### 2015 GROVER CONFERENCE on Pulmonary Circulation in the “omics” era: New Insights into Pathogenesis

#### COURSE SCHEDULE

**Wednesday, September 9, 2015**

- **12:00pm** - Arrivals
- **6:00 pm** - Welcome Reception and Dinner
- **7:00 pm** - State of the Art: Translational Research in Pulmonary Vascular Disease: Challenge and Opportunity  
  Marc Humbert, MD PhD. Paris, France (INSERM)

**Thursday, September 10, 2015**

**Session I: Systems Biology, Bioinformatics Integration, and the Process of Pulling it all Together for Cardiopulmonary Diseases**

- **Moderator: Nicholas Morrell, MD**

  - **7:00-8:00 am** Breakfast
  - **8:05 am** Welcome and Introduction
  - **8:15 am** Role of miRNAs in the Pathogenesis of PAH  
    Sebastien Bonnet, PhD, MSc, Quebec, Canada (Laval University)
  - **8:50 am** Integration of Gene Networks to Identify Novel Genes Related to Lung Function  
    Hakon Hakonarson, M.D., Ph.D. Philadelphia, PH (Children’s Hospital of Philadelphia)
  - **9:25 am** Short Talk: Abstract Award Recipient  
    (TBD)
  - **9:45 am** Break (10 min)
  - **9:55 am** Effects of Estrogen and Sex on Gene Expression in PAH  
    Margaret MacLean, PhD. Glasgow, Scotland, UK (University of Glasgow)
  - **10:30 am** Phenotypes Matter too: Bioinformatic Strategies to Study (Pediatric) Pulmonary Vascular Diseases  
    Steven Abman, M.D. Aurora, CO (University of Colorado)
  - **11:05 pm** Proteomic Profiling of Pediatric Pulmonary Hypertension  
    Allen Everett, M.D. (Hopkins)
  - **12:00 pm** Lunch

**Session II: The Identification of Rare Variants in Novel Genes that Associate with PAH**

- **Moderator: C. Gregory Elliott, MD, University of Utah**

  - **3:00 pm** Beyond BMPR2 I: KCNK3, CAV1 and the Use of New Approaches to Provide Alternative Insights into the Pathogenesis of PAH  
    Wendy K. Chung, MD, PhD. New York, NY (Columbia University)
  - **3:35 pm** Splicing and Expression of Wild Type BMPR2 Associates with PAH in BMPR2 Mutation Carriers  
    Rizwan Hamid, MD, PhD. Nashville, TN (Vanderbilt University)
  - **4:10 pm** Rare Variant Discovery in PCH  
    Hunter Best, PhD. Salt Lake City, UT (ARUP)
4:45 pm  Short Talk: Abstract Award Recipient
        (TBD)

5:05 pm  Rare Variant Discovery in PVOD
        Florent Soubrier, Ph.D. Paris, France (INSERM)

6:00 pm  Dinner

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<tr>
<td>Session III: The identification of Common Variations in Novel and Known Genes that Associate with PAH</td>
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<td>Moderator: Wendy K. Chung, MD</td>
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7:00-8:00 am Breakfast

8:05 am  High Throughput Genomic Screening as a Tool to Evaluate Developmental Pathways Relevant to Pulmonary Vascular Health and Disease
        Edward Morrisey, Ph.D., Philadelphia, PA (University of Pennsylvania)

8:40 am  Transcriptional High-Throughput Luciferase Reporter Assay Screening and the Discovery of FK506 as a Modifier of BMP Signaling
        Edda Spiekerkoetter, MD. Palo Alto, CA (Stanford University)

9:15 am  Derivation of Cord Blood Angiogenic Progenitor Cells for the Study and Potential Therapy of Rare Lung Disorders
        Christopher D. Baker, MD. Aurora, Colorado (University of Colorado)

9:50 am  Break (10 min)

10:00 am Novel Highthroughput Approaches in PAH Research
        Nicholas W. Morrell, MD, Cambridge, UK (University of Cambridge)

10:35 am Sample Acquisition and Genotyping: National Biological Sample and Data Repository
        William C. Nichols, PhD, Cincinnati, OH (Cincinnati Children's Hospital Medical Center)

11:10 am Trainee Roundtable with the Experts

12:00 pm Lunch

| Session IV: High throughput Approaches |
| Moderator: Eric D. Austin, MD MSc |

3:00 pm  Novel Gene Associations with Disease Susceptibility and Severity in Scleroderma Associated PAH
        Rachel L. Damico, MD. Baltimore, MD (Johns Hopkins University)

3:35 pm Genome-Wide Association Analysis Identifies a Susceptibility Locus for Pulmonary Arterial Hypertension.
        Florent Soubrier, Ph.D. Paris, France (INSERM)

4:10 pm Translating Genetic Variant Research into Clinical Trials: Anastrozole for PAH Therapy.
        Steven M. Kawut, MD, MS. Philadelphia, PA (University of Pennsylvania)

4:45 pm  Short Talk: Abstract Award Recipient
        (TBD)

6:00 pm  Dinner

8:00 pm  After Dinner Talk: Estelle Grover Lecture
        The Mitochondria in Pulmonary Vascular Disease
### Saturday, September 12, 2015

#### Session V: Epigenetic Mechanisms of Pulmonary Vascular Disease  
**Moderator: D. Hunter Best, PhD**

- **7:00-8:00 am**  
  Breakfast

- **8:05 am**  
  The integration of microRNAs into a Network Bioinformatics Approach.  
  Stephen Y. Chan, MD PhD. Boston, MA (Brigham and Women’s Hospital)

- **8:40 am**  
  Epigenetic Reprogramming and a Pathologic Phenotype of Lung Fibroblasts  
  Kurt Stenmark, MD, Aurora, CO (University of Colorado)

- **9:15 am**  
  Wnt Signalling Irregularities and PAH  
  Vinicio De Jesus Perez, MD, Palo Alto, CA (Stanford University)

- **9:50 am**  
  Genomic and Functional Consequences of Chronic Hypoxia  
  Larissa Shimoda, Ph.D. Baltimore, MD (Johns Hopkins University)

- **10:25 am**  
  Break (10mins)

- **10:35 am**  
  Novel Metrics to Endotype the PH patient  
  Raed A. Dweik, MD, Cleveland, OH (Cleveland Clinic)

- **11:10 am**  
  Jack Reeves Lecture  
  Key Cellular and Molecular Programs Regulating Lung Vascular Development  
  Marlene Rabinovitch, MD. Palo Alto, CA (Stanford University)

- **12:00 pm**  
  Lunch

#### Session VI: Pulmonary vascular and ventricular dysfunction in the susceptible subject  
**Moderator: Kenneth Weir, MD**

- **3:00 pm**  
  Terry Wagner Lecture  
  Profiling Genetic and Epigenetic Changes in the Lungs of Patients with Pulmonary Vascular Disease  
  Micheala A. Aldred Ph.D. Cleveland, OH (Cleveland Clinic)

- **3:35 pm**  
  Variations in Aldosterone synthesis and activity in hypoxia  
  Bradley Maron, M.D. (BWH)

- **4:10 pm**  
  Right Ventricular Lipotoxicity in the Maladaptation to Stress in Heritable PAH  
  Anna R. Hemnes, MD. Nashville, TN (Vanderbilt University)

- **4:45 pm**  
  Short Talk: Abstract Award Recipient  
  (TBD)

- **6:00 pm**  
  Dinner

- **7:00 pm**  
  Poster Session (evening): Chaired by S.Bonnet, S. Kawut and K. Stenmark
7:00-8:00 am Breakfast

8:05 am Novel Clinical Trial Design in PH: room for “-omics”?  
   John J. Ryan, MD, MRCP, Salt Lake City, UT (University of Utah)

8:40 am Neonatal hyperoxic lung injury may promote a more adaptive RV phenotype later in life 
   Kara N. Goss, MD. Madison, WI (University of Wisconsin)

9:15 am Novel Insights into Pulmonary Vascular Disease in the Child with Premature-Associated Lung Disease 
   Peter Mourani, MD. Aurora, CO (University of Colorado)

9:50 am Break (10 min)

10:00 am Gene Transfer of SERCA2a to the Pulmonary Vasculature and Right Ventricle.  
   Jane A. Leopold, MD. Boston, MA (Brigham and Women's Hospital)

10:35 am A Role for Directed miRNA Antagonism for the Prevention and Treatment of BMPR2 Associated PAH 
   James West, Ph.D. Nashville, TN (Vanderbilt University)

11:10 am Novel Molecular and Phenotypic Signatures of Pulmonary Vascular Disease in Sickle Cell Lung Disease 
   Roberto F. Machado, MD. Chicago, IL. (University of Illinois at Chicago)

11:45 am Closing summary (10 min)

12:00 Lunch

The conference will adjourn after lunch.