THOMAS L. PETTY
ASPEN LUNG CONFERENCE
64th Annual Meeting
"Bridging the Gap Between Innate and Adaptive Immunity in the Lung"
June 8-11, 2022

Tuesday, June 7, 2022 -- Evening
5:00-7:00 PM Evening Registration  Gant Conference Center

Wednesday, June 8, 2022 – Morning

8:00-8:20 AM Welcome/Introduction
William Janssen, M.D., Chair
Andrew Fontenot, M.D., Co-Chair
Lisa Maier, M.D., Co-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

Innate Immunity: Mononuclear Phagocytes and Lung Disease - Moderator

8:30-9:05 AM GILES F. FILLEY LECTURE
“MACROPHAGE HETEROGENEITY IN THE LUNG”
Miriam Merad, M.D., Ph.D.
Professor, Oncological Sciences, Hematology and Medical Oncology
Icahn School of Medicine at Mount Sinai
Hess Center for Science and Medicine
New York, New York

9:05-9:30 AM Discussion

9:30-9:45 AM SINGLE CELL RNA SEQUENCING OF HUMAN LUNG SUB-COMPARTMENTS DEFINES SPATIAL HETEROGENEITY OF LEUKOCYTES AND IDENTIFIES INTERSTITIAL MACROPHAGE SUBPOPULATIONS ENRICHED BY CHRONIC CIGARETTE SMOKE EXPOSURE. Patrick S Hume1,3,*, Sean Jacobson2, Camille M. Moore2,4, Kara J. Mould1,3, Peter M. Henson1,3, William J. Janssen1,3, 1Department of Medicine, Division of Pulmonary, Critical Care, and Sleep Medicine; 2Department of Biomedical Research, National Jewish Health, Denver Colorado; 3Department of Medicine; 4Department of Biostatistics and Informatics, University of Colorado, Denver | Anschutz Medical Campus, Aurora, CO.

9:45-10:00 AM ALLERGIC ASTHMA RESPONSES ARE DEPENDENT ON INTERSTITIAL MACROPHAGE ONTOGENY. Robert M. Tighe1*, Anastasiya Birukova1, Yuriy Malakhau1, Aaron T. Vose1, Vidya Chandramohan2, Jaime M. Cyphert-Daly1, R. Ian Cumming1, Alexander V. Misharim3, Yoshihiko Kobayashi4, Purushothama R. Tata4, Jennifer L. Ingram1, Michael D. Gunn1, Loretta G. Que1, Yen-Rei A. Yu1,5, 1Department of Medicine, Duke University, Durham, NC; 2Department of Surgery, Duke University, Durham, NC; 3Department of Medicine, Northwestern University, Chicago, IL; 4Department of Cell Biology, Duke University, Durham, NC; 5Department of Medicine, University of Colorado, Denver, CO.

10:00-10:30 AM.....Coffee Break  MEET THE PROFESSOR SESSION (by Registration table)
Wednesday, June 8, 2022 -- Morning

**Innate Immunity: Mononuclear Phagocytes and Lung Disease: Moderators –**

10:30-11:05 AM   **PARKER B. FRANCIS LECTURESHIP**  
“DENDRITIC CELLS IN THE LUNG AND IMPLICATIONS FOR AIRWAYS DISEASE”  
Bart N. Lambrecht, M.D., Ph.D.  
Professor of Pulmonary Medicine  
University of Ghent  
Ghent, Belgium

11:05-11:30 AM   Discussion

11:30-11:45 AM   **AN IMPORTANT ROLE OF MITOCHONDIRAL H₂O₂ IN ALLERGEN-INDUCED TOLERANCE IN EARLY LIFE.**  
Huijuan Yuan¹*, Jie Chen¹, Sanmei Hu¹, Timothy B. Oriss¹, Sagar L. Kale¹, Sudipta Das¹, Seyed M. Nouraie¹, Prabir Ray¹,² and Anuradha Ray¹,²  
¹Division of Pulmonary, Allergy, and Critical Care Medicine, ²Department of Immunology, University of Pittsburgh School of Medicine, Pittsburgh, PA.

11:45-12:00 Noon   **A HUMAN MODEL OF ASTHMA EXACERBATION IDENTIFIES PATHOGENIC AIRWAY IMMUNE CIRCUITS SPECIFIC TO ASTHMA.**  
J. Alladina¹*, N.P. Smith¹, K. Manakongtreecheep¹, K. Slowikowski¹, H.L. Keen², T. Kooistra¹, R.A. Rahimi¹, F.L. Giacona¹, A.D. Luster¹, A.C. Villani¹, J.L. Cho² and B.D. Medoff¹, ¹Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital, Boston, MA; ²Iowa Inflammation Program, University of Iowa Carver College of Medicine, Iowa City, IA.

12:00-1:30 PM   ......Lunch  (lunch not provided by conference)
Wednesday, June 8, 2022 -- Afternoon

Bridging the Gap Between Innate and Adaptive Immune Responses/Part 1: Moderators –

1:30-2:05 PM  STATE OF THE ART
Robert P. Dickson M.D.
University of Michigan Medical School, Ann Arbor, Michigan
“How Gut and Lung Microbiota Calibrate Lung Immunity in Health and Disease”

2:05-2:30 PM  Discussion

2:30-2:45 PM  PROINFLAMMATORY MONOCYTE IMMUNE REPROGRAMMING ENHANCES LPS-INDUCED LUNG INJURY IN SEPSIS SURVIVOR MICE. Scott J. Denstaedt*, Benjamin H. Singer, Michael W. Newstead, Theodore J. Standiford, Bethany B. Moore, Rachel L. Zemans, Pulmonary and Critical Care Medicine, Michigan Medicine, Ann Arbor, MI.

2:45-3:00 PM  AN INEFFECTIVE HYPERINFLAMMATORY NEUTROPHILIC IMMUNE RESPONSE INDUCED BY HYPERVIRULENT KLEBSIELLA PNEUMONIAE. Sudipta Das1,*, Akruti Patel1, Jie Chen1, Sanmei Hu1, Kathryn Dalton1, Michael Gorry1, Kong Chen1, Janet Lee1,2, Anuradha Ray1,3 and Prabir Ray1,3; 1Division of Pulmonary, Allergy, and Critical Care Medicine, Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA; 2Acute Lung Injury Center of Excellence, Department of Medicine, University of Pittsburgh, Pittsburgh, PA; 3Department of Immunology, University of Pittsburgh School of Medicine, Pittsburgh, PA

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

3:30-4:05 PM  MARVIN I. SCHWARZ LECTURE
“DEVELOPMENT AND REGULATION OF MACROPHAGE RESPONSES”
Christopher K. Glass, M.D., Ph.D.
Professor, Cellular Molecular Medicine
University of California, San Diego
LaJolla, California

4:05-4:30 PM  Discussion

4:30-4:45 PM  SINGLE CELL RNA-SEQUENCING REVEALS INFLAMMATORY RAT MODEL OF PULMONARY ARTERIAL HYPERTENSION WITH BMPR2 MUTATIONS IS CHARACTERIZED BY TRANSCRIPTOMIC SHIFT IN PULMONARY MONOCYTES AND MACROPHAGES. Christine M. Cunningham1,2,*, Ting-Hsuan Wu1, Dongeon Kim1,2, Ryan Vihn1,2, Emilie Claire Schneider1,2, Gongyong Peng1,2, Alexander McQuiston1,2, Lan Zhao1,2, Peter Kao1, Xinguo Jiang1,2, Amy Tian1,2, and Mark R. Nicolls1,2; 1Stanford University School of Medicine, Stanford, CA; 2VA Palo Alto Health Care System, Palo Alto, CA.

4:45-5:00 PM  A NOVEL TRPV4-NF-kB INHIBITORY INTERACTION IN MACROPHAGES PROTECT THE LUNG FROM INJURY. Y. Liu1, Y. Wang3, S. Abraham1, L.M. Grove1, B.D. Southern1,2, Amanda Reinhardt1, Erica M. Orsini1, M. A. Olman1,2, R. G. Scheraga1,2,*, Departments of Inflammation and Immunity1, Respiratory Institute2, and Cancer Biology3 Cleveland Clinic, Cleveland, OH.

5:00-7:00 PM  POSTER VIEWING (Refreshments for conference participants only)
Thursday, June 9, 2022 -- Morning

*Bridging the Gap Between Innate and Adaptive Immune Responses/Part 2: Moderators –*

8:00-8:35 AM  **STATE OF THE ART**
G.R. Scott Budinger, M.D.
Northwestern University Feinberg School of Medicine, Chicago, Illinois
“Innate and Adaptive Immune Responses in COVID-19 Pneumonia”

8:35-9:00 AM  Discussion

9:00-9:15 AM  SARS-CoV-2-SPECIFIC T CELLS ASSOCIATE WITH REDUCED LUNG FUNCTION AND INFLAMMATION IN PULMONARY POST-ACUTE SEQUALAE OF SARS-CoV-2 Katherine M. Littlefield, Renée O. Watson, Jennifer M. Schneider, Charles P. Neff, Eiko Yamada, Min Zheng, Thomas B. Campbell, Michael T Falta, Sarah E. Jolley, Andrew P. Fontenot, **Brent E. Palmer**, 1 Department of Medicine, University of Colorado AMC, Aurora, CO; 2Department of Immunology and Microbiology, University of Colorado AMC, Aurora, CO.

9:15-9:30 AM  IL-13-INDUCED GOBLET CELL METAPLASIA BLOCKS SARS-COV-2 BINDING/ENTRY TO PRIMARY HUMAN AIRWAY EPITHELIA IN VITRO. *Shreya Ghimire*, Biyun Xue, Kun Li, Chris Wohlford-Lenane, Ryan M. Gannon, Andrew L. Thurman, David K. Meyerholz, Stanley Perlman, Paul B. McCray, Jr., Alejandro A. Pezzulo, Department of Internal Medicine, Carver College of Medicine, The University of Iowa, Iowa City, IA.

9:30-10:00 AM  ......Coffee Break  MEET THE PROFESSOR SESSION (by Registration table)

10:00-10:35 AM  ROGER S. MITCHELL LECTURE
“GRANULOMA FORMATION IN THE LUNG”
Professor Lalita Ramakrishnan, Ph.D.
Professor of Medicine, Immunology and Infectious Diseases
Molecular Immunity Unit
University of Cambridge
Cambridge, United Kingdom

10:35-11:00 AM  Discussion

11:00-11:15 AM  ASPERGILLUS NIDULANS-INDUCED GRANULOMATOUS INFLAMMATION IN A MURINE MODEL OF SARCOIDOSIS. *Shaikh M. Atif*, Douglas G. Mack, 1 Allison Martin, Michael Falta, and Andrew Fontenot, 1,2, 1Department of Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO. 2Department of Immunology and Microbiology, University of Colorado Anschutz Medical Campus, Aurora, CO.

11:15-11:30 AM  NTM MUCOSAL-INDUCED IMMUNE RESPONSE ENHANCES THE PROTECTIVE EFFECT OF BCG AGAINST MYCOBACTERIUM TUBERCULOSIS INFECTION. Taru S. Dutt, Burton R. Karger, Amy Fox, Nathan Youssef, Rhythm Dhadhwal, Sarah Cooper, Brendan Podell, Elisa Rampacci, Andres Obregon-Henao and *Marcela Henao-Tamayo*, Microbiology, Immunology, and Pathology, Colorado State University, Fort Collins, Colorado

12:00-3:00 PM  Picnic – T Lazy 7 - The Ranch (for conference participants and their family)
Adaptive Immune Responses in Lung Disease: Moderators -

**8:00-8:35 AM**  
STATE OF THE ART  
Frances E. Lund, Ph.D.  
*University of Alabama at Birmingham, Birmingham, Alabama*  
“Role of B-Cells in Adaptive Immunity and Autoimmunity”

**8:35-9:00 AM**  
Discussion

**9:00-9:15 AM**  
*B CELLS ARE REGULATED BY RELMa IN PULMONARY HYPERTENSION.*  
Qing Lin*, Udeshika Kariyawasam, John Skinner, Roger Johns, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

**9:15-9:30 AM**  
INTERSTITIAL LUNG DISEASE PATIENTS EXHIBIT AUGMENTED GERMINAL CENTER RESPONSES IN LUNG LYMPH NODES AND INCREASED SERUM REACTIVITIES TO NOVEL AUTOANTIGENS  
Young me Yoon¹, Tania Velez², Vaibhav Upadhyay³, Sara Vazquez³, Cathryn T Lee¹, Kelly Blaine¹, Donna Decker¹, Robert Guzy¹, Ayodeji Adegunsoy¹, Mary Strek¹, Imre Noth², Mark S Anderson³, Joseph DeRisi³, Anthony Shum³, and Anne I Sperling⁴,²*  
¹Dept of Medicine, Section of Pulmonary and Critical Care, University of Chicago, Chicago, IL; ²Department of Medicine, Pulmonary and Critical Care Division, Carter Immunology Center, Dept of Microbiology, Immunology, and Cancer, University of Virginia, Charlottesville, VA; ³Dept of Medicine, University of California, San Francisco, CA.

**9:30-10:00 AM**  
…..Coffee Break  (Refreshments for conference participants only)

**10:00-10:35 AM**  
STATE OF THE ART  
Montserrat C. Anguera Ph.D.  
*University of Pennsylvania School of Veterinary Medicine, Philadelphia, Pennsylvania*  
“Sex as a Biologic Variable: Role of X Chromosome Inactivation in Immunity”

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

**11:00-11:15 AM**  
SEXUALLY DIMORPHIC EXPRESSION OF LUNG MIRNAS IN AN ASTHMA MOUSE MODEL.  
Nathalie Fuentes¹, **Sarah Commodore**²*, Ashley Weaver¹, Rachel Steckbeck¹, Lidys Rivera¹, Marvin Nicoleau¹, and Patricia Silveyra², ¹Department of Pediatrics, Pennsylvania State University College of Medicine, Hershey, PA; ²Department of Environmental and Occupational Health, School of Public Health, Indiana University Bloomington, IN.

**11:15-11:30 AM**  
LUNG EPITHELIAL CELL-DERIVED C3 PROTECTS AGAINST PNEUMONIA-INDUCED LUNG INJURY.  
A. N. Ozanturk¹, S. K. Sahu¹, D. H. Kulkarni², L. Garnica¹, L. Dannull¹, L. Ma¹, J. McPhatter¹, J. Kuen¹, X. Wu³, S. L. Brody¹, J. P. Atkinson³, **H. S. Kulkarni**²*, ¹Pulmonary and Critical Care Medicine, ²Gastroenterology, and ³Rheumatology, Washington University in St Louis, Saint Louis, MO.

**11:30-1:30 PM**  
…..Lunch  (lunch not provided by conference)
1:30-2:05 PM  
**THOMAS A. NEFF LECTURE**  
“COMPLICATIONS OF IMMUNE MODIFYING THERAPIES”  
Karthik S. Suresh, M.D.  
Assistant Professor of Medicine  
Johns Hopkins Asthma and Allergy Center  
Baltimore, Maryland

2:05-2:30 PM  
Discussion

2:30-2:45 PM  
**BRONCHOALVEOLAR FLUID OF PATIENTS WITH CHECKPOINT INHIBITOR PNEUMONITIS DEMONSTRATE ELEVATED LEVELS OF CHEMOKINE LIGAND 18 WITH RELATION TO DISEASE SEVERITY. Mohammad I Ghanbari, Andres Vilabona-Rueda, Ara Wally, Julie Brahmer, Jarushka Naidoo, Jeffrey Thiboutot, Hans J. Lee, Lonny B. Yarmus, David J. Feller-Kopman, Vasan Yegnasubramanian, Franco R. D’Alessio, Karthik Suresh.**  
1Division of Pulmonary Critical Care Medicine, and 2Department of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD.

2:45-3:00 PM  
**CLINICAL RESPONSES TO TREATMENT WITH TEZEPELUMAB AMONG PATIENTS WITH SEVERE, UNCONTROLLED ASTHMA IN THE PHASE 3 NAVIGATOR STUDY. Njira Lugogo, Christopher S Ambrose, Gene Colice, Kamil Kmita, Bill Cook, Sandhia Ponnarambil, Jean-Pierre Llanos-Ackert and Andrew Menzies-Gow.**  
1University of Michigan, Ann Arbor, MI, USA; 2AstraZeneca, Gaithersburg, MD; 3AstraZeneca, Warsaw, Poland; 4AstraZeneca, Cambridge, UK; 5Amgen, Thousand Oaks, CA; 6Royal Brompton and Harefield Hospitals, London, UK. ( encore/presented by Sarah Moyle/AstraZeneca)

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

3:30-4:05 PM  
**STATE OF THE ART**  
Matthew F. Krummel, Ph.D.  
University of California San Francisco, San Francisco, California  
“Curing Cancer Through Immunity”

4:05-4:30 PM  
Discussion

4:30-4:45 PM  
**NEWLY DEFINED NEOANTIGEN MODELS DEMONSTRATE THAT NAbs RECOGNIZE AND ELIMINATE A BROAD-SPECTRUM OF TRANSFORMING CELLS. Kavita Rawat, Dhyanir N. Kansara, Shannon M. Soucy, Fred W. Kolling, Kiara M. Diaz, and Claudia V. Jakubzick.**  
1Department of Microbiology and Immunology, Dartmouth Geisel School of Medicine, Hanover, NH; 2Department of Biomedical Data Science, Dartmouth Geisel School of Medicine, Hanover, NH.

4:45-5:00 PM  
**INDUCTION OF TERTIARY LYMPHOID STRUCTURES IN NON-SMALL CELL LUNG CANCER IMPROVES B AND T CELL ANTI-TUMOR IMMUNITY. Hye Mi Kim, Dongyan Liu, Ayana Ruffin, Alexandra McDonough, Caleb Lampenfeld, Sheryl Kunning, Ashwin Somasundaram, Laura Stabile, Tullia C. Bruno.**  
University of Pittsburgh, UPMC Hillman Cancer Center, Department of Immunology, Pittsburgh, PA

5:00-7:00 PM  
**POSTER VIEWING** (Refreshments for conference participants only)
Saturday, June 11, 2022 -- Morning

**Future of Lung Immunology: Moderators –**

8:00-8:35 AM  **REUBEN M. CHERNIACK LECTURE**  
“IMAGING OF IMMUNE CELLS IN THE LIVING LUNG”  
Paul Kubes, Ph.D.
Professor, Department of Physiology and Pharmacology  
Snyder Institute for Chronic Diseases  
University of Calgary Cumming School of Medicine  
Calgary, Alberta, Canada

8:35-9:00 AM  **Discussion**

9:00-9:15 AM  **ROLE OF DHX58 (LGP2) DURING RESOLUTION OF PNEUMONIA-ARDS IN MICE AND HUMANS.**  
Andres Villabona-Rueda*, Ye Xiong¹, Nuala Meyer², Nicola Heller³, Rachel Damico¹, Franco D’Alessio¹, ¹Department of Medicine, Johns Hopkins University, Baltimore, Maryland; ²Department of Medicine, Perelman School of Medicine, University of Pennsylvania; ³Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University, Baltimore, MD.

9:15-9:30 AM  **CRTH2 MEDIATES PRO-FIBROTIC MONOCYTE-DERIVED ALVEOLAR MACROPHAGE DIFFERENTIATION AND PROMOTES LUNG FIBROSIS.**  
Yueming Cao¹, Jahnava Rudrakshala¹, River Williams¹, Miles Mundy¹, Dongqin Yang¹, Amy Palmisciano², Thomas Walsh², Cesar Delcompare², Tanis Caine², Luca Tomasi², Barry S. Shea², Yang Zhou¹*, ¹Department of Molecular Microbiology and Immunology, Brown University, Providence, Rhode Island; ²Division of Pulmonary, Critical Care and Sleep Medicine, Alpert Medical School of Brown University and Rhode Island Hospital, Providence, Rhode Island.

9:30-10:00 AM  **Coffee Break (Refreshments for conference participants only)**
Saturday, June 11, 2022 -- Morning

Future of Lung Immunology: Moderators –

10:00-10:35 AM  THOMAS L. PETTY LECTURE
"NOVEL THERAPIES FOR LUNG DISEASE”
Terry J. Fry, M.D.
Professor of Pediatrics, Hematology and Immunology
University of Colorado School of Medicine
Children’s Hospital Colorado
Anschutz Medical Campus
Aurora, Colorado

10:35-11:00 AM  Discussion

11:00-11:15 AM  MAINTENANCE DNA METHYLATION STABILIZES INDUCED TREGS. Anthony M. Joudi*, Kathryn A. Helmin1, Luisa Morales-Nebreda1, Manuel Torres Acosta1, Carla P. Reyes Flores1, Samuel E. Weinberg1, Benjamin D. Singer1, 1Dept. of Medicine, Northwestern University Feinberg School of Medicine, Chicago, IL

11:15-11:30 AM  PERIPHERALLY-INDUCED TREGS REGULATE IMMUNE CELL NUMBERS DURING RESOLUTION OF INFLUENZA IN MICE. Jason R. Mock*, Miriya K. Tune1,2, and Claire M. Doerschuk1, 1Division of Pulmonary Disease and Critical Care Medicine, Department of Medicine, 2Marsico Lung Institute, 3Center for Airways Disease, University of North Carolina, Chapel Hill, NC.

11:30-12:30 PM  CONFERENCE SUMMARY
Anuradha Ray, Ph.D.
Professor of Medicine and Immunology
UPMC Endowed Chair in Lung Immunology
Division of Pulmonary, Allergy, and Critical Care Medicine
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

12:30-1:00 PM  Discussion and Adjourn
POSTER VIEWING
Wednesday, June 8, 2022
5:00-7:00 PM

POSTERS

ADOPTIVE TRANSFER OF IMMUNOMODULATORY MACROPHAGES MODIFIES LOCAL PULMONARY IMMUNITY AND ATTENUATES PULMONARY HYPERTENSION IN A MODEL OF CHRONIC HYPOXIA EXPOSURE. Angeles Fernandez-Gonzalez1*, Amit Mukhia1, Jahnavi Nadkarni1, Kristjan Zhumka1, Sally Vitali2, Xianlan Liu1, S. Alex Mitsialis1, Stella Kourembanas1, 1Boston Children’s Hospital, Division of Newborn Medicine and 2Department of Pediatrics, Harvard Medical School.

SYNDECAN-1 ATTENUATES LUNG INJURY BY PROMOTING EFFEROCYTOSIS. Marília Zuttion1*, Tanyalak Parimon1, Yapei Huang1 and Peter Chen1, 1Cedars-Sinai Medical Center; Women’s Guild Lung Institute; Department of Medicine, Los Angeles, CA.

IL-22 REGULATES LUNG IMMUNITY AND INJURY RESPONSE IN A MOUSE MODEL OF REPETITIVE ENVIRONMENTAL DUST EXPOSURE. Arzu Ulu1, Stefanie Sveiven1, Amanpreet Bilg1, Jalene V. Velazquez1, Marissa Díaz2, Maheswari Mukherjee3, Ana G. Yuil-Valdes4, Santosh Kota5, Abigail Burr1, Aileen Najera1, and Tara M. Nordgren6,1*, 1Division of Biomedical Sciences, School of Medicine, University of California, Riverside. Riverside, CA; 2Riverside Community College, Riverside, CA; 3Department of Medical Sciences, College of Allied Health Professions, University of Nebraska Medical Center, Omaha, NE; 4Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE; 5 Department of Preprofessional Biology, University of Florida, Gainesville, FL; 6Department of Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO.

SCRNA-SEQ EXPRESSION OF APOC2 AND IFI27 IDENTIFIES FOUR AM SUPERCLUSTERS IN CF AND HEALTHY BALF. Xin Li1*, Fred W. Kolling2, Daniel Aridgides3, Diane Mellinger3, Alix Ashare1,3, and Claudia V. Jakubzick1, 1Department of Microbiology and Immunology, Dartmouth Geisel School of Medicine, Hanover, NH; 2Department of Biomedical Data Science, Dartmouth Geisel School of Medicine, Hanover, NH; 3Department of Medicine, Dartmouth Hitchcock Medical Center, Lebanon, NH.

REAL-WORLD EFFECTIVENESS OF BENRALIZUMAB ON EXACERBATIONS AMONG SPECIALIST-TREATED PATIENTS WITH SEVERE ASTHMA IN THE US: DATA FROM CHRONICLE. Reynold A. Panettieri, Jr1, Njira Lugogo2, Wendy C. Moore3, Bradley E. Chipp5, Brett Jepson5, Wenjiong Zhou6, Christopher S. Ambrose7, Eduardo Genofre8, Donna Carstens8, Rutgers, 1The State University of New Jersey, New Brunswick, NJ; 2University of Michigan, Ann Arbor, MI; 3Wake Forest School of Medicine, Winston-Salem, NC; 4Capital Allergy & Respiratory Disease Center, Sacramento, CA; 5Cytel, Cambridge, MA; 6ClinChoice, Fort Washington, PA; 7AstraZeneca, Gaithersburg, MD; 8AstraZeneca, Wilmington, DE. (encore/presented by Sarah Moyle/Astra Zeneca)

RESISTIN REGULATES NLRP3 INFLAMMASOME IN PULMONARY HYPERTENSION. Roger Johns*, Udeshika Kariyawasam, John Skinner, Qing Lin, Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

CHROMATIN ACCESSIBILITY IDENTIFIES NOVEL REGULATORY PATHWAYS MEDIATING STEMNESS AND IMMUNOEDITING IN SMALL CELL LUNG CANCER. Vivek Shukla1, Lyuba Varticovski2, Songjoon Baek2, Haitao Wang1, Ruihong Wang1, Yonghong Wang3, Sudheer K. Gara1, Mary R. Zhang1, Markku M. Miettinen3, Gordon L. Hager2, David S. Schrump1, Thoracic Epigenetics Section, Thoracic Surgery Branch1; Laboratory of Receptor Biology and Gene Expression2; Laboratory of Pathology3; Center for Cancer Research, National Cancer Institute, Bethesda, MD.
DECAY ACCELERATING FACTOR (CD55) PROTECTS AGAINST COMPLEMENT-MEDIATED ALVEOLAR TYPE-2 (AT2) CELL INJURY DURING CIGARETTE SMOKE (CS) EXPOSURE. R. Kurniadi1, A. Mikosz1, D. Cao1, I. Echelman1, H Steichen1, I Chelepis1, J Bridges1, I Petrache1,2, Karina A Serban1,2*, 1Division of Pulmonary, Critical Care, and Sleep Medicine at National Jewish Health, Denver, CO and 2Anschutz Medical Campus, University of Colorado, Aurora, CO.

GM-CSF ENHANCES MACROPHAGE KILLING OF NONTUBERCULOUS MYCOBACTERIA. Alma Ochoa, Krystin Skinner, Ari Simenauer, Jazalle McClendon, Thienthanh Trinh, William J Janssen, Ken Malcolm, Katie Hisert*; Department of Medicine, National Jewish Health, Denver, CO.


DIFFERENTIAL LUNG IMMUNE CELL INFLAMMASOME RESPONSES TO ENVIRONMENTAL NONTUBERCULOUS MYCOBACTERIA AND VOLCANIC ASH Rachel N. Wilsey1, Stephanie N. Dawrs1, Charmie K. Vang1, David E. Damby2, Jennifer R. Honda1*, 1Department of Immunology and Genomic Medicine, Center for Genes, Environment and Health, National Jewish Health, Denver, CO; 2Volcano Science Center, United States Geological Survey, Menlo Park, CA.

PROTEOMIC ANALYSIS OF BRONCHOALVEOLAR LAVAGE CELLS IDENTIFIES BIOLOGICALLY DISTINCT MODULES IN CHRONIC BERYLLIUM DISEASE. Li Li*, Brian Vestal, Peggy M. Mroz , Sucai Liu, Kristyn MacPhail, Tim J Griffin, Ivana V. Yang, Lisa A. Maier, Maneesh Bhargava, National Jewish Health, Denver, CO.

RELEASE OF EC-SOD INTO ALVEOLAR FLUID IS PROTECTIVE AGAINST NEUTROPHIL-MEDIATED LUNG INJURY AND INFLAMMATION IN MRSA PNEUMONIA. Christina Sul1*, Caitlin Lewis1, Nathan Dee1, Nana Burns1, Kaori Oshima2, Laura Hernandez-Lagunas1, Eric Schmidt2, Christine Vohwinkel1, Eva Nozik1, 1Cardiovascular Pulmonary Research Laboratories and Pediatric Critical Care Medicine, Department of Pediatrics; 2Pulmonary Sciences and Critical Care Medicine, Department of Medicine, University of Colorado School of Medicine, Aurora, CO.

CD4 TISSUE RESIDENT MEMORY T CELL STIMULATION ACTIVATES ASTHMA-RELEVANT INFLAMMATORY PATHWAYS. Nathan Schoettler1*, Anne I Sperling2, 1Department of Medicine, University of Chicago, Chicago, IL; 2Department of Medicine, University of Virginia, Charlottesville, VA.

PULMONARY THROMBOSIS PROMOTES SEVERE FLU IN MICE EXPOSED TO CIGARETTE SMOKE. Tomasz W. Kaminski1*, Tomasz Brzoska1, Keven Robinson2, Toru Nyuonyo2, Prithu Sundd1,2, 1Pittsburgh Heart, Lung and Blood Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA; 2Division of Pulmonary, Allergy and Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA.

MALAT1 AND MIR-155 REGULATE INFLAMMATORY CYTOKINE SIGNALING IN HIV-INFECTED MACROPHAGES. Zhihong Yuan12*, Yunlong Huang3, Ruxana T Sadikot1,2, 1VA Nebraska Western Iowa Health Care System, Omaha, NE; 2Division of Pulmonary, Critical Care & Sleep, Department of Internal Medicine, University of Nebraska Medical Center, Omaha; 3 Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha, NE.
NIVOLUMAB FOR THE PREVENTION OF BRONCHIAL DYSPLASIA PROGRESSION IN HIGH-RISK CURRENT AND FORMER SMOKERS. **Robert L. Keith**1,2*, Howard Li3, Moumita Ghosh1, Melissa New1, Michele Baloneque-Siqueira1, Brandi Kubala1, Junxia Hu1, Hui Yu1, Deandra Walker1, York Miller1,2, Dan Merrick1, 1University of Colorado Cancer Center, Aurora, CO; 2Rocky Mountain; Regional VAMC, Aurora, CO; 3Hunter Holmes McGuire VAMC, Richmond, VA.

EXTRACELLULAR SUPEROXIDE DISMUTASE AFFECTS INTERSTITIAL MACROPHAGE ACCUMULATION AND REPROGRAMMING DURING HYPOXIA. **Caitlin Lewis***, Christina Sul, Laura Hernandez, Cassidy Delaney, Claudia Mickael, Eva Nozik, Cardiovascular Pulmonary Research Labs, Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO.

CLASSICAL DENDRITIC CELLS DRIVE AND MAINTAIN HYPOXIA-INDUCED PULMONARY HYPERTENSION. **Claudia Mickael***, Linda A. Sanders1, Michael H. Lee4, Rahul Kumar4, Amy McKee3, David Irwin2, Delaney Swindle2, Kurt Stenmark2, Brian Graham4, Rubin Tuder1, 1Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado Denver, Department of Medicine, Aurora, CO; 2Cardiovascular Pulmonary Research Laboratory, University of Colorado School of Medicine, Department of Pediatrics-Critical Care Medicine, Aurora, CO; 3Division of Allergy and Clinical Immunology, University of Colorado Denver, Department of Medicine, Aurora, CO; 4Division of Pulmonary Sciences, University of California San Francisco, Department of Medicine, San Francisco, CA.

IMMUNE DYSFUNCTION AFTER COPD EXACERBATIONS WITH RESPIRATORY FAILURE. **Kimberly R. Jordan, PhD***, Jonathan K. Zakrajsek, MS2, Fernando Diaz del Valle, MD2, Harold W. Bell2, Daniel N. Frank, PhD1, Sung-Joon Min, PhD6, Jihye Kim, PhD5, Hyunmin Kim, PhD6, Martin R. Zamora, MD2, Moumita Ghosh, PhD2 and R. William Vandivier, MD2, 1Department of Immunology and Microbiology; 2Division of Pulmonary Sciences and Critical Care Medicine; 3Division of Infectious Diseases; and 4Division of Health Care Policy and Research, University of Colorado, Aurora CO; 5Cleveland Clinic Lerner Research Institute and 6Case Western Reserve University, Cleveland, OH.
POSTERS

EFFECTS OF E-CIGARETTE WHOLE BODY AEROSOL EXPOSURE ON THE IMMUNE RESPONSE IN MICE TO AN ACUTE STREPTOCOCCUS PNEUMONIAE CHALLENGE. N. Durmus1,*, G. Grunig1,2, V. Goriaínova2, A. Abruzzo3, A. Raja2, H. Joung2, D. Chalupa4, A. C. Elder4, J. Weiser4, J. T. Zelikoff2. Dept. of Medicine, Environmental Medicine, Microbiology, NYU Grossman School of Medicine, New York, NY; Dept of Environmental Med, Univ of Rochester Med Ctr, Rochester, NY.

CC16 DEFICIENCY IMPACTS PULMONARY EPITHELIAL-DRIVEN RESPONSES DURING MYCOPLASMA PNEUMONIAE INFECTION. Natalie Iannuzo1,*, Paul R. Langlais2, Stefano Guerra1,4, Julie G. Ledford1,3,4, Department of Cellular and Molecular Medicine, University of Arizona, Tucson, AZ; Department of Medicine, Division of Endocrinology, University of Arizona, Tucson, AZ; Department of Medicine, Division of Pulmonary, Allergy, Critical Care, and Sleep Medicine, University of Arizona, Tucson AZ; Asthma and Airway Disease Research Center, Tucson, AZ.

THE COMPLEX EFFECT OF OZONE ON ALLERGIC AIRWAY INFLAMMATION IN ASTHMA Mehrdad Arjomandi1,*, Hofer Wong1, Rachel Tenney1, Nina Holland2, John R. Balmes1,2, University of California, San Francisco and Berkeley, CA.

CELL-FREE HEMOGLOBIN WORSENS THE OUTCOME OF INFECTION BY KLEBSIELLA PNEUMONIAE. Akruti Patel1,2,*, Sudipta Das1, Jie Chen1, Kathryn Dalton1, Anuradha Ray1,2, Prabir Ray1,2, Division of Pulmonary, Allergy, and Critical Care Medicine, Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA; Department of Immunology, University of Pittsburgh, Pittsburgh, PA.

BIODEGRADABLE CYCLODEXTRIN-BASED NANOFORMULATION BARRIER FOR SARS-COV-2 INFECTION. Angela Lu1,*, Jeanmarie Bouteiller2, Gianluca Lazzi3, Mark Humayun1, Stan Louie2, Isaac Asante; University of Southern California, School of Pharmacy; University of Southern California, Viterbi School of Engineering; University of Southern California, Keck School of Medicine, Los Angeles, CA.

MYCOBACTERIUM TUBERCULOSIS INFECTED HUMAN ALVEOLAR MACROPHAGES HAVE HIGHER TYPE I IFN RESPONSES COMPARED TO MONOCYTE-DERIVED MACROPHAGES. Monica Campo1,*, KA Dill-McFarland2, GJ Peterson2, SJ Skerrett2, TR Hawn2; Department of Medicine, Univ of Minnesota, Minneapolis, MN; Department of Medicine, Univ of Washington, Seattle WA.

DISCOIDIN DOMAIN RECEPTOR 2 EXPRESSION BY BONE MARROW-DERIVED CELLS MAY BE PROTECTIVE IN EXPOSURE-INDUCED PULMONARY FIBROSIS. Lindsay T. McDonald, PhD1,*, Research Service, Ralph H. Johnson VA Medical Center and Department of Pathology and Laboratory Medicine, Medical University of South Carolina, Charleston, SC.

CALCIUM-DEPENDENT MACROPINOCYTOSIS OF CELL-FREE HEMOGLOBIN IMPAIRS MACROPHAGE RESPONSES TO PATHOGENS. Ciara M. Shaver1,*, Stuart R. Landstreet, Lorraine B. Ware, Julie A. Bastarache, Division of Allergy, Pulmonary, and Critical Care Medicine, Department of Medicine, Vanderbilt University Medical Center, Nashville, TN.
NEUTROPHIL ELASTASE ACTIVATES THE RELEASE OF EXTRACELLULAR TRAPS FROM COPD MONOCYTE-DERIVED MACROPHAGES. Apparao B. Kummarapurugu*, Shuo Zheng1, Adam Hawkridge2, Aamer Syed3, Judith A. Voynow1, 1Children’s Hospital of Richmond at Virginia Commonwealth University; 2School of Pharmacy, Virginia Commonwealth University; 3Department of Internal Medicine, Virginia Commonwealth University, Richmond, VA.

CIRCULATING MONOCYTES CONTRIBUTE TO THE LUNG INTERSTITIAL MACROPHAGE POPULATION DURING HOMEOSTASIS AND INFLAMMATION. Emily M. King1*, Thienthanh Trinh2, Jazalle McClendon2, Alexandra L. McCubbrey2,3, Peter M. Henson2,4, and William J. Janssen2,3, 1Medical Scientist Training Program, University of Colorado School of Medicine, Aurora, CO; 2Division of Pulmonary, Critical Care and Sleep Medicine, Department of Medicine, National Jewish Health, Denver, CO; 3Division of Pulmonary Sciences and Critical Care Medicine, Department of Medicine, University of Colorado School of Medicine, Aurora, CO; 4Program for Cell Biology, Department of Pediatrics, National Jewish Health, Denver, CO.

INFLAMMATORY AIRSPACE MACROPHAGE POPULATIONS FOLLOWING ENDOTOXIN EXPOSURE IN HUMANS. Kara J. Mould1,2*, Camille M. Moore3, Sean Jacobson3, Shannon A. McManus1, William J. Janssen1,2, 1Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine, 3Center for Genes and Environment, Department of Biomedical Research, National Jewish Health, Denver Colorado; 2Division of Pulmonary Diseases and Critical Care Medicine, Department of Medicine, University of Colorado, Aurora, CO.

LACK OF FATTY ACID BINDING PROTEIN 5 (FABP5) PREVENTS THE ESTABLISHMENT OF RESIDENT MEMORY T CELLS IN THE LUNGS. Katja Aviszus1, Aaron Giron1, Manale El Kharbili DiLisio1, Xiaoyun Zhao1 and Fabienne Gally1*, National Jewish Health, Denver, CO.

PULMONARY SURFACTANT PHOSPHOLIPIDS INHIBIT SARS-CoV-2 AND ITS VARIANTS. Mari Numata-Nakamura1*, Richard Bowen2, Jessica Loeffler4 and Dennis. R. Voelker1, 1 Dept of Medicine, National Jewish Health, Denver, CO 80206, 2 Dept of Biomedical Sciences, Colorado State University, Fort Collins, CO.

L-LACTATE INDUCED LACTYLATION- A NEW EPIGENETIC PLAYER IN ACUTE LUNG INJURY. Daniel Youmans, Nana Burns, René M. Roy, Kurt Stenmark, Eva Nozik, Rubin Tuder, Christine Vohwinkel*, Cardiovascular Pulmonary Laboratories, Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO.

PLATELET CONTRIBUTION TO THE INNATE IMMUNE RESPONSE DURING INFLAMMATORY MEDIATED PULMONARY HYPERTENSION. Cassidy Delaney1,3,4*, Janelle Posey1,4, Mariah Jordan1,4, Claudia Mickael1,7, Rahul Kumar5, Kim Jordan7, Aneta Gandjeva3,7, Kirk Hansen7, Jorge Di Paola6, Rubin M. Tuder3,7, Eva Nozik2,3,4, Brian Graham6, Kurt Stenmark2,3,4, Section of Neonatology1, Pediatric Critical Care Medicine2, Cardiovascular Pulmonary Research Laboratories3, Department of Pediatrics, University of Colorado5, Division of Pulmonary and Critical Care Medicine, University of California San Francisco5, Pediatric Hematology Oncology, Department of Pediatrics, Washington University6, Department of Medicine, University of Colorado7.

THE IMPACT OF AGING ON SEPSIS-RELATED ENDOTHELIAL GLYCOCALYX DEGRADATION. Ryan Sullivan MD1*, Eva Nozik MD1, Eric Schmidt MD1, Joseph Hippenssteel MD1, 1Division of Pulmonary Sciences and Critical Care Medicine, Department of Medicine, University of Colorado, Anschutz Medical Campus, Aurora, CO.
THE ROLE OF INNATE AND ADAPTIVE IMMUNITY AMONG GULLAH SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS IN ELUCIDATING PULMONARY OUTCOMES. *Robert Campbell, Jr. PhD – NHLBI PRIDE AGOLD, Scholar, University of Colorado - Anschutz Medical Campus, Aurora, CO; Julius Nyalwidhe, PhD - Leroy T. Canoles Jr., Cancer Research Center, Eastern Virginia Medical School, Norfolk, VA; Christopher Gignoux, PhD - Colorado Center for Personalized Medicine, University of Colorado - Anschutz Medical Campus, Aurora, CO.

AIRWAY PREVOTELLA ENHANCE PNEUMOCOCCAL CLEARANCE FROM THE LUNG. Kadi J. Horn, Melissa A. Schopper, Sarah E. Clark*, University of Colorado School of Medicine, Department of Otolaryngology, Aurora, CO.

USE OF CLINICAL ISOLATES TO ESTABLISH CRITERIA FOR A MOUSE MODEL OF LATENT CRYPTOCOCCUS NEOFORMANS INFECTION. Minna Ding1*, Kyle Smith1, Darin Wiesner2, Katrina Jackson1, and Kirsten Nielsen1. 1Department of Microbiology and Immunology, University of Minnesota Medical School, Minneapolis, MN; 2Department of Medicine, Center for Immunity & Inflammation, Rutgers New Jersey Medical School, Newark, New Jersey.

TLR4-DEPENDENT INHIBITION OF AIRWAY INFLAMMATION BY A PROBIOTIC-DERIVED EXOPOLYSACCHARIDE. Maile K. Hollinger1*, Tania E. Velez1, Jesus Zamora-Pineda2, Katherine L. Knight2, and Anne I. Sperling1,3, 1Committee on Immunology, Department of Medicine, University of Chicago, Chicago, IL; 2Department of Microbiology and Immunology, Loyola University Chicago, Chicago, IL; 3Division of Pulmonary and Critical Care Medicine, Department of Medicine, University of Virginia, Charlottesville, VA.