

## Final Agenda

Last Updated April 10, 2019

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

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**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

- 8:15 am **Periprocedural Hydrogen Sulfide Therapy Impairs Vascular Remodeling and Improves Vein Graft Patency**  
Peter Kip\*<sup>1</sup>, Ming Tao<sup>1</sup>, Kaspar M Trocha<sup>1</sup>, Michael R MacArthur<sup>2</sup>, Sarah J Mitchell<sup>2</sup>, Suzannah Patterson<sup>1</sup>, Jonathan Jung<sup>2</sup>, Paul H. Quax<sup>3</sup>, Margreet R de Vries<sup>3</sup>, James R Mitchell<sup>2</sup>, C. Keith Ozaki<sup>1</sup>  
<sup>1</sup>Brigham and Women's Hospital, Boston, MA; <sup>2</sup>Harvard T.H. Chan School of Public Health, Boston, MA; <sup>3</sup>Leiden University Medical Center, Leiden, Netherlands
- 8:27 am **Microbial Colonization Restores Neointimal Hyperplasia Development after Arterial Injury in Germ-Free Mice**  
Edmund B Chen\*<sup>1</sup>, Katherine E Shapiro<sup>1</sup>, Thomas Kuntz<sup>2</sup>, Betty Theriault<sup>2</sup>, Michael J. Nooromid<sup>1</sup>, Kelly H Wun<sup>1</sup>, Vanessa Leone<sup>2</sup>, Katharine Harris<sup>2</sup>, Qun Jiang<sup>1</sup>, Melanie Spedale<sup>2</sup>, Liqun Xiong<sup>1</sup>, Owen M Eskandari<sup>1</sup>, Eugene B. Chang<sup>2</sup>, Karen J. Ho<sup>1</sup>  
<sup>1</sup>Northwestern Univ, Feinberg School of Med, Chicago, IL, <sup>2</sup>Univ 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 Klarin<sup>1</sup>, Emma Busenkell<sup>1</sup>, Renae Judy<sup>2</sup>, Julie Lynch<sup>3</sup>, Krishna Aragam<sup>4</sup>, Mark Chaffin<sup>4</sup>, Mary Haas<sup>4</sup>, Themistocles L Assimes<sup>5</sup>, Jie Huang<sup>6</sup>, Kyung Min Lee<sup>7</sup>, Qing Shao<sup>7</sup>, Jennifer E Huffman<sup>6</sup>, Yunfeng Huang<sup>8</sup>, Yan V Sun<sup>8</sup>, Marijana Vujkovic<sup>2</sup>, Danish Saleheen<sup>2</sup>, Donald R Miller<sup>7</sup>, Peter Reaven<sup>9</sup>, Scott DuVall<sup>3</sup>, William Boden<sup>10</sup>, Saiju Pyarajan<sup>1</sup>, J. Michael Gaziano<sup>11</sup>, John Concato<sup>12</sup>, Daniel J Rader<sup>2</sup>, Kelly Cho<sup>6</sup>, Kyong-Mi Chang<sup>2</sup>, Peter W Wilson<sup>8</sup>, Nicholas L Smith<sup>13</sup>, Christopher J O'Donnell<sup>6</sup>, Philip S Tsao<sup>5</sup>, Sekar Kathiresan<sup>1</sup>, Pradeep Natarajan<sup>1</sup>, Scott M Damrauer<sup>2</sup>  
<sup>1</sup>Massachusetts General Hospital, Boston, MA; <sup>2</sup>Univ of Pennsylvania School of Medicine, Philadelphia, PA; <sup>3</sup>Salt Lake City Health Care System, Salt Lake City, UT; <sup>4</sup>Broad Institute of Harvard and MIT, Cambridge, MA; <sup>5</sup>Stanford University School of Medicine, Stanford, CA; <sup>6</sup>Massachusetts Veterans Epidemiology Research and Information Center, Boston, MA; <sup>7</sup>Edith Nourse Rogers Memorial VA Hospital, Bedford, MA; <sup>8</sup>Emory University Rollins School of Public Health, Atlanta, GA; <sup>9</sup>Phoenix Veterans Affairs Health Care System, Phoenix, AZ; <sup>10</sup>State University of New York at Buffalo Schools of Medicine and Public Health, Buffalo, NY; <sup>11</sup>Boston VA Healthcare System, Boston, MA; <sup>12</sup>VA Connecticut Healthcare System, New Haven, CT; <sup>13</sup>School 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 Wong<sup>1</sup>, David Hui<sup>2</sup>, John Matsuura<sup>1</sup>, Lucile Wrenshall<sup>1</sup>  
<sup>1</sup>Wright State University, Dayton, OH; <sup>2</sup>Univ of Cincinnati, Cincinnati, OH
- 9:27 am **Inhibition of the Akt1-mTORC1 Axis Alters Venous Remodeling To Improve Arteriovenous Fistula Patency**  
 Arash Fereydooni<sup>1</sup>, Xiangjiang Guo<sup>2</sup>, Toshihiko Isaji<sup>3</sup>, Jolanta Gorecka<sup>3</sup>, Shun Ono<sup>3</sup>, Haidi Hu<sup>3</sup>, Shirley Liu<sup>3</sup>, Naiem Nassiri<sup>1</sup>, Lan Zhang<sup>2</sup>, Alan Dardik<sup>1</sup>  
<sup>1</sup>Yale School of Medicine, New Haven, CT; <sup>2</sup>Dept of Vascular Surgery, Renji Hosp, Shanghai Jiaotong University, Shanghai, China; <sup>3</sup>Vascular 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

- 11:15 am **Alternative Macrophage Activation Limits Experimental Abdominal Aortic Aneurysms**  
Baohui Xu<sup>1</sup>, Naoki Fujimura<sup>1</sup>, Hongping Deng<sup>1</sup>, Gang Li<sup>1</sup>, Yankui Li<sup>1</sup>, Xiaoya Zheng<sup>1</sup>, Fanru Shen<sup>1</sup>, Takahiro Shoji<sup>1</sup>, Jia Guo<sup>1</sup>, Sihai Zhao<sup>1</sup>, Xiaofeng Chen<sup>2</sup>, Masaaki Miyata<sup>3</sup>, Alan Daugherty<sup>4</sup>, Hong S Lu<sup>4</sup>, Ronald L Dalman<sup>1</sup>  
*<sup>1</sup>Stanford University School of Medicine, Stanford, CA; <sup>2</sup>Taizhou Hospital Wenzhou Medical University, Linhai, China; <sup>3</sup>Kagoshima City Hospital, Kagoshima, Japan; <sup>4</sup>SAHA 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. Hillaire, MD

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

Patric Liang<sup>1</sup>, Marisa Sewall<sup>1</sup>, Navneet Momi<sup>1</sup>, David Mooney<sup>2</sup>, Leena Pradhan-Nabzdyk<sup>1</sup>, Frank LoGerfo<sup>1</sup>

<sup>1</sup>Beth Israel Deaconess Medical Ctr, Boston, MA; <sup>2</sup>Harvard 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\*<sup>1</sup>, Phat Duong<sup>2</sup>, Laura Bouchareychas<sup>2</sup>, Mian Chen<sup>1</sup>, Allen Chung<sup>2</sup>, Melinda S Schaller<sup>1</sup>, Adam Z Oskowitz<sup>1</sup>, Robert L Raffai<sup>1</sup>, Michael S Conte<sup>1</sup>

<sup>1</sup>University of California, San Francisco, CA; <sup>2</sup>San 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 Nevada 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 Seime<sup>1</sup>, Eva Karlöf<sup>1</sup>, Asim C Akbulut<sup>2</sup>, Rick H van Gorp<sup>2</sup>, Mariette Lengquist<sup>1</sup>, Malin Kronqvist<sup>1</sup>, Nuno Dias<sup>3</sup>, Anton Razuvaev<sup>1</sup>, Jacob Odeberg<sup>4</sup>, Jan H Lindeman<sup>5</sup>, Lars Maegdefessel<sup>1</sup>, Leon J Schurgers<sup>2</sup>, Ulf Hedin<sup>1</sup>, Ljubica Matic<sup>1</sup>  
*<sup>1</sup>Karolinska Instt, Stockholm, Sweden; <sup>2</sup>Maastricht Univ, Maastricht, Netherlands; <sup>3</sup>Skåne Univ Hosp, Malmö, Sweden; <sup>4</sup>Royal Inst of Technology, Stockholm, Sweden; <sup>5</sup>Leiden 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*