

# Vasculata 2022 - Environmental Determinants of Vascular Health & Disease

Great Hall, Trent Semans Center for Health Education, Duke University, Durham NC  
July 18-21, 2022

**Organizers:** **Patty J Lee, M.D., Duke University**  
**Francis Miller M.D., Wake Forest**  
**Edward Bahnson Ph.D., UNC**

## Meeting Itinerary

### Monday, July 18, 2022 – Day 1

**7:30 AM** **Continental Breakfast and Registration**

**8:30AM** **Welcome**

Patty J Lee, M.D, Duke University

**8:40 AM** **Keynote: Victoria L Bautch, Ph.D, UNC – *Blood Vessels and Disease: BMP Signaling***

**9:30 AM – 11:00 AM** **Session 1 – Genetic and Epigenetic Modifiers in Diverse Vascular Niches**

**MODERATOR(S): Francis Miller, MD, Wake Forest**

9:30 AM Purushothama Tata, Ph.D, Duke University - *Distal lung stem cells and regeneration*

10:00 AM Xuchen Zhang, MD, Ph.D, Yale - *Non-cirrhotic portal hypertension: an underrecognized entity and new concept*

10:30 AM Christopher Mack, Ph.D, UNC - *Transcriptional regulation of SMC phenotype in vascular development and disease*

**11:00 AM BREAK**

**11:30 AM – 12:30 PM** **Session 2 – Vascular Remodeling and Hypertension**

**MODERATOR(S): Daniel Greif, MD, Yale**

11:30 AM Sudarshan Rajagopal, MD, Ph.D, Duke University - *The Vasculature in Pulmonary Arterial Hypertension*

12:00 PM Joan Taylor, Ph.D, UNC - *RhoA signaling in the development of hypertension and vascular stiffness*

12:30 PM Ke Yuan, PhD FAHA, Boston Children's Hospital & Harvard Medical School - *The vascular modeling in the lung*

**1:00 PM – 2:30 PM** **LUNCH** (provided) **Presentation: Diversity, Equity and Inclusion – Trent Semans Great Hall** - Matthew Moreira Bahnson, Ph.D and Edward Bahnson, Ph.D

**2:30 PM – 3:00 PM** **Transfer to workshops**

**3:00 PM – 5:30 PM** **Workshops 1, 2, 3 or 4**

Workshop 1: Mass Spectrometry – Matt Foster, Ph.D, Duke University: TSCHE 4030 Conference Room 4A

Workshop 2: Light Sheet Microscopy – Miltenyi Biotec: TSCHE 4067 Classroom 4

Workshop 3: Spatial Transcriptomics – Simon Gregory, PhD, Duke University: Trent Semans Great Hall

Workshop 4: Applying 3D-Engineered Vasculature-on-Chip Models in Drug Discovery Research – Nortis: TSCHE 3025 Classroom 3

5:30 PM

**Wrap-up Day 1 (approximate)**

## Tuesday, July 19, 2022 – Day 2

7:30 AM

**Continental Breakfast and Registration**

8:30 AM – 10:30 AM

**Session 3 – Vascular Biology and Signaling**

**MODERATOR(S): Daniel Greif, MD, Yale**

8:30 AM Francis Miller, MD, Wake Forest - *NADPH Oxidases and Vascular Disease*

9:00 AM Tim McMahon, MD, Ph.D, Duke University - *Respiratory vasoregulation by RBC-derived mediators in health and disease*

9:30 AM Edward Bahnson, Ph.D, UNC - *Nrf2 activators to combat arterial disease*

10:00 AM Matthew L Edin, Ph.D, NIEHS - *Cytochrome P450-Derived Eicosanoids, a Double-Edged Sword in Vascular Biology*

**10:30 AM BREAK**

11:00 AM – 12:30 PM

**Session 4 – Vascular Homeostasis and Angiogenesis**

**MODERATOR(S): Edward Bahnson, Ph.D, UNC**

11:00 AM Chris Kontos, MD, Duke University - *Mechanisms Regulating Vascular Homeostasis*

11:30 AM Daniel Greif, MD, Yale - *Smooth muscle cell pathobiology in cardiovascular disease*

12:00 PM – 1:30 PM

**LUNCH**

1:30 PM – 2:00 PM

**Transfer to workshops**

2:00 PM – 4:30 PM

**Workshops 1, 2, 3 or 4**

Workshop 1: Mass Spectrometry – Matt Foster, Ph.D, Duke University: TSCHE 4030 Conference Room 4A

Workshop 2: Light Sheet Microscopy – Miltenyi Biotec: TSCHE 4067 Classroom 4

Workshop 3: Spatial Transcriptomics – Simon Gregory, PhD, Duke University: Trent Semans Great Hall

Workshop 4: Applying 3D-Engineered Vasculature-on-Chip Models in Drug Discovery Research – Nortis: TSCHE 3025 Classroom 3

4:30 PM

**BREAK**

5:00 PM – 6:30 PM

**Poster Session A – Trent Semans Atrium**

6:30 PM

**Wrap up Day 2 (approximate)**

## Wednesday, July 20, 2022 – Day 3

7:30 AM

**Continental Breakfast and Registration**

**8:30 AM – 10:00 AM Session 5 – Data Science and Informatics**
**MODERATOR(S): A.Ian Wong, MD, Ph.D, Duke University/Patty Lee, MD, Duke University**

 8:30 AM Matt Foster, Ph.D, Duke University - *Secretomics to interrogate mechanisms of cellular signaling*

 9:00 AM Bastiaan Driehuys, Ph.D, Duke University - *Xenon MRI of lung vasculature*

 9:30 AM Ed Manning, MD, Ph.D, Yale – *Functional Genomics Approach to Investigating Proximal Pulmonary Arterial Remodeling*
**10:00 AM BREAK**
**10:15 AM – 11:45 AM Session 6 – Crosstalk Between Vessels, Immune Cells, & Tissues**
**MODERATOR(S): Edward Moreira Bahnson, Ph.D, UNC**

 10:15 AM Patty J Lee, MD, Duke University - *Intersections between Endothelial Innate Immunity & Senescence*

 10:45 AM Suzanne N Martos, Ph.D, NIEHS - *Epigenetic modifications and scRNA-seq of immune cells link smoking to atherosclerosis and immunosenescence*

 11:15 AM Jacqueline Cole, Ph.D, NCSU - *Interactions between Bone and Microvasculature Following Ischemic Stroke*
**11:45 AM – 1:15 PM Workshop 5 – Grant Writing Workshop (All) – Michael Gunn, M.D, Duke University – Trent Seaman Great Hall**
**1:15 PM – 2:15 PM LUNCH**
**2:15 PM – 3:15 PM Session 7 – Emerging Microbes and Environmental Stressors**
**MODERATOR(S): Francis Miller, MD, Wake Forest**

 2:15 PM Jennifer Ingram, Ph.D, Duke University - *Chronic allergen exposure models of pulmonary hypertension and vascular remodeling*

 2:45 PM Robert Tighe, MD, Duke University - *Environmental-host inflammatory responses in immune and vascular cells*

 3:15 PM – 4:30 PM **Poster Session B - Trent Semans Atrium**

 4:30 PM – 6:30 PM **Explore Downtown Durham/Free Time**

 6:30 PM **Dinner – Tobacco Road Restaurant**
**Thursday, July 21, 2022 – Day 4**
**7:30 AM Continental Breakfast and Registration**
**8:30 - 9:00 Keynote – Sonia A. Rapaport, M.D. *Mold, Mycotoxins, and Health***
**9:00 AM – 10:30 AM Talks from selected abstracts**

 9:00 AM Lindsay Bischoff, Cincinnati Children's - *Hospital Medical Center Hyperactive GNAQ mutation in endothelial cells drive aberrant vascular morphology and signaling*

 9:15 AM Katie Anne Fopiano, Medical College of Georgia at Augusta University - *The role of CD44 variants in coronary vascular rarefaction and the development of left ventricular diastolic dysfunction in HFpEF*

- 9:30 AM Mascha Koenen, Rockefeller University - *The role of adipose tissue identity in blood pressure regulation*
- 9:45 AM Boa Kim, University of Pennsylvania - *Endothelial lipid droplets link metabolic syndrome to blood pressure elevation*
- 10:00 AM Meng Ling Wu, Oklahoma Medical Research Foundation - *The endothelial chromatin remodeling enzymes BRG1 and CHD4 transcriptionally regulate extracellular matrix production to promote lung development*
- 10:15 AM Donghyun Jeong, University of Notre Dame - *Podoplanin regulates angiogenesis and lymphangiogenesis through physical recognition*

**10:30 AM BREAK**

**10:45 AM Concluding Remarks –** Patty J Lee, M.D, Duke University

**11:00 AM End – Have a safe trip home**