his MD from Harvard Medical School, completed residency at Mass General Hospital, a research fellowship at Beth Israel Deaconess Medical Center, and a fellowship at the University of Pennsylvania. In 2019, he received the Young Physician-Scientist Award from the American Society for Clinical Investigation.



Vinicio de Jesus Perez, MD

Dr. Vinicio de Jesus Perez received his MD from the University of Puerto Rico Medical School and completed an internal medicine residency at Massachusetts General Hospital. He completed a fellowship in pulmonary and critical care medicine in Denver, followed by postdoctoral research training at Stanford University. He focused on researching genetic and molecular mechanisms of pulmonary hypertension (PH) and idiopathic pulmonary fibrosis (IPF) and has devoted his clinical practice to diagnosis and management of these conditions. He is presently Associate Professor of medicine and staff physician of the Stanford Adult PH Clinic where he trains fellows pursuing careers in PH and IPF. He is principal investigator of a research program with the ultimate goal of identifying new therapeutic targets to treat PH and IPF. As a medical professional belonging to a minority group, Dr. de Jesus Perez is involved in academic endeavors seeking to improve access of care for patients with disadvantaged ethnic backgrounds and to promote diversity in medicine.



Marie A. Guerraty, MD, PhD

Marie A. Guerraty, MD, PhD, received her bachelors degree in Mathematics from Duke University and her MD and PhD in Bioengineering from the University of Pennsylvania. Dr. Guerraty then completed residency in internal medicine and cardiovascular clinical and research fellowships at the University of Pennsylvania/Hospital of the University of Pennsylvania. She is now an Instructor in the Division of Cardiovascular Medicine using a basic-translational approach to study coronary microvascular disease. Her research, funded by an NHLBI K08 and Burroughs Wellcome Career Award for Medical Scientists, is currently focused on the interaction between cardiomyocyte FOG2 and the HIF pathway.



Robert A. Harrington, MD

Dr. Robert A. Harrington is a cardiologist and the Arthur L. Bloomfield Professor and Chairman of the Department of Medicine (15 divisions and more than 600 faculty) at Stanford University. His research interests include evaluating antithrombotic therapies to treat acute ischemic heart disease, building collaborations for the efficient conduct of innovative clinical research and trying to better understand and improve upon the methodology of clinical research, including the use of technologies to facilitate clinical trials. He has authored over 600 peer-reviewed publications. He recently served as a member and chair of the US FDA Cardiovascular and Renal Drugs Advisory Committee. Dr. Harrington is a member of the AHA Board of Directors and its 2019 President. He is an elected member of the Association of American Physicians, the Association of University Cardiologists, and the National Academy of Medicine/Institute of Medicine. In 2016, he was named a Master of the American College of Cardiology. He was awarded the AHA's Clinical Research Prize in 2017. Interested in innovative learning tools, he can be followed on Twitter @HeartBobH and on a monthly podcast on theheart.org.



Sarah Heilshorn, PhD

Sarah Heilshorn, PhD, is Associate Professor and the Lee Otterson Faculty Scholar in the Materials Science & Engineering Department at Stanford University. She holds courtesy faculty appointments in the Departments of Chemical Engineering and Bioengineering and is a Bass University Fellow in Undergraduate Education. Her laboratory integrates concepts from materials engineering and protein science to design new, bioinspired materials. These materials are being explored for applications in tissue engineering and regenerative medicine. Dr. Heilshorn completed her PhD in Chemical Engineering at Caltech and was a postdoctoral scholar in Molecular and Cell Biology at the University of California, Berkeley. Dr. Heilshorn is a fervent supporter of diversifying the engineering community and serves in multiple leadership roles to help achieve this goal. She is a Fellow of the American Institute for Medical and Biological Engineering and serves as an Associate Editor for *Science Advances*.



William Hiesinger, MD

Dr. William Hiesinger is an Assistant Professor in the Department of Cardiothoracic Surgery at Stanford University. He serves as the Surgical Director of the Mechanical Circulatory Support (MCS) Program, where he leads and directs the surgical implantation of ventricular assist devices (VADs) in patients with end-stage heart failure. In addition, he runs a basic science laboratory investigating bioengineered devices and the application of angiogenic cytokine therapy and tissue engineering for the treatment of ischemic heart failure. Originally from Philadelphia, PA, Dr. Hiesinger was an undergraduate at Dartmouth. He went on to receive his medical degree from the University of Pennsylvania School of Medicine and remained on at the Hospital of the University of Pennsylvania for both his general surgery and cardiothoracic surgery trainings. He has received research fundings from the National Institutes of Health and the Thoracic Surgery Foundation.



Ngan F. Huang, PhD

Ngan F. Huang, PhD, is an Assistant Professor of Cardiothoracic Surgery at Stanford and Principal Investigator at the Veterans Affairs Palo Alto Health Care System. Dr. Huang completed her BS in chemical engineering at MIT, followed by a PhD in bioengineering from the UC Berkeley & UCSF Joint Program in Bioengineering. Prior to joining Stanford faculty, she was a postdoc in Cardiovascular Medicine at Stanford. Her laboratory investigates the interactions between stem cells and extracellular matrix microenvironment for engineering cardiovascular tissues to treat cardiovascular and musculoskeletal diseases. Dr. Huang has authored over 70 publications and patents, including those in *Nat Med*, *PNAS*, and *Circ Res*. She has received numerous honors, including a NIH K99/R00, Fellow of the American Heart Association, Young Investigator awards from the Society for Vascular Medicine and from the Tissue Engineering and Regenerative Medicine International Society-Americas, and a Rising Star award at the Cell & Molecular Bioengineering conference. She has active or completed projects funded by the NIH, NSF, AHA, DoD, California Institute of Regenerative Medicine, and Department of Veteran Affairs.



Sharon Hunt, MD

Dr. Sharon Hunt was an undergraduate at the University of Dayton. She became interested in cardiology while working summers in a research lab at the Cleveland Clinic. She completed her MD at Stanford where she continued her interest in cardiology looking at the effects of various drugs on heart muscle cells in tissue culture. The first heart transplant was done at Stanford during her second year of medical school and the excitement was infectious. By the time she finished her cardiology fellowship, the heart surgeons were looking for a few good cardiologists to provide long term care for the transplant recipients, who were beginning to survive for long periods of time. She has been with the program ever since, and helped with many of the developments in the field. In 2013 she was awarded the Lifetime Achievement Award by the ISHLT. Dr. Hunt continues an active clinical practice and is also involved in a moderate amount of writing and editing, working with the online textbook *UpToDate* and *Hurst's The Heart*, among others.



Erik Ingelsson, MD, PhD

Dr. Ingelsson obtained his MD and PhD at Uppsala University, Sweden, and is currently a Professor of Cardiovascular Medicine at Stanford. Dr. Ingelsson's research focus is on the role of obesity and insulin resistance in development of cardiovascular disease. His research is translational and interdisciplinary, combining big data approaches, such as -omics in population-based cohorts, gene editing in functional model systems to reach new insights into the pathophysiology of cardiovascular disease and related conditions, identification of new biomarkers for improved risk prediction, and discovery of novel targets for drug development. He has had a leading role in many of the large efforts identifying new genetic loci associated with cardiovascular and metabolic traits, and has extensive experience from research on biomarkers and -omics methods, including development and application of prediction metrics and Mendelian randomization.



Rajan Jain, MD

Dr. Rajan Jain is Assistant Professor, Department of Medicine (Cardiology) and Department of Cell & Developmental Biology at Perelman School of Medicine at the University of Pennsylvania. Dr. Jain is a physician-scientist with a research program primarily focused on understanding the mechanisms underlying lineage restriction, with a particular interest on the role of epigenetics and 3D genome organization. A major focus of his laboratory is defining the molecular factors regulating nuclear lamina-chromatin interactions, their impact on development and disease, and the rules governing spatial positioning of the genome. A second focus is on understanding the mechanistic basis of enhancer-promoter interactions and their role in cardiac development and disease, particularly the role of tandem bromodomain proteins and their role in genome organization during cardiac development. He is also a practicing cardiologist attending in the Cardiac Care Unit at the Philadelphia VA Medical Center.



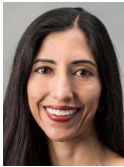
Ioannis Karakikes, PhD

Dr. Karakikes is an Assistant Professor of Cardiothoracic Surgery at Stanford. He completed his PhD at the University of Essex and a postdoc at Mount Sinai School of Medicine. Dr. Karakikes runs an active basic science laboratory that studies the molecular mechanisms underlying the pathogenesis of cardiomyopathies and heart failure. His group has extensive expertise in patient-specific induced pluripotent stem cells (iPSC)-based disease models, genome editing and gene therapy. His current research focuses on the generation of isogenic iPSCs using genome-editing technologies to unravel the pathogenesis of familial and acquired cardiomyopathies. The overarching goal of his studies is to better understand the underlying mechanisms and develop tailored therapeutic approaches.



Daniel P. Kelly, MD

In 2017, after previous appointments at Washington University and the Sanford Burnham Prebys Medical Discovery Institute, Dr. Kelly moved to the University of Pennsylvania where he was named Director of the Pennsylvania Cardiovascular Institute. Dr. Kelly's research interests stem from an early fascination with rare inborn errors in mitochondrial metabolism that cause sudden death and heart failure. His laboratory has identified molecular switches that define distinct forms of heart failure, a key step towards identifying therapeutic targets for phenotype-specific treatment of heart failure. More recently, the Kelly laboratory uses proteomic and metabolomic approaches to investigate the metabolic origins of heart failure. Dr. Kelly is an Associate Editor for the *Journal of the American College of Cardiology-Basic to Translational Science*. He serves, or has served, on the Editorial Boards of *The Journal of Clinical Investigation*, *Genes & Development*, *Nuclear Receptor Signaling*, *Circulation*, and *Circulation Research*. He has held leadership advisory roles for the AHA, the NHLBI, Pfizer, and Eli Lilly. Dr. Kelly is a member of the ASCI, the American Association of Physicians, and is a recipient of the AHA Basic Research Prize.



Kiran Khush, MD

Kiran Khush, MD, is Associate Professor of Medicine (Cardiovascular Medicine) at Stanford University. After growing up in the Philippines, Dr. Khush graduated with Honors and Distinction in Biological Sciences from Stanford University. She completed her medical training at Harvard University and medical residency at the University of California at San Francisco, followed by general cardiology training and advanced training in heart failure, heart transplantation, pulmonary hypertension, and echocardiography at UCSF. She then joined the UCSF faculty while concomitantly earning a Masters' Degree in Clinical Research and Epidemiology. Dr. Khush moved back to Stanford in 2008, joining the faculty in the Division of Cardiovascular Medicine, where she focuses on clinical and translational research in the field of heart transplantation. She also maintains an active general cardiology practice.



Joshua W. Knowles, MD, PhD

Dr. Knowles is an Assistant Professor of Medicine (Cardiovascular Medicine) at Stanford, and is a physician-scientist. The overall theme of his research has been the genetic basis of cardiovascular disease, from discovery to the development of model systems to the translation of these findings to the clinic, and most recently to the Public Health aspect of genetics. He completed his MD-PhD at UNC with Nobuyo Maeda and Nobel Laureate Oliver Smithies, and Internal Medicine residency and Cardiology fellowship training at Stanford. Dr. Knowles's current efforts center on understanding the genetic basis of insulin resistance using GWAS studies coupled with exploration in model systems. His clinical translational focus is on Familial Hypercholesterolemia (FH) and he is the volunteer Chief Medical Advisor of the FH Foundation (FHF), which is a patient-led organization dedicated to increasing awareness of FH, identifying and treating patients with FH, and screening family members to prevent deleterious outcomes. He helped lead the FHF efforts to establish a national patient registry (CASCADE FH), apply for an ICD10 code for FH, and is now using cutting-edge "big-data" approaches to identify previously undiagnosed FH patients in electronic medical records (FIND FH). He has published over 90 papers with research projects currently funded by the NIH, the AHA, and the Doris Duke Charitable Foundation.



Bonnie Ky, MD, MSCE

Dr. Ky is an Associate Professor of Medicine and Epidemiology and physician scientist at the University of Pennsylvania. Her overarching goals are to gain insight into the underlying mechanisms and predictors of cancer therapy cardiotoxicity and heart failure, and to translate this understanding to the clinical care of patients. Dr. Ky leads a translational research program in cardio-oncology and is the PI of multiple cohort studies and clinical trials focused on the study of the cardiotoxic effects of doxorubicin, trastuzumab, sunitinib, and radiation therapy in breast, renal cell, and lung cancers and lymphoma patients. She is also Director for the Penn Center for Quantitative Echocardiography and of the Penn Cardio-Oncology Center of Excellence. In addition, she is an invited member of many cardio-oncology expert consensus and research groups within the NIH, FDA, American Society of Clinical Oncology, ACC, AHA, and ESC focused on advancing our understanding of cardiovascular disease in the growing cancer population. Dr. Ky is Editor-in-Chief of *JACC CardioOncology* and is a member of the Sarnoff Cardiovascular Research Foundation Scientific Committee.

SPEAKER BIOS



Nicholas Leeper, MD

Dr. Leeper is an Associate Professor of Surgery and Medicine, Director of Vascular Research, and Chief of Vascular Medicine at Stanford University. He earned his MD from the University of Chicago, and completed his residency at UCSF and fellowship at Stanford. Dr. Leeper studies the vascular biology of atherosclerosis and aneurysm disease, and is interested in the molecular mechanisms that mediate vascular disease and developing new translational therapies directed against them. His group pursues the goal of true ‘bench-to-bedside’ translation, and includes a basic genetics, molecular biology, and mouse model team, as well as a translational Vascular Medicine team that performs early-phase clinical research. Ultimately, his group seeks to develop a platform of new therapies directed against atherosclerosis, which is now the leading killer worldwide.



Ronglih Liao, PhD

Dr. Liao is Professor of Medicine at Stanford University. She was trained at Beth Israel Hospital and Brigham and Women’s Hospital, Harvard Medical school for her postdoctoral research after she received her PhD in biophysics. She rose to the rank of Professor of Medicine at Harvard before she was recruited to Stanford CVMed and CVI in December, 2017. Dr. Liao co-directs the Stanford Amyloid Center with Drs. Ronald Wittles and Michaela Liedtke. Her research interest has centered on two areas of investigation: to define the mechanisms governing the development of amyloid cardiomyopathy and to understand endogenous cardiac regenerative capacity in the adult heart. Dr. Liao's research program aims to elucidate the key mechanisms underlying the transition from a healthy to a failing heart, and ultimately to reverse this deleterious process. Her lab has made critical contributions to the understanding of the molecular mechanisms that underlie the development of amyloid cardiomyopathy and the regulation of cardiac repair and function in ischemic, dilated, and idiopathic cardiomyopathy. Her efforts have universally involved collaboration with local, national, and international colleagues. Through this process, Dr. Liao's research program has contributed to the scientific knowledge base and education of the next generation of scientists.



Alison Marsden, PhD

Alison Marsden, PhD, is an Associate Professor in the Departments of Pediatrics, Bioengineering, and, by courtesy, Mechanical Engineering at Stanford University. From 2007-2015 she was a faculty member in Mechanical and Aerospace Engineering at UCSD. She graduated with a BSE degree in Mechanical Engineering from Princeton University in 1998, and a PhD in Mechanical Engineering from Stanford in 2005. She was a postdoctoral fellow at Stanford University in Bioengineering from 2005-07. She was the recipient of a Burroughs Wellcome Fund Career Award in 2007, an NSF CAREER award in 2011, and was elected as a fellow of AIMBE and SIAM in 2019. She has published 105 peer reviewed journal papers. Her research focuses on the development of numerical methods for cardiovascular blood flow simulation and application of engineering tools to impact patient care in cardiovascular surgery and congenital heart disease.



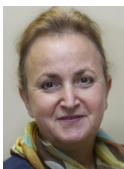
Mark Mercola, PhD

Dr. Mercola is Professor of Medicine at Stanford University and a member of the Stanford Cardiovascular Institute. He completed his postdoc at Dana-Farber Cancer Institute and Harvard Medical School, where he was also Assistant and Associate Professor of Physiology. In 2003, Dr. Mercola moved to Professor of Bioengineering at UCSD and Stanford-Burnham-Preby's Medical Research Institute. He is known for identifying many of the factors that are responsible for inducing and forming the heart, including the discovery that Wnt inhibition is a critical step in cardiogenesis, which provided the conceptual basis and reagents for the large-scale production of cardiovascular tissues from pluripotent stem cells. He has collaborated with medicinal chemists, optical engineers, and software developers to pioneer the use of patient iPSC-cardiomyocytes for disease modeling, safety pharmacology, and drug development. His academic research is focused on developing and using quantitative assays of patient-specific cardiomyocyte function to discover druggable targets for preserving contractile function in heart failure and promoting regeneration following ischemic injury. He co-founded and led the high throughput screening center, which operated as one of the largest NIH-funded screening centers as part of the Roadmap Multiple Libraries Screening Centers Network.



Lloyd B. Minor, MD

Lloyd B. Minor, MD, is the Carl and Elizabeth Naumann Dean of the Stanford University School of Medicine. He led the first integrated strategic planning process for Stanford Medicine. With his leadership, Stanford Medicine has established an inspiring vision to lead the biomedical revolution in Precision Health (predict, prevent, and cure – *precisely*), a fundamental shift to more proactive and personalized health care that empowers people to lead healthy lives. Dr. Minor is also a professor of Otolaryngology–Head and Neck Surgery and a Professor of Bioengineering and of Neurobiology, by courtesy, at Stanford University. With more than 140 published articles and chapters, Dr. Minor is an expert in balance and inner ear disorders. In 2012, he was elected to the National Academy of Medicine.



Daria Mochly-Rosen, PhD

Dr. Mochly-Rosen is the George D. Smith Professor of Translational Research and Professor of Chemical and Systems Biology at Stanford. She was the Chair of her department (2001-2004) and the Senior Associate Dean for Research (2006-2013) at Stanford School of Medicine. Dr. Mochly-Rosen's research focuses on improving health as it relates to heart disease and improving mitochondrial functions in cardiac and neurodegenerative diseases. Many laboratories have used the research tools that her lab has generated, and these tools also led to the foundation of three pharmaceutical companies. She published >275 papers and several dozen patents. Dr. Mochly-Rosen's experience in translating basic research to drug development efforts led her to found SPARK, a translational research program at Stanford University. Now in its 13th year, SPARK has a >50% success rate each year, as measured by projects that were licensed and/or entered clinical studies, and continues with efforts to address local and global health care needs as they arise. The SPARK model has been adopted in ~60 institutes on all continents and Dr. Mochly-Rosen serves as Founder President of the SPARK GLOBAL organization.

SPEAKER BIOS



Kiran Musunuru, MD, PhD, MPH

Kiran Musunuru, MD, PhD, MPH, is an Associate Professor of Cardiovascular Medicine and Genetics in the Perelman School of Medicine at the University of Pennsylvania. Dr. Musunuru's research focuses on the genetics of cardiovascular and metabolic diseases and seeks to identify naturally occurring genetic variants that protect against disease and can be used to develop therapies to protect the entire population. His recently published work focuses on the use of genome editing to create a "vaccination" against coronary heart disease. He is a recipient of the Presidential Early Career Award for Scientists and Engineers from the White House, the American Heart Association's Award of Meritorious Achievement, the American Philosophical Society's Judson Daland Prize for Outstanding Achievement in Clinical Investigation, and the American Federation for Medical Research's Outstanding Investigator Award.



Saman Nazarian, MD, PhD

Dr. Nazarian earned a Doctorate in Medicine from Stanford University and PhD in Clinical Epidemiology from the Johns Hopkins Bloomberg School of Public Health. He completed residency at the Brigham and Women's Hospital of Harvard Medical School, followed by fellowship training in Cardiovascular Disease and Clinical Cardiac Electrophysiology at Johns Hopkins Hospital. As a cardiac electrophysiologist, clinical investigator, and educator, Dr. Nazarian is privileged to treat his patients with the latest evidence-based therapies. His priority is to translate his experience in electrophysiology, imaging techniques, and ablation into clinically relevant strategies for the care of his patients with cardiac arrhythmias, including atrial fibrillation, supraventricular, and ventricular tachycardia. He has additional expertise in treating arrhythmia in patients with neuromuscular disease. Dr. Nazarian runs an active clinical research program, funded by the US National Institutes of Health, with the goal of improving treatment strategies to reduce cardiac arrhythmia related morbidity and mortality.



Patricia Nguyen, MD

Dr. Nguyen is an Assistant Professor in Cardiovascular Medicine at Stanford and Director of Advanced Imaging at the Veterans Affairs Palo Alto. She directs a translational cardiovascular research program to better understand the underlying mechanisms in atherosclerosis. Her projects include a study applying molecular imaging to evaluate stem cell efficacy, funded by the NIH, and studies evaluating how the immune system may contribute to atherosclerosis, funded by the NIH and AHA. Dr. Nguyen received her bachelors degree from the University of California, Irvine, and her Doctor of Medicine at Johns Hopkins Medical School. She completed her internal medicine training at New York Presbyterian Hospital (Columbia) and her cardiology fellowship at Stanford University, before becoming an Instructor at Stanford in the Division of Cardiovascular Medicine.



Victoria Parikh, MD

Dr. Parikh is an Assistant Professor of Medicine at Stanford University and a cardiologist specializing in the care of patients with inherited cardiovascular diseases. She completed clinical cardiology fellowship at Stanford School of Medicine and her medical residency at the University of California, San Francisco. Funded by a research grant from the NIH, she currently studies multiple causes of cardiomyopathy in the laboratory. She has a particular clinical and scientific interest in inherited arrhythmogenic cardiomyopathies, which are an increasingly recognized disease entity. Dr. Parikh is currently using patient cohort genetics, high-throughput molecular biology, and human induced pluripotent stem cell-derived cardiomyocytes to study variant pathogenicity in this disease. Previously, her work focused on defining the clinical characteristics of an international cohort of patients with RBM20 cardiomyopathy, demonstrating a regional distribution of variant pathogenicity in this gene.



James R. Priest, MD

James R. Priest, MD, is an Assistant Professor of Pediatrics in the Division of Pediatric Cardiology at the Stanford University School of Medicine. Prior to clinical and postdoctoral training at the University of Washington and Stanford University, respectively, Dr. Priest completed his MD at Stanford University School of Medicine and undergraduate degrees at Oberlin College. The goal of his laboratory is to translate an improved molecular genetic and developmental understanding of congenital heart disease from the laboratory into clinically actionable diagnostics: prenatal, pre-conception, and predictive genetic testing. Dr. Priest is the clinical director of the cardiogenomics program at Lucile Packard Children's Hospital, which manages genomic testing for children with heritable forms of heart disease.



Marlene Rabinovitch, MD

Dr. Rabinovitch is the Dwight and Vera Dunlevie Professor of Pediatric Cardiology at Stanford University School of Medicine. Dr. Rabinovitch graduated from McGill University Medical School and completed her pediatrics training at the University of Colorado and training in cardiology at Boston Children's Hospital, Harvard Medical School where she was Assistant Professor. She became Professor of Pediatrics, Laboratory Medicine and Pathobiology, and Medicine at the University of Toronto, Director of the Cardiovascular Research Program at the Hospital for Sick Children, and the Robert M. Freedom/Heart and Stroke Foundation Chair.

Dr. Rabinovitch is currently Director of the Basic Science and Engineering Initiative of the Betty Irene Moore Children's Heart Center at Stanford University. She is also the Associate Director in Basic Research at Stanford's Cardiovascular Institute and is on the Executive Committee of the Pulmonary Vascular Research Institute. She recently served as an External Advisor to the NHLBI Lung Regeneration Program, the Max Planck Institute for Heart and Lung Research, and the German Lung Centers of Excellence, and has also served on the Scientific Advisory Councils of NHLBI as well as numerous other Research Foundations. She is a member of the American Society for Clinical Investigation and the Association of American Physicians, and has been Associate Editor of *Circulation Research* and *Annual Reviews of Physiology*. Her research focuses on uncovering fundamental genetic, metabolic, and inflammatory mechanisms causing pulmonary hypertension that can be translated to the clinic.

SPEAKER BIOS



Kristy Red-Horse, PhD

Dr. Red-Horse is an Associate Professor in Biology and in the Institute for Stem Cell and Regenerative Medicine at Stanford. She earned her MS from San Francisco State University, PhD from UCSF, and completed postdocs at both Genentech and Stanford. Her laboratory studies how the coronary vessels of the heart develop during embryogenesis and how they regenerate following cardiac injury. The unifying theme among her projects is to study coronary development and regeneration at cellular resolution within the context of the intact organ. Her lab's long-term goal is to contribute knowledge towards the advancement of clinical treatments for cardiovascular disease. Dr. Red-Horse is also a Searle Scholar and a Roberson Stem Cell Investigator of the New York Stem Cell Foundation.



June-Wha Rhee, MD

Dr. Rhee is a cardiologist with specialized clinical and research training in cardiovascular drug toxicity and pharmacogenomics. She completed clinical cardiology fellowship and internal medicine residency training at Stanford University School of Medicine. During her postdoctoral training, in the lab of Dr. Joseph C. Wu, Dr. Rhee's research focused on elucidating cardiotoxic effects of iron overload and of multiple chemotherapeutic agents using patient-specific induced pluripotent stem cell (iPSC) derived models. Her current research employs clinical data, population genomics, and patient-derived iPSCs models to study genetic determinants and mechanisms of drug-induced cardiovascular toxicities. Dr. Rhee's clinic sees cardio-oncology patients and focuses on devising new methods for minimizing cardiovascular complications in that population.



Fatima Rodriguez, MD, MPH

Fatima Rodriguez, MD, MPH, is an Assistant Professor in the Division of Cardiovascular Medicine at Stanford University. She is a practicing general and preventive cardiologist. Dr. Rodriguez is a graduate of the University of Pennsylvania. She received her medical degree and her MPH from Harvard. She then completed internal medicine residency at Brigham and Women's Hospital, Harvard University. Dr. Rodriguez arrived to Stanford University in 2014, where she completed a cardiovascular medicine fellowship and served as Chief Fellow. Her research interests include a range of issues relating to racial and ethnic disparities in guideline adherence, cardiovascular disease prevention, health promotion, and leveraging technology to improve the care of diverse patients. She has authored over 70 peer-reviewed publications and has been a two-time winner of Stanford University's Alderman Award for Excellence in Clinical Research. Dr. Rodriguez is a Fellow of the American College of Cardiology and the American Heart Association and serves as an Associate Editor for the *New England Journal of Medicine Journal Watch Cardiology*.

SPEAKER BIOS



Elsie Ross, MD, MSc

Dr. Ross is an Assistant Professor of Surgery and of Medicine at Stanford. She received her MD from Stanford, and also earned an MSc from the London School of Economics and the London School of Hygiene & Tropical Medicine. Dr. Ross conducts interdisciplinary, translational research in the fields of cardiovascular medicine and biomedical informatics to develop and implement automated solutions for disease screening and treatment in patients with chronic diseases. She was awarded the Society of University Surgeons 2018-19 Junior Faculty Award, as well as the Association for Academic Surgery 3rd Annual Young Investigators Award in 2018.



Karim Sallam, MD

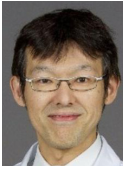
Dr. Sallam is an Assistant Professor in the Division of Cardiovascular Medicine at Stanford University. Dr. Sallam completed his residency, fellowship, and advanced fellowship at Stanford and subsequently joined the Heart Failure group at Stanford in 2015 attending on the CCU, MCS, and Post-transplant services. Dr. Sallam is the Medical Director of Advanced Heart Failure and Transplant Program at the Veterans Affairs Palo Alto Health Care System. His research and clinical interest focuses on familial dilated cardiomyopathy, risk stratification and management of arrhythmic features of cardiomyopathy, and cardiomyopathy-arrhythmia overlap syndromes. Dr. Sallam is interested in combining patient specific induced pluripotent stem cell derived cardiomyocyte models with other clinical and translational models to augment diagnosis and therapy for patients with cardiac disorders.



Nazish Sayed, MD, PhD

Dr. Sayed is a cardiologist by training whose research has been focused on the development of novel technologies that drive innovation in regenerative medicine, disease modeling, and drug testing in vascular and endothelial biology. Before becoming an Instructor at Stanford, he earned an MD at the University of Bombay, an MS from Montclair State, and a PhD from the University of Medicine & Dentistry of New Jersey. Dr. Sayed was initially recruited to Houston Methodist Research Institute as a junior faculty member, where he made fundamental discoveries in the field of endothelial regeneration. He has continued this work at Stanford, establishing a successful, collaborative endothelial regeneration program investigating the pathological mechanisms associated with cardiovascular diseases, including dilated cardiomyopathy, using patient-specific iPSCs as a disease model.

SPEAKER BIOS



Yasuhiro Shudo, MD, PhD

Dr. Shudo is a Clinical Assistant Professor at Stanford. Prior to this, he earned his MD and PhD from Osaka University and he completed postdoctoral training at the University of Pennsylvania School of Medicine and at Stanford University. His laboratory currently focuses on tissue engineered stem cell sheet biology as well as advanced imaging and analysis of the ventricular, annular, and leaflet alterations in complex mitral valve surgery. The hope is that this research can be successfully translated to the clinical arena to positively impact progression to heart failure following myocardial infarction. He is an author on over 70 peer-reviewed scientific publications. His clinical focus is on the surgical treatment for end-stage heart failure, with a particular emphasis on the outcome of mechanical circulatory system (MCS) and ventricular assist device (VAD) as well as orthotopic heart transplant.



Edda Spiekerkoetter, MD

Dr. Spiekerkoetter is an Associate Professor of Medicine, Division of Pulmonary and Critical Care Medicine at Stanford University. She received her MD in Germany and then moved to Stanford for a postdoctoral fellowship in Cardiology and a clinical fellowship in Pulmonary and Critical Care Medicine. Dr. Spiekerkoetter has a strong clinical background in pulmonary arterial hypertension (PAH). Her research lab focuses on modulating BMPR2 signaling, a pathway dis-regulated in PAH and, most recently, also in hereditary hemorrhagic telangiectasia (HHT), in which other players of the same pathway are mutated. Dr. Spiekerkoetter has also developed a high-throughput screening assay to identify FDA approved drugs that activate BMP signaling, and have used on of the hits to prevent and reverse experimental PH, leading to the initiation of a phase II clinical trial. Dr. Spiekerkoetter received the American Society of Clinical Investigation's 2015 Young Physician-Scientist Award. She is also a Co-Chair of the American Heart Association 3 CPR Early Career Committee, as well as Medical Director HHT Center of Excellence Stanford and Director of HHT research.



Philip Tsao, PhD

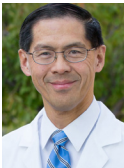
Dr. Tsao has a long-standing interest in the molecular mechanisms of vascular disease, including the role of metabolic abnormalities in atherosclerosis, restenosis, and abdominal aortic aneurysms (AAA). His laboratory has primarily focused on signaling pathways and how they regulate vascular function and transcription. Dr. Tsao co-leads a team exploring the role of genetics in obesity, diabetes, and abnormal lipid levels as drivers of heart disease using data gathered from the VA Million Veteran Program. He is a Professor of Medicine at Stanford, the Associate Chief of Precision Medicine at the Veterans Affairs Palo Alto Health Care System (VAPAHCS), and Director of the Epidemiological Research and Information Center (ERIC) for Genomics and Bioinformatics. Prior to this, he earned his PhD from Thomas Jefferson University and completed a postdoctoral fellowship at Stanford.

SPEAKER BIOS



Hanjay Wang, MD

Dr. Wang, is a resident physician in the Department of Cardiothoracic Surgery at Stanford University. He received his undergraduate degree in molecular and cellular biology from Harvard University and his medical degree from Columbia University College of Physicians and Surgeons. Dr. Wang is currently a postdoctoral research fellow in Dr. Joseph Woo's laboratory, and he is extramurally funded by an American Heart Association Postdoctoral Fellowship. His research activities include investigating the mechanism of natural heart regeneration in neonatal mammals, as well as angiogenic and photosynthetic symbiotic therapies to treat ischemic heart failure. Dr. Wang is also interested in cardiac ventricular and valvular biomechanics, especially with the aim of optimizing surgical repair techniques to correct mitral regurgitation.



Paul J. Wang, MD

Dr. Wang is the Director of the Stanford Cardiac Arrhythmia Service and Professor of Medicine and, by courtesy, of Bioengineering at Stanford. Dr. Wang is an expert in the treatment of cardiac arrhythmias, including atrial fibrillation, atrial flutter, ventricular arrhythmias, supraventricular arrhythmias, and sudden cardiac death. He has practiced cardiac electrophysiology as an arrhythmia expert for over 26 years. He was a co-inventor of catheter cryoablation, which has been used to treat over 250,000 patients with atrial fibrillation, and has pioneered new techniques in the management of heart rhythm problems. He has co-authored numerous textbooks and book chapters on catheter ablation, implantable defibrillators, sudden cardiac death, cardiac resynchronization/biventricular pacing therapy, and innovations in arrhythmia therapy. He is past Chair of the American Heart Association Council on Clinical Cardiology ECG and Arrhythmias Committee, a member of the American Heart Association Council on Clinical Cardiology, and the American Heart Association National Science and Clinical Education Committee. He is a former member of the Board of Trustees of the leading professional society in his field, the Heart Rhythm Society. He has helped write the examination used for certification of heart rhythm specialists in the U.S. He founded the annual Stanford Biodesign New Arrhythmia Technologies Retreat, focusing on new technological advances in arrhythmia management and diagnosis. He serves as the Editor-in-Chief of *Circulation: Arrhythmia and Electrophysiology*, one of the leading scientific journals in the field.



Robert Wirka, MD

Dr. Wirka is an Instructor in the Department of Medicine at Stanford University, investigating novel mechanisms driving coronary artery disease in the laboratory of Thomas Quertermous. Genome-wide association studies have identified hundreds of areas in the human genome containing the genes that drive coronary artery disease. Dr. Wirka's work involves identifying the causal genes in these genomic areas and determining their cellular and molecular function in vivo in the vessel wall during atherosclerosis. Beginning with human genetics in this manner allows the discovery of truly novel disease mechanisms and ensures that these mechanisms are important in human disease. He also sees general cardiology patients within the Veterans Affairs Palo Alto Health System.

SPEAKER BIOS



Ronald Witteles, MD

Dr. Witteles received his MD from the University of Chicago Pritzker School of Medicine, and then completed the remainder of his training at Stanford – including residency, chief residency, and fellowship. He is an Associate Professor of Medicine (Cardiovascular Medicine) as a member of the Advanced Heart Failure faculty, and has served as the Program Director for the Internal Medicine Residency Training Program at Stanford for the past decade. His clinical and research interests focus on amyloidosis, cardiac complications of cancer therapy (cardio-oncology), and sarcoidosis. He has published extensively in all three areas. He is Co-Director of the Stanford Amyloid Center (one of the world’s largest centers dedicated to amyloidosis), Co-Director of the Stanford Multidisciplinary Sarcoidosis Program, and is an Associate Editor for *JACC: CardioOncology*.



Joseph C. Wu, MD, PhD

Joseph C. Wu, MD, PhD is Director of the Stanford Cardiovascular Institute and Simon H. Stertzler, MD, Professor of Medicine and Radiology at Stanford University School of Medicine. Dr. Wu received his MD from Yale University School of Medicine. He trained in internal medicine and cardiology at UCLA followed by a PhD in the Department of Molecular Pharmacology. His lab works on biological mechanisms of patient-specific and disease-specific induced pluripotent stem cells (iPSCs). The main goals are to (i) understand basic cardiovascular disease mechanisms, (ii) accelerate drug discovery and screening, (iii) develop “clinical trial in a dish” concept, and (iv) implement precision cardiovascular medicine for prevention and treatment of patients. Dr. Wu has received numerous awards, including National Institutes of Health (NIH) Director’s New Innovator Award, NIH Roadmap Transformative Award, American Heart Association (AHA) Innovative Research Award, Presidential Early Career Award for Scientists and Engineers given out by President Obama, AHA Established Investigator Award, Burroughs Wellcome Foundation Innovation in Regulatory Science Award, AHA Merit Award, and AHA Distinguished Scientist Award. Dr. Wu serves on the Scientific Advisory Board for the Keystone Symposia, FDA Cellular, Tissue, and Gene Therapies Advisory Committee, AHA National Board of Directors, Chair of the AHA Basic Cardiovascular Science Council, and Chair of the AHA National Research Committee. Dr. Wu is an elected member of American Society of Clinical Investigators (ASCI), Association of University Cardiologists (AUC), American Institute for Medical and Biological Engineering (AIMBE), American Association of Physicians (AAP), American Academy of Arts & Sciences (AAAS), and National Academy of Medicine (NAM).

SPEAKER BIOS



Sean Wu, MD, PhD

Dr. Wu completed an MD-PhD at Duke and an internal medicine residency at Duke University Hospital. He then completed a clinical and research fellowship in cardiovascular medicine at Massachusetts General Hospital/Harvard Medical School. He was an Assistant Professor of Medicine at Harvard until 2012 when he returned to Stanford where he is now a tenured Associate Professor of Medicine and, by courtesy, Pediatrics. Dr. Wu is also Associate Director at the Stanford Cardiovascular Institute and an Endowed Faculty Scholar at the Lucile Packard Foundation for Children at Stanford. His research is dedicated to the identification of molecular mechanisms regulating cardiac lineage commitment during embryonic development and the biology of cardiac progenitor cells in development and disease. Recently, his lab has explored the transcriptional signature of single cardiac cells from mouse embryos, embryonic stem cells, and adult mouse hearts using single cell RNA sequencing and 3D bioprinting and bioacoustics patterning to generate bioengineered cardiac tissue. He is a recipient of the AFMR Henry Christian Award for Research, the ACC Foundation/Pfizer Career Development Award in Cardiovascular Medicine, the GSK International Young Investigator Award, the AHA David Stein Award, the AHA Established Investigator Award, the 2018 AHA Kenneth D. Bloch Memorial Lecturer, and is an elected member of the American Society for Clinical Investigation.



Celina Yong, MD, MBA, MSc

Dr. Yong is the Director of Interventional Cardiology and Structural Heart Disease at the Palo Alto VA Medical Center and an Assistant Professor in the Division of Cardiovascular Medicine at Stanford. She completed her medical training at Stanford and her internal medicine residency at the University of California, San Francisco. She completed her cardiology and interventional cardiology fellowships at Stanford, including a year as Chief Fellow. As a Marshall Scholar, she completed a Masters in Health Policy, Planning and Financing from the London School of Economics and an MBA from Oxford. Dr. Yong's current research focuses on understanding and innovating scalable technologies to reduce inequities in cardiovascular care for patients. Specifically, she is interested in understanding and resolving racial, gender, geographic, and socioeconomic disparities in access to high quality minimally invasive treatments, as well as gender imbalances in the medical profession itself. She is also actively involved in clinical trials of novel devices for percutaneous coronary and structural intervention.

For list of submitted abstracts visit:

<http://med.stanford.edu/content/dam/sm/cvi/documents/pdf/abstracts-stanford-penn.pdf>

or Scan this QR Code:



ORGANIZING COMMITTEE



Erik Ingelsson, MD, PhD (Chair)
Professor of Medicine, Cardiovascular Medicine
Stanford University



Ngan F. Huang, PhD
Assistant Professor, Cardiothoracic Surgery
Stanford University



Joshua W. Knowles, MD, PhD
Assistant Professor of Medicine, Cardiovascular Medicine
Stanford University



Nicholas Leeper, MD
Professor of Surgery, Vascular Surgery and Medicine, Cardiovascular Medicine
Stanford University



Ronglih Liao, PhD
Professor of Medicine, Cardiovascular Medicine
Stanford University



Philip Tsao, PhD
Professor (Research) of Medicine, Cardiovascular Medicine
Stanford University



Sean M. Wu, MD, PhD
Associate Professor of Medicine, Cardiovascular Medicine, and, by courtesy, of Pediatrics
Stanford University



cvi.stanford.edu