Tuesday, June 4, 2019 -- Evening

5:00-7:00 PM Evening Registration Reception

Gant Conference Center

Wednesday, June 5, 2019 – Morning

8:00-8:20 AM Welcome/Introduction

M. Patricia George, M.D., Chair
Brian Graham, M.D., Chair

8:20-8:30 AM The Thomas L. Petty Aspen Lung Conference: A Historical Perspective

Dennis E. Doherty, M.D., FCCP
Professor of Medicine
University of Kentucky
Secretary/Treasurer, National Lung Health Education Program

Cellular Metabolism: Moderators – Irina Petrache, M.D. and Adela Cota-Gomez, Ph.D.

8:30-9:05 AM MARVIN I. SCHWARZ LECTURE

“ALTERED METABOLISM IN PAECS AND THE RV”

Serpil C. Erzurum, M.D.
Chair, Lerner Research Institute
The Alfred Lerner Memorial Chair
in Innovative Biomedical Research
Cleveland Clinic Foundation
Cleveland, Ohio

9:05-9:30 AM Discussion

9:30-9:45 AM

RIGHT VENTRICULAR FIBROSIS IN PULMONARY HYPERTENSION IS MEDIATED BY ACh/nAChR SIGNALING. A. Vang1, J.H. Siamwala2, N.R. Kue3, T.J. Mancini1, D.J. McCullough2, A. Allawzi3, R. Clements1, Gaurav Choudhary1,4*, 1Vascular Research Laboratory, Providence VA Medical Center, Providence, RI; 2Department of Anatomical Sciences, The Edward Via College of Osteopathic Medicine, Auburn, AL; 3Pediatrics - CVP, University of Colorado, Denver, Aurora, CO; 4Department of Medicine, Alpert Medical School of Brown University, Providence, RI.

9:45-10:00 AM

RIGHT VENTRICULAR MITOCHONDRIAL BIOENERGETICS AND METABOLIC MODULATION IN A MODEL OF MALADAPTATIVE REMODELING TO PULMONARY ARTERIAL HYPERTENSION. Virgilio J Cadete1,2*, A. Cuillerier2,3, Y. Deng1, K. Rowe1, Y. Burelle2,3, D.J. Stewart1,2, 1Sinclair Centre for Regenerative Medicine, Ottawa Hospital Research Institute, Ottawa, Canada; 2Department of Cellular and Molecular Medicine, Faculty of Medicine, University of Ottawa, Ottawa, Canada; 3Interdisciplinary School of Health Sciences, Faculty of Health Sciences, University of Ottawa, Ottawa, Canada.

10:00-10:30 AM Coffee Break (Refreshments for conference participants only)
Wednesday, June 5, 2019 -- Morning

Cellular Metabolism: Moderators – Irina Petrache, M.D. and Adela Cota-Gomez, Ph.D.

10:30-11:05 AM STATE OF THE ART
Karen A. Norris, Ph.D.
University of Georgia
“Immunologic and Metabolic Alterations in a Nonhuman Primate Model of Pulmonary Hypertension”

11:05-11:30 AM Discussion

11:30-11:45 AM ENDOTHELIAL INFLAMMATORY SIGNALING SUPPRESSES MDSC-MEDIATED PULMONARY VASCULAR REMODELING. Andrew J. Bryant¹*, C. Fu¹, Y. Lu¹, M.A. Williams¹, M.L. Brantly¹, E.W. Scott², Ph.D., ¹Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine, College of Medicine, University of Florida, Gainesville, FL; ²Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL.


12:00-1:30 PM ......Lunch (lunch not provided by conference)
Wednesday, June 5, 2019 -- Afternoon

**Cellular Metabolism: Moderators – Darlene Kim, M.D. and Rubin Tuder, M.D.**

**1:30-2:05 PM** STATE OF THE ART
Augustine M.K. Choi, M.D.
Weill Cornell Medicine
“Crosstalk Between Autophagic Metabolism and Angiocrine Signaling in Pulmonary Arterial Hypertension”

**2:05-2:30 PM** Discussion

**2:30-2:45 PM** SEVERE PULMONARY ARTERIAL HYPERTENSION AND MICROVASCULATURE LOSS IN THE RAT SU5416-HYPOXIA MODEL IS ASSOCIATED WITH PROTRACTED ENDOTHELIAL CELL APOPTOSIS: A SELF-SUSTAINING CYCLE DRIVEN BY HEMODYNAMIC STRESS? Y. Deng¹, Ketul R. Chaudhary¹,²*, A. Yang¹, K.R. Rowe¹, D.J. Stewart¹,², ¹Regenerative Medicine Program, Ottawa Hospital Research Institute, Ottawa, ON, Canada; ²Department of Cellular and Molecular Medicine, Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada.

**2:45-3:00 PM** PRO-SURVIVAL ADAPTATION OF PULMONARY VASCULATURE MEDIATED BY SPHINGOLIPIDS FOLLOWING CIGARETTE SMOKE EXPOSURE OR HYPOXIA. Kelly S. Schweitzer¹*, T. Lahm²*, K. Goel³, A. Scruggs¹, D. Cao¹, E. Beatman¹, E.V. Berdyshev¹, M.B. Brown⁴, W. Janssen¹,³, I. Petrache¹,³, ¹National Jewish Health, Denver, CO; ²Indiana University and VAMC, Indianapolis, IN; ³University of Colorado, Aurora, Colorado; ⁴University of Washington, Seattle, WA.

**3:00-3:30 PM** ......Break *(Refreshments for conference participants only)*


Wednesday, June 5, 2019 -- Afternoon

**Cellular Metabolism: Moderators – Darlene Kim, M.D. and Rubin Tuder, M.D.**

3:30-4:05 PM **ROGER S. MITCHELL LECTURE**

“METABOLISM AS A THERAPEUTIC TARGET IN PULMONARY HYPERTENSION AND THE RV”

Anna R. Hemnes, M.D.
Associate Professor of Medicine
Assistant Director, Pulmonary Vascular Center
Division of Allergy, Pulmonary and Critical Care Medicine
Vanderbilt University Medical Center
Nashville, Tennessee

4:05-4:30 PM Discussion

4:30-4:45 PM TREATMENT WITH TREPROSTINIL AND METFORMIN NORMALIZES HYPERGLYCEMIA AND IMPROVES CARDIAC FUNCTION IN PRE-CLINICAL MODEL OF PULMONARY HYPERTENSION ASSOCIATED WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION (PH-HFpEF). L. Wang¹, T. Satoh¹, J. Baust¹, J. Hu¹, A. Mora¹², M. Gladwin¹², Yen-Chun Lai³*, ¹Pittsburgh Heart, Lung, Blood and Vascular Medicine Institute, University of Pittsburgh; ²Division of Pulmonary, Allergy and Critical Care Medicine, University of Pittsburgh; ³Division of Pulmonary, Critical Care, Sleep and Occupational Medicine, Indiana University School of Medicine.

4:45-5:00 PM AN IMPLANTED MECHANICAL DEVICE IMPROVES PULMONARY ARTERY COMPLIANCE AND REDUCES PULMONARY ARTERY ELESTANCE. Marc Pritzker¹.*, J. Scandura², K. Vollmer², J. Gainor², I. Lang³, ¹Cardiology, University of Minnesota, Minneapolis, MN; ²ARIA Cardiovascular, Minneapolis, MN, ³Cardiology, Medical University of Vienna, Vienna Austria.

5:00-7:00 PM **POSTER VIEWING --- SOCIAL HOUR**
Thursday, June 6, 2019 -- Morning

Hypoxia Signaling: Moderator – Jeffrey Kern, M.D. and Eva Grayck, M.D.

8:00-8:35 AM  GILES F. FILLEY LECTURE
"HYPOXIA SIGNALING IN CANCER"
M. Celeste Simon, Ph.D.
Scientific Director and Investigator
Abramson Family Cancer Research Institute
Arthur H. Rubenstein, MBBCh Professor
Department of Cell and Developmental Biology
University of Pennsylvania Perelman School of Medicine
Philadelphia, Pennsylvania

8:35-9:00 AM  Discussion

9:00-9:15 AM  MMP-8 DEFICIENCY PROMOTES VASCULAR REMODELING THROUGH ENHANCED INTEGRIN BETA-3 SIGNALING. Paul B. Dieffenbach*, R. Rehman, C.M. Haeger, A.M. Corcoran, A.M.F. Coronata, F. Polvorino, C.A. Owen, L.E. Fredenburgh, Brigham and Women’s Hospital, Boston, MA.

9:15-9:30 AM  DOWNREGULATION OF IRS2 EXAGGERATES PULMONARY VASCULAR REMODELING AND RIGHT VENTRICULAR HYPTERTROPHY UNDER HYPOXIC CONDITIONS. Kazuyo Yamaji-Kegan*, H. Huang, Department of Anesthesiology and Critical Care Medicine, The Johns Hopkins Medical Institutions, Baltimore, MD.

9:30-10:00 AM  ......Coffee Break

10:00-10:35 AM  STATE OF THE ART
Larissa A. Shimoda, M.D., Ph.D.
Johns Hopkins School of Medicine
“Hypoxia Signaling in Pulmonary Hypertension”

10:35-11:00 AM  Discussion

11:00-11:15 AM  SELECTIVE DEPLETION OF VASCULAR EC-SOD REPROGRAMS INTERSTITIAL MACROPHAGES IN RESPONSE TO HYPOXIA. Ayed Allawzi1*, I. McDermott1, S. Pugliese2, K. Elkasmi1, K. Stenmark1, E. Nozik-Grayck1, 1Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; 2Paul F. Harron Jr. Lung Center, Perlman School of Medicine, University of Pennsylvania, Philadelphia, PA.

11:15-11:30 AM  HYPERACTIVATION OF HYALURONAN SYNTHESIS DRIVES PROLIFERATIVE METABOLISM IN PULMONARY HYPERTENSION. Victor Tseng1,2*, J. Kleinhenz2, E. Nozik-Grayck3; C. M. Hart1,2, 1Emory University Pulmonary, Allergy, Critical Care, and Sleep Medicine; 2Atlanta VA Medical Center; 3Cardiovascular and Pulmonary Research, University of Colorado, Aurora, CO.

12:00-3:00 PM  Picnic – T Lazy 7 - The Ranch (for conference participants and their family)
Friday, June 7, 2019 — Morning

Aberrant Proliferation: Sonia Flores, Ph.D. and Kurt Stenmark, M.D.

8:00-8:35 AM PARKER B. FRANCIS LECTURESHP
"ANGIOGENESIS REVISITED: ROLE AND (THERAPEUTIC) IMPLICATIONS OF ENDOTHELIAL METABOLISM"
Peter Carmeliet, M.D., Ph.D.
Professor of Medicine
Head of Laboratory of Angiogenesis and Vascular Metabolism
VIB-KU Leuven Center for Cancer Biology
VIB, KU Leuven/Department of Oncology
Campus Gasthuisberg
Leuven, Belgium

8:35-9:00 AM Discussion

9:00-9:15 AM WNT SIGNALING REGULATES ANGIOGENESIS AND REMODELING DURING CHRONIC LUNG DISEASE WITH ASSOCIATED PULMONARY HYPERTENSION. Susan M. Majka*, K.Y. Tao², J.A. Kropski³, B.W. Richmond², M.M. Taketo³, R.F. Foronjy⁴, ¹National Jewish Health, Denver CO; ²Vanderbilt University and Medical Center, Nashville, TN; ³Kyoto University, Kyoto, Japan; ⁴SUNY Downstate, Brooklyn, NY.


9:30-10:00 AM ......Coffee Break MEET THE PROFESSOR SESSION (by Registration table)
Friday, June 7, 2019 -- Morning

Aberrant Proliferation: Sonia Flores, Ph.D. and Kurt Stenmark, M.D.

10:00-10:35 AM REUBEN M. CHERNIACK LECTURE
"THE PIVOTAL ROLE OF BMPR2 IN PREVENTING PULMONARY HYPERTENSION"
Marlene Rabinovitch, M.D.
Dwight and Vera Dunlevie Professor of Pediatric Cardiology
Director, Basic Science and Engineering (BASE) Initiative
Betty Irene Moore Children’s Heart Center
Stanford University School of Medicine
Stanford, California

10:35-11:00 AM Discussion

11:00-11:15AM BONE MORPHOGENETIC PROTEIN RECEPTOR 2 (Bmpr2) MUTATIONS FACILITATE THE DEVELOPMENT OF A PROLIFERATIVE INFLAMMATORY ENDOTHELIAL PHENOTYPE IN PULMONARY HYPERTENSION. Wen Tian¹,²,*, X. Jiang¹,², Y.K. Sung¹,², E. Shuffle¹,², P. Kao², A.B. Tu¹,², P. Maguire², P. Zhang¹,², P. Dorfmüller³,⁴,⁵, J. Chappell², P. Dahms¹,², A. Cao², L. Wang², S. Pasupneti¹,², G. Peng⁶, H. Chaib², R. Zamanian², M. Peters-Golden⁷, M.P. Snyder², N.F. Voelkel⁸, M. Humbert³,⁴,⁹, M. Rabinovitch², M.R. Nicolls¹,², ¹VA Palo Alto Health Care System, Palo Alto, CA; ²Stanford University School of Medicine, Stanford, CA; ³Faculté de Médecine, Université Paris-Sud and Université Paris-Saclay, Le Kremlin-Bicêtre, France; ⁴INSERM UMR_S 999, Le Plessis-Robinson, France; ⁵Pathology Department, Hôpital Marie Lannelongue, Le Plessis-Robinson, Paris, France; ⁶State Key Laboratory of Respiratory Diseases, Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China; ⁷University of Michigan Health System, Ann Arbor, MI; ⁸Free University Medical Center Amsterdam, the Netherlands; ⁹AP-HP, Service de Pneumologie, Centre de Référence de l’Hypertension Pulmonaire Sévère, DHU Thorax Innovation, Hôpital de Bicêtre, Le Kremlin-Bicêtre, France.

11:15-11:30 AM SELECTIVE ACTIVATION OF ESTROGEN RECEPTOR α STIMULATES PULMONARY VASCULAR HOMEOSTATIC REGULATOR APELIN IN PULMONARY ARTERY ENDOTHELIAL CELLS (PAECS) FROM PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION (PAH). Andrea Frump¹*, B. Yakubov³, M. Albrecht¹, S. Comhair², D.T. Martinez³, N. Chesler³, T. Lahm¹,⁴, ¹Department of Medicine, Indiana University School of Medicine, Indianapolis, IN; ²Cleveland Clinic Lerner Research Institute, Cleveland, OH; ³Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, Wisconsin; ⁴Richard L. Roudebush VA Medical Center, Indianapolis, IN.

11:30-1:30 PM ......Lunch (lunch not provided by conference)
Friday, June 7, 2019 – Afternoon

Aberrant Proliferation: Susan Majka, Ph.D. and David Badesch, M.D.

1:30-2:05 PM  STATE OF THE ART
Soni Savai Pullamsetti, Ph.D.
University of Giessen, Germany
“Transcription Factor Regulation of Pulmonary Hypertension and Cancer”

2:05-2:30 PM  Discussion


2:45-3:00 PM  DEFICIENCY OF THE DEUBIQUITINASE, UCHL1, ATTENUATES PULMONARY HYPERTENSION. A. Gupta1, S.A. Morrisroe2, S. Sangam1,2, H. Tang3, G. Gupta1, S. Desai1, R. Rafikov1, O. Rafikova1, B. Mathew4, B. Larsen5, N. Andrew-Warfel1, L. Hecker1, S. Mitra5, S.M. Black1, J.X-J Yuan4, J. Jacobson3, J.G.N. Garcia1, Ankit A. Desai MD2*, 1Department of Medicine and Arizona Health Sciences Center, University of Arizona, Tucson, AZ; 2Department of Medicine, Indiana University, Indianapolis, IN; 3Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, Guangdong, China; 4Department of Medicine, University of Illinois, Chicago, IL; 5Department of Pathology, May Clinic, Scottsdale, AZ; 6Department of Obstetrics and Gynecology, Indiana University, Indianapolis, IN; 7Department of Physiology, University of California-San Diego (UCSD), San Diego, CA.

3:00-3:30 PM  ......Break (Refreshments for conference participants only)

3:30-4:05 PM  STATE OF THE ART
Steven M. Kawut, M.D.
University of Pennsylvania, Perelman School of Medicine
“Novel Treatment Targets in Pulmonary Hypertension”

4:05-4:30 PM  Discussion

4:30-4:45 PM  THE ROLE OF FATTY ACID OXIDATION IN THE PATHOGENESIS OF PULMONARY HYPERTENSION. Michael H. Lee*, A. Gandjeva, D. Hernandez-Saavedra, L. Sanders, R. Kumar, C. Mickael, B.B. Graham, R.M. Tuder, Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado School of Medicine, Aurora, CO.

4:45-5:00 PM  MESENCHYMAL STEM CELLS (hMSC) EXOSOMES COUPLE THE RV/PA DURING PULMONARY FIBROSIS (PF). J. Njah1, A. Marrocco1, A. Detwiler1, J. Milosevic1, T. Beckman2, B. Rivera-Lebron2, M. Simon2, M. Rojas2, A. Mora2, D. Riches3, Luis A. Ortiz1,2*, 1Department of EOH; 2Medicine at the University of Pittsburgh; 3National Jewish Health, Denver, CO.

5:00-7:00 PM  POSTER VIEWING – Wine and Cheese Reception
Saturday, June 8, 2019 -- Morning

*Personalized Medicine: Moderators – Todd Bull, M.D. and Laurie Carr, M.D.*

8:00-8:35 AM  
**THOMAS L. PETTY LECTURE**  
"BRIDGING GENES TO PHENOTYPE IN PULMONARY HYPERTENSION"  
Mark W. Geraci, M.D.  
John B. Hickam Professor of Medicine  
Chair, Department of Medicine  
Professor of Medical and Molecular Genetics  
Indiana University School of Medicine  
Indianapolis, Indiana

8:35-9:00 AM  
Discussion

9:00-9:15 AM  
A PRELIMINARY FORAY of PROTEOMIC CLUSTERING IN PVDOMICS. Anna R. Hemnes, Evelyn M. Horn*, E.B. Rosenzweig, J. Leopold, G. Grunig, B. Willard, B. Hu, J. Barnard, and the PVDOMICS Study Group, Vanderbilt University, Weill Cornell, Columbia University, Brigham and Women’s, New York University School of Medicine, Cleveland Clinic.

9:15-9:30 AM  
SINGLE CELL RNA SEQUENCING REVEALS EMERGENCE OF MULTIPLE ALVEOLAR MACROPHAGE SUBPOPULATIONS WITH DISTINCT TRANSCRIPTIONAL RECONFIGURATIONS IN SCHISTOSOMIASIS AND HYPOXIA EXPOSED MICE. Nzali Campbell*, C. Mickael, R. Kumar, M. Frid, K. Stenmark, B. Graham, School of Medicine, Anschutz Medical Campus, University of Colorado, Denver, CO.

9:30-10:00 AM  
......Coffee Break (Refreshments for conference participants only)
Saturday, June 8, 2019 -- Morning

**Personalized Medicine: Moderators – Todd Bull, M.D. and Laurie Carr, M.D.**

**10:00-10:35 AM**  
**THOMAS A. NEFF LECTURE**  
"FOUR DECADES OF PERSONALIZED MEDICINE IN BREAST CANCER: LESSONS FOR DRUG DEVELOPMENT”  
Tatiana M. Prowell, M.D.  
Johns Hopkins Sidney Kimmel Comprehensive Cancer Center  
Office of Hematology and Oncology Products  
U.S. Food and Drug Administration  
Silver Spring, Maryland

**10:35-11:00 AM**  Discussion

**11:00-11:15 AM**  
PERSONALIZING 6MW BY INCORPORATING HEART RATE ‘EXPENDITURE’.  
Daniel Lachant*, A. Light, R.J. White, University of Rochester Medical Center, Rochester, MN.

**11:15-11:30 AM**  
MESENCHYMAL STEM CELL EXTRACELLULAR VESICLES INCREASE RECRUITMENT OF ALTERNATIVELY ACTIVATED MACROPHAGE TO LUNG AND REVERSE SUGEN/HYPOXIA-INDUCED PULMONARY HYPERTENSION IN RATS.  
James R. Klinger*, M. Pierra, M. Deltatto, M. Dooner, T. Borgovan, L. Goldberg, J.M. Aliotta, C.E. Ventetuolo, P.J. Quesenberry, O.D. Liang, Divisions of Pulmonary and Critical Care Medicine and Hematology/Oncology, Center for Stem Cell Biology, Rhode Island Hospital, Albert School of Medicine, Brown University, Providence, RI.

**11:30-12:30 PM**  
**CONFERENCE SUMMARY**  
Mark T. Gladwin, M.D.  
Jack D. Myers Professor and Chair  
Department of Medicine  
Director, Pittsburgh Heart, Lung and Blood Vascular Medicine Institute  
University of Pittsburgh  
Pittsburgh, Pennsylvania

**12:30-1:00 PM**  Discussion and Adjourn
POSTER VIEWING - SOCIAL HOUR

Wednesday, June 5, 2019

5:00-7:00 PM

POSTERS


BONE MARROW DERIVED INTERSTITIAL MACROPHAGES CONTRIBUTES TO HYPOXIA-INDUCED PULMONARY HYPERTENSION. Rahul Kumar1*, C. Mickael1, B. Kassa1, L. Sanders1, D.E. Koyanagi1, S. Kumar2, W.J. Janssen2, K.R. Stenmark2, R.M. Tudor1, B.B. Graham1, 1Program in Translational Lung Research, Department of Medicine, University of Colorado, Anschutz Medical Campus, Aurora, CO; 2Department of Pediatrics and Medicine, Cardiovascular Pulmonary Research Laboratory, University of Colorado, Anschutz Medical Campus, Aurora, CO.

CHITINASE 3-LIKE-1 CONTRIBUTES TO THE DEVELOPMENT OF RIGHT VENTRICULAR HYPERTROPHY AND PULMONARY VASCULAR REMODELING. X. Sun1, D. Yang1, C.E. Ventetuolo2, J. Braza3, J. Aliotta3, D. Banerjee2, M. Pereira2, E. Harrington3, S. Rounds3, C.G. Lee1, J.A Elias1,2, J.R. Klinger2, Yang Zhou1*, 1Department of Molecular Microbiology and Immunology, Brown University, Providence, RI; 2Alpert Medical School of Brown University/Rhode Island Hospital, Providence, RI; 3Providence VA Medical Center, Providence, RI.

GLUCOSE-6-PHOSPHATASE CATALYTIC SUBUNIT 3 (G6PC3) GENE SILENCING RESULTS IN A HYPER-PROLIFERATIVE PULMONARY ARTERY ENDOTHELIAL CELL PHENOTYPE. Li-Yuan Chen1*, E.J. Dougherty1, J.Y. Chou2, R.L. Danner1, J.M. Elinoff1, 1Critical Care Medicine Department, Clinical Center; 2Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD.

INFLAMMATORY PULMONARY VASCULAR DISEASE DUE TO SCHISTOSOMA JAPONICUM. Biruk Kassa*, R. Kumar, C. Mickael, L. Sanders, D. Koyanagi, B. Graham, Program in Translational Lung Research, University of Colorado, Denver, CO.

PROLIFERATION, APOPTOSIS RESISTANCE AND AKT ACTIVATION IN PHD2-SILENCED, PSEUDOHYPOXIC PULMONARY MICROVASCULAR ENDOTHELIAL CELLS. Shuibang Wang*, K.S. Awad, C.L. Wang, J.M. Elinoff, R.L. Danner, Critical Care Medicine Department, Clinical Center, National Institutes of Health, Bethesda, MD.

ANALYSIS OF ALTERATIONS TO THE EXTRACELLULAR MATRIX IN PULMONARY HYPERTENSION USING PROTEOMICS. Jason S. Williams1*, M. Floren2, K.C. Hansen1, L.R. Schmitt1, K.R. Stenmark2, Department of Biochemistry and Molecular Genetics and Biological Mass Spectrometry Shared Resource; 2Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO.

RANOLAZINE BLUNTS DEVELOPMENT OF SPONTANEOUS PULMONARY HYPERTENSION IN IL-13 TRANSGENIC MICE. Sharon Rounds1*, M. Mundy1, A. Yang1, G. Choudhary1, Q. Lu1, J.A. Elias2, C. G. Lee2, W.-K. Cho1, 1Vascular Research Laboratory, Providence VA Medical Center, Department of Medicine; 2Department of Molecular Microbiology and Immunology, Warren Alpert Medical School of Brown University, Providence, RI.
DEVELOPMENTAL CARDIOPULMONARY ADAPTATION TO CHRONIC HYPOXIA LEADS TO EXTREME TRANSCRIPTOMIC MODIFICATIONS. **Sheila Krishnan***, R.S. Stearman, E.A. Mickler, B.E. Hickey, M.W. Geraci, T. Lahn, R.S. Tepper, Indiana University School of Medicine, Department of Medicine, Indianapolis, IN.

QUANTIFICATION OF RIGHT VENTRICULAR MACROPHAGES IN TWO MURINE MODELS OF PULMONARY HYPERTENSION. **Sue Gu***, C. Mickael, R. Kumar, L.Sanders, B. Kassa, B. Graham, Program in Translational Lung Research, Department of Medicine, University of Colorado Denver, Aurora, CO.

IMMUNOSUPPRESSIVE TREATMENT OF PAH. **Marc Pritzker***, Cardiovascular Medicine and Surgery, University of Minnesota, Minneapolis, MN.

RELM REGULATES DAMP SIGNALING IN THE PATHOGENESIS OF PH-ASSOCIATED RIGHT VENTRICLE DYSFUNCTION. **Qing Lin***, X. Yang, W.D. Gao, J. Skinner, R. Johns, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

CHRONIC NICOTINE INHALATION PROMOTES THE DEVELOPMENT OF PULMONARY HYPERTENSION. J.M. Oakes¹, C.S. Pearson¹, J. Xu², E. Lazartigues², J.D. Gardner¹, **Xinping Yue¹***, ¹Departments of Physiology; ²Department of Pharmacology, Louisiana State University Health Sciences Center, New Orleans, LA.

MULTI-MODAL SHORT CHAIN FATTY ACID, BUTYRATE, IS THERAPEUTIC IN PULMONARY HYPERTENSION. D. Strassheim¹, V. Karoor¹, T. Sullivan¹, P. Pauck², A. Kovacs-Kasa³, A. Verin³, K. Stenmark¹⁴, **Evgenia Gerasimovskaya⁴***, Departments of Medicine¹, Neurology², and Pediatrics⁴, University of Colorado Denver, Aurora, CO; ³Augusta University Vascular Biology Center, Augusta, GA.

THE BALANCE OF LUNG MICROVASCULAR INJURY AND REPAIR DETERMINED THE DEVELOPMENT OF A PULMONARY ARTERIAL HYPERTENSION IN A MURINE MODEL OF DIPHTHERIA TOXIN-MEDIATED ENDOTHELIAL CELL ABLATION. **Rafael Soares Godoy¹***, M. Taha¹², Y. Deng¹, K. Rowe¹, D.J. Stewart¹², Sinclair Center for Regenerative Medicine, Ottawa Hospital Research Institute, Canada; ²University of Ottawa, Faculty of Medicine, Ottawa, Canada.

SUPEROXIDE IN PATIENTS UNDERGOING RIGHT HEART CATHETERIZATION. **Tammy Wichman¹***, M. Sanchez¹, A. Thompson¹, C. Wichman², M. Zimmerman³, University of Nebraska Medical Center; ¹Department of Internal Medicine Pulmonary Critical Care; ²Department of Biostatistics, ³Department of Physiology, Omaha, NE.

PULMONARY ADVENTITIAL FIBROBLASTS REGULATE MACROPHAGE TRANSCRIPTIONAL AND METABOLIC PROGRAMS IN PULMONARY HYPERTENSION. **Min Li***, S. Riddle¹, S. Kumar¹, K.C. El Kasim¹, A. D’alessandro³, D. Champagne³, H. Zhang¹, A. Law², B.A. McKeon¹, M.G. Frid¹, D. Brown¹, C.-J. Hu², K.R. Stenmark¹. ¹Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine; ²Department of Craniofacial Biology; ³Department of Biochemistry and Molecular Genetics, University of Colorado, Anschutz Medical Campus, Aurora, CO.

PULMONARY VENO-OCCulsive DISEASE, UNEXPECTED NUMBERS IN A RARE DISEASE: A CASE SERIES. **Brett Begley***, O. Aghaji¹, Reda Girgis², ¹Spectrum Health, Internal Medicine Residency, Grand Rapids, MI; ²Director of Pulmonary Hypertension and Lung Transplantation, Fred and Lena Meijer Heart Center, Grand Rapids, MI.
FEMALE RATS DEVELOP CONSISTENTLY SEVERE PULMONARY HYPERTENSION FOLLOWING PNEUMONECTOMY AND LOW DOSE MONOCROTALINE. **R. James White**, D. Haight, D.J. Lachant, University of Rochester, Rochester, NY.

DYSREGULATION OF Nrf2/ARE REGULATED ANTIOXIDANT GENES AND THE CELLULAR REDOX ENVIRONMENT BY THE HIV TRANSACTIVATOR OF TRANSCRIPTION: IMPLICATIONS FOR HIV-ASSOCIATED PULMONARY ARTIERAL HYPERTENSION. **Ari Simenauer**, B. Assefa, J. Rios-Ochoa, A. Cota-Gomez, University of Colorado Anschutz Medical Campus, Aurora, CO.
POSTERS

THE BROWN ALGAE POLYSACCHARIDE FUCOIDAN -P-SELECTIN AXIS FOR TREATMENT OF HYPOXIA-INDUCED PULMONARY HYPERTENSION. T. Novoyatleva1*, B. Kojonazarov1*, A. Owczarek1, S. Veeroju1, N. Rai1, I. Henneke1, M. Böhm1, F. Grimminger1, H.A. Ghofrani1, W. Seeger1,2, N. Weissmann1, Ralph T. Schermuly1*, 1Universities of Giessen and Marburg Lung Center (UGMLC), Excellence Cluster Cardio-Pulmonary System (ECCPS), Member of the German Center for Lung Research (DZL), Justus-Liebig-University Giessen, Giessen, Germany; 2Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

TARGETING LOXL2 IN PULMONARY HYPERTENSION. Jochen Steppan1*, H. Wang1, Y. Nomura1, S. Jandu1, S. Melucci1, D. Bedja2, G. Zhu2, D.E Berkowitz1, L. Shimoda3, L. Santhanam1, Johns Hopkins University, School of Medicine, Departments of 1Anesthesiology and Critical Care Medicine, 2Cardiology, 3Pulmonary and Critical Care Medicine Baltimore, MD.

DISRUPTION OF ENDOTHELIAL-DERIVED ANGIOCRINE FACTOR SIGNALING PERTURBS THE DEVELOPMENT OF PULMONARY HYPERTENSION. Alexandra C. Racanelli1*, D. Chavez2, P. Guo3, A. Zhou1, Y. Zhu4, A.C. Borczuk5, B.-S. Ding6, A.M.K. Choi6, 1Division of Pulmonary Critical Care Medicine, Department of Medicine, New York Presbyterian Hospital-Weill Cornell Medicine, New York, NY; 2Fibrosis Research Center, Division of Pulmonary, Critical Care and Sleep Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 3Division of Regenerative Medicine, Department of Medicine, Weill Cornell Medicine, New York, NY; 4Institute of Systems Biomedicine, School of Basic Medical Sciences, Peking University Health Science Center, Beijing, China; 5Department of Pathology, New York Presbyterian Hospital-Weill Cornell Medicine, New York, NY.

RESISTIN PREDICTS DISEASE SEVERITY AND SURVIVAL IN PULMONARY ARTERIAL HYPERTENSION. Li Gao1*, J. Skinner2, E. Hunter2, R. Johns2, 1Division of Allergy & Clinical Immunology, Department of Medicine; 2Department of Anesthesia and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

CARDIAC MAGNETIC RESONANCE IMAGING PREDICTS TREATMENT OUTCOMES IN PULMONARY HYPERTENSION PATIENTS. Arun Jose1*, J.M. Elwing2, R. O’Donnell3, 1University of Cincinnati, Cincinnati Ohio; 2University of Cincinnati, Cincinnati Ohio; 3University of Cincinnati, Cincinnati Ohio.

CORRELATING THE ORAL MICROBIOME WITH NITRATE METABOLISM IN PATIENTS WITH PH-HFPEF. Noel Britton*, MPH1,2,3, C. Koch1,2, A. Levine1,2, N. Helbling1, S. Shiva1, A. Fitch3, R. Nettles3, B. Meth1,2,3, J. Lundberg4, M. Simon1, M.T. Gladwin1, A. Morris1,3, 1University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA; 2Department of Epidemiology, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA; 3Center for Medicine and The Microbiome, University of Pittsburgh, Pittsburgh, PA; 4Department of Physiology and Pharmacology, Karolinska Institute, Stockholm.

NON-CANONICAL HIPPO-MST1/2 SUPPORTS PRO-PROLIFERATIVE/PRO-SURVIVAL VASCULAR SMOOTH MUSCLE PHENOTYPE AND ESTABLISHED PULMONARY HYPERTENSION VIA MODULATING AKT1 AND FOXO1. Tatiana Kudryashova4*, A. Ray1, A. Rode1, Y. Shen1, T. Avolio1, D. Goncharov1, Y. Zhao2, E. Goncharova1, 1Vascular Medicine Institute, Department of Medicine, University of Pittsburgh, Pittsburgh, PA; 2Department of Physiology and Cell Biology, The Ohio State University, Columbus, OH.
H3K27 MODIFICATIONS: MECHANISMS OF REPRESSION OF MIR-124 AND THERAPEUTIC IMPLICATION IN PULMONARY HYPERTENSION. Hui Zhang*, A. Laux2, D. Wang1, A. Flockton1, C.-J. Hu2, K. Stenmark1, 1Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; 2Department of Craniofacial Biology School of Dental Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO.


FIBROBLAST GENERATED EXTRACELLULAR VESICLES INDUCES METABOLIC REPROGRAMMING IN BONE MARROW DERIVED MACROPHAGES. Sushil Kumar*, R. Balalsubramaniyan, M. L. Floren, S. Riddle, H. Zhang, M. Li, M. G. Frid, K. Hansen, K. R. Stenmark, University of Colorado Denver, Aurora, CO.

ANALYSIS OF NOVEL BIOMARKERS ASSOCIATED WITH THE DEVELOPMENT OF SCLERODERMA-ASSOCIATED PULMONARY ARTERIAL HYPERTENSION. Akshay Muralidhar*, C. Meadows, C. Abbott, P. Senecal, A. Fischer, B.B. Graham, P. Hountras, D.B. Badesch, T.M. Bull, Pulmonary Sciences and Critical Care Medicine, University of Colorado, Aurora, CO.

A NOVEL MULTI-HARMONIC APPROACH TOWARDS CHARACTERIZING RIGHT VENTRICLE – PULMONARY ARTERY INTERACTION. Akshay Muralidhar*, S. Hsu2, S. C. Mathai3, T. M. Bull1, R. J. Tedford4, K. S. Hunter5, 1Pulmonary Sciences and Critical Care Medicine, University of Colorado, Aurora, CO; 2Cardiology, Johns Hopkins University, Baltimore, MD; 3Pulmonary and Critical Care Medicine, Johns Hopkins School of Medicine, Baltimore, MD; 4Medicine/Cardiology, Medical University of South Carolina, Charleston, SC; 5Bioengineering, University of Colorado at Denver, Aurora, CO.

EVALUATING THE ROLE OF BMPER IN PULMONARY HYPERTENSION. Lavannya Pandit*, M. Hua2, H. Karmouty-Quintana3, X. Pi2, 1Department of Medicine, Michael E. DeBakey Veterans Affairs Medical Center/Baylor College of Medicine(BCM); 2Department of Medicine, Baylor College of Medicine; 3University of Texas Health Science Center at Houston, TX.

NON-MUSCLE MYOSIN LIGHT CHAIN KINASE ACTIVATION INCREASES ENDOTHELIAL CELL PROLIFERATION AND IDENTIFIES A ROLE FOR CYTOSKELETAL REGULATION IN PULMONARY ARTERIAL HYPERTENSION. Dustin R. Fraidenburg*, M. Anis, R. Halstrom, N. Baig, S.M. Dudek, J.R. Jacobson, University of Illinois at Chicago, Chicago, IL.

ROLE OF PIONEER TRANSCRIPTION FACTORS IN THE PERSISTENT ACTIVATED PHENOTYPE OF PH VASCULAR CELLS. A. Laux1, H. Zhang2, K.R. Stenmark2, Cheng Jun Hu1*, 1Department of Craniofacial Biology School of Dental Medicine; 2Cardiovascular Pulmonary Research Laboratories, Division of Pulmonary Sciences and Critical Care Medicine, Division of Pediatrics-Critical Care, Departments of Medicine and Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO.

PERSONALIZED MEDICINE FOR PULMONARY HYPERTENSION - THE FUTURE. Gabriele Grunig1-3*, N. Durmus2, S. Pylawka3, 1Departments of Environmental Medicine; 2Medicine, NYU School of Medicine, New York, NY; 3Mirna Analytics, New York, NY.

IDENTIFYING PROCOAGULANT EXTRACELLULAR VESICLES IN PAH: A STEP TOWARDS PERSONALIZED MEDICINE. Daniel Lachant*, A. Light, D. Haight, R.J. White, University of Rochester Medical Center, Rochester, NY.

HYMECROMONE INHIBITS FIBROTIC DEPOSITION AND PULMONARY HYPERTENSION IN AN EXPERIMENTAL MODEL OF COMBINED PULMONARY FIBROSIS AND EMPHYSEMA (CPFE). S.D. Collum1, J.G. Molina1, A. Hanmandlu1, W. Bi1, M. Pedroza1, N.-Y. Chen1, T. Weng1, T. Mertens1, C. Wilson1, M.R. Blackburn1, S.S.K. Jyothula2, Harry Karmouty-Quintana1*, 1Department of Biochemistry and Molecular Biology; 2Department of Internal Medicine, McGovern Medical School at the University of Texas Health Science Center at Houston, Houston, TX.

BASELINE CHARACTERISTICS FROM A PRE-SPECIFIED INTERIM ANALYSIS OF A PHASE IIB, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF SILDENAFIL ADDED TO PIRFENIDONE IN PATIENTS WITH ADVANCED IDIOPATHIC PULMONARY FIBROSIS AND RISK OF PULMONARY HYPERTENSION. J. Behr1, S.D. Nathan,2 S. Harari,3 W. Wuyts,4 N.M. Bishop,5 D.E. Bouros,6 K. Antoniou,7 J. Guiot,8 M. Kramer,9 K.-U. Kirchgasser,10 M. Bengus,10 F. Gilberg,10 A.U. Wells11, 1Department of Internal Medicine V, LMU and Asklepios Fachkliniken Gauting, Comprehensive Pneumology Center, Munich, Germany; Member of the German Center for Lung Research; 2Inova Heart and Vascular Institute, Inova Fairfax Hospital, Falls Church, VA; 3U.O. di Pneumologia e Terapia Semi-Intensiva Respiratoria, Servizio di Fisiopatologia Respiratoria ed Emodinamica Polmonare, Ospedale San Giuseppe, MultiMedica IRCCS, Milan Italy; 4Department of Pulmonary Medicine, Unit for Interstitial Lung Diseases, University of Leuven, Leuven, Belgium; 5Department of Pulmonary Medicine, Unit for Interstitial Lung Diseases, Ege University Hospital, Izmir, Turkey; 6National and Kapodistrian University of Athens, Athens, Greece; 7Department of Thoracic Medicine, University of Crete, Heraklion, Crete, Greece; 8Respiratory Department and GIGA-13 Research Unit, CHU Liège, Liège, Belgium; 9Pulmonary Institute Rabin Medical Center, Petah Tikva, Israel; 10F. Hoffmann-La Roche Ltd., Basel, Switzerland; 11Interstitial Lung Disease Unit, Royal Brompton Hospital, London, UK. (Presented by John L. Stauffer, M.D., Genentech/Roche).