## 2019 GROVER CONFERENCE ON THE PULMONARY CIRCULATION
“The Pulmonary Vasculature in Development, Injury and Repair”

### COURSE SCHEDULE

#### Wednesday, September 4, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:00 pm</td>
<td>Arrivals</td>
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<tr>
<td>6:00 pm</td>
<td>Welcome Reception and Dinner</td>
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<tr>
<td>7:15 pm</td>
<td>Welcome and Introduction</td>
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<tr>
<td></td>
<td>David N. Cornfield, MD, Co-Chair, Organizer, Stanford University</td>
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<td></td>
<td>Steven H. Abman, MD, Co-Chair, Organizer, University of Colorado</td>
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<tr>
<td>7:30 pm</td>
<td>Ethical and Policy Implications for Genome Editing in Human Biology</td>
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<td>Jeffrey Kahn, PhD, MPH, Johns Hopkins University</td>
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#### Thursday, September 5, 2019

**Session I: Pulmonary Vascular Development, Passenger or Driver?**

**Moderator: Steven Abman, M.D.**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 am</td>
<td>Breakfast</td>
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<tr>
<td>7:45 am</td>
<td>The Placenta – Lung Interface</td>
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<td>Karen Mestan, MD, Northwestern University</td>
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<tr>
<td>8:15 am</td>
<td>The Placental-Pulmonary Connection: Nature’s Original Respiratory Circuit</td>
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<td>Elizabeth Taglauer, MD, PhD, Harvard University</td>
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<td>8:45 am</td>
<td>Genetic Mechanism of Pediatric Pulmonary Vascular Disease</td>
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<td>Xin Sun, PhD, University of California San Diego</td>
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<td>9:15 am</td>
<td>Break (15 min)</td>
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<tr>
<td>9:30 am</td>
<td>Robyn Barst Lecture: Genetics of Pulmonary Vascular Disease in Children</td>
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<td>Wendy K. Chung, MD, PhD, Columbia University</td>
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**Session II: Pulmonary Vascular Disease Across the Lifespan – “Canaries in a Coal mine?”**

**Moderator: Brad Maron, M.D.**

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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:15 am</td>
<td>Late pulmonary vascular disease in children after preterm birth</td>
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<td>Phil Levy, MD, Boston Children’s Hospital</td>
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<td>10:45 am</td>
<td>Pulmonary Vascular and Right Ventricular Dysfunction in Adults Born Preterm</td>
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<td>Marlowe Eldridge, MD, University of Wisconsin-Madison</td>
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<td>11:15 pm</td>
<td>Jack Reeves Lecture: Adult Cardiac and Systemic Vascular Health After Preterm Birth</td>
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<td>Adam Lewandowski, PhD, Oxford University</td>
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<tr>
<td>12:00 pm</td>
<td>Lunch and Afternoon Break</td>
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Session III: Basic Mechanisms of Lung Vascular Development, Injury and Repair: Human and Mouse
Moderator: Usha Raj, M.D.

3:15 pm  **Lung Map: Insights into lung vascular development and repair**  
Jeffrey A. Whitsett, MD, Cincinnati Children’s Hospital

3:45 pm  **Epithelial-mesenchymal interactions during lung vascular development**  
Jarod Zepp, PhD, University of Pennsylvania

4:15 pm  **Pulmonary endothelial heterogeneity during postnatal lung growth at single cell resolution**  
Cristina Alvira, MD, Stanford University

4:45pm  *Break (10 min)*

4:55 pm  **Guidance of vascular barrier formation**  
Anne Eichmann, PhD, Yale University

5:25 pm  **Role of miRNAs during Lung Vascular Development and Injury**  
Vineet Bhandari, MD, Drexel University

6:00 pm  *Dinner*

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Friday, September 6, 2019

Session IV: Systemic Disease and Lung Vascular Injury
Moderator: David Cornfield, MD

7:00 am  *Breakfast*

7:45 am  **The Terry Wagner Lecture: Angiogenesis Revisited: Role and (Therapeutic) Implications of Endothelial Metabolism**  
Peter F. Carmeliet MD, PhD, University of Leuven, VIB, Belgium

8:30 am  **Notch3-marked subpopulation in the artery wall is the cell of origin for occlusive vascular lesions in a novel model of pulmonary hypertension**  
Maya Kumar, PhD, Stanford University

9:00 am  *Break (15 min)*

9:15 am  **At the border of normal and PH: Focusing on disease inception**  
Brad A. Maron, MD, Harvard University

9:45 am  **Mechanisms and new therapies for pulmonary hypertension in the setting of heart failure with preserved ejection fraction (PH-HFpEF)**  
Mark T. Gladwin, MD, University of Pittsburgh

10:15 am  **Mechanisms and Prognostic Impact of RV Dysfunction in Systemic Sclerosis-PAH**  
Paul Hassoun, MD, Johns Hopkins University

10:45 am  *Break (15 min)*

11:00 pm  **How airway hypoxia can provide a window of understanding for lung transplantation**  
Mark Nicolls, MD, Stanford University

11:30 am  **Apelin system methylation in high-altitude pulmonary edema**  
M.A. Qadar Pasha, PhD, Delhi, India

12:00 pm  *Lunch and Afternoon Break*
Session V: Novel Therapeutic Strategies for Pulmonary Vascular Disease
Moderator: Cristina Alvira, MD

3:30 pm Mesenchymal stromal cells and lung repair mechanisms
   Bernard Thebaud, MD, PhD, Ottawa Hospital Research Institute, Canada

4:00 pm Immunomodulatory effects of MSC Exosomes in lung development and disease
   Stella Kourembanas, MD, Harvard University

4:30 pm Endothelium-Derived Extracellular Vesicles, MicroRNAs and Pulmonary Hypertension
   Usha Raj, MD, University of Illinois Chicago

5:00 pm Break (10 min)

5:10 pm Tissue engineering in the lung: go or no go?
   Laura E. Niklason, MD, PhD, Yale University

5:40 pm Abstract Presentation:
   In Vivo Generation of Lung Tissue from Embryonic Stem Cells using Blastocyst Complementation
   Bingqiang Wen, PhD, Cincinnati Children's Hospital Medical Center

6:00 pm Dinner

7:30 pm The Estelle Grover Lecture: Hypoxia Inducible Factors in the developing lung circulation and its response to injury and repair
   Larissa Shimoda, PhD, MS, Johns Hopkins University

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Saturday, September 7, 2019

Session VI: Metabolic Adaptations of the Lung Circulation to Hypoxia
Moderator: Larissa Shimoda, MD

7:00 am Breakfast

8:00 am Hypoxia and the lung circulation: An Overview
   Jason X. J. Yuan, MD, PhD, University of California San Diego

8:30 am Metabolic and Epigenetic Control of Inflammatory Gene Expression in Pulmonary Hypertension
   Kurt Stenmark, MD, University of Colorado

9:00 am Hypoxic microenvironments and angiogenesis: Lessons from oncology
   Erinn Rankin, PhD, Stanford University

9:30 am Break (15min)

9:45 am The impact of hypoxia on inflammation, infection and immunity
   Cormac T. Taylor, PhD, University College Dublin, Ireland

10:15 am Abstract Presentation:
   Evaluation of iPSC-derived Hemangioblasts in Regeneration of Pulmonary Endothelium
   Ifeolu Akinnola, BA, University of Minnesota

10:35 am Abstract Presentation:
   Fatty acid synthesis in neonatal hypoxia-induced heart disease
   Ethan David Cohen, PhD, University of Rochester

10:55 am Abstract Presentation:
Single-Cell Transcriptomes Identify Abnormal Endothelial Subpopulation in Pulmonary Arterial Hypertension
Zhiyu Dai, PhD, University of Arizona

12:00 pm Lunch and afternoon break

Session VIII: Novel Concepts in Vascular Disease Pathogenesis:
Moderator: Eric Schmidt, MD

3:30 pm Bronchial-pulmonary vascular communication during development and in disease
Csaba Galambos, MD, PhD, University of Colorado

4:00 pm Transient receptor potential vanilloid 4 channel in permeability edema
Wolfgang Liedtke, MD, PhD, Duke University

4:30 pm Break (15 min)

4:45 pm Targetable Cellular Signaling Events in the Pathogenesis of Vascular Connective Tissue Disorders
Harry (Hal) C. Dietz, MD, PhD, Johns Hopkins University

5:20 pm Infectious Proteinopathy: From an endothelial innate immune surveillance to a transmissible cytotoxicity
Troy Stevens, PhD, University of South Alabama

6:00 pm Dinner

7:00 – 9 pm Evening Poster Session: Chaired by Mark Gladwin and Troy Stevens

Sunday, September 8, 2019

Session IX: Repair and Regeneration: Strategies and Diagnostics
Moderator: Bernard Thebaud, MD

7:00 am Breakfast

8:00 am Molecular determinants of lung vascular zonation for fibrosis-free regeneration
Shahin Raffi, MD, Cornell University

8:30 am Towards understanding vascular regeneration
Luisa Iruela-Arispe, MSc, PhD, University of California Los Angeles

9:00 am Break (15 min)

9:15 am Defining the transcriptional and epigenetic basis of endothelial cell heterogeneity
Joshua Wythe, PhD, Baylor College of Medicine

9:45 am Epigenetics and the pulmonary vasculature, a therapeutic target?
William T. Gerthoffer, PhD, Mobile, AL

10:15 am Closing Remarks