



2023 GROVER CONFERENCE on Precision Medicine for Pulmonary Vascular Disease: The Future is Now

COURSE SCHEDULE

Monday, October 16, 2023

- 12:00 pm Arrivals**
- 6:00 pm Welcome Reception and Dinner**
- 7:00 pm Beyond Genotype and Phenotype: Has Omics Changed Pulmonary Medicine?**
Naftali Kaminski, MD, ATSF, Yale School of Medicine

Tuesday, October 17, 2023

Session I: Clinical Phenotypes Of Pulmonary Vascular Disorders - What We Know And What We Don't Know

**Moderators: Katherine R. Clapham, MD University of Utah
Olga Rafikova, MD, PhD, Indiana University**

7:00-8:00 am Breakfast

- 8:05 am Welcome and Introduction**
Anna Hemnes, MD, ATSF, Vanderbilt University
Vinicio de Jesus Perez, MD, ATSF, Stanford University
Prof. Martin R. Wilkins, Imperial College of London
- 8:15 am Pulmonary Arterial Hypertension: One disease, Different Phenotypes**
Bradley Maron, MD, BWH
- 8:45 am The Continuum of Vascular Remodeling in Heart Failure**
Marc Simon, MD, MS, UCSF
- 9:15 am Comorbidity-Driven Taxonomy of Pediatric Pulmonary Hypertension**
Rachel K. Hopper, MD, Stanford University
- 9:45 am Break (10 min)**
- 9:55 am Pulmonary Embolism And CTEPH: One Disease with Different Phenotypes?**
Gustavo A. Heresi, MD, MSci, Cleveland Clinic
- 10:25 am ALI, ARDS, and Bronchopulmonary Dysplasia: A Spectrum Of Phenotypes**
Rebecca F. Hough, MD, PhD, Columbia University
- 10:55 am John T. Reeves Memorial Lecture: Pulmonary Vascular Disorders Related to Scleroderma And Connective Tissue Diseases: is Autoimmunity the Only Phenotype?**
Paul M. Hassoun, MD, Johns Hopkins
- 11:25 am Open Discussion**
- 12:00 pm Lunch**

Session II: Genetics of Pulmonary Vascular Disorders: From Family Studies to Population Studies

**Moderators: Sasha Z. Prisco, MD, PhD, University of Minnesota
Jair A. Tenorio, MSc, PhD, Institute of Medical and Molecular Geneticist**

- 3:00 pm** **Diagnosis and Management of Genetic Diseases in the Era of Next Generation Sequencing**
Jair Antonio Tenorio, MSc, PhD, Institute of Medical and Molecular Geneticist
- 3:30 pm** **Overview of Genetics of PAH**
Carrie Welch, PhD, Columbia University
- 4:00 pm** **Next Steps for the UK Cohort Study**
Allan Lawrie, PhD, Imperial College London
- 4:30 pm** **Unlocking the Potential-Novel Insights in Smooth Muscle Cells and Fibroblasts Heterogeneity**
Grazyna Kwapiszewska-Marsh, DrMed, Ludwig Boltzmann Institute for Lung Vascular Research
- 5:00 pm** **Open Discussion**
- 5:15 pm** **Abstract Presentation:
ATP Citrate Lyase (ACLY): a Promising Target Against Vascular Remodeling Development**
Yann Grobs, MSc, Laval University | ULAVAL, Department of Medicine
- 5:30 pm** **Abstract Presentation:
Hypusine Signaling: A Novel Pathway Driving Vascular Remodeling in Pulmonary Arterial Hypertension**
Sarah-Eve Lemay, MSc, Laval University | ULAVAL, Department of Medicine
- 6:00 pm** **Dinner**
- 8:00 pm** **Career Development Session: How to Obtain your First Job in Academia or Industry**
Julie A. Bastarache, MD, Vanderbilt University
Olga Rafikova, MD, PhD, Indiana University

Wednesday, October 18, 2023

Session III: Biomarker Discovery and Cell Therapy for Pulmonary Vascular Disorders in the Era of Precision Medicine

**Moderators: James R. Klinger, MD, ATSF, Rhode Island Hospital
William M. Oldham, MD, PhD, Harvard University**

7:00-8:00 am Breakfast

- 8:05 am** **Epigenetics, Metabolomics And Proteomics As Tools For Precision Medicine In Pulmonary Vascular Medicine**
Stefan Gräf, University of Cambridge Medicine
- 8:35 am** **Using Platform Omic Technologies to Probe Blood in Pulmonary Vascular Disease**
Christopher J. Rhodes, PhD, Imperial College London

- 9:05 am** **Proteomics and Machine Learning for Discovery of Biomarkers in Pulmonary Vascular Disorders**
Andrew J. Sweatt, MD, Stanford University
- 9:35 am** **Exosomes and Microparticles: Biomarkers, Therapeutic Vectors or Both?**
Natalie N. Bauer, PhD, University of South Alabama
- 10:05 am** **Break (10 min)**
- 10:15 am** **Single Cell ‘Omics, Circulating Cells And Genetic Engineering To Accelerate Biomarker Discovery And Cell Therapy**
Duncan J. Stewart, MD, Ottawa Hospital Research Institute
- 10:45 am** **Novel Sub-populations of Lung Capillary Endothelial Cells and Their Functional Significance**
Ruslan Rafikov, PhD, University of Arizona
- 11:05 am** **Robyn J. Barst Memorial Lecture: Bronchopulmonary Dysplasia and ALI/ARDS In Pediatrics: New Biomarkers and Role of Cell Therapy**
Kara N. Goss, MD, University of Texas Southwestern Medicine
- 11:35 am** **Abstract Presentation: Association Of Right Ventricular Diastolic Stiffness and RV Ejection Fraction with Mortality In Patients With Pulmonary Hypertension**
Rebecca R. Vanderpool, PhD, Ohio State University
- 12:00 pm** **Lunch**

Session IV: From Precision Biology to Clinical Trials: Examples for how Basic Research Accelerates Clinical Trials in Pulmonary Vascular Diseases
Moderators: Ke Yuan, PhD, Boston Children’s Hospital
Corey E. Ventetuolo, MD, MS, Brown

- 3:00 pm** **Sotatercept for Treatment of PAH: The PULSAR and STELLAR Data (15’)**
David B. Badesch, MD, University of Colorado
- 3:40 pm** **Biological Role of Tyrosine Kinase receptors in PAH (15’)**
Bradley Maron, MD, BWH
Positioning Imatinib for PAH (PIPAH study) (15’)
Prof. Martin R. Wilkins, Imperial College London
- 4:20 pm** **Rituximab for Scleroderma-PAH Targeting B Cells in PAH**
Mark R. Nicolls, MD, Stanford
Clinical trial of Rituximab in PAH (15’)
Roham Zamanian, MD, FCCP, Stanford University
- 5:00 pm** **Targeting Bromodomain proteins with Apabetalone**
Bromodomain Protein Biology and rationale for therapy (15’)
Sebastien Bonnet, PhD, MSc, Inst of Cardiology & Pulmonary of Quebec
- 6:00 pm** **Dinner**
- 8:00 pm** **After Dinner Talk: Estelle B. Grover Memorial Lecture**
The “Interactome” and the Repurposing of Medicines for cardiopulmonary Diseases: Big Data in Precision Medicine
Stephen Y. Chan, MD, PhD, University of Pittsburgh

Thursday, October 19, 2023

Session V: The Right Ventricle: A Phenotype of its Own
Moderators: Rebecca R. Vanderpool, PhD, Ohio State
Roberto Bernando, MD, MS, OU College of Medicine

7:00-8:00 am Breakfast

- 8:05 am Deep-Phenotyping the Heart**
Kurt Prins, MD, PhD, University of Minnesota
- 8:35 am Genomic And Proteomic Studies in the RV: Therapeutic Possibilities**
Tim Lahm, MD, ATSF, University of Colorado
- 9:05 am Metabolomics of The RV: What We have Learned and What We Need to Know**
Jane Leopold, MD, BWH
- 9:35 am The Transition from Acute to Chronic PE – Insights from Single Cell RNA Sequencing**
Sudarshan Rajagopal, MD, PhD, Duke
- 10:05 am Break (10 min)**
- 10:15 am Cardiac Imaging, Radiometrics and their Role in Precision Medicine**
Harm Bogaard, MD, PhD, Amsterdam UMC
- 10:45 am Intravascular Hidden Threats: Reshaping the Pulmonary Vasculature and the Right Ventricle**
Suellen D'Arc Dos Santos Oliveira, PhD, MSci, University of Illinois at Chicago
- 11:15 am Cluster Analysis to Define Right Heart Failure Phenotypes in Pulmonary Vascular Diseases**
Rebecca R. Vanderpool, PhD, Ohio State University
- 11:45 am Abstract Presentation:
Pathogenic Role for RUNX1 in Pulmonary Arterial Hypertension**
James R. Klinger, MD, ATSF, Rhode Island Hospital
- 12:00 pm Lunch**

Session VI: Understanding epigenetics and their role in Precision Medicine: A New Frontier?
Moderators: Tatiana Kudryashova, PhD, UC Davis
Grazyna Kwapiszewska - Marsh, DrMed, ILH of JLU

- 3:00 pm Terry Wagner Memorial Lecture: Epigenetics for Gene Discovery and Phenotyping of Pulmonary Vascular Disorders**
Kurt R. Stenmark, MD, University of Colorado Denver
- 3:30 pm HIF and Epigenetics in the Pathogenesis of PAH**
Zhiyu Dai, University of Arizona

- 4:00 pm** **Beyond the Coding Regions: Microrna, Lncrna and Control of Non-Coding RNA Expression And Function**
Ke Yuan, PhD, Harvard University
- 4:30 pm** **Epigenetics and COVID in PVD**
Harry Karmouty-Quintana, PhD, McGovern Medical School at UT Health
- 5:00 pm** **Abstract Presentation:**
Lactobacillus Suppresses Glycoprotein-130-Mediated Microtubule Remodeling to Support Right Ventricular Function in Pulmonary Arterial Hypertension
Sasha Z. Prisco, MD, PhD, University of Minnesota
- 5:30 pm** **Cancer, Epigenetics, and Pulmonary Hypertension: Translational Opportunities**
Soni S. Pullamsetti, PhD, Max Planck (Germany)
- 6:00 pm** **Dinner**
- 7:00 pm** **Poster Session chaired by Drs. Elena Goncharova, Andrew Bryant, and Suellen D'Arc Dos Santos Oliveira**
Poster presenters to give short summaries of their research followed by questions from the audience.

Friday, October 20, 2023

Session VII: Integrating Precision Medicine to Clinical Care
Moderators: Peter Leary, MD, PhD, UW Medical Center
Vineet Agrawal, MD, Vanderbilt

7:00-8:00 am Breakfast

- 8:05 am** **Risk Stratification for PAH, acute PE and CTEPH: Role of Precision Medicine**
Olivier Sitbon, MD, PhD, INSERM
- 8:35 am** **Hemodynamics and Vasoreactivity - Can they Help us Phenotype PAH Patients?- YES** Roham Zamanian, MD, FCCP, Stanford University
- 8:45 am** **Hemodynamics and Vasoreactivity - Can they Help us Phenotype PAH Patients?- NO** Brian Houston, MD
- 8:55 am** **Rebuttals and discussion**
- 9:05 am** **The Discovery of Sotatercept and the Future of Drug Discovery on PH**
Paul B. Yu, MD, PhD, Harvard University
- 9:35 am** **Break (10 min)**
- 9:45 am** **Using Wearables to Monitor Patients with Pulmonary Vascular Diseases**
Raymond L. Benza, MD, Ohio State Medical Center
- 10:15 am** **Ethical Issues Surrounding Precision Medicine**
Daphne O. Martschenko, BA, MPhil, PhD, Stanford University
- 11:45 am** **Role of a Comprehensive Electronic Medical Record in Precision Medicine- What is Needed**
Evan Brittain, MD, Vanderbilt University

12:15 pm Closing Summary

Anna Hemnes, MD, ATSF, Vanderbilt University
Vinicio de Jesus Perez, MD, ATSF, Stanford University
Prof. Martin R. Wilkins, Imperial College of London

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