Vascular Biology 2025
October 19-23, 2025 – Hyport Conference Center

Day 1 – Sunday, October 19

1:30-5:30pm Grand II	**Pre-conference Meeting for Trainees** **Organizers: Yu Jung Shin, University of Washington and Xiaochen Fan, Stanford University with Alicen Whitaker-Hilbig, Medical College of Wisconsin and Liping Zhang, Brigham & Women's Hospital** *My journey into vascular biology and why I remain excited about it* Anne Eichmann, Yale University School of Medicine *Helping Each Other Grow: Lessons from Brain Collateral Resilience* Stefania Nicoli, Yale University Cardiovascular Research Center
7:00-9:00pm Grand Ballroom	**Opening Session** **Welcome:** A. Wayne Orr, President of NAVBO **Judah Folkman Award in Vascular Biology Presentation and Lecture -** *Transcriptional and Post-transcriptional Regulation of Cellular Functions within the Vascular System* Yajaira Suárez, Yale University School of Medicine **Earl P. Benditt Award Presentation and Lecture -** *Harnessing Blood Vessels to Promote Brain Health* Anne Eichmann, Yale University School of Medicine **Presentation of Travel Awards**
9:00-10:00pm	**Welcome Reception** – Ballroom Foyer

Day 2 – Monday, October 20

7:00-8:00am	**Group Breakfast** – Bass River Room	**Networking 101** – Cape Cod Room
	Grand I	**Grand II**
8:00-10:00am	**Regenerative Medicine and Cardiovascular Repair** *Dynamic In vitro models of vascular growth and injury across scales* Ying Zheng, University of Washington Short talk: *Transcriptional reprogramming of mitochondrial dynamics in iPSCs-derived endothelial cells* Gwang-Bum Im, Boston Children's Hospital Short talk: *Systematic discovery of collateral artery regulators via cross-species in vivo*	**Microvascular Dysfunction in Shock** *Extracellular vesicles in vascular inflammation and barrier dysfunction vascular permeability during sepsis* Sarah Yuan, University of South Florida Short talk: *Distinct blood and lung proteins drive pulmonary capillary leak in invasively ventilated children* Richard Pierce, Yale University Short talk: *Fluid shear stress modulates the CD44/HA axis of the basal endothelial glycocalyx*

	Perturb-seq Xiaochen Fan, Stanford University Short talk: *Connexin 43 is required for smooth muscle cell driven neointimal hyperplasia* Mark Renton, Virginia Tech Short talk: *Genetic mechanisms in natural variation of coronary artery anatomy across diverse populations* Pamela Rios, Yale University *A novel angiogenic biomaterial for localized protein delivery improves revascularization and ischemic wound healing* Kareen Coulombe, Brown University	Zoe Vittum, Worcester Polytechnic Institute Short talk: *Characterization of the endothelial ADAM10 sheddome identifies novel cleavage substrates during S. aureus Hla infection* Danielle Alfano, Washington University Short talk: *STAT1 and STING are required for endothelial expression of interferon-stimulated genes in response to an endotoxin challenge* Nina Martino, Albany Medical College *Microvascular heterogeneity in endothelial cell responses in sepsis* Audrey Cleuren, Oklahoma Medical Research Foundation
10:30am-12:30pm	**Epigenetic and Post-Transcriptional Control of the Vasculature** *Sex-specific epigenetic mechanisms in cerebrovascular injury* Kahlilia Morris-Blanco, University of Pennsylvania Short talk: *IL-12 upregulates SETD4 to epigenetically activate atherogenic programs in diabetic aortic endothelial cells* James Shadiow, University of Michigan Short talk: *Endothelial cells retain inflammatory memory through chromatin remodeling in a two-hit model of infection-induced inflammation* Ramon Bossardi Ramos, Albany Medical College Short talk: *Loss of the lncRNA DIO3OS promotes caspase activation, mitochondrial dysfunction, and endothelial apoptosis* Cristina Espinosa-Diez, Wayne State Short talk: *PKM2 signaling in HDAC7-mediated lung endothelial barrier dysfunction* Peter Biggs, Augusta University *Dynamic epigenetic signatures during vascular development* Angie Serrano, Boston University	**Inflammation in Small Vessels** *Vascular permeability, cause and consequence* Lena Claesson-Welsh, Uppsala University Short talk: *BET bromodomain proteins regulate an interferon-like proinflammatory response in the vasculature in Hutchinson-Gilford progeria syndrome* Jonathan D. Brown, Vanderbilt University Medical Center Short talk: *Fxr1 loss in aging cerebrovascular endothelium impairs desmosome organization and increases nuclear strain* Olivia Durham, UConn Health Short talk: *Discovering novel regulators of VE-Cadherin from stabilized endothelial adherens junctions using proximity labeling proteomics* Avishek Ghosh, Boston Children's *Tracking neutrophil infiltration into the ischemic brain reveals new targets for treating stroke* David Sullivan, Northwestern University
12:30-1:45pm	**Lunch and Learn for Trainees** – Bass River Room	Lunch for all others – Bass River and Cape Cod Rooms
1:45-3:45pm	**Plenary Session: Mechanosensing and Mechanotransduction in the Vasculature** *Flow-mediated endothelial cell signaling and vascular inflammation* Julia Mack, University of California, Los Angeles	

Grand Ballroom	Short talk: *Investigating a Mechanotransduction role for EHD2* Jasper Farrington, University of Denver Short talk: *Vascular smooth muscle LIM kinase inhibition attenuates tissue transglutaminase-dependent actin polymerization induced by mechanical stretching* Olubodun Lateef, University of Missouri Short talk: *Mechanosensitive BBB modeling reveals glycocalyx-driven neurovascular damage* Nicholas O'Hare, Northeastern University Short talk: *Endothelial Nucleoporin93 maintains Sun1 expression for proper flow-induced cellular alignment* Julia Michalkiewicz, University of Illinois – Chicago *Flow-induced reprogramming of endothelial cells in atherogenesis* Hanjoong Jo, Emory University
4:00-5:00pm	**Nano-talks** – Grand Ballroom
5:00-7:00pm	Dinner on your own
7:00-10:00pm	**Poster Sessions** – Ballroom Foyer and Osterville Room

Day 3 – Tuesday, October 21

7:00-8:00am	**Group Breakfast** – Bass River Room	**Science in Action: Advocating for Research and Discovery** – Cape Cod Room
	Grand I	**Grand II**
8:00-10:00am	**Advanced Molecular Mechanisms in Vascular Matrix Remodeling** *Systems approach to cardiovascular calcification* Elena Aikawa, Brigham and Women's Hospital Short talk: *Functional profiling of SCAD-associated genes reveals disruption of ECM and cell morphology in human vascular cells* Emily Bramel, Broad Institute of MIT Short talk: *Role of endothelial Nck1 in atherosclerosis* Cyrine Ben Dhaou, LSUHS Short talk: *BMP1 coronary disease causality and mechanisms of disease risk* Joao Monteiro, Stanford University Short talk: *CRK/CRKL regulate embryonic angiogenesis by maintaining formation of tip cells and modulating MAP4K4 signaling in mammals* Lijie Shi, Albert Einstein College of Medicine *Mineralization in the matrix* Cynthia St. Hilaire, University of Pittsburgh	**Neuroinflammation** *Mechanisms of cerebral microvascular dysfunction in AD/ADRD: role of cellular inflammatory mediators* Paulo Pires, University of Arizona Short talk: *Pde4b activity and vascular association correlate with immune-like oligodendrocytes in chronic stress* Miguel M Madeira, Stony Brook University Short talk: *Myeloid β2-adrenergic receptors mediate neuroimmune signaling to prime aortic stiffness* Tzung Hsiai, UCLA Short talk: *Microglia and neutrophils reciprocally mediate unique post-stroke spatial patterning independent of infarct topology* Laurel Schappell, Stony Brook Short talk: *A high-throughput human Blood-brain barrier (BBB)-on-a-chip model for drug discovery of anti-inflammatory and barrier restoring agents for neurological disorders* Nick Saites, Mimetas B.V. *Vascular contributions to neuroinflammation: novel roles for endothelial tissue-nonspecific alkaline phosphatase* Candice Brown, Indiana University School of Medicine
10:30am-12:00pm	**Blood Vascular Development** *Higd1b is a unique and conserved gene marker for pericytes* Ke Yuan, Boston Children's Hospital Short talk: *The metabolism-regulated transcription factor FOXO1 links nutrient deprivation to the establishment of artery identity* Qingqing Yin, Stanford University Short talk: *Pioneer factor ETV2 safeguards endothelial cell specification by recruiting*	**Vascular Extracellular Matrix Bioengineering** *Engineering human blood vessels for modeling and therapeutics* Sharon Gerecht, Duke University Short talk: *Biological sex influences long term remodeling outcomes of compliance matched vascular grafts* Katarina Martinet, University of Pittsburg Short talk: *From human genetics to therapeutics: RNA nanomedicine for cardiovascular and metabolic disease*

	the repressor REST to restrict alternative lineage commitment Danyang Chen, Boston Children's Short talk: *Artery formation is mediated by Esm1+ endothelial cells* Ralf Adams, MPI for Molecular Bioscience Short talk: *Endothelial Ovol1 regulates angiogenesis via Slug* Kapil Thapa, Tulane University	Yun Fang, University of Chicago *Matrix-mediated regeneration of vasa vasorum as a treatment for aortic aneurysm* Julie Phillippi, University of Pittsburgh
12:00-1:30pm	**Group Lunch** – Bass River Room	**Career Development: Mock Interviews -** Cape Cod Room
1:30-3:00pm Grand I	**MCS President's Symposium: Bone Marrow Niche** *Clonal hematopoiesis: the emergent risk factor* Kenneth Walsh, University of Virginia *The role of the nitric oxide / soluble guanylyl cyclase pathway in erythropoiesis* Miriam Cortese-Krott, Heinrich Heine University *Endothelial cell responses to hyperlipidemia distinguish the bone marrow and splenic hematopoietic niches* Adil Rasheed, Augusta University	
3:00-3:45pm Grand I	**MCS Landis Award Lecture** *The Architecture of Resistance: Three Decades in Microcirculatory Research* Donald Welsh, Robarts Research Institute, University of Western Ontario	
4:00-5:30pm	**Emerging Topics in Microcirculation** Short talk: *Paracrine regulation of angiogenesis and coronary microvascular function by cardiac-specific isoform Friend of GATA 2 (FOG2S)* Marie Guerraty, University of Pennsylvania Short talk: *Investigating stimuli that elicit pericyte-capillary dissociation in skeletal muscle* Mark A Danesh, York University Short talk: *Calcium influx via Cx43 hemichannels directs eNOS internalization and endothelial hyperpermeability* Pia Burboa, Rutgers University Short talk: *Rapid activation of TRPV4 channels by aldosterone in mouse and human vascular smooth muscle cells* Fênix Araujo, University of Virginia	**Vascular Remodeling in the Uterus and Placenta** *The impact of the regulation of uteroplacental perfusion on fetal growth: novel animal models and human studies* Ramon Lorca, University of Colorado *Mechanisms of placental vascular growth* Mark Kahn, University of Pennsylvania

	Short talk: *Understanding the process and signaling of coronary collateral growth in adult heart by single-cell RNA sequencing* Jian Shi, NE Ohio Short talk: *Poor lysosome acidification blunts BKCa channel activity in the cerebral vasculature of male 5x-FAD mice* Paige E. Martin, University of Arizona	
5:30-7:00pm	Dinner on your own	
7:00-10:00pm	**Poster Sessions** – Ballroom Foyer and Osterville Room	

Day 4 – Wednesday, October 22

7:00-8:00	**Group Breakfast** – Bass River Room	
	Grand I	**Grand II**
8:00-10:00am	**Lymphatic Vascular Development** *Chemokine signaling as a guiding cue regulating lymphatic development* Xiaolei Liu, Temple University Short talk: *Adm and Ackr3 regulates cardiac lymphatic vessel formation during zebrafish heart development and regeneration* Xidi Feng, USC Short talk: *Erg deletion in lymphatic endothelium protects against bleomycin-induced lung fibrosis* Arun Narota, Boston University Short talk: *A novel role for second heart field progenitors in lymphovenous valve formation* Christina Vyzas, Rutgers University Short talk: *Metabolic mechanisms regulating lymphatic vascular development* Pengchun Yu, OMRF *Lymphatic valve and cell junction morphogenesis* Joshua Scallan, University of South Florida	**Innovations in Vascular Tissue Engineering** *Bioengineered perfused human brain microvasculature to model brain tumor and neurodegenerative diseases* Guohao Dai, Northeastern University Short talk: *Kidney organoid vascularization using inducible endothelial cells from human pluripotent stem cells* Yonglin Zhu, Boston Children's Hospital Short talk: *Hemodynamic cues promote hierarchical vascular remodeling and maturation in in vitro model of perfusable vascular organoids* Yu Jung Shin, Massachusetts Institute of Technology Short talk: *Organ-on-Chip model of the microcirculation in AAA recapitulates aspects of disease* Philipp Hauger, Amsterdam UMC Short talk: *Reconstructing native soluble cues to enhance endothelial cell maturation in bioengineered whole lung vascular model* Yifan Yuan, University of Maryland *Delineating the role of vasculature in beta cell development and cell therapies for type 1 diabetes* Yasaman Aghazadeh, University of Montreal
10:30am-12:30pm	**Health Disparities and the Microcirculation** *Fission/fusion modulators of age-related coronary microvascular function* Amanda Jo Leblanc, University of Louisville Short talk: *Endothelial-derived Neuregulin 1 modulates pericytes function in heart failure with preserved ejection fraction* Leah Rebecca Vanicek - Goethe University Frankfurt Short talk: *FoxO1 protects female endothelial cells from mitochondrial dysfunction, DNA damage and oxidative stress* Alexanda Pislaru - York University	**Metabolism and Vascular Dysfunction** *Immune metabolic reprogramming in vascular inflammation and salt-sensitive hypertension* Annet Kirabo, Vanderbilt University Short talk: *HIV Nef extracellular vesicles impair macrophage efferocytosis via epigenetic regulation of Btk-NFκB-MerTK to promote atherosclerosis* Sarvesh Chelvanambi, Brigham & Women's Hospital Short talk: *Resolvin D2 limits senescent cell accumulation in atherosclerotic plaques* Ignacia A Salfate del Rio, Albany Medical College Short talk: *Extracellular matrix-related genes, such as Cthrc1, are potential targets in pulmonary hypertension*

	Short talk: *Iron regulates endothelial NO signaling via endothelial a-globin* Luke S Dunaway, University of Virginia Short talk: *Matrix Gla protein expression in pericytes and myofibroblasts contributes to renal fibrosis* Kyoungmi Bak, McGill University *The role of pluripotency and innate immunity in sex differences in endothelial cells* Olga Cherepanova, Cleveland Clinic	Eunate Gallardo-Vara, Yale University Short talk: *Putrescine synthesis drives smooth muscle cell differentiation in a myocardin-dependent manner* Louise Frausto, LSU *Evolving landscape of atherosclerosis in the COVID-19 era* Chiara Giannarelli, New York University
12:30-2:00pm	**Group Lunch** – Bass River Room	**Publish or Perish? Disseminating Science in an Uncertain Age** – Cape Cod Room
2:00-3:00pm Grand Ballroom	**Keynote Lecture** New roles for endothelial cells and mechanical forces revealed using human organ chips Donald Ingber, Wyss Institute for Biologically Inspired Engineering at Harvard University	
3:00-4:00pm Grand Ballroom	**NAVBO – Award Lectures and Presentations** Presentation of the Stephen Schwartz Award Klaus Ley, Medical College of Georgia, Augusta University Presentation of the Florence Sabin Award Mahdi Garalnabi, University of Massachusetts Lowell Springer Award Presentation and Lecture: An epigenetic link between metabolism and smooth muscle cell differentiation Callie Kwartler, University of Texas Health Science Center at Houston	
5:00-7:00pm	Dinner on your own	
7:00-10:00pm	**Posters Sessions** – Ballroom Foyer and Osterville Room	

Day 5 – Thursday, October 23

7:00-8:00am	**Group Breakfast** – Bass River Room
8:00-8:15am Grand Ballroom	**Presentation of the Poster Awards**
8:15-9:30am Grand Ballroom	**Plenary Session: Genetics in Vascular Inflammation** *Gut microbiota-immune interactions modulating vascular inflammation in mice* Magali Noval Rivas, Cedars-Sinai Medical Center Short talk: *The tryptophan metabolite indoxyl sulfate promotes vascular dysfunction by impairing anti-atherogenic macrophage functions in chronic kidney disease* Prabhash Jha, Brigham & Women's Hospital Short talk: *TMEM16F regulates multiple aspects of the endothelial cell response to inflammation* Allison Gabbert, Beth Israel Deaconess Medical Center Short talk: *Interleukin-1 receptor-activated Kinase-1 in disturbed flow-induced vascular remodeling and atherosclerosis progression* Mabruka Alfaidi, University of Nebraska
10:00am-12:00pm Grand Ballroom	**Plenary Session: Genetic Drivers of Vascular Malformations** Short talk: *Signaling changes in LOH cells contribute to loss of vessel integrity in Hereditary Hemorrhagic Telangiectasia* Adella Guidroz, Tulane University Short talk: *Loss of TBX4 alters smooth muscle contractility and induces endothelial dysfunction in pulmonary arterial hypertension* Mauro Lago Docampo, Stanford University *Molecular mechanisms of pulmonary arteriovenous malformations in single ventricle congenital heart disease* Andrew Spearman, Medical College of Wisconsin Short talk: *MYC-induced hypertranscription contributes to brain arteriovenous malformation* Negar Khosraviani, University of Toronto Short talk: *MEK signaling represents a viable therapeutic vulnerability of KRAS-driven somatic brain arteriovenous malformations* Gabrielle Largoza, University of Virginia Short talk: *Endothelial Notch4 and Notch1 in retinal angiogenesis* Christie Kang, University of Illinois Short talk: *An endothelial SOX18-mevalonate pathway axis enables novel targeted therapies for vascular anomalies* Annegret Holm, Boston Children's Hospital
12:00-12:30pm	**Closing Remarks**