

SOCIETY FOR VASCULAR SURGERY
2019 VASCULAR RESEARCH INITIATIVES CONFERENCE
HARD SCIENCE: CALCIFICATION AND VASCULAR SOLUTIONS

MONDAY, MAY 13, 2019 8:00AM – 7:00PM

7:00 AM REGISTRATION AND CONTINENTAL BREAKFAST

8:00 AM INTRODUCTORY REMARKS

Luke Brewster, MD, Chair, Research and Education Committee

Michel S. Makaroun, MD, President, Society for Vascular Surgery

Edith Tzeng, MD, Chair, SVS Research Council

**ABSTRACT SESSION I: VASCULAR REMODELING, THROMBOSIS, AND DISCOVERY
SCIENCE FOR VENOUS DISEASE**

Moderator: Areck Ucuzian, MD

Moderator: Naomi M. Hamburg, MD, MS

- 8:15 am **Periprocedural Hydrogen Sulfide Therapy Impairs Vascular Remodeling and Improves Vein Graft Patency**
Peter Kip*¹, Ming Tao¹, Kaspar M Trocha¹, Michael R MacArthur², Sarah J Mitchell², Suzannah Patterson¹, Jonathan Jung², Paul H. Quax³, Margreet R de Vries³, James R Mitchell², C. Keith Ozaki¹
¹Brigham and Women's Hospital, Boston, MA; ²Harvard T.H. Chan School of Public Health, Boston, MA; ³Leiden University Medical Center, Leiden, Netherlands
- 8:27 am **Microbial Colonization Restores Neointimal Hyperplasia Development after Arterial Injury in Germ-Free Mice**
Edmund B Chen*¹, Katherine E Shapiro¹, Thomas Kuntz², Betty Theriault², Michael J. Nooromid¹, Kelly H Wun¹, Vanessa Leone², Katharine Harris², Qun Jiang¹, Melanie Spedale², Liqun Xiong¹, Owen M Eskandari¹, Eugene B. Chang², Karen J. Ho¹
¹Northwestern Univ, Feinberg School of Med, Chicago, IL, ²Univ of Chicago, Chicago, IL
- 8:39 am **Deletion Of Nr4a1 Is Associated With Increased Vein Wall Injury After Venous Thrombosis**
Andrew Kimball, Andrea Obi, Cathy Luke, Qing Cai, Abigail Dowling, Farouc Jaffer, Katherine Gallagher, Peter Henke
University of Michigan, Ann Arbor, MI
- 8:51 am **A Novel Design for Shear Rate Optimization of the Venous-End Anastomosis of an Arteriovenous Graft**
Dillon Williams, Mohamed Zayed, Guy Genin, Eric Leuthardt
Washington University School of Medicine, Saint Louis, MO

- 9:03 am **Genetic Analysis Implicates LDL Cholesterol Reduction and Plasminogen Activator-inhibitor 1 Antagonism As Therapeutic Interventions For Venous Thromboembolism**
 Derek Klarin¹, Emma Busenkell¹, Renae Judy², Julie Lynch³, Krishna Aragam⁴, Mark Chaffin⁴, Mary Haas⁴, Themistocles L Assimes⁵, Jie Huang⁶, Kyung Min Lee⁷, Qing Shao⁷, Jennifer E Huffman⁶, Yunfeng Huang⁸, Yan V Sun⁸, Marijana Vujkovic², Danish Saleheen², Donald R Miller⁷, Peter Reaven⁹, Scott DuVall³, William Boden¹⁰, Saiju Pyarajan¹, J. Michael Gaziano¹¹, John Concato¹², Daniel J Rader², Kelly Cho⁶, Kyong-Mi Chang², Peter W Wilson⁸, Nicholas L Smith¹³, Christopher J O'Donnell⁶, Philip S Tsao⁵, Sekar Kathiresan¹, Pradeep Natarajan¹, Scott M Damrauer²
¹Massachusetts General Hospital, Boston, MA; ²Univ of Pennsylvania School of Medicine, Philadelphia, PA; ³Salt Lake City Health Care System, Salt Lake City, UT; ⁴Broad Institute of Harvard and MIT, Cambridge, MA; ⁵Stanford University School of Medicine, Stanford, CA; ⁶Massachusetts Veterans Epidemiology Research and Information Center, Boston, MA; ⁷Edith Nourse Rogers Memorial VA Hospital, Bedford, MA; ⁸Emory University Rollins School of Public Health, Atlanta, GA; ⁹Phoenix Veterans Affairs Health Care System, Phoenix, AZ; ¹⁰State University of New York at Buffalo Schools of Medicine and Public Health, Buffalo, NY; ¹¹Boston VA Healthcare System, Boston, MA; ¹²VA Connecticut Healthcare System, New Haven, CT; ¹³School of Public Health, University of Washington, Seattle, WA
- 9:15 am **Regulation of Vascular Smooth Muscle Cell Responses by IL-2/IL-2R alpha**
 Victoria Wong¹, David Hui², John Matsuura¹, Lucile Wrenshall¹
¹Wright State University, Dayton, OH; ²Univ of Cincinnati, Cincinnati, OH
- 9:27 am **Inhibition of the Akt1-mTORC1 Axis Alters Venous Remodeling To Improve Arteriovenous Fistula Patency**
 Arash Fereydooni¹, Xiangjiang Guo², Toshihiko Isaji³, Jolanta Gorecka³, Shun Ono³, Haidi Hu³, Shirley Liu³, Naiem Nassiri¹, Lan Zhang², Alan Dardik¹
¹Yale School of Medicine, New Haven, CT; ²Dept of Vascular Surgery, Renji Hosp, Shanghai Jiaotong University, Shanghai, China; ³Vascular Biology and Therapeutics Program, Yale School of Medicine, New Haven, CT

9:45 am BREAK

ABSTRACT SESSION II: VASCULAR REGENERATION, STEM CELLS AND WOUND HEALING

Moderator: Bryan Tillman, MD

Moderator: Ngan Huang, MD

- 10:00 am **Inhibition of Xanthine Oxidoreductase Accelerates Diabetic Wound Healing**
 Kathy Gonzalez, Karim M Salem, Guiying Hong, Edith Tzeng
VA Pittsburgh Healthcare System, Univ of Pittsburgh, Pittsburgh, PA
- 10:12 am **Knockdown of TSP-1 and TSP-2 Decreases Intimal Hyperplasia in Rats after Carotid Balloon Injury**
 Furqan Muqri, Mohammed Kassem, Alex Helkin, David Bruch, Kristopher G Maier, Vivian Gahtan
SUNY Upstate Medical Univ, Syracuse, NY
- 10:24 am **Aging Impairs Wound Healing By Hematopoietic Stem Cell Autonomous Mechanism**
 Jinglian Yan, Guodong Tie, Amanda Tutto, Kate Hayes, Lyne Khair, Louis Messina
University of Massachusetts Medical School, Worcester, MA

- 10:36 am **Intracellular Notch1 Signaling Determines Fibroblasts-modulated Angiogenic Response In Diabetic Wounds**
 Hongwei Shao, Yan Li, Irena Pastar, Rochelle Prokupets, Sophia Liu, Marjana Tomic-Canic, Omaid C Velazquez, Zhao-Jun Liu
University of Miami, Miami, FL
- 10:48 am **Endothelial-to-Mesenchymal Transition is Regulated by Substrate Stiffness**
 Maedeh Zamani, Frank Charbonier, Ngan F Huang
Stanford University, Stanford, CA
- 11:00 am **Caspase-1 Mediates Muscle Fiber Typing And Functionality In Response To Ischemia**
 Ricardo J Ferrari, Xiangdong Cui, Abish Pius, Amrita Sahu, Sunita N Shinde, Fabrisia Ambrosio, Hong Liao, Melanie J Scott, Ulka Sachdev
University of Pittsburgh Medical Center, Pittsburgh, PA

ABSTRACT SESSION III: AORTOPATHIES AND NOVEL VASCULAR DEVICES

Moderator: Dai Yamanouchi, MD

Moderator: Sean English, MD

Moderator: Peter Henke, MD

- 11:15 am **Alternative Macrophage Activation Limits Experimental Abdominal Aortic Aneurysms**
 Baohui Xu¹, Naoki Fujimura¹, Hongping Deng¹, Gang Li¹, Yankui Li¹, Xiaoya Zheng¹, Fanru Shen¹, Takahiro Shoji¹, Jia Guo¹, Sihai Zhao¹, Xiaofeng Chen², Masaaki Miyata³, Alan Daugherty⁴, Hong S Lu⁴, Ronald L Dalman¹
¹Stanford University School of Medicine, Stanford, CA; ²Taizhou Hospital Wenzhou Medical University, Linhai, China; ³Kagoshima City Hospital, Kagoshima, Japan; ⁴SAHA Cardiovascular Research Center University of Kentucky, Lexington, KY
- 11:27 am **A Retrievable Rescue Stent for Thoracic or Abdominal Traumatic Hemorrhage**
 Catherine Go, Jenna Kuhn, Moataz Elsisy, Youngjae Chun, Bryan Tillman
University of Pittsburgh Medical Center, Pittsburgh, PA
- 11:39 am **Interleukin-6 Is Necessary But Not Sufficient For Abdominal Aortic Aneurysm Development**
 Jean Marie Ruddy, Randall T. Grespin, Nicholas Ward, Christine Couch, Rupak Mukherjee, Jeffrey A. Jones
Medical University of South Carolina, Charleston, SC
- 11:51 am **Changes in Systemic Inflammation are Associated with Frailty Phenotypes and Clinical Outcomes after Open Aortic Repair**
 Kerri A O'Malley, Jared Rozowsky, Grace Shan, Sarah Barbey, Qiongyao Hu, Thomas Huber, Scott Berceci, Salvatore Scali
University of Florida, Gainesville, FL

12:05 PM LUNCH WITH QUICKSHOT POSTER REVIEW

12:50 PM SVS FOUNDATION UPDATE AND AWARDS CEREMONY

R. Clement Darling, III, MD, Chair, SVS Foundation

VRIC Trainee Awards

Edmund Chen, MD

Peter Kip, MD

Constance Mietus, PhD

Thomas Sorrentino, BS

1:00 PM SPECIAL SESSION I

Presented by Recipients of the 2017 SVS Foundation Mentored Clinical Scientist Research Career Development Award

Karen Woo, MD

University of California, Los Angeles

K08 Project: Outcomes of Dialysis Vascular Access in the Elderly

Mohamed Zayed, MD, PhD

Washington University in Saint Louis

K08 Project: The Role of Phospholipogenesis In Diabetic Peripheral Arterial Disease

1:25 PM RECOGNITION CEREMONY: Honoring the Work of Dr. Frank LoGerfo

Moderator: Karen Ho, MD

Moderator: Michel S. Makaroun, MD

Frank W. LoGerfo, MD

William V. McDermott Distinguished Professor of Surgery

Beth Israel Deaconess Medical Center

Harvard Medical School

ABSTRACT SESSION IV: ATHEROSCLEROSIS, ARTERIAL INJURY AND DIABETES

Moderator: Cynthia St. Hilaire, MD

1:55 PM Perivascular Gene Targeted Therapy using Biodegradable CLICK-Gelatin Hydrogels

Patric Liang¹, Marisa Sewall¹, Navneet Momi¹, David Mooney², Leena Pradhan-Nabzdyk¹, Frank LoGerfo¹

¹Beth Israel Deaconess Medical Ctr, Boston, MA; ²Harvard Univ, Boston, MA

2:10 pm Diet, Nutrition And The Pad Patient: An Evaluation Of Dietary Factors Associated With Incident Peripheral Artery Disease Events Using The Uk Biobank Cohort Study

Elsie Ross, Atif Rana, Alyssa Flores, Daniela Zanetti, Eri Fukaya, Erik Ingelsson, Nicholas Leeper

Stanford University School of Medicine, Stanford, CA

2:21 pm Circulating Exosomes in PAD Patients: Disease Severity Correlates with Effects on Vascular Cell Migration and miRNA Content

Thomas A Sorrentino^{*1}, Phat Duong², Laura Bouchareychas², Mian Chen¹, Allen Chung², Melinda S Schaller¹, Adam Z Oskowitz¹, Robert L Raffai¹, Michael S Conte¹

¹University of California, San Francisco, CA; ²San Francisco VA Medical Center, San Francisco, CA

- 2:32 pm **Arterial Spin Labeling Quantifies Regional Foot Perfusion During Sustained Toe Flexion**
Joe Luis Pantoja, Fadil Ali, Jiaxin Shao, Donald Baril, Erik Dutson, John Paul Finn, Peng Hu, Peter F Lawrence
University of California, Los Angeles, CA
- 2:43 pm **Microvascular Pathology Influences Walking Performance in Patients with Peripheral Artery Disease**
Constance J Mietus*, Matthew A Fuglestad, Timothy J Lackner, Gregory T Willcockson, Peter Karvelis, Hernan Hernandez, Yue Gao, Katyarina Brunette, Holly Despiegelaere, Feng Xie, Thomas Porter, Iraklis Pipinos, George Casale
University of Nebraska Medical Center, Omaha, NE
- 2:54 pm **The Parathyroid Hormone Receptor Limits Arterial Fibrosis In Diabetic Vascular Disease**
Abraham Behrmann, Dalian Zhong, Su Li Cheng, Li Li, Megan Mead, Bindu Ramachandaran, Mohammad Goodarzi, Andrew Lemoff, Dwight A Towler
University of Texas Southwestern Medical Center, Dallas, TX
- 3:05 pm **Proteoglycan 4 Is Implicated In Osteo-chondrogenic Smooth Muscle Cell Differentiation During Vascular Remodelling And Intimal Calcification**
Till Seime¹, Eva Karlöf¹, Asim C Akbulut², Rick H van Gorp², Mariette Lengquist¹, Malin Kronqvist¹, Nuno Dias³, Anton Razuvaev¹, Jacob Odeberg⁴, Jan H Lindeman⁵, Lars Maegdefessel¹, Leon J Schurgers², Ulf Hedin¹, Ljubica Matic¹
¹Karolinska Instt, Stockholm, Sweden; ²Maastricht Univ, Maastricht, Netherlands; ³Skåne Univ Hosp, Malmö, Sweden; ⁴Royal Inst of Technology, Stockholm, Sweden; ⁵Leiden Univ Medical Ctr, Leiden, Netherlands

3:20 PM BREAK

3:35 PM SPECIAL SESSION II: ALEXANDER W. CLOWES DISTINGUISHED LECTURE

Moderator: Katherine Gallagher MD

New Concepts in Regulation and Bioengineered Therapies for Vascular and Valvular Calcification

Cecilia Giachelli, PhD

Professor and Chair

Hunter and Dorothy Simpson Endowed Chair in Bioengineering

Department of Bioengineering

University of Washington

4:05 PM TRANSLATIONAL PANEL

Moderator: Shirling Tsai, MD

Moderator: R. Clement Darling, III, MD

HARD SCIENCE: CALCIFICATION AND VASCULAR SOLUTIONS

Raul Guzman, MD

Associate Professor of Surgery

Harvard Medical School

Elena Aikawa, MD, PhD

Associate Professor of Medicine

Director, Heart Valve Translational Research Program

Harvard Medical School

Dwight Towler, MD, PhD

J.D. and Maggie E. Wilson Distinguished Chair in Biomedical Research

Louis V. Avioli Professorship in Mineral Metabolism Research

Vice Chair, Research - Internal Medicine

UT Southwestern Medical Center

5:15 PM QUICKSHOT POSTER SESSION AND VRIC RECEPTION

7:00 PM ADJOURN

** SVS Foundation Vascular Research Initiatives Trainee Awardee*