December 15, 2022

NAVBO North American Vascular Biology Organization

NewsBEAT

NAVBO's Program Committee

The Online Programming Committee of NAVBO organized and hosted virtual events that facilitated members to share their exciting scientific advances with the broader vascular biology community. These sessions seek to provide a platform for scientists of all genders, race, career stages, and geographical regions to share their cutting-edge science with a global audience. We strongly believe that NAVBO can leverage its online presence through these events to promote diverse scientific voices to build an inclusive scientific community.

The **InFocus Sessions** are geared towards providing promising early career scientists (NAVBO members) the opportunity to broadcast their discoveries. This series has featured online oral presentations from abstracts submitted to Vascular Biology 2021, Vasculata 2022 and IVBM 2022. In 2022, 16 events featuring oral presentations by 48 early career scientists were hosted. These events have been well attended with 2,076 registrants in total!

The Committee also hosts **Online Symposia** featuring invited oral presentations by leading scientists in the field of vascular biology. These sessions are free to attend for NAVBO members and was received as an excellent educational tool for our members to stay up to date with the latest advances in both science and technology. Seven symposia featured 21 well-established scientists with a total of 778 registrants.

The Online Programming Committee will continue to host InFocus Sessions (twice a month) and Online Symposia (once a month) in 2023 based on presentations from the IVBM 2022. This is another fantastic reason to submit abstracts and attend NAVBO conferences thanks to these great opportunities to present your research to a highly engaged community. These events are also free educational content included with your NAVBO membership. If you are interested in being a part of the Online Programming Committee, **please complete this form.**

Read more to find out about our most popular sessions . . .

Year-End Giving

Support NAVBO
Please consider NAVBO in your year-end giving. All funds will be used to support educational activities including our video series for high school students.

NAVBO is a 501(c) 3 charitable organization as designated by the IRS. If you live in the US, your donation to NAVBO is tax deductible.
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Lymphatic Forum 2023

EXPLORING THE LYMPHATIC CONTINUUM
LYMPHATIC FORUM 2023

The Banff Center - June 13-17, 2023

The Lymphatic Forum 2023 (LF2023) is the fifth iteration of this biennial event that brings together researchers from around the world to present and discuss studies of lymphatics in health and disease. This year's event will address the significant role and

In this issue...

Meetings/Events

NAVBO ONLINE

Webinars - 1st Thursday
InFocus Sessions - 2nd and 4th Thursdays
Journal Clubs - 3rd Thursdays
Special Sessions on Tuesdays
(check schedule)

Did you know?

You can connect with fellow NAVBO members through the Vascular Network Community

Respond to emails that you receive through the NAVBO Vascular Network or visit the site and post questions, comments and start conversations. The NAVBO Mentoring Program is within the Community site, **so visit today!**

functions of the lymphatic system in the various organs of the human body.

The program revolves around the general theme: The Lymphatic System in Health and Disease – Role of the lymphatics in organ-specific functions and dysfunctions and incorporates general sessions where the lymphatic system will be discussed across organs (Development, Function & Drainage, Cancer & Metastasis, Immunity & Infection) and concurrent sessions where the role of the lymphatics will be addressed in the context of specific organs or tissues (Skin, Lung & Airway, Heart & Vasculature, Liver & Kidney, GI Tract, Brain). Each session will include presentations by invited speakers and short presentations selected from abstracts. For more information and the full program, visit the web site: http://lymphaticforum.org

Register for the meeting here
Early bird deadline is April 10, 2023

Submit your abstract here
Deadline is March 15, 2023

Member News

Welcome to our New Members:
Yasaman Aghazadeh, University of Toronto
Jingyan Han, Boston University
Katherine Hekman, Atlanta VA
Sang-Ho Lee, Emory University
Shin-Jeong Lee, Yonsei University
Yunfan Lyu, University of Toronto
Zhanna Nepiyushchikh, Georgia Institute of Technology
Laena Pernomian, University of South Carolina
Paul Yu, Mass General Hospital and Harvard Medical School
Maksym Zarodniuk, University of Notre Dame

If you have news to share with your colleagues, send it to membership@navbo.org

Spotlight on Trainees

NPA plans workshop on public policy and advocacy
The National Postdoctoral Association offers SmartSkills, a monthly series of virtual courses for postdocs that are free to members of the NPA. Upcoming on December 13, 2022, is "Advocacy," a venue for trainees to learn to engage in improve the policy and legislative landscape surrounding the research community. Participants will become acquainted with advocacy tactics, effective communication, and the application of their scientific research know-how to advocacy activities. Attendees will also discover opportunities to participate in policy and advocacy initiatives during their postdoctoral training and potential paths to careers in government relations. The session will be led by FASEB's Yvette Seger, Director of Science Policy, and Jennifer Zeitzer, Director of the Office of Public Affairs.

Originally published in December 1 issue

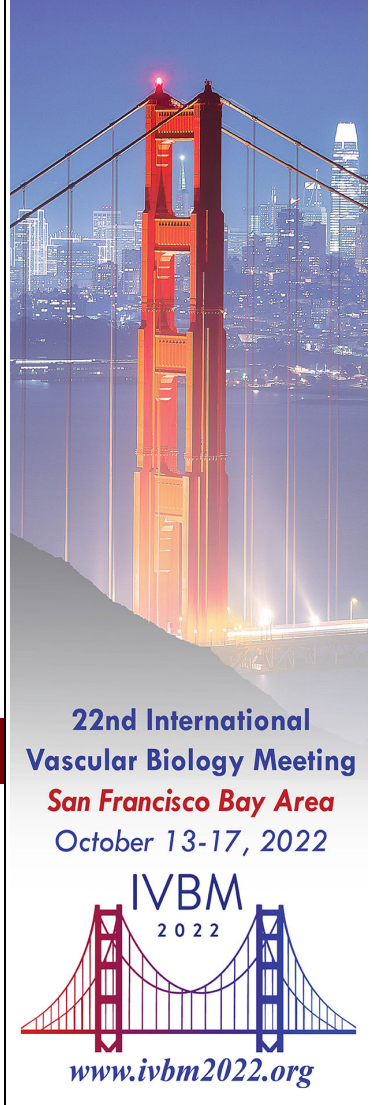
Recent Member Publications

Fibroblasts repair blood-brain barrier damage and hemorrhagic brain injury via TIMP2
Cell Reports
The function of fibroblasts in intracerebral hemorrhage (ICH) remains elusive. By targeting Col1α1, a fibroblast-specific marker, we generate mice with ablated Col1α1+ fibroblasts. These mutants show exacerbated blood-brain barrier (BBB) damage, enlarged injury volume, and worse neurological function, highlighting a beneficial role of Col1α1+ fibroblasts in ICH. Read more

Endothelial Rap1B mediates T-cell exclusion to promote tumor growth: a novel mechanism underlying vascular immunosuppression
Angiogenesis
Overcoming vascular immunosuppression: lack of endothelial cell (EC) responsiveness to inflammatory stimuli in the proangiogenic environment of tumors, is essential for successful cancer immunotherapy. The mechanisms through which Vascular Endothelial Growth Factor A(VEGF-A) modulates tumor EC response to exclude T-cells are not well understood. Read more

Characterization of the Expression of Angiogenic Factors in Cutaneous Squamous Cell Carcinoma of Domestic Cats
Veterinary Sciences
Cutaneous squamous cell carcinoma (CSCC) is a common malignant skin cancer with a significant impact on health, and it is important to determine the degree of reliance of CSCC on angiogenesis for growth and metastasis. Major regulators of angiogenesis are the vascular endothelial growth factor (VEGF) family and their associated receptors. Read more

Engineered models of the lymphatic vascular system: Past, present, and future
Microcirculation
The lymphatic vascular system is crucial for optimizing body fluid level, regulating immune function, and transporting lipid. Relative to the experimental models to investigate blood vasculature, there are significantly fewer tools to explore lymphatics. Read more



IVBM 2022 Supporters

We gratefully acknowledge the support of the following societies, academic centers and corporations.

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Single-Cell Transcriptomic Census of Endothelial Changes Induced by Matrix Stiffness and the Association with Atherosclerosis

Advanced Functional Materials

Vascular endothelial cell (EC) plasticity plays a critical role in the progression of atherosclerosis by giving rise to mesenchymal phenotypes in the plaque lesion. Despite the evidence for arterial stiffening as a major contributor to atherosclerosis, the complex interplay among atherogenic stimuli in vivo has hindered attempts to determine the effects of extracellular matrix (ECM) stiffness on endothelial-mesenchymal transition (EndMT). Read more

Mitochondrial dysfunction induces ALK5-SMAD2-mediated hypovascularization and arteriovenous malformations in mouse retinas

Nature Communications

Although mitochondrial activity is critical for angiogenesis, its mechanism is not entirely clear. Here we show that mice with endothelial deficiency of any one of the three nuclear genes encoding for mitochondrial proteins, transcriptional factor (TFAM), respiratory complex IV component (COX10), or redox protein thioredoxin 2 (TRX2), exhibit retarded retinal vessel growth and arteriovenous malformations (AVM). Read more

If you have a recent paper that you would like to share with NAVBO NewsBEAT subscribers, send the title and link to membership@navbo.org. *Please note, only papers authored by current NAVBO members are accepted for inclusion.*

Industry News

New book explores history of biotech's impact on rare diseases

Cold Spring Harbor Laboratory Press has published Inside the Orphan Drug Revolution: The Promise of Patient-Centered Biotechnology by biotech executive and consultant James Geraghty. The book focuses on the class of diseases, many genetic in origin, that each afflict only a small number of people. Development of therapies for these rare diseases is typically a lower priority for big pharma, owing to the small potential market and high cost of bringing drugs to market. Passage of the U.S. Orphan Drug Act in 1983, coupled with the emergence in the early 1980s of biotechnology companies like Genentech, Amgen, and Biogen, transformed the industry and made possible novel approaches to the treatment of overlooked diseases.

Microbiome Prize entries invited

Submission of entries for the NOSTER & Science Microbiome Prize is now open. This award recognizes innovative research by investigators who received their M.D., Ph.D, or M.D/Ph.D. in the last ten years and are working on the functional attributes of the microbiota. The research can include any organism that has potential to contribute to our understanding of human or veterinary health and disease, or to guide therapeutic interventions. The top prize includes a cash award and publication of the winning essay published in Science. Previous winning entries have included studies on the relationship between cardiovascular disease and infectious gastroenteritis. Deadline for entry is 24 January 2023.

Calibration of alternative methods in biomedical research

A working group associated with the NIH's Advisory Committee to the Director has shared progress on their assessment of alternative methods to advance biomedical research. The ACD is tasked with making recommendations to senior HHS officials concerning program development, resource allocation, NIH administrative regulation, and other specific or general aspects of NIH policy. The alternative methods project is examining advances in methodologies (in chemico, in silico, in vitro) that are complementary to, and not by intention replacements for, research using animal models. The group expects to present its final report with recommendations to the ACD by December 2023.

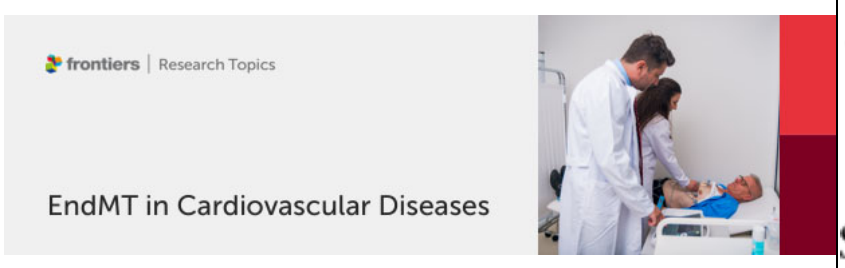
Originally published in December 1 issue

Call for Papers/Proposals

Are you using leading-edge techniques to profile endothelial cells at single-cell resolution? Consider submitting your work to a new JoVE collection guest-edited by NAVBO members, **Dr Zhen Bouman Chen** (2020 Springer Junior Investigator Award winner) and Dr. **Naseeb Malhi** at City of Hope! For more information or to submit an abstract, please email zhenchen@coh.org or ***follow this link.***

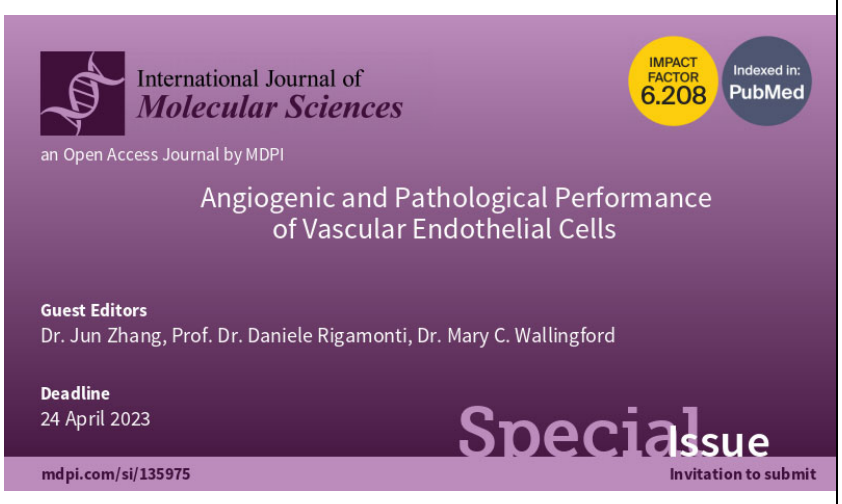
Novel Adipose Regulation of Vascular Physiology and Cardiovascular Disease hosted by Drs. Carolina Restini (Michigan State University), **Cameron G. McCarthy** (University of South Carolina School of Medicine) and Jessica L. Faulkner (Medical College of Georgia at Augusta University).

It is well established that adipose tissue has profound influence on organ function via paracrine and endocrine signaling. Specifically, adipose tissue is able to expresses and secrete various bioactive molecules (e.g. adipokines). However, depending on the type of fat (brown or white), the organ, and the embryological origin, adipose tissues may diverge in the production/secretion of specific metabolites and how they subsequently affect organ function. Therefore, how adipose tissue contributes to homeostatic vascular physiology and the pathogenesis of cardiovascular disease is far-reaching, as are possible therapeutic targets. In this issue, we aim to bring together a collection of state-of-the-art articles that illustrates this potential and contributes significantly to combating the prevalence and incidence of cardiovascular disease by targeting adipose tissue depots. **Submit your paper here**



"EndMT in Cardiovascular Diseases" hosted by Drs. Mabruka Alfaidi (LSU Health Shreveport, USA), J. Geoffrey Pickering (Western University London, Canada) and Paul Evans (University of Sheffield, UK).

Endothelial-to-mesenchymal transition (EndMT) is characterized by multiple morphological and physiological changes, including loss of endothelial cell polarity, disruption of intercellular junctions, migration, altered extracellular matrix secretion, and increased proliferation. EndMT is a fundamental process during early development, however, it has been identified in a multitude of cardiovascular disease processes such as progressive atherosclerotic plaques, valvular heart disease, myocardial infarction, pulmonary hypertension, and cardiac fibrosis and remodeling in heart failure. EndMT entails a spectrum of cell phenotypic changes in which endothelial cells (ECs) downregulate their adhesion junction molecules (e.g. CD31, VECAD) and upregulate contractile and invasive markers (e.g. SMA, nCAD, CNN1). During development and in the process of transition, ECs delaminate from an organized cell layer and invade the underlying tissue. However, there is less understanding of these processes in the post-development stages, especially during the pathogenesis of cardiovascular diseases. **Submit your paper here**
Manuscript Submission Deadline: January 4, 2023



Special Issue **"Angiogenic and Pathological Performance of Vascular Endothelial Cells"** *co-edited by our NAVBO members, Dr. Jun Zhang (TTUHSC) and Dr. Mary C. Wallingford (Tufts).* Soliciting contributions from experts from NAVBO community in the vascular endothelial cell (EC) research field. This issue will focus on the angiogenic and pathological performance of vascular/microvascular ECs, covering activation, proliferation, migration, invasion, tube formation, the clonal expansion of ECs and cell junctions, maintenance and the malformations of vasculatures and the blood–brain barrier (BBB). Papers will be

CHINESE AMERICAN ACADEMY OF CARDIOLOGY 北美中华心脏学会 CAAC

INTERNATIONAL SOCIETY FOR Applied Cardiovascular Biology ISACB

mcs

Guests

BMVBS British Microcirculation & Vascular Biology Society

Société Française d'Angiogenèse

IAS

KVBM Korean Society for Vascular Biology and Medicine

Academic

Summa Cum Laude

BWH

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CARDIOVASCULAR MEDICINE

UIC UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

Magna Cum Laude

Northwestern Medicine Feinberg School of Medicine

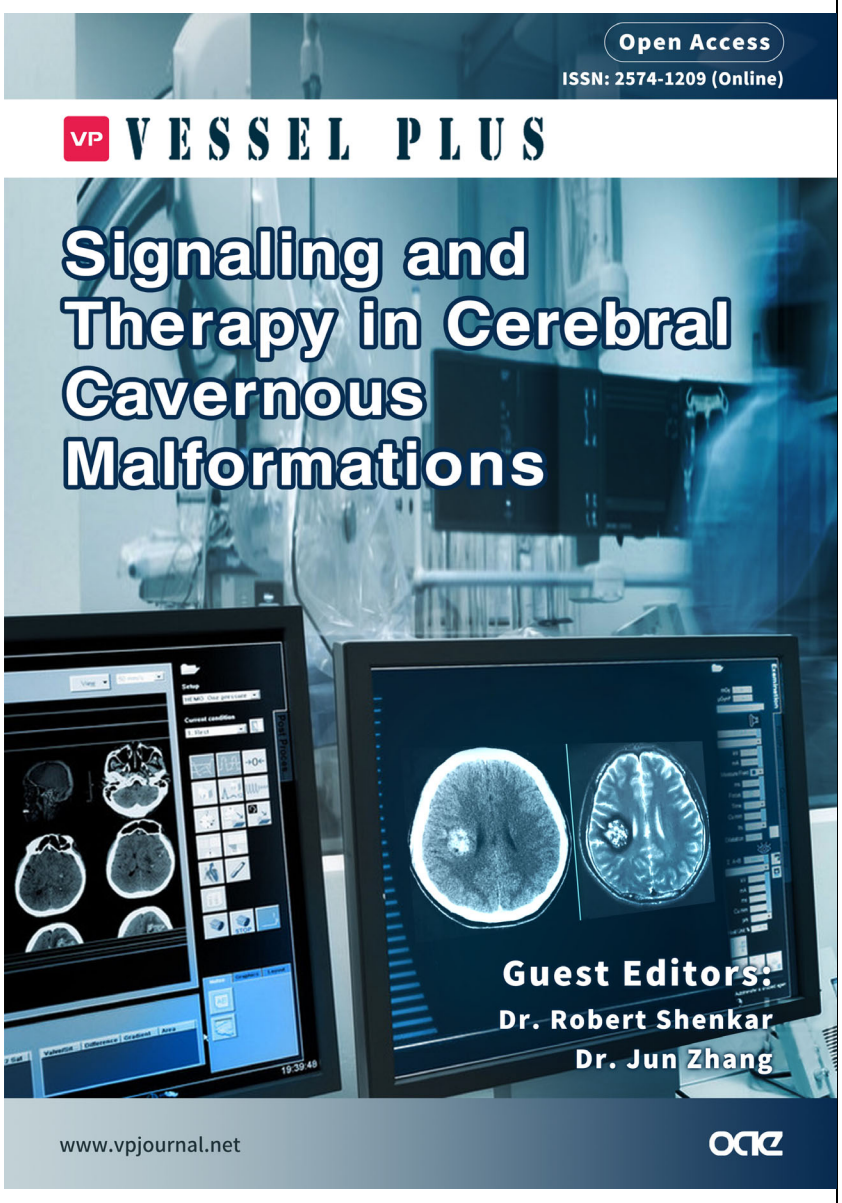
OMRF Oklahoma Medical Research Foundation

Cum Laude

Cardiovascular Research Institute

UCSF

published in IJMS (International Journal of Molecular Sciences, impact factor, 6.208) are welcome in order to include results at both the cellular and molecular level. **For detailed Manuscript Submission Information,** please go to website



Special issue title: **Signaling and Therapy in Cerebral Cavernous Malformations**
Introduction: Cerebral cavernous malformations (CCMs) are ectatic capillary-venous malformations that develop in approximately 0.5% of the population. These malformations, which can vary in size from 2 millimeters to several centimeters in diameter, may be hereditary but most often occur on their own. As opposed to other kinds of hemangiomas, CCM vessels, which have the appearance of a small mulberry, develop and create problems in the brain or spinal cord. Patients with CCMs may develop headaches, focal neurologic deficits, seizures, and hemorrhages. In this special issue, we aim to report latest advances of CCMs.
Submit your paper here
Submission Deadline: March 31, 2023

Barrier Formation and Homeostasis in the Vertebrate Brain
In this Special Edition, the guest editors, including **Ramani Ramchandran, Medical College of Wisconsin**, invite you to submit articles that study the various barriers associated with child and adult brains, such as the blood–brain barrier, blood–retinal barrier, blood–lymph barrier and the blood–cerebrospinal fluid barrier. Studies focused on cell–cell interactions and the mechanisms underlying barrier formation or disruption are welcome. Approaches utilizing 3D microfluidic-based primary cell culture model systems, organoids, induced pluripotent stem cells, zebrafish, rodent model systems and human brain tissue are welcome. Computational modelling studies that mimic and provide novel hypotheses in barrier formation will also be considered. In general, we are interested in a multi-faceted
innovative approach to barrier formation in vertebrates, and its role in disease. Endothelial barrier formation in tissues outside the brain will also be considered on a case-by-case basis.
Original articles, reviews, hypotheses, and perspectives are welcome. Studies must be focused on basic science using in vitro, in vivo, and pre-clinical models. Manuscripts with exclusive clinical studies will not be considered.
https://www.mdpi.com/si/151961
Deadline for manuscript submission is June 15, 2023.

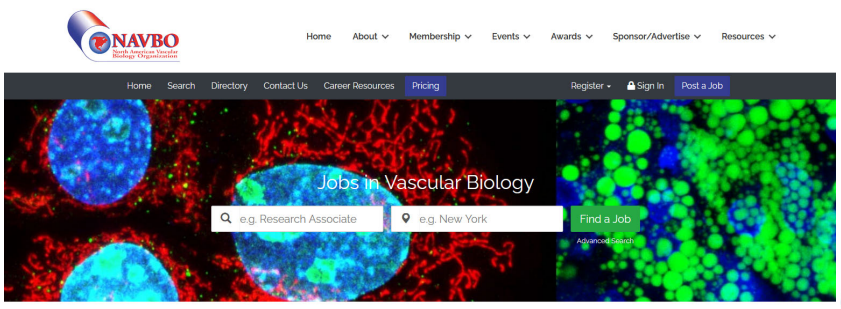
Calendar of Events

January 7 - 8, 2023	First Regional EVSS Conference
January 15 - 20, 2023	Vascular Complexity, Heterogeneity, and Metabolism in Health and Disease
Jan. 31 - Feb. 3, 2023	VAC 2023
February 2023	FASB Short Course - Center for Complex Biological Systems
August 6 - 11, 2023	Gordon Research Conferences 2023 in Biomechanics on Vascular Biology and Disease

Visit the NAVBO Calendar of Events for more meetings

Job Postings

Job Title	Company	Location
Postdoctoral Fellow Position	Johns Hopkins University School of Medicine	Baltimore, MD
Postdoc - Yale University - Vascular or Lung Biology	Yale University School of Medicine	New Haven, CT
Postdoctoral Fellow at Weill Cornell Medicine	Weill Cornell Medical College	New York, NY
Postdoctoral Opportunities	Harvard Medical School	Boston, MA
Assistant/Associate/Full - Internal Medicine-Cardiovascular Medicine	Yale School of Medicine	New Haven, CT
Postdoctoral Research Associate	The University of Illinois at Chicago	Chicago, IL
Post-doctoral fellow	Emory University	Atlanta, GA



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