



UCLA Cardiovascular Theme Symposium

Venue: UCLA Covel Commons

Thursday, October 12, 2023

1:00 – 1:30 PM	Check-in, Registration
1:30 – 1:40 PM	Opening Remarks by Arjun Deb, MD; CV Theme Director; UCLA DGSOM & Paul Boutros, PhD; Interim Vice Dean for Research; UCLA DGSOM
	Session I: Early Career Investigators (ECI) Moderators: Marlin Touma, MD, PhD Pearl Quijada, PhD
1:40 – 1:55 PM	ECI Paper - Zhengyi Zhang, PhD; UCLA <i>"A PPARγ-long Noncoding RNA Axis Regulates Adipose Thermoneutral Remodeling in Mice"</i>
1:55 – 2:10 PM	ECI Paper - Grégoire Ruffenach, PhD; UCLA <i>"HNRNPA2B1: RNA-Binding Protein That Orchestrates Smooth Muscle Cell Phenotype in Pulmonary Arterial Hypertension"</i>
2:10 – 2:25 PM	ECI Paper - Adrian Arrieta, PhD; UCLA <i>"Circadian Control of Histone Turnover During Cardiac Development and Growth"</i>
2:25 – 2:45 PM	Coffee Break
	Session II: Heart Failure, Fibrosis & Therapeutics Moderators: Thomas Vondriska, PhD René Packard, MD, PhD
2:45 – 3:15 PM	Eric Small, PhD; University of Rochester <i>"Transcriptional Control of Fibroblast Proliferation and Cardiac Fibrosis"</i>
3:15 – 3:45 PM	Nikolaos G. Frangogiannis, MD; Albert Einstein College of Medicine <i>"Cardiac Fibrosis: Cellular Mechanisms and Therapeutic Opportunities"</i>
3:45 – 4:15 PM	Arjun Deb, MD; UCLA <i>"A Humanized Monoclonal Antibody to Enhance Heart Repair"</i>
4:15 – 6:00 PM	Poster Session with Wine and Cheese



Friday, October 13, 2023

7:30 – 8:30 AM	Breakfast, Check-in
8:30 – 8:40 AM	Opening Remarks by Steven M. Dubinett, MD; Dean; UCLA DGSOM
	Session III: Cardiovascular Immunology & Inflammation Moderators: Mansoureh Eghbali, PhD Julia Mack, PhD
8:40 – 9:10 AM	Pilar Alcaide, PhD; Tufts University <i>“T Cell-Fibroblast Interphase in Cardiac Pathophysiology”</i>
9:10 – 9:40 AM	Jordan Pober, MD, PhD; Yale University <i>“Immunobiology of Human Vascular Endothelial Cells”</i>
9:40 – 10:10 AM	Ajit Divakaruni, PhD; UCLA <i>“Targeting Mitochondria to Treat Cardiometabolic Disease”</i>
10:10 – 10:30 AM	Coffee Break
	Session IV: Vascular Biology Moderators: Linda Demer, MD, PhD Yalda Afshar, MD, PhD
10:30 – 11:00 AM	Zorina Galis, PhD; NIH <i>“From Mapping the Human Vasculome to Mapping the Human Body. And Back!”</i>
11:00 – 11:30 AM	Amber Stratman, PhD; Washington University <i>“Biomechanical Regulation of Cardiovascular Development”</i>
11:30 – 12:00 AM	Ming-Sing Si, MD; UCLA <i>“Organoid Culture of Mesenchymal Stromal Cells Promotes Vascular Mimicry”</i>
12:00 – 1:30 PM	Lunch
	Session V: Cardiovascular Metabolism Moderators: Elizabeth Tarling, PhD Tamer Sallam, MD, PhD
1:30 – 2:00 PM	Zoltan Arany, MD, PhD; University of Pennsylvania <i>“Human Cardiac Metabolism and Heart Failure”</i>



Friday, October 13, 2023- Continued

2:00 – 2:30 PM	Stavros G. Drakos, MD, PhD; University of Utah <i>“Myocardial Recovery: Bedside to Bench and Back”</i>
2:30 – 3:00 PM	Andrea Hevener, PhD, UCLA <i>“The Impact of ERalpha Expression on Mitochondrial Function and Cardiomyocellular Health”</i>
3:00 – 3:20 PM	Coffee Break
	Session VI: Translational Genomics Moderators: Peipei Ping, PhD Jake Lusic, PhD
3:20 – 3:50 PM	Muredach P. Reilly, MD; Columbia University <i>“Novel Discoveries of Smooth Muscle Cell Plasticity in Atherosclerosis”</i>
3:50 – 4:20 PM	Mete Civelek, PhD; University of Virginia <i>“Genetic Regulation of Vascular Smooth Muscle Cell Phenotypes”</i>
4:20 – 4:50 PM	Paivi Pajukanta, MD, PhD; UCLA <i>“Integrating Single Cell Omics Data with Biobank Data to Identify Genes and Biomarkers for Cardiometabolic Disorders”</i>
4:50 – 5:00 PM	Closing Remarks and Poster Prize Announcements

*All talks will be held in the Grand Horizon Ballroom.

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Eric Small, Ph.D. Dr. Small earned a Ph.D. in Molecular Biology from the University of Texas at Austin. During his post-doctoral training in Dr. Eric Olson's lab at UT Southwestern Medical Center in Dallas, TX, he investigated transcriptional and post-transcriptional mechanisms regulating gene expression in embryonic development and pathological cardiac remodeling. Dr. Small was recruited to the University of Rochester in 2011 where he is currently an Associate Professor of Medicine at the Aab Cardiovascular Research Institute (CVRI), with secondary appointments in Pharmacology and Physiology and Biomedical Engineering. Dr. Small is also the director of the Aab CVRI Microsurgery and Pathophysiology Core. Dr. Small and his trainees have secured funding from the NIH, AHA, and industry sponsors to study the cellular and molecular mechanisms contributing to the development of pathological fibrosis in ischemic and non-ischemic heart disease.



Nikolaos G Frangogiannis, M.D. Dr. Frangogiannis earned his medical degree from the University of Athens Medical School, completed residency training in Internal Medicine (Clinical Investigator Pathway), and a fellowship in Cardiology, at Baylor College of Medicine, in Houston TX. After completing his fellowship in 1999, he joined the faculty at Baylor and established his laboratory investigating inflammatory mechanisms in cardiac injury, repair and remodeling. In 2010, Dr Frangogiannis relocated to Albert Einstein College of Medicine (Bronx NY), holding the Edmond J Safra/Republic National Bank of New York Chair in Cardiovascular Medicine. His laboratory is funded by NIH and Department of Defense grants and studies repair, remodeling, and fibrosis in ischemic and non-ischemic heart failure.



Arjun Deb, M.D.

Dr. Deb is a physician-scientist and a Professor of Medicine and Molecular, Cell and developmental Biology at UCLA, and Director of the UCLA Cardiovascular Theme. His laboratory investigates the biology of tissue repair and heart fibrosis and has significantly contributed to the role of cell plasticity, metabolism, and the extracellular matrix in regulating heart repair. Dr. Deb's work has been published in *Nature*, *Cell* and *Science*.



Pilar Alcaide, Ph.D. Dr. Alcaide is the Kenneth and JoAnn G. Wellner Professor of Immunology, the Director of the Immunology Graduate program and the Assistant Dean for Faculty Development at Tufts University School of Medicine, Boston, MA. She received her PhD, *cum laude*, in Molecular Biology and Immunology from Universidad Autonoma de Madrid, Spain. As a Fulbright postdoctoral fellowship recipient, Dr. Alcaide trained in vascular biology at the Department of Pathology, Brigham and Women's Hospital. Dr. Alcaide was appointed to Instructor of Pathology at Harvard Medical School. Dr. Alcaide's research focuses on understanding the role of T lymphocytes in heart inflammation and their impact on the progression of heart failure to unveil new pathways that can potentially be targeted in useful therapeutic ways. Dr. Alcaide's impactful work in the growing field of cardio-immunology has been published in top scientific journals and resulted in funding from the NIH and private foundations. Dr. Alcaide has received several prestigious awards, including the Cotran Early Career Investigator, the International Society for Heart Research Mid-Career Research and Scholarship Award. Recently, Dr. Alcaide was elected Vice President of

the American Society of Investigative Pathology. Dr. Alcaide has forged a reputation as a role model for Women in Science,



Jordan S. Pober M.D, Ph.D. Dr. Pober received his MD and PhD (in Molecular Biophysics and Biochemistry) from Yale University. He completed his residency in anatomic pathology at Yale-New Haven and Brigham and Women's Hospitals and was a post-doctoral fellow with Jack Strominger at Harvard, working on the structure of HLA antigens. He served as an attending pathologist and Assoc. Prof. of Pathology at Harvard Medical School and moved to Yale in 1991 as a Professor of Pathology, Immunobiology and Dermatology, founding the Molecular Cardiobiology Program, the Vascular Biology and Transplantation Program and the Human and Translational Immunology Program in 2007. In the same year, he became vice-chair of the Dept. of Immunobiology for the Section of Human and Translational Immunology in 2007. Jordan has served as a founding member and President of the North American Vascular Biology Organization (NAVBO), as Program Committee chair and a Councilor of the American Society of Investigative Pathology (ASIP), as a member of the program committee for the American Transplant Congress, and is currently the Compliance Officer and Board Member for FOCIS. He has received research awards from NAVBO,

ASIP, and the American Society for Transplantation, as co-editor-in-chief of Laboratory Investigation and as a member or chair of several NIH study sections. Dr. Pober's research has focused on the intersection of human vascular biology and immunology with particular emphasis on vascular function, dysfunction and injury in transplanted organ rejection. He also has applied insights from this work to vascular tissue engineering. Jordan is among the most highly cited investigators in immunology with nearly 400 publications. His research program has been continuously funded by the NIH since 1981 and he has trained over 40 fellows and 15 students, currently working in academia or industry.



Ajit Divakaruni, Ph.D. Dr. Divakaruni is an Assistant Professor at the University of California, Los Angeles. His research aims to understand how specific metabolic pathways control cell function and fate. Ajit earned his B.S. in Biochemistry and Applied Mathematics from the University of Arizona in 2006. He then conducted his graduate research in mitochondrial bioenergetics under the supervision of Dr. Martin Brand at the University of Cambridge (UK) and earned his Ph.D. in 2011. He subsequently joined the University of California, San Diego as a postdoctoral fellow under the supervision of Dr. Anne Murphy, focusing on mitochondrial pharmacology with an emphasis on assay development. In 2017, he joined the UCLA Department of Molecular and Medical Pharmacology at the David Geffen School of Medicine.



Zorina Galis, Ph.D. Dr. Galis was trained in Physics, Biophysics, and Cell Biology, at University of Bucharest, Romania, in Pathology at McGill School of Medicine, Canada, and in Vascular Medicine at Harvard. She achieved tenured Cardiology and Biomedical Engineering positions at Emory School of Medicine and Georgia Institute of Technology in academia ([Google Scholar](#)), and Chief Scientific Officer for Cardiovascular R&D at Eli Lilly and Co. Since joining NIH in 2011, Dr. Galis has served as the Chief of the Vascular Biology and Hypertension Branch at the National Heart Lung and Blood Institute (NHLBI), providing scientific leadership, and enabling extramural research, from basic discovery through technology development, translation, to multi-site clinical trials. She also has spearheaded and led large interdisciplinary initiatives creating new funding opportunities recognized with NHLBI and NIH Director Awards, including the NHLBI Vascular Interventions/Innovations and Therapeutic Advances ([VITA](#)) Program, the NIH Common Fund Human BioMolecular Atlas Program ([HuBMAP](#)), and the Trans-NIH Lymphatic Coordination Committee.



Amber Stratman, Ph.D. Dr. Stratman started as a tenure-track Assistant Professor in the Department of Cell Biology and Physiology at Washington University in St. Louis School of Medicine in December 2018, following a Ph.D. in Medical Physiology from the University of Missouri in 2010, and a postdoctoral fellowship at the NIH/NICHD in developmental biology. Her lab focuses on understanding how biomechanical forces alter cellular-level choices to build and maintain tissues in 3D spaces, particularly in blood vessel patterning and stabilization. Her group uses a multimodal approach, working in tissue culture models and the zebrafish, to elucidate molecular mechanisms that regulate vascular development. In tandem, the lab has established an *in vivo* genomics pipeline to study altered gene translation in response to changes in biomechanical force, netting information on new signaling networks to study in the context of mechanics and vascular patterning events.



Ming Sing Si, M.D. Ming-Sing Si is an Associate Professor of Surgery and a pediatric and adult congenital cardiac surgeon at UCLA. Dr. Si is the Surgical Director for Pediatric Heart Transplantation and Mechanical Circulatory Support. Dr. Si is a graduate of the David Geffen School of Medicine and completed postgraduate medical and research training at UCSF, Stanford, and the University of Michigan. Dr. Si's clinical interests include the surgical treatment for heart failure, single ventricle heart disease, and valvular heart disease. Dr. Si and his lab are investigating the role of the SLIT3 ligand in cardiac fibrosis, which will be the topic of his presentation today.



Zoltan (Zolt) Arany, MD, PhD. Dr. Zoltan is the Samuel Bellet Professor of Cardiology and Director of the Cardiovascular Metabolism Program at the Perelman School of Medicine at the University of Pennsylvania. 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 taking a multidisciplinary approach, spanning from molecular biology and numerous 'omic approaches to model organisms and human clinical studies. Dr. Arany 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, and the Research Achievement Award of the International Society for Heart Research (ISHR). He is elected to the American Society of Clinical Investigators (ASCI), and to the American Association of Physicians (AAP), where he is a member of the Council. Dr. Arany's work has been published in *New England Journal of Medicine*, *Nature*, *Cell*, *Science*, *Circulation*, *PNAS*, *Cell Metabolism*, *Nature Metabolism*, etc



Stavros G. Drakos, M.D., Ph.D. Dr. Stavros is a Professor of Medicine at the Univ. of Utah (U of U) Health & School of Medicine, the Medical Director of the U of U historic Cardiac Mechanical Support/Artificial Heart Program, Co-Chief of Heart Failure & Transplant and Director of Research for the Cardiology Division. He holds the H.A. and Edna Benning Presidential Endowed Chair and his research interests are focused on myocardial recovery in the chronic heart failure (HF) setting and the acute setting. Dr. Drakos' team is utilizing clinical and biological information derived from studies in humans and small or large animal HF models to understand and enhance myocardial recovery. Original work generated by Dr. Drakos' research team in the clinical arena and in his lab led to the establishment of the award-winning multidisciplinary Utah Cardiac Recovery Program-UCAR. He is the chairperson of the Clinical Integrative Cardiovascular and Hematological Sciences (CCHS) at the NIH. He co-chairs the annual international Utah Cardiac Recovery Symposium (UCARS), and the NIH Working Group on Myocardial Recovery and is an elected member of the ASCI (American Society of Clinical Investigation). Dr. Drakos mentored over the years several individuals who are now independent faculty in academic medical centers in the US and overseas.



Andrea L Hevener, Ph.D. Dr. Hevener's laboratory studies the transcriptional regulation of metabolism and insulin action specifically focusing on the biological actions of hormone-responsive nuclear receptors in metabolic tissues. Dr. Hevener is the Associate Director for Research at the Iris Cantor-UCLA Women's Health Center and the Director of the NIH-sponsored UCSU-UCLA Diabetes Research Center Metabolic and Molecular Physiology Core. Dr. Hevener's laboratory is supported by the UCLA Department of Medicine, the STOP CANCER Foundation I.C.O.N. Award, the Helmsley Charitable Trust, the UCLA CTSI, and the Iris Cantor Women's Health Executive Advisory Board. In addition to ongoing National Institutes of Health R01 funding, Dr. Hevener is currently a project principal investigator of an NIH U54 Specialized Center of Research Excellence (SCORE) studying sex differences and women's health related to metabolism. She is the lead investigator of an NIH Director's Common Fund award to study the molecular transducers of physical activity as part of the MoTrPAC consortium. The overarching goal of the Hevener laboratory is to identify mechanisms of therapeutic targets to combat metabolic-related diseases.



Muredach Reilly, M.D. Dr. Reilly received his medical degree from University College Dublin, Ireland and completed his residency and fellowship training in Medicine and Cardiovascular Medicine at the University of Pennsylvania, where he also received an M.S. degree in clinical epidemiology. Dr. Reilly is the Herbert and Florence Irving Professor of Medicine and Vice Dean for Clinical and Translational Research at Columbia University Irving Medical Center in New York, USA. He is the Director of the Irving Institute for Clinical and Translational Research (Irving Institute), and PI of Columbia University's NIH-NCATS funded Clinical and Translational Science Award (CTSA) Program hub. Dr. Reilly is the Director of the Cardiometabolic Precision Medicine Program in the Division of Cardiology at Columbia University. His research program is dedicated to translational precision medicine studies of human atherosclerosis and heart disease as well as inflammatory mechanisms in cardio-metabolic disease, emphasizing humans as the ideal "model" to understand mechanisms of and therapeutic opportunities for human disease and prevention.



Paivi Pajukanta, MD, PhD. Dr. Pajukanta is a Professor of Human Genetics at UCLA, and recipient of The Diller-von Furstenberg Family Endowed Chair in Precision Clinical Genomics. Her research group is using integrative genomics approaches on multilayer genomics data, including single-cell omics data, to identify cell-type-specific mechanisms underlying obesity and related cardiovascular and metabolic disorders, such as type 2 diabetes (T2D), dyslipidemia, and non-alcoholic fatty liver disease (NAFLD). She is especially interested in 1) genomic studies of the admixed Mexican population that has been underrepresented in genomic studies despite their high predisposition to obesity, T2D, dyslipidemias, and NAFLD; 2) development of computational methods for complex traits; and 3) utilizing single cell and bulk level RNA-sequencing and ATAC-sequencing approaches to study gene-environment interactions contributing to cardiovascular and metabolic traits.



Mete Civelek, Ph.D. Dr. Civelek is an Associate Professor of Biomedical Engineering and a resident faculty member at the Center for Public Health Genomics at the University of Virginia (UVA). He joined the UVA faculty in 2015 after completing a postdoctoral fellowship in cardiovascular genetics at the University of California, Los Angeles. His laboratory studies the complex interactions among genes and environment that increase our risk for heart disease and type 2 diabetes. and adopts a holistic approach by carefully studying various human populations to connect the dots between genes and disease. Dr. Civelek's research has been funded by the National Institute of Diabetes and Digestive and Kidney Diseases, the National Heart, Lung, and Blood Institute (NHLBI), the Leducq Foundation, the American Heart Association, and the American Diabetes Association. He serves as the chair of the Biomedical Engineering Department's Diversity, Equity, and Inclusion Committee and is a member of the leadership team of the Driving Change Initiative supported by the Howard Hughes Medical Institute.

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