22nd International Vascular Biology Meeting
October 13-17, 2022 – Oakland Marriott City Center
Oakland, California, USA

PROGRAM

Thursday, October 13, 2022 – Opening Session (6:30 to 9:00pm)

The EMBO Keynote Lecture: Molecular anatomy of the vasculature
Christer Betsholtz, Ph.D.
Professor of Vascular and Tumor Biology, Uppsala University and Professor of Vascular Biology, Karolinska Institute

Inaugural Florence Sabin Award Presentation
Supported by Regeneron
Omolola Eniola-Adefeso, Ph.D.
Professor, Biomedical Engineering, Chemical Engineering and Macromolecular & Science Engineering
Associate Dean for Graduate & Professional Education, University of Michigan

Earl P. Benditt Award Lecture
Three Vignettes on Endothelial Plasticity, Vasculogenesis and Disruption
Joyce Bischoff, Harvard Medical School

Friday, October 14, 2022 – Concurrent Sessions (8:30-10:00am)

Stem Cells
Co-Chairs: Emma Gordon, University of Queensland and Naoki Mochizuki, National Cerebral and Cardiovascular Center Research Institute
Regulation of endothelial cell specialization
Karen Hirschi, University of Virginia
Adaptable and hemodynamic human endothelial cells for tissue-specific organogenesis
Shahin Rafii, Weill Cornell Medical College
Endoderm-derived endothelial cells constitute a stem cell niche in zebrafish
Hiroyuki Nakajima, National Cerebral and Cardiovascular Research Institute

Smooth Muscle Cells
Co-Chairs: Delphine Gomez, University of Pittsburgh and Yabing Chen, University of Alabama at Birmingham
Notch Signaling in Vascular Smooth Muscle Cells
Brenda Lilly, Nationwide Children's Hospital
Single-cell and spatially resolved transcriptome analysis reveals cellular heterogeneities and novel regulators of atherosclerotic plaque destabilization
Jessica Pauli, Molecular Vascular Medicine, Klinikum rechts der Isar TUM
Rescuing cerebral blood flow deficits in small vessel disease of the brain
Mark Nelson, University of Vermont
b-catenin C-terminal signaling induces sphingosine-1-phosphate receptor 1 expression to promote vascular remodeling
Gustavo Oliveira de Paula, Albert Einstein College of Medicine

Vascular Cell-Matrix Interactions
Co-sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Cecilia Giachelli, University of Washington and Hiromi Yanagisawa, University of Tsukuba
Novel mouse model of familial thoracic aortic dissection
Hiromi Yanagisawa, University of Tsukuba
The integrin inhibitor SHARPIN regulates endothelial permeability via balancing cell-cell and cell-matrix adhesion
Anne Pink, Translational Cancer Medicine program, University of Helsinki
Extracellular matrix dynamics modulate pericyte and endothelial cell organization during vascular development and dysfunction
John Chappell, Fralin Biomedical Research Institute at Virginia Tech Carilion
Structural and functional consequences of deficiency of the elastogenic proteins, fibulin-4 and fibulin-5, on resistance arteries
Carmen Halabi, Washington University School of Medicine in St. Louis

Vascular Malformations
Co-sponsored by European Vascular Biology Organization
Co-Chairs: Elisa Boscolo, Cincinnati Children's Hospital Medical Center and Taija Mäkinen, Uppsala University
Mechanisms of cerebral bleeding in the collagen IV disease
Anne Joutel, INSERM
Neuroinflammation plays a critical role in brain vascular malformations
Helios Gallego-Gutierrez, University of California, San Diego
From identification of somatic mutations to targeted therapies for vascular malformations
Miikka Vikkula, de Duve Institute, University of Louvain
The Secret Agent of Endothelial Cells - Fibroblasts in PI3K-driven Vascular Lesions
Johanna Laakkonen, A.I. Virtanen Institute for Molecular Sciences

Systems Approach to Target Discovery
Co-sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Scott Johnstone, Virginia Tech and Takashi Minami, Kumamoto University
Macrophage heterogeneity as a guide to precision medicine for vascular disease: a systems approach
Masanori Aikawa, Brigham and Women's Hospital, HMS
Systems approach to evaluate circulating extracellular vesicles containing HIV-Nef as a mechanism for promoting chronic inflammation in cardiac and hepatic monocytes/macrophages
Sarvesh Chelvanambi, Brigham & Women's Hospital
Genetic Regulation of Vascular Smooth Muscle Cell Function
Mete Civelek, University of Virginia
Endothelial cell metabolism in heart failure: a gene prioritisation system-level approach
Alessandra Pasut, KULeuven

Translational Approaches to Vascular Pathology and Regeneration
Sponsored by International Society for Applied Cardiovascular Biology
Co-Chairs: Masayuki Yoshida, Tokyo Medical and Dental University and Luke Brewster, Emory University
Visualizing angiogenesis and vascular permeability using microvessel model
Yukiko Matsunaga, The University of Tokyo
Mechanisms Driving Osteogenesis in Cardiovascular Systems
Cynthia St. Hilaire, University of Pittsburgh
Plasticity of Endothelial Phenotype on Controllable Stiffness Hydrogels
Ngan Huang, Stanford University
Cell-based vascular regeneration in diabetes
Sara Nunes de Vasconcelos, University of Toronto
Endoluminal Biopsy for Molecular Classification of Human Brain Arteriovenous Malformations
Ethan Winkler, University of California San Francisco

Friday, October 14, 2022 – Concurrent Sessions (10:30am to 12:00pm)

Vascular Aging
Co-sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Catherine Shanahan, King's College London and Tohru Minamino, Juntendo University Graduate School of Medicine
Vessel-tissue interactions during aging
Anjali Kusumbe, University of Oxford
RGS5 controls heart function by regulating pericyte biology
Anita Tamiato, Institute of Cardiovascular Regeneration, Goethe University Frankfurt
Targeting senescent cells for the treatment of cardiovascular disease
Tohru Minamino, Juntendo University

Vascular Heterogeneity
Sponsored by European Vascular Biology Organization
Co-Chairs: Mauro Siragusa, Goethe University and Mariona Graupera, Josep Carreras Leukaemia Research Institute
Vascular heterogeneity during organ growth and regeneration
Karina Yaniv, Weizmann Institute of Science
Human and murine single-cell RNA sequencing reveals fibroblast heterogeneity in healthy and diseased vasculature and differential regulation by ageing and serum cholesterol
Renée Tillie, Maastricht Univ Medical Center
Lymphatic endothelial heterogeneity in

Cell-Cell Interactions
Co-sponsored by Korean Society for Vascular Biology and Medicine
Co-Chairs: Brant Isakson, University of Virginia and Injune Kim, KAIST
Tie'ing Up Loose Ends in the Vasculature
Susan Quaggin, Northwestern University
Endothelial connexin 43 hemichannels promote Ca2+ influx and hyperpolarization in the regulation of arteriolar resistance
Mauricio Lillo, Rutgers University
Bioactive lipid regulation of vascular and innate immune systems
Tim Hla, Boston Children's Hospital
Normal-to-tumor vascular transition in the

The Role and Regulation of SOX9 in Ageing Vascular Smooth Muscle Cells Maria Faleeva, Kings College London	*development and disease* Taija Makinen, Uppsala University *Endothelial cell type-specific angiogenesis drives intra-organ vessel phenotypic heterogeneity in the brain* Ryota Matsuoka, Lerner Research Institute, Cleveland Clinic	*periphery of glioblastoma is dependent on VEGFR2 signaling* Injune Kim, Korea Advanced Institute of Science and Technology
Dyslipidemia as Cardiovascular Risk ***Co-sponsored by the International Atherosclerosis Society*** Co-Chairs: Alan Daugherty, University of Kentucky and Peter Libby, Brigham and Women's Hospital *Lipoprotein(a): Use of Stable Isotopes to Understand Protein Function* Gissette Reyes-Soffer, Columbia University *Transcriptomic analysis reveals that lipid loading of distinct intimal myeloid cell subpopulations precedes inflammation in early atherogenesis* Corey Scipione, University Health Network *Targeting Triglyceride-rich Lipoproteins to Modify Cardiovascular Risk* Peter Libby, Brigham & Women's Hospital, HMS *Pericentrin deficiency in smooth muscle cells leads to augmented phenotypic modulation and atherosclerosis* Suravi Majumder, The University of Texas Health Science Center at Houston	**Vascular-Immune Interface in Cancer** ***Co-sponsored by the American Society for Investigative Pathology*** Co-Chairs: Andrew Dudley, The University of Virginia and Kevin Claffey, University of Connecticut Health Center *Activated lymphatics modulate T cell plasticity in the tumor microenvironment* Melody A. Swartz, University of Chicago *Notch signaling in tumor endothelial cells programs cancer-associated fibroblasts to suppress anti-tumor T cell immunity* Yu Zhu, Stanford University *High endothelial venules generate tumor-attacking T cell niches* Gabriele Bergers, VIB Center for Cancer Biology and KU Leuven *Endothelial Rap1B mediates T-cell exclusion to promote tumor growth; a novel mechanism underlying vascular immunosuppression* Magdalena Chrzanowska, Blood Research Institute, Versiti	**Frontiers in Vascular Biology** ***Sponsored by Frontiers in Cardiovascular Medicine*** Co-chairs: Masanori Aikawa, Brigham and Women's Hospital and Delphine Gomez, University of Pittsburgh *High endothelial venules and the vascular control of immune cell traffic: Insights from the single cell revolution* Eugene C. Butcher, Stanford University School of Medicine *RNA biology in cardiovascular disease* Shizuka Uchida, Aalborg University *Bioactive surface coating to reduce the prevalence of prosthetic heart valve thrombosis* Cécile Oury, University of Liège
Friday, October 14, 2022 – Poster Sessions (12:00-2:00pm)		
Friday, October 14, 2022 – Keynote Lecture (2:00-3:00pm)		
Traveling the Path to Immune Tolerance Jeffrey Bluestone A.W. and Mary Margaret Clausen Distinguished Professor of Metabolism and Endocrinology Director, Hormone Research Institute in the Diabetes Center, University of California, San Francisco		
Friday, October 14, 2022 – Technical Workshops (3:10-3:40pm)		
3D Visualization of Vasculature Using Light Sheet Microscopy - *Sponsored by Miltenyi Biotec*	**Ultrasound and Photoacoustic Imaging Approaches to Vascular Research** - *Sponsored by FujiFilm Visual Sonics*	
Friday, October 14, 2022 – Concurrent Sessions (3:45-5:15pm or 4:00-5:30pm)		
Vascular Differentiation ***Co-sponsored by European Vascular Biology Organization*** Co-Chairs: Brian Black, University of California, San Francisco and Maarja Andaoussi-Mäe, Uppsala University *Making endothelial and epithelial tubes* Ondine Cleaver, UT Southwestern Medical Center *Differential Etv2 threshold requirement for endothelial and erythropoietic development* Tanvi Sinha, Cardiovascular Research Institute, University of California, San Francisco *Endothelial cell specification* Didier Stainier, Max Planck Institute for Heart & Lung Research *Hemodynamic Regulators of Vascular Development* Amber Stratman, Washington University	**Blood Brain Barrier** ***Co-sponsored by Societe Française d'Angiogenese*** Co-Chairs: Sarah Lutz, University of Illinois at Chicago and Anne-Clemence Vion, Institut du thorax - INSERM UMR1087 *Mechanisms of blood-brain barrier damage and pathological angiogenesis in neuroinflammation* Dritan Agalliu, Columbia University *Monoamine neurotransmitter metabolism at the blood-brain barrier regulates behavior* Roeben Munji, University of California San Diego *The Neuro-vascular interactions in the CNS* Chenghua Gu, Harvard Medical School *Caveolae mediate leakage and drug delivery at the blood-brain barrier* Patric Turowski, University College London	**Mechanotransduction** ***Co-sponsored by the American Society for Investigative Pathology*** Co-Chairs: Magdalena Chrzanowska, Blood Research Instititue, Versiti and Guillermo García-Cardeña, Harvard Medical School/BWH *Mechanotransduction, control of endothelial function and progression of atherosclerosis by small GTPase Rap1* Magdalena Chrzanowska *Alignment with flow induces an apical planar polarity to promote endothelial cell resilience via localized signaling domains* Julia Mack, University of California, Los Angeles/ Cardiology *Precision vascular nanomedicine targeting novel endothelial mechano-sensing mechanisms* Yun Fang, University of Chicago *Novel mechanical regulation of angiogenesis: intraluminal pressure restricts wound angiogenesis* Shinya Yuge, Nippon Medical School
Arterial Diseases ***Co-sponsored by International Society for Applied Cardiovascular Biology*** Co-Chairs: Linda Demer, UCLA School of Medicine and Derek Klarin, Stanford Medicine *New screening approaches to identify inhibitors for cardiovascular calcification* Elena Aikawa, Brigham and Women's Hospital, HMS *Interrogation of the Role of Androgens and Their Antagonists in the Pathogenesis and Treatment of Vascular Ehlers-Danlos Syndrome (VEDS)* Emily Juzwiak, Johns Hopkins University School of Medicine *ACTA2 pathogenic variants that predispose to childhood onset occlusive cerebrovascular disease uniquely disrupt a nuclear function of smooth muscle alpha-actin and lead to undifferentiated smooth muscle cells* Dianna Milewicz, UT Health Sciences Center at Houston *Elastin denudation underlies early aortic*	**Innovative Research on Key Molecule to Regulate Heart, Blood, and Vessel** ***Sponsored by The Korean Society of Cardiology*** - *October 14, 4:00-5:30 pm* Co-Chairs: Arndt Siekmann, University of Pennsylvania and Yin Tintut, University of California, Los Angeles *Discovery of surface marker for cardiac progenitors from human iPSCs: role of Latrophillin2* Hyun-Jai Cho, Seoul National University *Proteo-genomic identification of endothelial microproteins encoded by non-canonical small open reading frames* Mauro Siragusa, Institute for Vascular Signalling, Goethe University *Cross-road of hematopoiesis and angiogenesis: role of Kai1 (CD82)* Yoo-Wook Kwon, Seoul National University *Soluble signals to improve vascular integrity in the lung* Yifan Yuan, Yale University School of Medicine	**Revealing Vascular Biology through Omics Lenses** ***Sponsored by Chinese American Academy of Cardiology*** Co-Chairs: Liya Yin, Northeast Ohio Medical University and Pengchun Yu, Oklahoma Medical Research Foundation *Immunological signaling in inflammatory monocyte subsets in mice bearing metabolic syndrome* Hong Wang, Temple University *Integrating 5-D light-field imaging with deep learning to elucidate cardiovascular morphogenesis* Tzung Hsiai, University of California, Los Angeles *Endothelial cell derived-VEGF signaling licenses the transition of non-committed cells toward an endothelial cell fate* Hong Chen, Harvard Medical School/Boston Children's Hospital *PANDORA-seq unveils a hidden small non-coding RNA landscape associated with*

degeneration in Loeys-Dietz syndrome 3 Hao Yin, Western University		*atherosclerosis development in LDL receptor-deficient mice* Changcheng Zhou, University of California, Riverside *Epigenetic Control of Smooth Muscle Cell Phenotypic Alterations in Aortic Aneurysm and Dissection* Ying Shen, Baylor College of Medicine *The class III phosphatidylinositol 3-kinase PIK3C3 is a master regulator for smooth muscle cell identity* Jiliang Zhou, Augusta University
Saturday, October 15, 2022 – Concurrent Sessions (8:30-10:30am)		
Lymphangiogenesis ***Co-sponsored by Australian Vascular Biology Society*** Co-Chairs: Tsutomu Kume, Northwestern University School of Medicine and Connie Wong, Monash University *Dissecting the mechanisms by which lymphatic endothelial cell identity is transcriptionally programmed* Natasha Harvey, University of South Australia *VEGFR3 is required for button junction development in lymphatic capillaries* Melanie Jannaway, University of South Florida *The specification of the lymphatic vascular lineage and the role of Prox1 in zebrafish* Benjamin Hogan, Peter MacCallum Cancer Centre *Engineering Functional Biomaterials with Stem Cells for Therapeutic Lymphangiogenesis* Donny Hanjaya-Putra, University of Notre Dame	**AVMs and Somatic Vascular Malformations** Co-Chairs: Chris Hughes, University of California, Irvine and Angela Glading, University of Rochester *Deciphering Molecular Mechanisms of Arteriovenous Malformation* Rong Wang, University of California, San Francisco *Identifying Novel Therapeutic Vulnerabilities in Kras-Driven Sporadic Brain Arteriovenous Malformations* Carlos Flores Suarez, Baylor College of Medicine *Somatic Activating KRAS Mutations in Brain Arteriovenous Malformations* Jason Fish, University of Toronto *Localized Conditional Induction of Brain Arteriovenous Malformations in an HHT Mouse Model* Lea Scherschinski, Barrow Neurological Institute	**Translational Vascular Biology** ***Co-sponsored by Chinese American Academy of Cardiology*** Co-Chairs: Hong Chen, Harvard Medical School/Boston Children's Hospital and Jun Yu, Temple University Lewis Katz School of Medicine *Notch function in the tumor microenvironment* Jan Kitajewski, University of Illinois at Chicago *Rewiring tumor vasculature by endothelial reprogramming to improve immunotherapy* Yi Fan, University of Pennsylvania *Purinergic modulation of vascular L-type calcium channel Cav1.2* Madeline Nieves-Cintron, University of California, Davis *Exercise-augmented pulsatile shear stress modulates Stearoyl-CoA Desaturase (SCD1) mediated lipid metabolites for vascular protection* Susana Cavallero, University of California, Los Angeles
Ocular and CNS Vascular Disease Co-Chairs: Douglas Gould, University of California, San Francisco and Patric Turowski, University College London *Neutrophil arrest in brain capillaries causes cerebral blood flow deficits and contributes to memory impairment in Alzheimer's disease mouse model* Chris B. Schaffer, Cornell University *Targeting macrophage Slit-Robo signaling prevents ocular neovascularization* Luiz Henrique Geraldo, Yale University - Yale Cardiovascular Research Center (YCVRC) *Photoacoustic microscopy of cerebral hemodynamics and metabolism in ischemic brains* Song Hu, Washington University in St. Louis *Rapid substitution of pericyte subpopulations prevents diabetic retinopathy* Soo Jin Kim, AMIST, Asan Medical Center, University of Ulsan, College of Medicine	**Bioengineering** ***Co-sponsored by International Society for Applied Cardiovascular Biology*** Co-Chair: Juan Melero-Martin, Boston Children's Hospital and Tzung Hsiai, University of California, Los Angeles *Engineered Microvascular Niches for Evaluation of Pericyte Form and Function* Anjelica Gonzalez, Yale University *Generation of Vascular Malformations in a Novel HHT-on-a-Chip Microphysiological Model* Jennifer Fang, Tulane University *Forces and adhesions: New insights in regulating endothelial function* Christopher Chen, Boston University *Modeling intussusceptive angiogenesis in a vessel-on-a-chip* Sabrina Staples, Robarts Research Institute, Western University	**Myeloid Cells, Vasculature, and Cancer Progression** ***Sponsored by the American Society for Investigative Pathology*** Co-Chairs: Jatin Patel, The University of Queensland and Jan Kitajewski, University of Illinois Chicago *Tracking tumor cells through the vasculature: Who are the influencers of stemness, survival, and dormancy in the lung?* David Entenberg, Albert Einstein College of Medicine *Myocardial infarction increases metastatic outgrowth in the lung* Alexandra Newman, New York University *Pro-angiogenic neutrophil reprograming in the tumor niche promotes tumor vascularization and growth* Ronen Sumagin, Northwestern University *Spatial and Temporal Vascular Remodelling in Triple-Negative Breast Cancer Lung Metastases* Salwa Lin, University of Oxford
Saturday, October 15, 2022 – Concurrent Sessions (10:30am-12:00pm)		
Vascular Cell Differentiation and Plasticity Co-Chairs: Brant Weinstein, NICHD, NIH and Sarah Childs, University of Calgary *Do cells with different developmental trajectories remember their history?* Kristy Red-Horse, Stanford University *O-GlcNAcylation enhances transdifferentiation and vascular regeneration* Li Lai, Houston Methodist Research Institute *Novel Regulatory Functions of GPCRs in Vascular Growth and Development* Kathleen Caron, University of North Carolina, Chapel Hill *Role of Smad4 in coronary vascular growth* Sarah De Val, University of Oxford	**Strategies to Understand and Treat COVID-19** Co-Chairs: Daniel Greif, Yale University School of Medicine and Andrew Vaughn, University of Pennsylvania *Single-cell-based method to identify diagnostic and therapeutic targets in complex diseases with potential application to COVID-19* Alex Arenas, Universitat Rovira i Virgili *Multistep attenuation reveals broad fitness tradeoff for the SARS-CoV-2 Omicron variant* Taha Taha, University of California, San Francisco/Gladstone Institutes *Investigate COVID-19-associated vascular dysfunction by using novel mouse models* Siqi Gao, University of Pennsylvania *An engineered ACE2 decoy receptor can be administered by inhalation and targets omicron variants of SARS-CoV-2* Lianghui Zhang, University of Pittsburgh Medical Center *SARS-CoV-2-induced blood-brain barrier leakage, T cell infiltration, and neuropsychiatric dysfunction are worsened by age-related declines in cerebrovascular Wnt/beta-catenin* Sarah Lutz, University of Illinois at Chicago	**Vascular Cell-Blood Interaction** ***Co-sponsored by Australian Vascular Biology Society*** Co-Chairs: Stephan Huveneers, Amsterdam UMC and Claudine Bonder, University of South Australia and SA Pathology *Novel mechanisms for therapeutic angiogenesis* Napoleone Ferrara, University of California, San Diego *TMEM16 phospholipid scramblases regulate endothelial cell procoagulant activity and thrombosis* Alec Schmaier, Beth Israel Deaconess Medical Center *Pathogenic vascular signaling mechanisms* Mark Kahn, University of Pennsylvania *Why are HEV high? Role of the Ire1-Xbp1 pathway in the morphology and function of high endothelial venules* Yuhan Bi, Stanford University

Endothelial Organ Heterogeneity and Stem Cells
Co-sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Ulf Eriksson, Karolinska Institute and Yoshiaki Kubota, Keio University
Reconstructing Organotypic Vasculature from iPSCs to Study Pulmonary Vascular Disease
Mingxia Gu, Cincinnati Children's Hospital Medical Center
Mouse placenta fetal macrophages are tissue resident macrophages that do not arise from placenta endothelium
Xiaowen Chen, University of Pennsylvania
Development and senescence of resident vascular endothelial stem cells
Nobuyuki Takakura, Osaka University
Temporally-restricted patterns of endothelial cell collagen IV expression determined with a novel knockin Col4a1-GFP mouse line
Martijn van der Ent, University of Michigan

Atherosclerosis
Co-sponsored by the American Society for Investigative Pathology
Co-Chairs: Masuko Ushio-Fukai, Medical College of Georgia at Augusta University and David Gordon, Univ of Michigan Med School
The role of efferocytosis in atherosclerosis
Nick Leeper, Stanford University
Lgi3 Deficiency Ameliorated Atherogenesis via Attenuating Lesional DC Accumulation
Goo Taeg Oh, Department of Life Science, Ewha Womans University
Protein sulfhydration and endothelial cell function
Ingrid Fleming, Johann Wolfgang Goethe University
Selective delivery of nanoparticle encapsulated Nrf2 Activator, CDDO-Methyl, for the treatment of atherosclerosis
Sophie Maiocchi, University of North Carolina at Chapel Hill

Innovation of Gene Therapy Technology
Sponsored by AnGes
Co-Chairs: Masanori Aikawa, Brigham and Women's Hospital and Masayuki Yoshida, Tokyo Medical and Dental University
Healing Diabetic Foot Wounds: A Marriage of Team, Technology and Tenacity
David G. Armstrong, University of Southern California
Molecular Mechanisms of AAA Disease
Philip Tsao, Stanford University
Vaccine development based on gene therapy technology
Hironori Nakagami, Osaka University

Saturday, October 15 – Poster Sessions (12:00-2:00pm)

Saturday, October 15 – Award Lecture (2:00-2:45pm)

Judah M Folkman Award in Vascular Biology Lecture
RNA based mechanism guiding endothelial cell behaviors
Stefania Nicoli, Yale University

Saturday, October 15, 2022 – Technical Workshops (2:50-3:50pm)

Multimodality imaging – The key to answering critical biologic questions
Sponsored by PerkinElmer

Vasculature-on-Chip Applications for Drug Discovery Research
Sponsored by Nortis

Saturday, October 15, 2022 – Concurrent Sessions (3:45pm-5:15pm or 4:00-5:30pm)

Imaging and Computational Approaches
Co-Chairs: Song Hu, Washington University in St. Louis and Darci Fink, South Dakota State University
Unravelling vascular biology with multispectral single cell genetics
Rui Benedito, CNIC
Increased hemoglobin oxygenation detected by photoacoustic imaging suggests altered microvascular function in chronic ischemia
Santeri Tarvainen, Heart Center, Kuopio University Hospital
Imaging neurovasculature at high spatiotemporal resolution
Na Ji, University of California, Berkeley
A Novel Vasculature-Centric Method for Mapping In Vivo Blood Oxygen Saturation in Preclinical Applications
Yunke Ren, Dept of Biomedical Engineering, Johns Hopkins University

Neurovascular Crosstalk
Co-sponsored by European Vascular Biology Organization
Co-Chairs: Tom Arnold, University of California, San Francisco and Christer Betsholtz, Uppsala University
Unexpected vascular findings at the brain borders
Jonathan Kipnis, Washington University in St. Louis
Electro-Calcium signaling in the brain endothelium: A higher order mechanism to control cerebral blood flow
Amreen Mughal, University of Vermont
Crosstalk between blood vessels and neural cells in the central nervous system
Carmen Ruiz de Almodovar, University of Bonn
Inhibition of Notch signaling in endothelial cells preserves cognitive function in a model of familial Alzheimer's disease
Stephanie Villa-Niemczyk, University of Illinois at Chicago

Vascular Plasticity
Sponsored by the European Vascular Biology Organization
Co-sponsored by the British Microcirculation and Vascular Biology Society
Co-Chairs: Lars Maegdefessel, Technical University Munich and Andrew Benest, University of Nottingham
Vascular plasticity in the growing, aging and regenerating skeletal system
Ralf Adams, Max Planck Institute for Molecular Biomedicine
Mechanisms of vascular maturation and maintenance captured by longitudinal imaging of live mouse skin
Chen Yuan Kam, Yale University
Senescence and Vascular Smooth Muscle Cell Plasticity
Martin Bennett, University of Cambridge
A novel mouse model for Hereditary Hemorrhagic Telangiectasia (HHT) and pulmonary vascular abnormalities
Katharina Schimmel, Stanford University School of Medicine

New Therapeutics
Co-sponsored by British Microcirculation & Vascular Biology Society
Co-Chairs: Stephen Moss, UCL Institute of Ophthalmology and Marie Billaud, Brigham and Women's Hospital
DNA-based Gene Therapy
Ryuichi Morishita, Osaka University
Use of Oxygel for the ambient transportation of endothelial colony forming cells (ECFCs) for cell therapy applications
Kiran Mcloughlin, Queen's University Belfast
Mechanisms and molecules for stopping neuroinflammation and neuronal cell death
Michelle Arkin, University of California, San Francisco
Targeted CD39 as a therapy for ischaemic stroke and global hypoxic ischaemic brain injury
Maithili Sashindranath, Monash University

Innovative Research on Mechanism for Variant Angina or Diabetic Cardiomyopathy
Sponsored by The Korean Society of Cardiology
Co-Chairs: Hyo-Soo Kim, Seoul National University and Petra Korpisalo-Pirinen, Kuopio University Hospital
Molecular mechanism of vasospastic angina: blood monocytes, iPSCs, and VSMCs
Han-Mo Yang, Seoul National University
Altered Coronary Artery Function, Arteriogenesis and Endothelial YAP Signaling in Postnatal Hypertrophic Cardiomyopathy
Paulina Langa, University of Illinois at Chicago
Mechanism and therapeutic approach of diabetic cardiomyopathy
Sung Woo Cho, Inje University
The regulatory role of Sirtuin 6 in coronary microvascular dysfunction
Liya Yin, Northeast Ohio Medical University

Angiogenesis and Vascular Remodeling
Sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Tetsuro Watabe, Tokyo Medical and Dental University and Shigetomo Fukuhara, Nippon Medical School
Blood flow-driven intraluminal pressure mediates wound angiogenesis by regulating the TOCA family of F-BAR proteins
Shigetomo Fukuhara, Nippon Medical School
Vascular patterning in the skeletal system
Yoshiaki Kubota, Keio University
OPN5 light sensing regulates hyaloid vessels regression through Hippo-YAP signaling pathway
Masahide Sakabe, Cincinnati Children's Hospital Medical Center
Tumor endothelial cells induce metastasis by disrupting immune environment
Kyoko Hida, Hokkaido University
Roles of ANGPTL2 in physiology and pathophysiology
Yuichi Oike, Kumamoto University
Angiogenesis in ischemic muscle is dominated by low-flow intussusception, not sprouting, and launched by flow-seeking endothelial cells
J. Geoffrey Pickering, Western University

Sunday, October 16, 2022 – Concurrent Sessions (8:30-10:00am)

Epigenetic Regulation
Co-Chairs: Bin Zhou, Albert Einstein College of Medicine of Medicine and Morgan Salmon, University of Michigan
What chromatin remodelers can teach us about vascular development and integrity
Courtney Griffin, Oklahoma Medical Research Foundation
Distal regulatory elements control angiogenic and homeostatic endothelial state
Stephanie Gehrs, European Center for Angioscience, Heidelberg University
Physiologic and Pathologic Changes in Chromatin Remodeling in Vascular Cells
Marlene Rabinovitch, Stanford University
A novel epigenetic regulator of arterial specification and development in zebrafish
Miranda Marvel, NICHD/NIH

Organ Crosstalk
Co-sponsored by Korean Society for Vascular Biology and Medicine
Co-Chairs: Xiaolei Liu, Temple University and Goo Taeg Oh, Ewha Womans University
Understanding the links between vascular dysfunction and neurodegeneration
Luisa Iruela-Arispe, Northwestern University
Regulation of blood pressure by adipocyte identity
Mascha Koenen, Rockefeller University
Endothelial metabolism in the muscle microenvironment
Katrien de Bock, ETH Zürich, EVBO Lecturer
Advancing Knowledge on the Effects and Pathogenesis of Hereditary Hemorrhagic Telangiectasia in Pregnancy
Mary Wallingford, Tufts Medical Center

Stem Cells and Regenerative Medicine
Co-Chairs: Ying Zheng, University of Washington and Shibani Pati, University of California San Francisco
Advancing Cell and Gene Therapies in California and Beyond
Maziar Shah Mohammadi, California Institute for Regenerative Medicine
Stacking perfusable human microvascular networks for thick and dense vascularity and rapid integration into infarcted rat heart
Ariana Frey, University of Washington
Search for the script for generating human hematopoietic stem cells from hemogenic endothelium
Hanna Mikkola, University of California, Los Angeles
Hematopoietic stem and progenitor cell heterogeneity is inherited from the embryonic hemogenic endothelium
Joey Ghersi, Yale University

Tumor Biology
Co-sponsored by Societe Française d'Angiogenese
Co-Chairs: David Bates, University of Nottingham and Julie Gavard, Societe Française d'Angiogenese Nantes
Vascular control of aging and metastasis
Hellmut Augustin, Heidelberg University
Targeting the Cerebrovasculature to Combat Glioblastoma Multiforme
Joshua Wythe, Baylor College of Medicine
The tumor microenvironment and resistance to checkpoint blockade therapy in cancer
Rosemary Akhurst, University of California, San Francisco
Lung endothelium instructs dormancy of susceptible metastatic tumor cells
Moritz Jakab, German Cancer Research Center

Immune-Vascular Crosstalk in Non-Neoplastic Diseases
Co-sponsored by The Microcirculatory Society
Co-Chairs: Jerome Breslin, University of South Florida and Miguel Lopez-Ramirez, University of California, San Diego
Immune Checkpoints in Vasculitis
Cornelia Weyand, Stanford University
Prox1 haploinsufficiency promotes immunosuppression by enhancing anti-inflammatory macrophage polarization
Noelia Escobedo, Universidad Autonoma de Chile
Endothelial Immune cross talk
David Harrison, Vanderbilt University
Diminished Vasculogenesis under Inflammatory Conditions is Mediated by Activin A
Dmitry Traktuev, University of Florida

The Vasculature in Health and Disease
Sponsored by Australian Vascular Biology Society
Co-Chairs: Anne Karine Lagendijk, University of Queensland and Mathias Francois, The Centenary Institute, The University of Sydney
Deciphering the signalling cascades guiding vascular growth and integrity
Emma Gordon, University of Queensland
High salt diets contribute to atherosclerosis through a gut-bone axis
Andrew Murphy, Baker Heart and Diabetes Institute
Effect of stroke on pulmonary leukocytes and vasculature
Connie Wong, Monash University
Impact of the Gut Microbiome on Vascular Development
Sally Dreger, Quadram Institute Bioscience

Sunday, October 16, 2022 – Concurrent Sessions (10:30am-12:00pm)

Lymphatics
Co-sponsored by European Vascular Biology Organization
Co-Chairs: Sathish Srinivasan, OMRF and Hellmut Augustin, Heidelberg University and German Cancer Research Center
Lymphoangiocrine factors in organ repair
Guillermo Oliver, Northwestern University
Modular HA-Hydrogels to Generate Lymphatic Networks for Tissue Engineering Applications
Laura Alderfer, University of Notre Dame
Crosstalk of signaling pathways in lymphangiogenesis
Pipsa Saharinen, University of Helsinki
Impact of Lymphatic Injury on Contractility and Mitochondrial Bioenergetics of Lymphatic Vessels
Zhanna V. Nepiyushchikh, Georgia Institute of Technology

Cardiovascular Regenerative Medicine
Co-Chairs: Kayla Bayless, Texas A&M Health Science Center and Saulius Sumanas, University of South Florida
Stem Cells & Genomics for Precision Medicine
Joseph Wu, Stanford University
Intramyocardial application of CCL24, a novel macrophage-derived angiocrine factor, promotes cardiac repair following injury
Dahlia Perez, Weizmann Institute of Science
CAP1 is the pivotal molecule to bind Resistin or PCSK9, leading to inflammatory and metabolic diseases
Hyo-Soo Kim, Seoul National University
Dynamic endothelial plasticity spatiotemporally induces vascular aberrancy during cardiac repair
Yanqing Anna Gong, University of Pennsylvania

Signaling in Vascular Disease
Co-sponsored by The Microcirculatory Society
Co-Chairs: S. Paul Oh, Barrow Neurological Institute and Amanda LeBlanc, University of Louisville
Vascular Mineralocorticoid Receptors in Cardiovascular Disease
Iris Jaffe, Tufts University
Endothelial cell immunoproteasome expression contributes to neo-antigen presentation and immune activation in hypertension
Néstor de la Visitación, Vanderbilt University Medical Center
Vascular Diseases associated with the impairment of BMP signaling pathway
Akiko Hata, University of California, San Francisco
Human milk oligosaccharide attenuates angiotensin II-induced vascular smooth muscle dysfunction and vascular remodeling
Le Lam Thuy Nguyen, Chungnam National University

The Vasculature in Metabolic Disease
Co-sponsored by International Atherosclerosis Society
Co-Chairs: Massimo Santoro, University of Padua and Evgenia Gerasimovskaya, University of Colorado Denver
Current and Novel Therapies for Dyslipidemia and Prevention of Atherosclerosis
Raul Santos, University of Sao Paulo Medical School
Endothelial lipid droplets link metabolic syndrome to blood pressure elevation
Boa Kim, University of Pennsylvania
Vascular smooth muscle cAMP signaling in health and disease
Manuel Navedo, University of California, Davis
Obesogenic Diet Promotes Endothelial-to-Mesenchymal Transition in Adipose Tissue
Nicholas Chavkin, University of Virginia

Immune Vascular Crosstalk for Cancer Therapy
Supported by Eisai
Co-Chairs: Jan Kitajewski, University of Illinois Chicago and Eugene Butcher, Stanford University Medical Center
Tailoring vascular phenotype to promote anti-tumor immunity in glioma
Anna Dimberg, Uppsala University
Losartan prevents immunotherapy-associated edema and enhances survival in glioblastoma
Meenal Datta, University of Notre Dame
Effect of angiogenesis inhibitor on tumor immune microenvironment
Yu Kato, Eisai
Priming a vascular-selective cytokine response permits CD8+ T-cell entry into tumors
Andrew Dudley, University of Virginia

Leukocyte Transendothelial Migration
Sponsored by the American Society for Investigative Pathology
Co-Chairs: Bill Muller, Northwestern University Feinberg School of Medicine and Myron Cybulsky, University Health Network - TGHRI
Immune cell trafficking across brain barriers
Britta Engelhardt, University of Bern
The Role of Sphingosine-1-Phosphate (S1P) in the Reverse Transendothelial Migration (RTM) of Aortic Intimal Myeloid Cells (MCs)
Chanele Polenz, University of Toronto
How the endothelium allows leukocytes to cross: Secrets Revealed by high-end microscopy
Jaap van Buul, Sanquin Research and Landsteiner Laboratory
Mechanotransduction Across Endothelial PECAM Initiates Transmigration and Reveals a Ligand-Independent Role for VEGFR2 in Diapedesis
David Sullivan, Northwestern University

Sunday, October 16 – Poster Sessions (12:00-2:00pm)

Sunday, October 16, 2022- Award Lectures (2:00pm-2:45pm)

Springer Junior Investigator Award Lecture
Delphine Gomez, University of Pittsburgh

Stephen Schwartz Award for Outstanding Mentorship Presentation and Lecture
Supported by Barbara Schwartz and Family
Richard O. Hynes, Ph.D.
Daniel K. Ludwig Professor for Cancer Research, MIT
Intramural Faculty, Koch Institute
Investigator, Howard Hughes Medical Institute

Sunday, October 16, 2022 – Concurrent Sessions (3:45pm-5:30pm)

New -omics Approaches
Co-Chairs: Sophie Astrof, Rutgers University and Elizabeth Crouch, University of California, San Francisco
Multiomics Approaches for Systems Biology in Human Cardiovascular Disease
Manuel Mayr, King's College London
Peroxidase proximity biotinylation: a valuable tool in understanding the regulation of endothelial proteins and vascular function
Tom Mitchell, Centre for Microvascular Research, Queen Mary University of London
A multi-omics approach to dissect the multi-layer networks of cardiovascular disease: from metabolites to proteins
Sasha Singh, Brigham and Women's Hospital, HMS
Integrated single cell molecular analysis of pericytes reveals the cis-regulatory logic governing their identity
Feston Idrizi, University of Massachusetts Chan Medical School

Vascular Heterogeneity
Sponsored by European Vascular Biology Organization
Co-Chairs: Mauro Siragusa, Goethe University and Mariona Graupera, Josep Carreras Leukaemia Research Institute
Vascular heterogeneity during organ growth and regeneration
Karina Yaniv, Weizmann Institute of Science
Human and murine single-cell RNA sequencing reveals fibroblast heterogeneity in healthy and diseased vasculature and differential regulation by ageing and serum cholesterol
Renée Tillie, Maastricht University Medical Center
Lymphatic endothelial heterogeneity in development and disease
Taija Makinen, Uppsala University
Endothelial cell type-specific angiogenesis drives intra-organ vessel phenotypic heterogeneity in the brain
Ryota Matsuoka, Lerner Research Institute, Cleveland Clinic

Vasculature in the Inflammatory Response
Co-sponsored by the American Society for Investigative Pathology
Co-Chairs: Michael Conte, University of California, San Francisco and Julia Mack, University of California, Los Angeles
Mechanisms that govern the dissemination of inflammatory signals from the intestine
Gwen Randolph, Washington University in St. Louis
15-Lipoxygenase drives inflammation resolution and Treg trafficking in lymphedema
Barbara Garmy-Susini, INSERM Institute of Metabolic and Cardiovascular Diseases
Inflammation is a Double-Edged Sword. Anti-inflammatory Therapy Doesn't Have to Be
Bill Muller, Northwestern University
Regeneration of the Pulmonary Vascular Endothelium After Severe Viral Pneumonia
Andrew Vaughan, University of Pennsylvania

Lipoproteins in Vascular Disease
Co-sponsored by Chinese American Academy of Cardiology
Co-Chairs: Mabruka Alfaidi, LSU Health Sciences Center - Shreveport and Yun Fang, University of Chicago
HDL and Atherosclerosis: More than just cholesterol efflux
Edward A. Fisher, NYU Langone Health
Targeting Epsins by nanotherapy promotes cholesterol efflux and lipid metabolism to fortify atheroma regression
Kui Cui, Boston Children's Hospital/ Harvard Medical School
The remnant lipoprotein hypothesis of diabetes-accelerated cardiovascular disease
Karin E. Bornfeldt, University of Washington
Molecular Mechanisms Linking LIPA CAD GWAS Variants to Increased Myeloid Expression and Atherosclerosis
Hanrui Zhang, Columbia University Irving Medical Center

Impact of Microvascular Aging in Development and Progression of Cardiovascular Pathology
Sponsored by the Microcirculatory Society
Co-Chairs: Andreas Beyer, Medical College of Wisconsin and Miranda Good, Tufts University School of Medicine
Restoring coronary microvascular dilation to flow in old age – is NO necessary for a comeback
Amanda Joe LeBlanc, University of Louisville
In utero exposure of delta-9-tetrahydrocannabinol (THC) affects cardiovascular tissues in rhesus macaques
Hillary Le, Oregon Health & Science University
Energetics of mouse brain microvessels: Impact of age and sex
Prasad Katakam, Tulane University
Impairment of Vascular Mitochondrial Metabolism Accelerates Vascular Aging, Promotes Endothelial Dysfunction, Vascular Hypertrophy and Hypertension
Sergey Dikalov, Vanderbilt University Medical Center

Pathophysiology of Vascular Disease
Sponsored by the Japanese Vascular Biology and Medicine Organization
Co-Chairs: Yoshikazu Nakaoka, National Cerebral and Cardiovascular Center and Kyoko Hida, Hokkaido University Graduate School of Dental Medicine
Roles of TGF-β signals during formation and maintenance of vascular systems
Tetsuro Watabe, Tokyo Medical and Dental University
Down syndrome and its trisomy gene set protect organ-specific vascular diseases with non-linearity
Takashi Minami, Kumamoto University
Genome-wide analysis reveals epigenetic coordinated endogenous FOXO1 stimulates tissue-specific and Tip-marked gene expression in endothelium
Yuri Miyamura, Kumamoto University
The molecular pathogenesis of pulmonary arterial hypertension via degradation of inflammatory cytokine mRNAs
Yoshikazu Nakaoka, National Cerebral and Cardiovascular Center
Novel roles of neutrophils in atherosclerosis and vascular inflammation
Masayuki Yoshida, Tokyo Medical and Dental University
The novel "microbiome-oral-gut-brain axis" in the mechanism of stroke
Shuichi Tonomura, National Cerebral and Cardiovascular Center

Monday, October 17- Keynote Lecture (8:00am – 9:00am)

Neurovascular crosstalks in the aging heart
Stefanie Dimmeler, University of Frankfurt

General Session (9:00am-12:30pm)

Presentation of Trainee Travel Awards from Participating Societies and Organizations

ACS - Pharmacology and Translational Science
American Society for Investigative Pathology
British Microcirculation and Vascular Biology Society
Company of Biologists
Korean Society for Vascular Biology and Science
Japanese Vascular Biology and Medicine Organization
The Microcirculatory Society
North American Vascular Biology Organization
Societe Francaise d'Angiogenese

Presentation on the 2024 IVBM

New Signaling Mechanisms

Co-Chairs: Jaap van Buul, Sanquin Research and Landsteiner Laboratory and Ondine Cleaver, UT Southwestern Medical Center

Advancing a quantitative understanding of vasculature through VEGFR measurements
Princess Imoukhuede, University of Washington

The Lung Lymphatics in Health and Disease
Hasina Outtz-Reed, Weill Cornell Medical Center

Guidance of vascular barrier formation
Anne Eichmann, Yale University

Vascular rejuvenation for healthier aging
Eli Keshet, Hebrew University

The good and the bad of PIK3CA in endothelial cells
Mariona Graupera, Josep Carreras Leukaemia Research Institute

Closing Remarks