THOMAS L. PETTY
ASPEN LUNG CONFERENCE
61st Annual Meeting
"Translating Resilience and Pathogenesis to Personalized Therapy for COPD"
June 6-9, 2018

Tuesday, June 5, 2018 -- Evening

5:00-7:00 PM  Evening Registration Reception  Gant Conference Center

Wednesday, June 6, 2018 – Morning

8:00-8:05 AM  Welcome/Introduction  Irina Petrache, M.D., Chair
R. William Vandivier, M.D., Chair
Moumita Ghosh, Ph.D., Co-Chair

8:05-8:10 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

Clinical and Molecular Heterogeneity of COPD: Moderators - Lorraine Ware, M.D. and Jadwiga Wedzicha, M.D.

8:10-8:30 AM  THOMAS L. PETTY LECTURE
Keynote Address
“BRINGING LIGHT TO COPD PATHOGENESIS AND RESILIENCE”
Rubin M. Tuder, M.D.
Hart Family Professor of Medicine
Division of Pulmonary Sciences and Critical Care Medicine
University of Colorado School of Medicine
Anschutz Medical Campus
Aurora, Colorado

8:30-8:40 AM  Discussion

8:40-9:10 AM  ROGER S. MITCHELL LECTURE
“TARGETING COPD PHENOTYPES, ENDOTYPES AND BIOMARKERS”
Prescott G. Woodruff, M.D.
Professor of Medicine
Division of Pulmonary, Critical Care, Sleep and Allergy
Cardiovascular Research Institute
University of California, San Francisco
San Francisco, California

9:10-9:35 AM  Discussion

9:35-9:50 AM  FUNCTIONAL STUDIES OF SINGLE NUCLEOTIDE POLYMORPHISMS SUGGEST HETEROGENEITY IN COPD DUE TO SUSCEPTIBILITY OF DIFFERENT CELL TYPES.
Yohannes Tesfaigzi*, H. Petersen, B. Celli, C. Owen, Lovelace Respiratory Research Institute, Albuquerque, NM and Brigham and Women’s Hospital, Boston, MA.

9:50-10:05 AM  THE COPD FREQUENT EXACERBATOR PHENOTYPE IS ASSOCIATED WITH DECREASED UPPER AIRWAY MICROBIOTA ALPHA DIVERSITY. Alexa A. Pragman1,2*, T.J. Gould2, K. Knutson2, S. Hodgson1, R.E. Isaacson2, C.S. Reilly2, C.H. Wendt1,2, 1Minneapolis VA Medical Center and 2University of Minnesota, Minneapolis, MN.

10:05-10:35 AM  ....Coffee Break  MEET THE PROFESSOR SESSION (by Registration table)
Wednesday, June 6, 2017 — Morning

Clinical and Molecular Heterogeneity of COPD: Moderators - Lorraine Ware, M.D. and Jadwiga Wedzicha, M.D.

10:35-11:05 AM  THOMAS A. NEFF LECTURE
“APPLYING FUNCTIONAL GENOMICS TO COPD”
Edwin K. Silverman, M.D., Ph.D.
Professor of Medicine
Channing Division of Network Medicine
Harvard Medical School
Brigham and Women’s Hospital
Boston, Massachusetts

11:05-11:30 AM  Discussion

11:30-11:45 AM  RNASEQ ANALYSIS OF BRONCHIAL EPITHELIAL CELLS TO IDENTIFY COPD-ASSOCIATED GENES AND SNPS.  J. Yeo1, D. Morales1, T. Chen1, E. Crawford1, X. Zhang1, T. Blomquist1, A.M. Levin2, P.P. Massion3, D. Arenberg4, D.E. Midthun5, P.J. Mazzone6, S.D. Nathan7, R.J. Wainz8, P. Nana-Sinkam9, James C. Willey1*, 1The University of Toledo; 2Henry Ford Health System; 3Vanderbilt Ingram Cancer Center; 4University of Michigan; 5Mayo Clinic; 6Cleveland Clinic; 7Inova Fairfax Hospital; 8The Toledo Hospital; 9Virginia Commonwealth University.

11:45:12:00 Noon SINGLE CELL RNA SEQUENCING ANALYSIS OF Hhip+/- AGE ASSOCIATED EMPHYSEMA MODEL REVEALS CELL TYPE SPECIFIC CHANGES RELATED TO INFLAMMATORY PATHWAYS. Jeong H. Yun*, C.H. Lee, S. Xu, P. Castaldi, C.P. Hersh, L. Pinello, X. Zhou, Brigham and Women’s Hospital, Boston, MA.

12:00-1:30 PM  ......Lunch (lunch not provided by conference)
Wednesday, June 6, 2018 -- Afternoon

**COPD as a Disease of Accelerated Aging: Moderators – Rubin Tuder, M.D. and Sonia Flores, Ph.D.**

1:30-2:05 PM **STATE OF THE ART**

MeiLan K. Han, M.D.
*University of Michigan Health System*

“Early COPD: Improving Early Detection, Prevention, and Treatment”

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

2:30-2:45 PM **BACK TO THE BOX: USING LUNG VOLUMES TO PREDICT SUSCEPTIBILITY TO DEVELOP COPD AMONG SMOKERS.** S. Zeng, A. Tham, B. Bos, J. Jin, Mehrdad Arjomandi*, University of California San Francisco and San Francisco VA Medical Center, California.

2:45-3:00 PM **AIRWAY EPITHELIAL GENOMIC SIGNATURES OF TYPE 2 AND IL-17 INFLAMMATION IDENTIFY CLINICALLY HETEROGENEOUS SUBGROUPS AMONGST EVER SMOKERS IN SPIROMICS.** Suresh Garudadri1,2,*, P.G. Woodruff5, M. Han3, R.G. Barr1, E. Bleecker5, R. Bowler5, A. Comellas7, C. Cooper8, G. Criner9, M. Dransfield10, N. Hansel11, R. Paine12, J. Krishnan13, S. Peters14, F. Martinez15, J. Curtis3, A. Hastie14, W. O’Neal16, D. Couper16, N.E. Alexis16, S.A. Christenson2, 1Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Cleveland, OH; 2University of California, San Francisco, San Francisco, CA; 3University of Michigan, Ann Arbor, MI; 4Columbia University, New York, NY; 5University of Arizona, Tucson, AZ; 6National Jewish Health, Denver, CO; 7University of Iowa, Iowa City, IA; 8University of California, Los Angeles, Los Angeles, CA; 9Temple University, Philadelphia, PA; 10University of Alabama, Birmingham, Birmingham, AL; 11Johns Hopkins University, Baltimore, MD; 12University of Utah, Salt Lake City, UT; 13University of Illinois, Chicago, Chicago, IL; 14Wake Forest University, Winston-Salem, NC; 15Weill Cornell Medical College, New York, NY; 16University of North Carolina, Chapel Hill, NC.

3:00-3:30 PM **Break (Refreshments for conference participants only)**
Wednesday, June 6, 2018 -- Afternoon

Metabolic and Biochemical Mechanisms of COPD Pathogenesis: Moderators – Rubin Tuder, M.D. and Sonia Flores, Ph.D.

3:30-4:05 PM  STATE OF THE ART
Irina Petrache, M.D.
National Jewish Health, Denver
“Bioactive Lipids in the Pathogenesis of Airway Disease and Emphysema”

4:05-4:30 PM  Discussion

4:30-4:45 PM  OXYSTEROL GUIDED iBALT POSITIONING DRIVES CIGARETTE SMOKE-INDUCED COPD. Thomas M. Conlon1*, J. Jia1, R.S.J. Sarker1, N.F. Smirnova1, K. Heinzelmann1, H. Bayram2, O. Eickelberg3, A.Ö. Yildirim1, 1CPC/iLBD, Helmholtz Zentrum München, Member of the German Center for Lung Research (DZL), Munich, Germany; 2School of Medicine, Koç University, Istanbul, Turkey; 3Division of Respiratory Sciences and Critical Care Medicine, University of Colorado, Aurora, CO.

4:45-5:00 PM  CIGARETTE SMOKE IMPAIRS FATTY ACID BINDING PROTEIN 5-MEDIATED RESOLUTION OF INFLAMMATION IN A MOUSE MODEL OF COPD EXACERBATIONS. D. Rao1, D. Phan1, A.-L. Perraud1, Fabienne Gally1*, 1Department of Medicine, National Jewish Health, Denver, CO.

5:00-7:00 PM  POSTER VIEWING --- SOCIAL HOUR
Thursday, June 7, 2018 – Morning

Stem/Progenitor Cell Dysfunction and Regenerative Therapies for COPD: Moderators - Moumita Ghosh, Ph.D. and Melanie Königshoff, M.D., Ph.D.

8:00-8:35 AM STATE OF THE ART
Barry R. Stripp, Ph.D.
Cedars-Sinai Medical Center
“Stem/Progenitor Cell Dysfunction in the Pathogenesis of COPD”

8:35-9:00 AM Discussion

9:00-9:15 AM IDENTIFICATION OF A NOVEL WNT ACTIVE EPITHELIAL STEM CELL IN THE ADULT LUNG. J.-P. Ng-Blichfeldt1,2, Yan Hu3*, C. Ota1, R. Gosens2, M. Königshoff1,3, 1Comprehensive Pneumology Center, Helmholtz-Zentrum Munich, Ludwig-Maximilians-University, University Hospital Grosshadern, Member of the German Center of Lung Research (DZL), Munich, Germany; 2Department of Molecular Pharmacology, Groningen Research Institute for Asthma and COPD (GRIAC), University of Groningen, Groningen, The Netherlands; 3Division of Pulmonary Sciences and Critical Care Medicine, School of Medicine, University of Colorado, Aurora, CO.

9:15-9:30 AM PATIENT iPSC-DERIVED LUNG EPITHELIAL CELLS AS A NOVEL MODEL FOR CIGARETTE SMOKE-INDUCED LUNG DISEASE. K. Abo, A. Jacob, M. Vedaie, F. Hawkins, D. Kotton, Andrew Wilson*, Center for Regenerative Medicine, Boston University School of Medicine, Boston, MA.

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

MEET THE PROFESSOR SESSION (by Registration table)

10:00-10:35 AM STATE OF THE ART
Daniel J. Weiss, M.D., Ph.D.
University of Vermont College of Medicine
“Cell-Based Therapy for COPD: Rebuilding the Lung”

10:35-11:00 AM Discussion

11:00-11:15 AM DYSFUNCTION OF AIRWAY BASAL PROGENITORS CAN BE RESCUED BY A HEALTHY MICROENVIRONMENT: IMPLICATIONS IN REGENERATIVE THERAPY FOR SMOKING INDUCED LUNG DISEASES. Mansi Sethi1*, A.E. Brantley1, K. Kincaid1, J. Kim2, D.T. Merrick2, R.L. Keith2,3, Y.E. Miller2,3, M. Ghosh1,2, 1National Jewish Health; 2University of Colorado; and 3Denver Veteran Affairs Medical Center.

11:15-11:30 AM BIOENGINEERED HYDROGELS TO IMPROVE THREE-DIMENSIONAL (3D) MODELS OF LUNG REGENERATION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD). Kolene E. Bailey1*, T.J. D'Ovidio1, G.T. Campbell2, V.M. Nguyen1,2, N. Manning1, M. Königshoff1, C.M. Magin1,2, 1Division of Pulmonary Sciences and Critical Care Medicine, Department of Medicine, University of Colorado, Anschutz Medical Campus, Aurora, CO; 2Department of Bioengineering, University of Colorado, Anschutz Medical Campus, Aurora, CO; 3School of Dental Medicine, Department of Craniofacial Biology, University of Colorado, Anschutz Medical Campus, Aurora, CO.

12:00-3:00 PM Picnic – T Lazy 7 - The Ranch (for conference participants and their families)
Friday, June 8, 2018 – Morning

**Immune and Epithelial Cell Mechanisms of COPD Exacerbations: Moderators - R. William Vandivier, M.D. and Rachel Zemans, M.D.**

8:00-8:15 AM Clinical Perspective
Jadwiga A. Wedzicha, M.D.
National Heart and Lung Institute, Imperial College London
“Taming the Tiger: Burden, Consequences and Challenges of COPD Exacerbations”

8:15-8:20 AM Discussion

8:20-8:50 AM REUBEN M. CHERNIACK LECTURE
“COPD EXACERBATIONS AND IMMUNE DYSFUNCTION”
Alison A. Humbles, Ph.D.
Fellow Director, Department of Respiratory, Inflammation and Autoimmunity
MedImmune, LLC
Cambridge, United Kingdom

8:50-9:15 AM Discussion

9:15-9:30 AM PERIPHERAL BLOOD NK CELL PHENOTYPES ASSOCIATED WITH EXACERBATION RISK IN COPD PATIENTS. A. Osterburg, L. Lach, H. Liu, J. Flury, R. Panos, Michael Borchers*, University of Cincinnati Medical Center, Cincinnati, OH.

9:30-9:45 AM INFLAMMATORY PHENOTYPES ASSOCIATED WITH COPD INCREASE SUSCEPTIBILITY TO EXACERBATION: LESSONS FROM SINGLE CELL ANALYSIS OF LUNG MACROPHAGES. Sreelakshmi Vasudevan*, J. Vasquez, W. Chen, M. Arjomandi, University of California San Francisco, CA.

9:45-10:15 AM Coffee Break

10:15-10:50 AM MARVIN I. SCHWARZ LECTURE
“EPITHELIAL-IMMUNE CELL INTERACTIONS IN COPD AND COPD EXACERBATIONS”
Michael J. Holtzman, M.D.
Selma and Herman Seldin Professor of Medicine
Director, Division of Pulmonary and Critical Care Medicine
Washington University School of Medicine
St. Louis, Missouri

10:50-11:15 AM Discussion

11:15-11:30 AM P73 IS REQUIRED FOR PIGR EXPRESSION IN THE RESPIRATORY EPITHELIUM. Bradley W. Richmond*, R.-H. Du1, C. Marshall2, J. Pietenpol2, V.V. Polosukhin1, T.S. Blackwell1, 1Division of Allergy, Pulmonary, and Critical Care Medicine, Vanderbilt University School of Medicine, Nashville, TN; 2Department of Cancer Biology, Vanderbilt University, Nashville, TN.

11:30-11:45 AM SHARED MECHANISMS BETWEEN NEUTROPHIL FUNCTIONS, MULTI-MORBIDITY AND FRAILTY IN COPD. G.M. Walton, D. Wilson, W. Drew, A. McGuinness, R.A. Stockley, Elizabeth Sapey*, Institute of Inflammation and Ageing, University of Birmingham, United Kingdom.

11:45-1:30 PM Lunch (lunch not provided by conference)
Friday, June 8, 2018 -- Afternoon

Metabolic and Biochemical Mechanisms of COPD Pathogenesis: Moderators – Susan Majka, Ph.D. and Karina Serban, M.D.

1:30-2:05 PM  PARKER B. FRANCIS LECTURESHP
"MITOCHONDRIAL AND METABOLIC DYSFUNCTION IN THE DEVELOPMENT OF COPD"
Augustine M.K. Choi, M.D.
Professor of Medicine
Stephen and Suzanne Weiss Dean
Weill Cornell Medicine
New York, New York

2:05-2:30 PM  Discussion

2:30-2:45 PM  DEFECTIVE CELLULAR ENERGETICS IN COPD MACROPHAGES. Eilise M. Ryan*, R. Budd, P. Coelho, M.A. Bewley, W. Rumsey, Y. Sanchez, G. Choudhury, J.B. McCafferty, D.H. Dockrell, S.R. Walmsley, M.K.B. Whyte, University of Edinburgh, Queen’s Medical Research Institute, MRC Centre Inflammation Research, Edinburgh, United Kingdom.

2:45-3:00 PM  FROM DICTYOSTELIUM TO HUMAN AIRWAY EPITHELIUM: ADENINE NUCLEOTIDE TRANSLOCASE ENHANCES CELLULAR RESPIRATION AND CILIARY FUNCTION DISRUPTED BY CIGARETTE SMOKE. Jennifer M. K. Nguyen1,2*, C.R. Kliment1,3, Y.W. Lu4, S.M. Claypool4, S. Raychaudhuri1, S. Watanabe1, P.A. Iglesias5, V.K. Sidhaye6, D.N. Robinson1,2,6, 1Department of Cell Biology; 2Department of Pharmacology and Molecular Sciences; 3Department of Medicine, Division of Pulmonary and Critical Care; 4Department of Physiology; 5Department of Electrical and Computer Engineering; 6Department of Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD.

3:00-3:30 PM  ......Break (Refreshments for conference participants only)
Friday, June 8, 2018 -- Afternoon

**COPD as a Disease of Accelerated Aging: Moderators – Susan Majka, Ph.D. and Karina Serban, M.D.**

3:30-4:05 PM  STATE OF THE ART  
Jonathan K. Alder, Ph.D.  
*University of Pittsburgh School of Medicine*  
“Role of Senescence in COPD Pathogenesis”

4:05-4:30 PM  Discussion

4:30-4:45 PM  AGE ASSOCIATED CHANGES IN EXTRACELLULAR MATRIX PROTEINS IN THE LUNG ARE ALSO PRESENT IN SEVERE COPD.  
Corry-Anke Brandsma1,2*, V. Guryev2,3, W. Timens1,2, D.S. Postma2,4, R. Bischoff5, J. Malm6,7, G. Marko-Varga6, M. van den Berge2,4, P. Horvatovich5,  
1University of Groningen, University Medical Center Groningen, Department of Pathology and Medical Biology, Groningen, The Netherlands; 2University of Groningen, University Medical Center Groningen, Groningen Research Institute for Asthma and COPD, Groningen, The Netherlands; 3European Research Institute for the Biology of Ageing, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands; 4University of Groningen, University Medical Center Groningen, Department of Pulmonary Diseases, Groningen, The Netherlands; 5University of Groningen, Department of Analytical Biochemistry, Groningen Research Institute of Pharmacy, Groningen, The Netherlands; 6Lund University, Center of Excellence in Biological and Medical Mass Spectrometry, Biomedical Center, Lund, Sweden; 7Lund University, Department of Translational Medicine, Malmö, Sweden.

4:45-5:00 PM  miR-24 PROTECTS AGAINST CIGARETTE SMOKE-MEDIATED CELL DEATH AND AIRSPACE ENLARGEMENT, BUT IS DECREASED IN COPD.  
E. Finnemore, P. Shan, J. Gomez, N. Kaminski, P. Lee, Maor Sauler*, Yale School of Medicine, Section of Pulmonary, Critical Care and Sleep Medicine, New Haven, CT.

5:00-7:00 PM  POSTER VIEWING – Wine and Cheese Reception
8:00-8:30 AM  GILES F. FILLEY LECTURE
"COPD AND LUNG CANCER: COMMON PATHOGENESIS"
A. McGarry Houghton, M.D.
Associate Professor of Medicine
Division of Pulmonary, Critical Care and Sleep Medicine
University of Washington School of Medicine
Seattle, Washington

8:30-8:50 AM  Discussion

8:50-9:05 AM  COPD PHENOTYPE DICTATES CANCER-PROMOTING STROMAL GENE EXPRESSION PROGRAMS. Chris H. Wendt1,3*, B.J. Sandri1, L. Masvidal2, C. Murie3, M. Bartish2, S. Avdulov1, L. Higgins3, T. Markowski3, M. Peterson1, J. Bergh2, P. Yang3, C. Rolny2, A.H. Limper4, T.J. Griffin3, P.B. Bitterman1, O. Larsson2, 1Department of Medicine, University of Minnesota Medical School, Minneapolis, MN; 2Karolinska Institute, Stockholm, Sweden; 3Department of Biochemistry, University of Minnesota, Minneapolis, MN; 4Mayo Clinic, Rochester; 5Veterans Affairs Medical Center, Minneapolis, MN.

9:05-9:20 AM  THE ROLE OF IGSF3 IN CELL ADHESION, PROLIFERATION, CELL MIGRATION. Kelly Schweitzer1*, K. Ni1, S. Jacobson1, I. Bronova1, E. Berdyshev1, R. Bowler1,2, I. Petrache1,2, 1National Jewish Health, Department of Pulmonary, Critical Care and Sleep Medicine, Denver, CO; 2University of Colorado, Aurora, CO.

9:20-9:50 AM  ......Coffee Break
Saturday, June 9, 2018 – Morning

**Consequences of COPD Beyond the Obstructed Lung: Moderators-York Miller, M.D. and Brian Graham, M.D.**

9:50-10:20 AM  **STATE OF THE ART**
Norbert Weismann, Ph.D.
*Universities of Giessen and Marburg Lung Center (UGMLC), Germany*
“COPD and Pulmonary Vascular Disease: Comorbidity in Search of a Treatment”

10:20-10:40 AM  **Discussion**

10:40-10:55 AM  **IDENTIFICATION OF NOVEL MESENCHYMAL PATHWAYS THAT INITIATE EMPHYSEMA.** C.F. Gaskill1, J.A. Kropski1, B.W. Richmond1, R.F. Foronjy2, M.M. Taketo3, Susan M. Majka1*, 1Vanderbilt University Medical Center, Nashville, TN; 2SUNY Downstate, Brooklyn, NY; 3Kyoto University, Kyoto, Japan.

10:55-11:10 AM  **GENERATION OF ALPHA-1 ANTITRYPSIN KNOCKOUT AND PI*ZZ FERRETS USING CRISPR/CAS9: A GENETIC MODEL OF EMPHYSEMA.** N. He1, Bradley H. Rosen1,2*, J.S. Gray1, I.A. Evans1, M. Zieger3, Z. Yan1, F. Borel3, B. Liang1, X. Sun1, S.R. Moll1, M.H. Brodsky3, C. Mueller2, J.F. Engelhardt1,2, 1Anatomy and Cell Biology and 2Medicine, University of Iowa, Carver College of Medicine, Iowa City, IA; 3Pediatrics, University of Massachusetts Medical Center, Worcester, MA.

**Consequences of COPD Beyond the Obstructed Lung: Moderator - Barry Make, M.D.**

11:10-11:25 AM  **NHLBI Perspective**
Thomas L. Croxton, Ph.D., M.D.
*National Heart Lung and Blood Institute/NIH, Division of Lung Diseases*
“NHLBI Critical Challenges and Compelling Questions for COPD: Moving the Field Forward”

11:25-11:30 AM  **Discussion**

11:30-12:30 PM  **CONFERENCE SUMMARY**
“Divining the Future for COPD Research”
Stephen I. Rennard, M.D.
Professor of Medicine
University of Nebraska
Head, Clinical Discovery Unit
AstraZeneca
Cambridge, United Kingdom

12:30-1:00 PM  **Discussion and Adjourn**