5/10/19

THOMAS L. PETTY
ASPEN LUNG CONFERENCE
62nd Annual Meeting
"Exploring New Therapeutic Pathways in Pulmonary Hypertension: Metabolism, Proliferation, and Personalized Medicine"
June 5-8, 2019

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. Vang[1], J.H. Siamwala[1], N.R. Kue[1], T.J. Mancini[1], D.J. McCullough[2], A. Allawzi[3], R. Clements[1], **Gaurav Choudhary[1,4]***, [1]Vascular Research Laboratory, Providence VA Medical Center, Providence, RI; [2]Department of Anatomical Sciences, The Edward Via College of Osteopathic Medicine, Auburn, AL; [3]Pediatrics - CVP, University of Colorado, Denver, Aurora, CO; [4]Department 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 Cadete[1,2]***, A. Cuillerier[2,3], Y. Deng[1], K. Rowe[1], Y. Burelle[2,3], D.J. Stewart[1,2], [1]Sinclair Centre for Regenerative Medicine, Ottawa Hospital Research Institute, Ottawa, Canada; [2]Department of Cellular and Molecular Medicine, Faculty of Medicine, University of Ottawa, Ottawa, Canada; [3]Interdisciplinary 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

11:30-11:45AM *ENDOTHELIAL INFLAMMATORY SIGNALING SUPPRESSES MDSC-MEDIATED PULMONARY VASCULAR REMODELING.* ***Andrew J. Bryant[1]****, C. Fu[1], Y. Lu[1], M.A. Williams[1], M.L. Brantly[1], E.W. Scott[2], Ph.D., [1]Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine, College of Medicine, University of Florida, Gainesville, FL; [2]Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL.*

11:45-12:00 Noon *IMMUNOGLOBULIN-(G)-TRIGGERED ACTIVATION OF THE COMPLEMENT CASCADE REGULATES PRO-INFLAMMATORY PROCESSES IN PULMONARY HYPERTENSION.* ***Maria G Frid****, B.A. McKeon, M. Li, H. Zhang, S. Kumar, M.A. Fini, T. Sullivan, J. Laskowski, C.-J. Hu, J.M. Thurman, K.R. Stenmark, University Colorado Denver, Anschutz Medical Campus, Pediatric Critical Care, Aurora, CO.*

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. Deng[1], **Ketul R. Chaudhary[1,2]***, A. Yang[1], K.R. Rowe[1], D.J. Stewart[1,2], [1]Regenerative Medicine Program, Ottawa Hospital Research Institute, Ottawa, ON, Canada; [2]Department 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. Schweitzer[1]***, T. Lahm[2]*, K. Goel[3], A. Scruggs[1], D. Cao[1], E. Beatman[1], E.V. Berdyshev[1], M.B. Brown[4], W. Janssen[1, 3], I. Petrache[1,3], [1]National Jewish Health, Denver, CO; [2]Indiana University and VAMC, Indianapolis, IN; [3]University of Colorado, Aurora, Colorado; [4]University 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. Wang[1], T. Satoh[1], J. Baust[1], J. Hu[1], A. Mora[1,2], M. Gladwin[1,2],* ***Yen-Chun Lai[3]****, [1]Pittsburgh Heart, Lung, Blood and Vascular Medicine Institute, University of Pittsburgh; [2]Division of Pulmonary, Allergy and Critical Care Medicine, University of Pittsburgh; [3]Division 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 Pritzker[1]****, J. Scandura[2], K. Vollmer[2], J. Gainor[2], I. Lang[3], [1]Cardiology, University of Minnesota, Minneapolis, MN; [2]ARIA Cardiovascular, Minneapolis, MN, [3]Cardiology, 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 HYPERTROPHY 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 ***MEET THE PROFESSOR SESSION (by Registration table)***

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 Allawzi[1]****, I. McDermott[1], S. Pugliese[2], K. Elkasmi[1], K. Stenmark[1], E. Nozik-Grayck[1], [1]Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; [2]Paul 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 Tseng[1,2]****, J. Kleinhenz[2], E. Nozik-Grayck[3]; C. M. Hart[1,2], [1]Emory University Pulmonary, Allergy, Critical Care, and Sleep Medicine; [2]Atlanta VA Medical Center; [3]Cardiovascular 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 LECTURESHIP**

"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*[1]**, *K.Y. Tao[2], J.A. Kropski[2], B.W. Richmond[2], M.M. Taketo[3], R.F. Foronjy[4], [1]National Jewish Health, Denver CO; [2]Vanderbilt University and Medical Center, Nashville, TN; [3]Kyoto University, Kyoto, Japan; [4]SUNY Downstate, Brooklyn, NY.*

9:15-9:30 AM *PI3K/AKT-INDUCED JNK SUPPRESSION CONTRIBUTES TO APOPTOSIS RESISTANCE IN BMPR2-SILENCED PULMONARY ARTERY ENDOTHELIAL CELLS.* ***Keytam S. Awad****, *S. Wang, J.M. Elinoff, R.L. Danner, CCMD, Clinical Center, National Institutes of Health, Bethesda, MD.*

.

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 Tian[1,2,*]***, *X. Jiang[1,2], Y.K. Sung[1,2], E. Shuffle[1,2], P. Kao[2], A.B. Tu[1,2], P. Maguire[2], P. Zhang[1,2], P. Dorfmüller[3,4,5], J. Chappell[2], P. Dahms[1,2], A. Cao[2], L. Wang[2], S. Pasupneti[1,2], G. Peng[6], H. Chaib[2], R. Zamanian[2], M. Peters-Golden[7], M.P. Snyder[2], N.F. Voelkel[8], M. Humbert[3,4,9], M. Rabinovitch[2], M.R. Nicolls[1,2], [1]VA Palo Alto Health Care System, Palo Alto, CA; [2]Stanford University School of Medicine, Stanford, CA; [3]Faculté de Médecine, Université Paris-Sud and Université Paris-Saclay, Le Kremlin-Bicêtre, France; [4]INSERM UMR_S 999, Le Plessis-Robinson, France; [5]Pathology Department, Hôpital Marie Lannelongue, Le Plessis-Robinson, Paris, France; [6]State Key Laboratory of Respiratory Diseases, Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China; [7]University of Michigan Health System, Ann Arbor, MI; [8]Free University Medical Center Amsterdam, the Netherlands; [9]AP-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 Frump[1]****, *B. Yakubov[1], M. Albrecht[1], S. Comhair[2], D.T. Martinez[3], N. Chesler[3], T. Lahm[1,4], [1]Department of Medicine, Indiana University School of Medicine, Indianapolis, IN; [2]Cleveland Clinic Lerner Research Institute, Cleveland, OH; [3]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, Wisconsin; [4]Richard 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**

2:30-2:45 PM *STIFFNESS-INDUCED TSC2 DEFICIENCY PROMOTES YAP/MTOR ACTIVATION, VASCULAR SMOOTH MUSCLE REMODELING AND PULMONARY HYPERTENSION.* ***Yuanjun Shen****, A. Pena, D.A. Goncharov, J. Baust, B.A.I. Chavez, A. Ray, A. Rode, S. Chan, B. Chang, A.L. Mora, T.V. Kudryashova, E.A. Goncharova, Vascular Medicine Institute, University of Pittsburgh School of Medicine, Pittsburgh, PA.*

2:45-3:00 PM *DEFICIENCY OF THE DEUBIQUITINASE, UCHL1, ATTENUATES PULMONARY HYPERTENSION. A. Gupta[1], S.A. Morrisroe[2], S. Sangam[1,2], H. Tang[3], G. Gupta[1], S. Desai[1], R. Rafikov[1], O. Rafikova[1], B. Mathew[4], B. Larsen[5], N. Andrew-Warfel[1], L. Hecker[1], S. Mitra[6], S.M. Black[1], J.X-J Yuan[7], J. Jacobson[3], J.G.N. Garcia[1],* ***Ankit A. Desai MD[2]****, [1]Department of Medicine and Arizona Health Sciences Center, University of Arizona, Tucson, AZ; [2]Department of Medicine, Indiana University, Indianapolis, IN; [3]Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, Guangdong, China; [4]Department of Medicine, University of Illinois, Chicago, IL; [5]Department of Pathology, May Clinic, Scottsdale, AZ; [6]Department of Obstetrics and Gynecology, Indiana University, Indianapolis, IN; [7]Department 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. Njah[1], A. Marrocco[1,], A. Detwiler[1], J. Milosevic[1], T. Beckman[2], B. Rivera-Lebron[2], M. Simon[2], M. Rojas[2], A. Mora[2], D. Riches[3],* ***Luis A. Ortiz[1,2]****, [1]Department of EOH; [2]Medicine at the University of Pittsburgh; [3]National 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

PLATELET DEPLETION PREVENTS HYPOXIA-INDUCED PULMONARY VASCULAR PROLIFERATION AND INFLAMMATION IN MICE. ***Cassidy Delaney****, P. Davizon-Castillo, A. Allawzi, S. Fisher, J. Di Paola, K. Stenmark, E. Nozik-Grayzk, Pediatrics, University of Colorado , Denver, CO.*

BONE MARROW DERIVED INTERSTITIAL MACROPHAGES CONTRIBUTES TO HYPOXIA-INDUCED PULMONARY HYPERTENSION. ***Rahul Kumar[1]****, C. Mickael[1], B. Kassa[1], L. Sanders[1], D.E. Koyanagi[1], S. Kumar[2], W.J. Janssen[3], K.R. Stenmark[2], R.M. Tuder[1], B.B. Graham[1], [1]Program in Translational Lung Research, Department of Medicine, University of Colorado, Anschutz Medical Campus, Aurora, CO; [2]Department of Pediatrics and Medicine, Cardiovascular Pulmonary Research Laboratory, University of Colorado, Anschutz Medical Campus, Aurora, CO; [3]Department of Medicine, National Jewish Health, Denver, CO.*

CHITINASE 3-LIKE-1 CONTRIBUTES TO THE DEVELOPMENT OF RIGHT VENTRICULAR HYPERTROPHY AND PULMONARY VASCULAR REMODELING. X. Sun[1], D. Yang[1], C.E. Ventetuolo[2], J. Braza[3], J. Aliotta[2], D. Banerjee[2], M. Pereira[2], E. Harrington[3], S. Rounds[3], C.G. Lee[1], J.A Elias[1,2], J.R. Klinger[2], ***Yang Zhou[1]****, [1] Department of Molecular Microbiology and Immunology, Brown University, Providence, RI; [2]Alpert Medical School of Brown University/Rhode Island Hospital, Providence, RI; [3]Providence 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 Chen[1]****, E.J. Dougherty[1], J.Y. Chou[2], R.L. Danner[1], J.M. Elinoff[1], [1]Critical Care Medicine Department, Clinical Center; [2]Eunice 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. Williams[1]****, M. Floren[2], K.C. Hansen[1], L.R. Schmitt[1], K.R. Stenmark[2], Department of Biochemistry and Molecular Genetics and Biological Mass Spectrometry Shared Resource; [2]Cardiovascular 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 Rounds[1]****, M. Mundy[1], A. Vang[1], G. Choudhary[1], Q. Lu[1], J.A. Elias[2], C. G. Lee[2], W.-K. Cho[1], [1]Vascular Research Laboratory, Providence VA Medical Center, Department of Medicine; [2]Department of Molecular Microbiology and Immunology, Warren Alpert Medical School of Brown University, Providence, RI.*

POSTERS – Wednesday, June 5, 2019 – continued

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. Lahm, 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 RIGHR VENTRICULAR 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. Oakes[1], C.S. Pearson[1], J. Xu[2], E. Lazartigues[2], J.D. Gardner[1], ***Xinping Yue[1]****, [1]Departments of Physiology; [2]Department of Pharmacology, Louisiana State University Health Sciences Center, New Orleans, LA.*

MULTI-MODAL SHORT CHAIN FATTY ACID, BUTYRATE, IS THERAPEUTIC IN PULMONARY HYPERTENSION. D. Strassheim[1], V. Karoor[1], T. Sullivan[1], P. Paucek[2], A. Kovacs-Kasa[3], A. Verin[3], K. Stenmark[1,4], ***Evgenia Gerasimovskaya[4]****, Departments of Medicine[1], Neurology[2], and Pediatrics[4], University of Colorado Denver, Aurora, CO; [3]Augusta 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 Godoy[1]****, M. Taha[1,2], Y. Deng[1], K. Rowe[1], D.J. Stewart[1,2],[1]Sinclair Center for Regenerative Medicine, Ottawa Hospital Research Institute, Canada; [2]University of Ottawa, Faculty of Medicine, Ottawa, Canada.*

SUPEROXIDE IN PATIENTS UNDERGOING RIGHT HEART CATHETERIZATION. ***Tammy Wichman[1]****, M. Sanchez[1], A. Thompson[1], C. Wichman[2], M. Zimmerman[3], University of Nebraska Medical Center; [1]Department of Internal Medicine Pulmonary Critical Care; [2]Department of Biostatistics, [3]Department of Physiology, Omaha, NE.*

PULMONARY ADVENTITIAL FIBROBLASTS REGULATE MACROPHAGE TRANSCRIPTIONAL AND METABOLIC PROGRAMS IN PULMONARY HYPERTENSION. ***Min Li[1]****, S. Riddle[1], S. Kumar[1], K.C. El Kasmi[1], A. D'alessandro[3], D. Champagne[3], H. Zhang[1], A. Laux[2], B.A. McKeon[1], M.G. Frid[1], D. Brown[1], C.-J. Hu[2], K.R. Stenmark[1]. [1]Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine; [2]Department of Craniofacial Biology; [3]Department of Biochemistry and Molecular Genetics, University of Colorado, Anschutz Medical Campus, Aurora, CO.*

PULMONARY VENO-OCCLUSIVE DISEASE, UNEXPECTED NUMBERS IN A RARE DISEASE: A CASE SERIES. ***Brett Begley[1]****, O. Agbaji[1], Reda Girgis[2], [1]Spectrum Health, Internal Medicine Residency, Grand Rapids, MI; [2]Director of Pulmonary Hypertension and Lung Transplantation, Fred and Lena Meijer Heart Center, Grand Rapids, MI.*

POSTERS – Wednesday, June 5, 2019 – continued

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.*

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

POSTERS

THE BROWN ALGAE POLYSACCHARIDE FUCOIDAN -P-SELECTIN AXIS FOR TREATMENT OF HYPOXIA-INDUCED PULMONARY HYPERTENSION. T. Novoyatleva[1]*, B. Kojonazarov[1]*, A. Owczarek[1], S. Veeroju[1], N. Rai[1], I. Henneke[1], M. Böhm[1], F. Grimminger[1], H.A. Ghofrani[1], W. Seeger[1,2], N. Weissmann[1], **Ralph T. Schermuly[1]***, [1]*Universities 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;* [2]*Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany*

TARGETING LOXL2 IN PULMONARY HYPERTENSION. **Jochen Steppan[1]***, H. Wang[1], Y. Nomura[1], S. Jandu[1], S. Melucci[1], D. Bedja[2], G. Zhu[2], D.E Berkowitz[1], L. Shimoda[3], L. Santhanam[1], Johns Hopkins University, School of Medicine, Departments of [1]Aesthesiology and Critical Care Medicine, [2]Cardiology, [3]Pulmonary and Critical Care Medicine Baltimore, MD.

DISRUPTION OF ENDOTHELIAL-DERIVED ANGIOCRINE FACTOR SIGNALING PERTURBS THE DEVELOPMENT OF PULMONARY HYPERTENSION. **Alexandra C. Racanelli[1]***, D. Chavez[2], P. Guo[3], A. Zhou[1], Y. Zhu[4], A.C. Borczuk[5], B.-S. Ding[2], A.M.K. Choi[1], [1]Division of Pulmonary Critical Care Medicine, Department of Medicine, New York Presbyterian Hospital-Weill Cornell Medicine, New York, NY; [2]Fibrosis Research Center, Division of Pulmonary, Critical Care and Sleep Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; [3]Division of Regenerative Medicine, Department of Medicine, Weill Cornell Medicine, New York, NY; [4]Institute of Systems Biomedicine, School of Basic Medical Sciences, Peking University Health Science Center, Beijing, China; [5]Department of Pathology, New York Presbyterian Hospital-Weill Cornell Medicine, New York, NY.

RESISTIN PREDICTS DISEASE SEVERITY AND SURVIVAL IN PULMONARY ARTERIAL HYPERTENSION. **Li Gao[1]***, J. Skinner[2], E. Hunter[2], R. Johns[2], [1]Division of Allergy & Clinical Immunology, Department of Medicine; [2]Department 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 Jose[1]***, J.M. Elwing[2], R. O'Donnell[3], [1]University of Cincinnati, Cincinnati Ohio; [2]University of Cincinnati, Cincinnati Ohio; [3]University of Cincinnati, Cincinnati Ohio.

CORRELATING THE ORAL MICROBIOME WITH NITRATE METABOLISM IN PATIENTS WITH PH-HFPEF. **Noel Britton***, MPH[1,2,3], C. Koch[1,3], A. Levine[1,2], N. Helbling[1], S. Shiva[1], A. Fitch[3] , R. Nettles[3], B. Methé[1,3], J. Lundberg[4], M. Simon[1], M.T. Gladwin[1], A. Morris[1,3], [1]University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA; [2]Department of Epidemiology, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA; [3]Center for Medicine and The Microbiome, University of Pittsburgh, Pittsburgh, PA; [4]Department 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 Kudryashova[1]***, A. Ray[1], A. Rode[1], Y. Shen[1], T. Avolio[1], D. Goncharov[1], Y. Zhao[2], E. Goncharova[1], [1]Vascular Medicine Institute, Department of Medicine, University of Pittsburgh, Pittsburgh, PA; [2]Department 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[1*]****, A. Laux[2], D. Wang[1], A. Flockton[1], C.-J. Hu[2], K. Stenmark[1], [1]Cardiovascular Pulmonary Research Laboratories, Departments of Pediatrics and Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; [2]Department of Craniofacial Biology School of Dental Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO.*

CAV1-SILENCED HUMAN PULMONARY ARTERY ENDOTHELIAL CELLS: HYPERPROLIFERATION ASSOCIATED WITH JAK/STAT AND PI3K/AKT ACTIVATION. ***Salina Gairhe****, K.S. Awad, E.J. Dougherty, G.A. Ferreyra, S. Wang, J.M. Elinoff , R.L. Danner, Critical Care Medicine Department, Clinical Center, National Institute of Health, Bethesda, MD.*

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[1]****, S. Hsu[2], S. C. Mathai[3], T. M. Bull[1], R. J. Tedford[4], K. S. Hunter[5], [1]Pulmonary Sciences and Critical Care Medicine, University of Colorado, Aurora, CO; [2]Cardiology, Johns Hopkins University, Baltimore, MD; [3]Pulmonary and Critical Care Medicine, John Hopkins School of Medicine, Baltimore, MD; [4]Medicine/Cardiology, Medical University of South Carolina, Charleston, SC; [5]Bioengineering, University of Colorado at Denver, Aurora, CO.*

EVALUATING THE ROLE OF BMPER IN PULMONARY HYPERTENSION. ***Lavannya Pandit[1]****, M. Hua[2], H. Karmouty-Quintana[3], X. Pi[2], [1]Department of Medicine, Michael E. DeBakey Veterans Affairs Medical Center/Baylor College of Medicine(BCM); [2]Department of Medicine, Baylor College of Medicine; [3]University 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. Laux[1], H. Zhang[2], K.R. Stenmark[2], ***Cheng Jun Hu[1]****, [1]Department of Craniofacial Biology School of Dental Medicine; [2]Cardiovascular 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 Grunig[1-3]****, N. Durmus[2], S. Pylawka[3], [1]Departments of Environmental Medicine; [2]Medicine, NYU School of Medicine, New York, NY; [3]Mirna 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.*

POSTERS – Friday, June 7, 2019 – continued

ENDOTHELIAL DYSFUNCTION IN COUPTF2 SILENCED CELLS. ***Edward J. Dougherty****, L.-Y. Chen, K.S. Awad, C.S. Curran, Y. Ding, J.M. Elinoff, A.F. Suffredini, R.L. Danner, Critical Care Medicine Department, Clinical Center, National Institutes of Health, Bethesda, MD.*

HYMECROMONE INHIBITS FIBROTIC DEPOSITION AND PULMONARY HYPERTENSION IN AN EXPERIMENTAL MODEL OF COMBINED PULMONARY FIBROSIS AND EMPHYSEMA (CPFE). S.D. Collum[1], J.G. Molina[1], A. Hanmandlu[1], W. Bi[1], M. Pedroza[1], N.-Y. Chen[1], T. Weng[1], T. Mertens[1], C. Wilson[1], M.R. Blackburn[1], S.S.K. Jyothula[2], ***Harry Karmouty-Quintana[1]****, [1]Department of Biochemistry and Molecular Biology; [2]Department 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. Behr[1], 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. Kirchgaessler,[10] M. Bengus,[10] F. Gilberg,[10] A.U. Wells[11], [1]Department of Internal Medicine V, LMU and Asklepios Fachkliniken Gauting, Comprehensive Pneumology Center, Munich, Germany; Member of the German Center for Lung Research; [2]Inova Heart and Vascular Institute, Inova Fairfax Hospital, Falls Church, VA; [3]U.O. di Pneumologia e Terapia Semi-Intensiva Respiratoria, Servizio di Fisiopatologia Respiratoriea ed Emodinamica Polmonare, Ospedale San Giuseppe, MultiMedica IRCCS, Milan Italy; [4]Department of Pulmonary Medicine, Unit for Interstitial Lung Diseases, University of Leuven, Leuven, Belgium; [5]Department of Pulmonary Medicine, Unit for Interstitial Lung Diseases, Ege University Hospital, Izmir, Turkey; [6]National and Kapodistrian University of Athens, Athens, Greece; [7]Department of Thoracic Medicine, University of Crete, Heraklion, Crete, Greece; [8]Respiratory Department and GIGA-13 Research Unit, CHU Liège, Liège, Belgium; [9]Pulmonary Institute Rabin Medical Center, Petah Tikva, Israel; [10]F. Hoffmann-La Roche Ltd., Basel, Switzerland; [11]Interstitial Lung Disease Unit, Royal Brompton Hospital, London, UK. ***(Presented by John L. Stauffer, M.D., Genentech/Roche).***