Monday, June 5, 2023 -- Evening

5:00-7:00 PM   Evening Registration

Gant Conference Center

Tuesday, June 6, 2023 – Morning

8:00-8:20 AM   Welcome/Introduction

Anthony N. Gerber, M.D., Ph.D., Chair
Monica Kraft, M.D., Co-Chair
Sunita Sharma, 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

Asthma:  Pathogenesis, Phenotypes, Therapies and Gaps:
Moderators--Fernando Holguin, M.D. and Sarah Rhoads, M.D.

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

“CLINICAL ASTHMA IN 2023 AND BEYOND: ENDOTYPE CARE
GAPS INFORM RESEARCH PRIORITIES”

Michael E. Wechsler, M.D., MMSc
Professor of Medicine
Director, The Cohen Family Asthma Institute
Division of Pulmonary, Critical Care and Sleep Medicine
National Jewish Health
Denver, Colorado

9:05-9:30 AM   Discussion

9:30-9:45 AM   CHARACTERISTICS OF BIOLOGICAL TREATMENT FAILURE IN PATIENTS WITH
SEVERE EOSINOPHILIC ASTHMA. Evan Zehr¹*, Raymond Pomponio², Ryan Peterson²,
Anne Reihman¹, Margaret Cruse¹, Abigail Hills¹, Keely Likosky², Minami K. Yamamura¹,
Fernando Holguin¹, Sunita Sharma¹, ¹Department of Medicine, University of Colorado School
of Medicine, Aurora, CO; ²Department of Biostatistics and Informatics, Colorado School
of Public Health, University of Colorado, Anschutz Medical Campus, Aurora, CO.

9:45-10:00 AM   CCL5 IS A POTENTIAL BRIDGE BETWEEN TYPE 1 AND TYPE 2 INFLAMMATION IN
ASTHMA. Marc Gauthier¹*, Sagar Laxman Kale¹, Timothy B. Oriss¹, Michael Gorry¹,
Richard P. Ramonell¹, Kathryn Scholl¹, Prabir Ray¹, Sally E. Wenzel¹,², Anuradha Ray¹,³,
¹Division of Pulmonary, Allergy and Critical Care Medicine, ²Department of Environmental
and Occupational Health and ³Department of Immunology, University of Pittsburgh School
of Medicine, Pittsburgh, PA.

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

MEET THE PROFESSOR SESSION (by Registration table)
(Refreshments for conference participants only)
Tuesday, June 6, 2023 -- Morning

**Asthma: Pathogenesis, Phenotypes, Therapies and Gaps:**
*Moderators--Monica Federico, M.D. and Sonali Bose, M.D., MPH*

10:30-11:05 AM STATE OF THE ART
Ilona Jaspers, Ph.D.
*University of North Carolina at Chapel Hill, Chapel Hill, North Carolina*
“The Contribution of Early Life Exposures to Asthma Susceptibility”

11:05-11:30 AM Discussion

11:30-11:45 AM EPIGENETIC CHANGES OVER THE COURSE OF ORAL IMMUNOTHERAPY ARE ASSOCIATED WITH CLINICAL OUTCOMES. **E.E. Thompson**¹*, S. Chinthrajah², T. Sindher², K. Nadeau², C. Ober¹, ¹Department of Human Genetics, The University of Chicago, Chicago, IL; ²Sean N. Parker Center for Allergy and Asthma Research, Stanford University School of Medicine, Stanford, CA.

11:45-12:00 Noon PERSON-LEVEL PARTICULATE MATTER CONSTITUENTS ARE ASSOCIATED WITH ASTHMA EXACERBATION. **Camille M. Moore**¹,4*, Elizabeth A. Secor¹, Jonathan Thornburg², Katharine L. Hamlington¹,4, Allison M. Schiltz³,4, Kristy L. Freeman³,4, Max A. Seibold¹, Andrew H. Liu³,4, ¹Center for Genes, Environment and Health, National Jewish Health, ²RTI International, Inc.; Research Triangle Park, NC, ³Pediatric Pulmonary and Sleep Medicine, Children’s Hospital Colorado; ⁴University of Colorado Anschutz Medical Campus.

12:00-1:30 PM ......Lunch (lunch not provided by conference)
Tuesday, June 6, 2023 -- Afternoon

The Developmental Origin of Asthma: The Role of Genetics and Gene-by-Environment Interaction:
Moderators—Max Seibold, Ph.D. and Arnav Gupta, M.D.

1:30-2:05 PM    STATE OF THE ART
Benjamin A. Raby, M.D., MPH
Harvard Medical School/Boston Children’s Hospital, Boston, Massachusetts
“Asthma Genetics: Understanding the Heritability of Asthma”

2:05-2:30 PM    Discussion

2:30-2:45 PM    GENOME FILTERING FOR GLUCOCORTICOID-REGULATED ENHANCER RNA TRANSCRIPTION IDENTIFIES NOVEL FUNCTIONAL GENETIC VARIANTS ASSOCIATED WITH ASTHMA. Sarah K. Sasse1##, Arnav Gupta1,2#, Amber Dahlin3, Lynn Sanford4, Robin D. Dowell4,5,6, Scott T. Weiss3 and Anthony N. Gerber1,2, (#Equal contributions) 1Department of Medicine, National Jewish Health, Denver, CO; 2Department of Medicine, University of Colorado, Aurora, CO; 3Channing Division of Network Medicine, Department of Medicine, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA; 4BioFrontiers Institute, University of Colorado, Boulder, CO; 5Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO; 6Computer Science, University of Colorado, Boulder, CO.

2:45-3:00 PM    EFFECTS OF DHEA TREATMENT ON NORMAL AIRWAY EPITHELIAL CELL PROTEINS. Michael Chmiel1, Avram Walts2, Laura Smith1, Taiya Edwards1, Yi Zhao1, Dawn Newcomb4, Joe Zein4, Tim Lahm2, Benjamin Gaston1, Nadzeya Marozkina*, 1Indiana University School of Medicine, Department of Pediatrics, Indianapolis, IN; 2National Jewish Health, Department of Medicine, Denver, CO; 3Vanderbilt University Medical Center, Department of Path., Micro., and Immunology, Vanderbilt, TN; 4Cleveland Clinic, Department of Pulmonary Medicine, Cleveland, OH.

3:00-3:30 PM    ......Break (Refreshments for conference participants only)
Tuesday, June 6, 2023 -- Afternoon

The Developmental Origin of Asthma: The Role of Genetics and Gene-by-Environment Interaction: Moderators—Alison Lee, M.D. and Andy Liu, M.D.

3:30-4:05 PM  GILES F. FILLEY LECTURE
“GENES, ENVIRONMENT AND THE ORIGINS OF ASTHMA”
Carole Ober, Ph.D.
Blum-Riese Distinguished Service Professor
Chair, Department of Human Genetics
The University of Chicago
Chicago, Illinois

4:05-4:30 PM  Discussion

4:30-4:45 PM  COMPARISON OF LUNG CLEARANCE INDEX AND FORCED OSCILLATION IN SOUTHWEST ASIA DEPLOYMENT-RELATED VETERANS WITH ASTHMA.
Sheena Kamineni1, Michael Falvo2,3, Alison Wilczynski1, Rebecca Toczylowski1, Arnav Gupta1,4,5, Lauren Zell-Baran4,6, Silpa Krefft1,4,5,6*, 1Veterans Administration Eastern Colorado Health Care System, Aurora, CO; 2War Related Illness and Injury Study Center/VA Airborne Hazards and Open Burn Pit Center of Excellence, East Orange, NJ; 3Rutgers New Jersey Medical School, Newark, NJ; 4National Jewish Health, Denver, CO; 5University of Colorado School of Medicine/Anschutz Medical Campus, Aurora, CO; 6Colorado School of Public Health, Aurora, CO.

4:45-5:00 PM  POOR ASTHMA CONTROL IN CHILDREN IS DRIVEN BY A DUAL INTERFERON AND T2 AIRWAY INFLAMMATORY ENDOTYPE, INDUCED BY SILENT VIRAL CARRIAGE.
Nathan D. Jackson1*, Elmar Pruesse1, Jamie Everman1, Ana Fairbanks-Mahnke1, Gianna Zinnen1, Yingchun Li1, Celeste Eng2, Allison M. Schiltz3,4, Kristy L. Freeman3,4, Katharine L. Hamlington3,4, Jose Rodriguez-Santana5, Camille Moore1, Andrew H. Liu3,4, Esteban G. Burchard2,6, and Max A. Seibold1, 1Center for Genes, Environment, and Health, National Jewish Health, Denver, CO; 2Department of Medicine, University of California San Francisco (UCSF), San Francisco, CA; 3Pediatric Pulmonary and Sleep Medicine, Children’s Hospital Colorado, Aurora, CO; 4University of Colorado Anschutz Medical Campus, Aurora, CO; 5Centro de Neumología Pediátrica, San Juan, Puerto Rico; 6Department of Bioengineering and Therapeutic Sciences, UCSF.

5:00-7:00 PM  POSTER VIEWING (Refreshments for conference participants only)
POSTERS

DUPILUMAB IMPROVES LUNG FUNCTION IN CHILDREN WITH MODERATE-TO-SEVERE TYPE 2 ASTHMA AT WEEK 12. Theresa W. Guilbert1, Antoine Deschildre2, Kevin R. Murphy3, Eckard Hamelmann4, Kristie Ross5, Atul Gupta6, Changming Xia7, Rebecca Gall7, Olivier Ledanois8, Amr Radwan7, Juby A. Jacob-Nara9, Paul J. Rowe9, Yamo Deniz7, 1Cincinnati Children’s Hospital and University of Cincinnati, Cincinnati, OH, USA; 2Centre Hospitalier Universitaire de Lille, Lille, France; 3Boys Town National Research Hospital, Boys Town, NE, USA; 4Bielefeld University, Bielefeld, Germany; 5Case Western Reserve University, Cleveland, OH, USA; 6King’s College Hospital, London, UK; 7Regeneron Pharmaceuticals Inc., Tarrytown, NY, USA; 8Sanofi, Paris, France; 9Sanofi, Bridgewater, NJ. (encore/presented by Barbara Felt, Regeneron)

REVISITING SEVERE ASTHMA DEFINITION USING ELECTRONIC HEALTH DATA IN UK BIOBANK FOR GENOME-WIDE ASSOCIATION STUDIES. Noemi-Nicole Piga1*, Michael A Portelli2, Glenda Lassi3, Ian Sayers2, Katherine Fawcett1, 1Genetic Epidemiology Group, Department of Health Sciences, University of Leicester, Leicester, UK; 2Centre for Respiratory Research, NIHR Respiratory Biomedical Research Centre, School of Medicine, Biodiscovery Institute, University of Nottingham, Nottingham, UK; 3Translational Science and Experimental Medicine, Research and Early Development, Respiratory and Immunology, R&D BioPharmaceuticals, AstraZeneca, Cambridge, UK.

IL33 RECEPTOR ACTIVATION IS IL33 ISOFORM DEPENDENT & ALTERED BY IL1RL1 ASTHMA-ASSOCIATED VARIANT HAPLOTYPES. Michael A. Portelli1,2*, Maria E. Ketelaar4,5, Stewart Bates6, Eszter Csomor6, Dominick Shaw1,3, Jonas Emsley7, Christopher Brightling8, Ian Hall1,2, Karen Affleck6, Matthew Edwards6, Martijn C. Nawijn4,5, Gerard H. Koppelman4, Antoon J. Van Oosterhout9 and Ian Sayers1,2, 1Centre for Respiratory Research, National Institute for Health Research Nottingham, Biomedical Research Centre, School of Medicine; 2Nottingham University Biodiscovery Institute; 3Clinical Sciences Building, City Hospital, University of Nottingham, Nottingham, United Kingdom; 4University of Groningen, Groningen Research Institute for Asthma and COPD, Department of Pediatric Pulmonology and Pediatric Allergology, Beatrix Children’s Hospital, Groningen, The Netherlands; 5University of Groningen, University Medical Center Groningen, Groningen Research Institute for Asthma and COPD, Department of Pathology and Medical Biology, Groningen, The Netherlands; 6Immunology Research Unit, GlaxoSmithKline, Stevenage, UK; 7Biodiscovery Institute, School of Pharmacy, University of Nottingham, Nottingham, UK; 8Respiratory Sciences, University of Leicester, Glenfield Hospital, Leicester, UK.

DISTINCT EPITHELIAL-INNATE IMMUNE CELL TRANSCRIPTIONAL CIRCUITS UNDERLIE AIRWAY HYPERRESPONSIVENESS IN ASTHMA. R.C. Murphy1,3*, Y. Lai1,3, M. Liu1,3, T. Al-Shaikhly2,3, M.C. Altman2,4, S.A. Gharib1,3, T.S. Hallstrand1,3, 1Division of Pulmonary, Critical Care and Sleep Medicine; 2Division of Allergy and Infectious Diseases; 3Center for Lung Biology, Department of Medicine, University of Washington, Seattle, WA; 4Immunology Program, Benaroya Research Institute, Seattle, WA.

BETA-HYDROXYBUTYRATE ATTENUATES BRONCHIAL SMOOTH MUSCLE ALLERGEN-INDUCED RESPONSES. V. Amanda Fastiggi1,2*, Madeleine M. Mank1, Paola E. Peña-Garcia1,2, Jennifer L. Ather1, Sophia H. Piffard3, Kalev Freeman3 and Matthew E. Poynter1, 1Department of Medicine, Division of Pulmonary Disease and Critical Care, and The Vermont Lung Center; 2Cellular, Molecular, and Biomedical Sciences Doctoral Program; 3Department of Surgery. University of Vermont, Burlington, VT.
AIRWAY HYPER-RESPONSIVENESS IN PRECISION CUT LUNG SLICES FROM DONORS WITH ASTHMA AND 17Q21/ORMDL3 SINGLE NUCLEOTIDE POLYMORPHISMS AFTER INFECTION WITH RHINOVIRUS. **Joshua L. Kennedy**, Marina Miller, Dana Frederick, David H. Broide. University of Arkansas for Medical Sciences, Little Rock, AR; Arkansas Children’s Research Institute, Little Rock, AR; University of California, San Diego, San Diego, CA.

AIRWAY SPECIFIC ANALYSIS OF CIGARETTE SMOKE EXPOSED DROSOPHILA MELANOGASTER LARVAE WITH ORMDL DYSREGULATION. **Daniel Meißner**, Birte Ehrhardt, Jacqueline Nakel, Mario Stanke and Susanne Krauss-Etschmann. Institute of Mathematics and Computer Science, University of Greifswald; Division of Early Life Origins of Chronic Lung Diseases, Research Center Borstel, Airway Research Center North (ARCN), German Center for Lung Research (DZL), Borstel, Germany; Institute of Experimental Medicine, Christian-Albrechts University Kiel, Kiel, Germany; Leibniz Institute of Virology, Hamburg, Germany.

LUNG MACROPHAGES CONTRIBUTE TO AIRWAY IMMUNE CELL INFILTRATION IN A MOUSE MODEL OF SEVERE ALLERGIC AIRWAY INFLAMMATION. **Brandon W. Lewis**, Terri Harshman, Maria L. Ford, Josh Walum, Mitchell H. Grayson, Megan N. Ballinger, John W. Christman, and Rodney D. Britt Jr. The Abigail Wexner Research Institute at Nationwide Children’s Hospital, Columbus, OH; Department of Pediatrics, Ohio State University, Columbus, OH; Division of Allergy and Immunology, Nationwide Children’s Hospital, Columbus, OH; Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Internal Medicine, Ohio State University Wexner Medical Center, Davis Heart and Lung Research Institute, Columbus, OH.

INHALANT ALLERGEN SENSITIZATION IS A FEATURE OF T2 HIGH AIRWAY ENDOTYPE IN EXACERBATION-PRONE CHILDREN WITH ASTHMA. **Andrew H. Liu**, Camille M. Moore, Elizabeth A. Secor, Nathan Jackson, Jonathan Thornburg, Katharine L. Hamlington, Allison M. Schilt, Kristy L. Freeman, Max A. Seibold. Pediatric Pulmonary and Sleep Medicine, Children’s Hospital Colorado, Aurora, CO; University of Colorado Anschutz Medical Campus, Aurora, CO; Center for Genes, Environment and Health, National Jewish Health, Denver, CO; RTI International, Inc.; Research Triangle Park, NC.

CD38 PROMOTES IL-6 PRODUCTION IN HUMAN AIRWAY SMOOTH MUSCLE. **Maria L. Ford**, Rodney D. Britt Jr., Brandon W. Lewis. Center for Perinatal Research, Abigail Wexner Research Institute, Nationwide Children’s Hospital, Columbus, OH; Biomedical Sciences Graduate Program, College of Medicine, The Ohio State University, Columbus, OH; Department of Pediatrics, College of Medicine, The Ohio State University, Columbus, OH.

ROLE OF TYPE 2 IMMUNITY IN THE CONTEXT OF IFN-γHIGH/TYPE 1HIGH SEVERE ASTHMA. **Sagar L. Kale**, Marc Gauthier, Timothy B Oriss, Sudipta Das, Huijuan Yuan, Sanmei Hu, Kathryn Dalton, Prabir Ray, and Anuradha Ray. Division of Pulmonary, Allergy and Critical Care Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA.

INDOOR AIR POLLUTION EXPOSURE AND MATERNAL ASTHMA HEALTH; IDENTIFYING RISKS FOR THE DEVELOPMENTAL ORIGINS OF CHILDHOOD ASTHMA. **Ann Wang**. Robert Wharton, Leon Hsu, Rachel Meislin, Najla Abdurrahman, Vi Le, Daniel Baboolal, Angela Bianco, Corrine Hanson, Sonali Bose. (Authors contributed equally) Division of Pulmonary, Critical Care, and Sleep Medicine; Department of Medicine; Department of Environmental Medicine and Public Health; Division of Maternal-Fetal Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; Medical Nutrition Education, University of Nebraska Medical Center, Omaha, NE.
CHILDREN WITH EXACERBATION PRONE ASTHMA EXHIBIT HETEROGENEITY IN AIRWAY INFLAMMATORY ENDOTYPE THAT IS ASSOCIATED WITH ENVIRONMENTAL EXPOSURES. Nathan D. Jackson1, Jamie Everman1, Elmar Pruesse1, Gianna Zinnen1, Ana Fairbanks-Mahnke1, Yingchun Li1, Allison M. Schiltz2,3, Kristy L. Freeman2,3, Katharine L. Hamlington2,3, Camille Moore1,3, Andrew H. Liu2,3, Max A. Seibold1*, 1Center for Genes, Environment, and Health, National Jewish Health, Denver, CO; 2Pediatric Pulmonary and Sleep Medicine, Children’s Hospital Colorado, Aurora, CO; 3University of Colorado Anschutz Medical Campus, Aurora, CO.


NOVEL GS BIASED B2-ADRENERGIC RECEPTOR AGONIST INHIBIT IL-13 INDUCED MUCUS HYPERSECRETION IN CULTURED HUMAN AIRWAY EPITHELIAL CELLS. Diana Cervantes*, Niccolette Schaunaman, Raymond Penn, Julia Walker, Richard Bond, Hong Wei Chu, National Jewish Health, Denver, CO; Jefferson University, Philadelphia, PA; Duke University, Durham, NC; University of Texas, Austin, TX.

IL-13 AND IL-17A ACTIVATE B1 INTEGRIN TO ENHANCE FORCE TRANSMISSION IN AIRWAY SMOOTH MUSCLE. Uyen Ngo1, Ying Shi2, Annabelle Charbird1, John Fahy1, Prescott Woodruff1, Kevan Shokat2, William DeGrado3, Hyunil Jo3, Dean Sheppard1, Aparna Sundaram1*, 1Department of Medicine, University of California, San Francisco; 2Department of Cellular and Molecular Pharmacology, University of California, San Francisco; 3Department of Pharmaceutical Chemistry, University of California, San Francisco, CA.

QUERCETIN MODULATE EXPRESSION OF PON2 IN HAECs BY INDUCING EXPRESSION OF NUCLEAR FACTOR LIKE 2 (Nfr2). Daniel Winnica*, Shuyu Ye, and Fernando Holguin. Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO.

EFFECT OF SUCCINATE ON GPR91 & HIF-1α EXPRESSION IN AIRWAY EPITHELIAL CELLS. Andi Hudler1*, Daniel Winnica1, Sunita Sharma1, Reynold A. Panettieri, Jr., Joseph Jude2, Tumim Yifrutch, Fernando Holguin1, 1University of Colorado, Division of Pulmonary Sciences and Critical Care Medicine, Aurora, CO; 2Rutgers, Institute for Translational Medicine and Science, New Brunswick, NJ.

ALPHA-1-ANTITRYPSIN INDUCES IL-27 GENE EXPRESSION VIA THE GLUCOCORTICOID RECEPTOR: IMPLICATIONS FOR ANTAGONIZING ASTHMA. Xiyuan Bai, Lorelenn Fornis, Robert A. Sandhaus, Edward D. Chan*. Department of Academic Affairs and Medicine, National Jewish Health, Denver, CO.
Wednesday, June 7, 2023 -- Morning

Using Cell Biology to Define Asthma Endotypes: Moderators–Rodney Britt, Ph.D. and Matthew Drake, M.D.

8:00-8:35 AM  STATE OF THE ART
Reynold A. Panettieri, Jr., M.D.
Rutgers Institute for Translational Medicine and Science, New Brunswick, New Jersey
“The Role of Airway Smooth Muscle in Asthma Susceptibility and Asthma Phenotypes”

8:35-9:00 AM  Discussion

9:00-9:15 AM  TNFα AND IFNγ INCREASES TYPE 2 INFLAMMATORY GENE EXPRESSION AND CHROMATIN ACCESSIBILITY IN HUMAN AIRWAY SMOOTH MUSCLE CELLS. Anushka Ruwanpathirana1,2*, Joshua Walum1, Kathryn Heyob1, Rodney D. Britt Jr1,3, 1Center for Perinatal Research, Abigail Wexner Research Institute, Nationwide Children’s Hospital, Columbus, OH; 2Biomedical Sciences Graduate Program, The Ohio State University, Columbus, OH; 3Department of Pediatrics, The Ohio State University, Columbus, OH.

9:15-9:30 AM  IL-31 RECEPTOR ALPHA INDUCES AIRWAY HYPERRESPONSIVENESS IN ASTHMA. Santoshi Akkenepally1,3, Dan JK Yombo2, Bhanuprakash R. Geereddy3, Francis X. McCormack1 and Satish K Madala1*, 1 Division of Pulmonary, Critical Care and Sleep Medicine, Department of Internal Medicine, University of Cincinnati, Cincinnati, Ohio USA. 2 Division of Pulmonary Medicine, Department of Pediatrics, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio USA. 3 Division of Biochemistry, National Institute of Nutrition, Hyderabad, Telangana, India.

9:30-10:00 AM  ......Coffee Break  MEET THE PROFESSOR SESSION (by Registration table) (Refreshments for conference participants only)

Using Cell Biology to Define Asthma Endotypes: Moderators–Hong Wei Chu, M.D. and Christopher Evans, Ph.D.

10:00-10:35 AM  PARKER B. FRANCIS LECTURESHIP
“AIRWAY EPITHELIAL CELL FUNCTION AND ITS IMPLICATIONS FOR ASTHMA”
David J. Erle, M.D.
Professor of Medicine
Associate Chair for Biomedical Research
University of California San Francisco
San Francisco, California

10:35-11:00 AM  Discussion

11:00-11:15 AM  THE MUCIN-REGULATING FUNCTION OF CLUB CELL PROTEIN 16 (CC16) IN HUMAN AIRWAY EPITHELIAL CELLS. Hiroki Kimura1*, Allyson Molzahn1, Niccolette Schaunaman2, Hong Wei Chu1, Monica Kraft1, 1Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 2Department of Medicine, National Jewish Health, Denver, CO.

11:15-11:30 AM  MECHANICAL COMPRESSION-INDUCED UNJAMMING TRANSITION REGULATED BY A MECHANOSensor, HIC-5 PROTEIN. Jennifer A. Mitchell, Michael J. O’Sullivan, Chimwemwe Mwase, Joel Mathews, Jeffrey Crosby, Christopher E. Turner, Jin-Ah Park*, Dept. of Environmental Health, Harvard T.H. Chan School of Public Health, Boston, MA; Ionis Pharmaceuticals, Carlsbad, CA; Dept. of Cell & Dev. Biology, SUNY Upstate Medical University, Syracuse, NY.

12:00-3:00 PM  Picnic – T Lazy 7 - The Ranch (for conference participants and their family)
Thursday, June 8, 2023 -- Morning

Microbiome and Immune Mechanisms Underlying Asthma Pathogenesis:
Moderators-Ivana Yang, Ph.D. and Chris Gignoux, Ph.D., M.S.

8:00-8:35 AM  ROGER S. MITCHELL LECTURE
"IMPACT OF MICROBIOME ON ASTHMA PHENOTYPES AND DISEASE ENDOTYPES"
Yvonne J. Huang, M.D.
Associate Professor of Internal Medicine
Division of Pulmonary and Critical Care Medicine
University of Michigan Medical School
Ann Arbor, Michigan

8:35-9:00 AM  Discussion

9:00-9:15 AM  MULTIOMIC INVESTIGATION OF ADULT ASTHMA REVEALS AIRWAY MICROBIAL DIFFERENCES ASSOCIATED WITH TYPE 2 INFLAMMATION AND INHALED CORTICOSTEROID USE. Ariangela J. Kozik*, Lesa Begley, Alan Baptist, Njira Lugogo, John Erb-Downward, Kristopher Opron, and Yvonne J. Huang. Divisions of Pulmonary and Critical Care Medicine; Allergy and Clinical Immunology; Department of Microbiology and Immunology; University of Michigan, Ann Arbor MI.

9:15-9:30 AM  ROLE OF SURFACTANT PROTEIN A IN RESPIRATORY VIRAL INFECTION IS DEPENDENT ON TOLLIP. Niccolette Schaumaman, Diana Cervantes, Taylor Nichols*, Mari Numata, Julie Ledford, Monica Kraft, Hong Wei Chu, National Jewish Health, Denver, CO; University of Arizona, Tuscon, AZ; Icahn School of Medicine at Mount Sinai, New York, NY.

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

Microbiome and Immune Mechanisms Underlying Asthma Pathogenesis:
Moderators-Benjamin Medoff, M.D. and Teal Hallstrand, M.D., MPH

10:00-10:35 AM  STATE OF THE ART
Pandurangan Vijayanand, M.D., Ph.D.
La Jolla Institute for Immunology, La Jolla, California
“Airway Immune Cells in Asthma Pathogenesis”

10:35-11:00 AM  Discussion

11:00-11:15 AM  TYPE 2 CYTOKINES ARREST CCR2-EXPRESSING MONOCYTE-DERIVED CELLS IN A PATHOGENIC STATE IN ASTHMATIC AIRWAYS. J. Alladina*, N.P. Smith, I.J. Kernin, K. Slowikowski, T. Kooistra, R.A. Rahimi, F.L. Giacona, A.M. Haring, N.D. Nguyen, S.L. Sheng, A.D. Luster, A.C. Villani, J.L. Cho and B.D. Medoff. Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital, Boston, MA; Iowa Inflammation Program, University of Iowa Carver College of Medicine, Iowa City, IA.

11:15-11:30 AM  HUMAN LUNG B CELLS EXPRESS THE ADULT-ONSET ASTHMA ASSOCIATED NON-CLASSICAL HLA-DQ2 GENES AND PROTEINS. D. Decker, A.I. Sperling, N. Schoettler*. Department of Medicine, University of Chicago, Chicago, IL; Department of Medicine, University of Virginia, Charlottesville, VA.

11:30-1:30 PM  .....Lunch (lunch not provided by conference)
THOMAS L. PETTY LECTURE
“CELLULAR CROSS-TALK UNDERSTANDING MECHANISMS UNDERLYING ASTHMA SUSCEPTIBILITY”
Kari C. Nadeau, M.D., Ph.D.
John Rock Professor of Climate and Population Studies
Chair, Department of Environmental Health
Harvard T.H. Chan School of Public Health
Boston, Massachusetts

2:05-2:30 PM Discussion

2:30-2:45 PM AUTOCRINE PARACRINE IL-10 INITIATES LUNG-SPECIFIC TH2 RESPONSES TO INDUCE ALLERGIC ASTHMA. Kun He1, William A. MacDonald1, Zhongli Xu1,2, Anuradha Ray3,4, Wei Chen1,5, Bart Lambrecht6,7,8, Amanda C. Poholek1,4*, 1Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, PA; 2School of Medicine, Tsinghua University, Beijing, China; 3Department of Pulmonary, Allergy, and Critical Care Medicine, Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh PA; 4Department of Immunology, University of Pittsburgh School of Medicine, Pittsburgh, PA; 5Department of Biostatistics, University of Pittsburgh School of Public Health, Pittsburgh PA; 6Laboratory of Mucosal Immunology, VIB-UGent Center for Inflammation Research, Ghent University, Technologiepark-Zwijnaarde, Ghent, Belgium; 7Department of Internal Medicine and Pediatrics, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium; 8Department of Respiratory Medicine, Ghent University Hospital, Ghent, Belgium.

2:45-3:00 PM AIRWAY EPITHELIAL BASAL STEM CELL NOTCH SIGNALING TO INTRAEPITHELIAL AIRWAY MACROPHAGES REGULATES ALLERGIC INFLAMMATION. Tristan Kooistra1*, Ana Pardo-Saganta2, Vladimir Vinarsky1, Jehan Alladina1, Nhan Nguyen1, Francesca Giacona1, Josalyn Cho3, Jayaraj Rajagopal1, Benjamin Medoff1, 1Division of Pulmonary and Critical Care Medicine, MGH, Boston, MA; 2Institute for Lung Health, Justus Liebig University, Giessen, Germany; 3Division of Pulmonary and Critical Care Medicine, University of Iowa, Iowa City, IA.

3:00-3:30 PM ......Break (Refreshments for conference participants only)
Thursday, June 8, 2023 — Afternoon

From Cell Biology to Defining Asthma Endotypes: Moderators—Loretta Que, M.D. and Andi Hudler, M.D.

3:30-4:05 PM  REUBEN M. CHERNIACK LECTURE  
“MOLECULAR BASIS OF COMPLEX CLINICAL ASTHMA PHENOTYPES”  
Monica Kraft, M.D.  
Murray M. Rosenberg Professor of Medicine  
System Chair, Samuel Bronfman Department of Medicine  
Icahn School of Medicine at Mount Sinai  
Mount Sinai Health System  
New York, New York

4:05-4:30 PM  Discussion

4:30-4:45 PM  PHENOTYPIC CHARACTERISTICS OF ASTHMA AND MORBIDITY ARE ASSOCIATED WITH DISTINCT LONGITUDINAL CHANGES IN L-ARGININE METABOLISM. Meghan D. Althoff1*, Ryan Peterson2, Max McGrath2, Ying Jin2, Hartmut Grasemann3, Sunita Sharma1, Alex D. Federman4, Juan P. Wisnivesky4,5, Fernando Holguin1, 1Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado Anschutz School of Medicine; 2Department of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado Anschutz Medical Campus; 3Division of Respiratory Medicine, Department of Pediatrics, Hospital for Sick Children, Toronto, Canada; 4Division of General Internal Medicine, Icahn School of Medicine at Mount Sinai; 5Division of Pulmonary, Critical Care, and Sleep Medicine, Icahn School of Medicine at Mount Sinai.

4:45-5:00 PM  SEVERE AND FATAL ASTHMA SMALL AIRWAYS ARE DEFINED BY MUCUS PLUGGING AND HETEROGENEOUS MUC5AC-EXPRESSING NICHEES. S.A. Schworer1, K. Okuda1, H. Dang1, T. Kato1, G. Chen1, R.C. Gilmore1, M. Chua1, H.T. Bittar2, B.A. Cody2, J.B. Trudeau3, W.K. O’Neal1, S.H. Randell1, S.E. Wenzel1, R.C. Boucher1, 1Marsico Lung Institute, University of North Carolina at Chapel Hill, Chapel Hill, NC; 2Department of Pathology; and 3Department of Environmental and Occupational Health, University of Pittsburgh Medical Center, Pittsburgh, PA.

5:00-7:00 PM  POSTER VIEWING (Refreshments for conference participants only)
POSTER VIEWING
Thursday, June 8, 2023
5:00-7:00 PM

POSTERS

EFFICACY OF TEZEPELUMAB IN PATIENTS WITH SEVERE, UNCONTROLLED ASTHMA BY SMOKING HISTORY: A POST HOC ANALYSIS OF THE PHASE 3 NAVIGATOR STUDY. Mario Castro,1 Bill Cook,2 Christopher S. Ambrose,2 Andrew W. Lindsley,3 Gillian Hunter,4 Neil Martin5,6 and Sandhia Ponnarambil7, 1Division of Pulmonary, Critical Care and Sleep Medicine, University of Kansas School of Medicine, Kansas City, KS, USA; 2Respiratory and Immunology, BioPharmaceuticals Medical, AstraZeneca, Gaithersburg, MD, USA; 3US Medical Affairs, Amgen, Thousand Oaks, CA, USA; 4Biometrics, Late-stage Development, Respiratory and Immunology, BioPharmaceuticals R&D, AstraZeneca, Cambridge, UK; 5Respiratory and Immunology, BioPharmaceuticals Medical, AstraZeneca, Cambridge, UK; 6University of Leicester, Leicester, UK; 7Late-stage Development, Respiratory and Immunology, BioPharmaceuticals R&D, AstraZeneca, Cambridge, UK. (encore/presented by Jean-Pierre Llanos Ackert, M.D., Amgen)

REAL-WORLD EFFECTIVENESS OF DUPILUMAB ON ORAL CORTICOSTEROID USE AND ASTHMA EXACERBATIONS IN PATIENTS WITH MODERATE-TO-SEVERE ASTHMA. Ajinkya Pawar1, Michael S. Blais2, Brian D. Modena3, Asif H. Khan4, Lucia de Prado Gómez5, Nami Pandit-Abid6, Amr Radwan7, Juby A. Jacob-Nara8, 1Sanofi, Cambridge, MA, USA; 2Medical College of Georgia at Augusta University, Augusta, GA, USA; 3Modena Allergy & Asthma, La Jolla, CA, USA; 4Sanofi, Chilly-Mazarin, France; 5Sanofi, Madrid, Spain; 6Sanofi Bridgewater, NJ, USA; 7Regeneron Pharmaceuticals Inc., Tarrytown, NY. (encore/presented by Barbara Felt, Regeneron)

DUPILUMAB INDUCES CLINICAL REMISSION IN PATIENTS WITH UNCONTROLLED, MODERATE-TO-SEVERE, TYPE 2 INFLAMMATORY ASTHMA. Ian D. Pavord1, Elliot Israel2,3, Stanley Szefler4, Guy Brusselle5, Klaus F. Rabe6,7, Zhen Chen8, Arman Altincatal9, Amr Radwan8, Nami Pandit-Abid10, Nikhil Amin8, Juby A. Jacob-Nara10, Paul J. Rowe10, Yamo Deniz8, Asif H. Khan11, David J. Lederer8, Yi Zhang8, William W. Busse12, 1NIHR Oxford Biomedical Research Centre, University of Oxford, Oxford, UK; 2Harvard Medical School, Boston, USA; 3Brigham and Women's Hospital, Boston, USA; 4University of Colorado School of Medicine, Aurora, USA; 5Ghent University Hospital, Ghent, Belgium; 6LungenClinic Grosshansdorf Grosshansdorf, Germany; 7Christian-Albrechts University Kiel, Germany; 8Regeneron Pharmaceuticals Inc., Tarrytown, USA; 9Sanofi, Cambridge, USA; 10Sanofi, Bridgewater, USA; 11Sanofi, Chilly-Mazarin, France; 12University of Wisconsin School of Medicine and Public Health, Madison. (encore/presented by Barbara Felt, Regeneron)

ASTHMA EXACERBATION REDUCTION AFTER TREATMENT WITH BENRALIZUMAB IN CORTICOSTEROID-DEPENDENT PATIENTS IN THE ZEPHYR 2 STUDY. Donna Carstens1, Diego J. Maselli2, Danni Yang3, Fan Mu3, Erin E. Cook3, Jingyi Chen3, Yen Chung1, 1AstraZeneca, Wilmington, DE; 2University of Texas Health San Antonio, TX; 3Analysis Group, Boston, MA.

ASSOCIATION OF CIRCULATORY CC16 WITH TYPE2 INFLAMMATION AND PULMONARY DYSFUNCTION POTENTIAL ROLE OF CC16 IN OBESE ASTHMA. Satoshi Konno1, Hooman Goudarzi1, Hiokazu Kimura1, Masaru Suzuki1, Kaoruko Shimizu1, Hiroki Kimura1, Noriharu Shijubo2, Shau-ku Huang3, Masaharu Nishimura1, 1Department of Respiratory Medicine, Faculty of Medicine and Graduate School of Medicine, Hokkaido University, Sapporo, Japan; 2J.R. Sapporo Hospital, Sapporo, Japan; 3National Health Research Institutes, Miaoli, Taiwan.
OBSERVATIONAL STUDY OF MEPOLIZUMAB IN ASTHMA. Neha Solanki1*, Brittany Beck2, Monica Labadia2, Sobia Farooq1, Stephanie King1, Sarah Micklewright1, Emily Pennington1, Laura Peterson2, Kevin Smith2, Peng Zhang1, Mark Aronica1, Joe Zein1,2, Sumita Khatri1, Suzy Comhair2, Serpil Erzurum1,2, 1Respiratory Institute; 2Lerner Research Institute, Cleveland Clinic.

COMMUNITY HEALTH WORKER LED ASTHMA HOME VISITS LEAD TO DECREASED HOSPITAL UTILIZATION AND HEALTH CARE COSTS FOR CHILDREN WITH ASTHMA. M.J. Federico*, M. Camacho, E. Cooper, J.T. Brinton, Department of Pediatrics, University of Colorado School of Medicine, Children’s Hospital Colorado, Aurora, CO.

THE CHILD OPPORTUNITY INDEX 2.0 AND EXACERBATION PRONE STATUS IN CHILDREN WITH ASTHMA. Emily H. Skeen1*, Camille M. Moore2, Andrew H. Liu1, Max A. Seibold2, Katharine L. Hamlington1, 1Pediatric Pulmonary and Sleep Medicine, University of Colorado at Children’s Hospital Colorado; 2Center for Genes, Environment and Health, National Jewish Health, Denver, CO.

THE ROLE OF SYNTHETIC DATA IN MODEL PERFORMANCE OF MACHINE LEARNING PREDICTIVE MODELS FOR ASTHMA ATTACKS: NHANES 2002-2012. Chao-Ping Wu1, Peng Zhang1, Bo Hu2, Joelle Sleiman3, Hooman Rashidi3, Joe G Zein1,2*, 1Respiratory Institute, Cleveland Clinic, Cleveland, OH; 2Lerner Research Institute, Cleveland Clinic, Cleveland, OH; 3Pathology and Laboratory Medicine Institute, Cleveland Clinic, OH.

THE EFFECTS OF pH ALTERATION ON HUMAN METAPNEUMOVIRUS INFECTION IN HUMAN AIRWAY EPITHELIAL CELLS. Ivana A. Daniels*, Jessica Saunders, Laura Smith, Taiya Edwards, Benjamin Gaston, Michael D. Davis, Herman B. Wells Center for Pediatric Research, Indiana University School of Medicine, Indianapolis, IN.

CILIARY IMMOBILITY LEADING TO ANTIGEN STASIS CAN PREDISPOSE PCD PATIENTS TO ASTHMA. Nadzeya Marozkina1*, Joe Zein2, Benjamin Gaston1, 1Herman B. Wells Center for Pediatric Research, Indiana University School of Medicine, Indianapolis, IN; 2Case Western Reserve University, Cleveland, OH.

IMPACT OF BIOLOGICS ON INNER-CITY PATIENTS WITH SEVERE PERSISTENT ASTHMA IN AN OUTPATIENT PULMONARY CLINIC. Abhisruth Jog1*, Cindy Jiang2, Sindhaghatta Venkataram1, Charnicia Huggins2, Gilda Diaz-Fuentes1, 1Division of Pulmonary Medicine, BronxCare Health System, Bronx, NY; 2Department of Pharmacy, BronxCare Health System, Bronx, NY.

THE EFFECTS OF TYPE 2 ASTHMA ON SARS-COV-2 INFLAMMATION. Allyson Molzahn1*, Hiroki Kimura1, Dave Francisco1, Naoko Kimura1, Avery Ann DeVries2,3, Vadim Pivniouk2,3, Donata Vercelli2,3, Monica Kraft1, 1Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 2Department of Medicine, College of Medicine-Tucson; 3Department of Cellular and Molecular Medicine, University of Arizona, Tucson, AZ.

HYPERINFLAMMATORY CD8+ EFFECTOR MEMORY T CELLS RE-EXRESSING CD45RA DISTINCT METABOLIC PROFILES IN SEVERE ASTHMA. Richard P. Ramonell1*, Timothy B. Oriss1, Sagar L. Kale1, Jessica C. McCreary-Partyka1, Kathryn L. Dalton1, Marc C. Gauthier1, Donna B. Stolz1, Sally E. Wenzel1, Anuradha Ray1, 1Division of Pulmonary, Allergy and Critical Care Medicine, Department of Medicine, University of Pittsburgh, Pittsburgh, PA.
ASTHMA CONTROL, DEPRESSION, AND INSOMNIA: DEFINING A MIND-BODY CONNECTION. Sarah Rhoads, Jack Edinger, Aastha Khatriwada, Joy Zimmer, Pearlanne Zelarney, Michael E. Wechsler. Division of Pulmonary Medicine and Critical Care Sciences, University of Colorado, Aurora, CO; Division of Pulmonary, Critical Care, and Sleep Medicine, National Jewish Health, Denver, CO; Division of Biostatistics and Bioinformatics, National Jewish Health, Denver, CO.

REAL-TIME MEASUREMENT OF METABOLISM IN PRECISION CUT LUNG SLICES. Ming-Hao Cheng, Brielle Patlin, Stuart A. Tober, Thomas W. Chen. Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO; Department of Biomedical Sciences, Colorado State University, Fort Collins, CO; School of Biomedical Engineering, Colorado State University, Fort Collins, CO.

MAPPING OF INFLAMMATORY BIOMARKERS IN SUBJECTS WITH RESPIRATORY SYMPTOMS AND NORMAL SPIROMETRY WHO HAVE NO PREVIOUS DIAGNOSIS OF ASTHMA. J. Laroche, M. E. Boulay, V. Gagnon, A. Lechasseur, M. Morissette, A. Côté. Department of Pulmonology, Quebec Heart and Lung Institute, Quebec, QC, Canada; Medicine Department, Faculty of Medicine, Laval University, Quebec, QC, Canada.

CIGARETTE SMOKE EXPOSURE INFLUENCES MORPHOLOGY OF AIRWAY TERMINAL CELLS AND FITNESS IN DROSOPHILA MELANOGASTER WITH ORMDL AND SCCA1 DYSREGULATION. Birte Ehrhardt, Beate Höschler, Thomas Roeder, Susanne Krauss-Etschmann. Division of Early Life Origins of Chronic Lung Diseases, Research Center Borstel, Airway Research Center North (ARCN), German Center for Lung Research (DZL), Borstel, Germany; Division of Molecular Physiology, Institute of Zoology, Christian-Albrechts University Kiel, Kiel, Airway Research Center North (ARCN), German Center for Lung Research (DZL), Germany; Institute of Experimental Medicine, Christian-Albrechts-Universität zu Kiel, Kiel, Germany.

PULMONARY SURFACTANT PHOSPHOLIPIDS INHIBIT RHINOVIRUS-C INFECTION IN AIRWAY EPITHELIAL CELLS OF SEVERE ASTHMA WITH TH2-HIGH INFLAMMATION. Mari Numata, Yury A. Bochkov, Jessica Loeffler, Allison M. Schlitz, Kristy L. Freeman, Katharine L. Hamlington, Elizabeth Secor, Nathan D. Jackson, Jamie Everman, Hong Wei Chu, Andrew H. Liu, Julie Ledford, Monica Kraft, Max A. Seibold, and Dennis R. Voelker. Department of Medicine, National Jewish Health, Denver, CO; Department of Pediatrics, University of Wisconsin School of Medicine, WI; Center for Genes, Environment and Health, National Jewish Health, Denver, CO; Section of Pediatric Pulmonary & Sleep Medicine, Children’s Hospital Colorado, Aurora, CO; University of Arizona, Tucson, AZ; Department of Medicine, Icahn School of Medicine at Mount Sinai, NY.

PALMITIC ACID INHIBITS INTERFERON RESPONSE DURING INFLUENZA A VIRUS INFECTION. Paige Hartsöe, Kris Genelyn Dimasuay, Fernando Holguín, Niccolette Schaunaman, Daniel Winnica, Hong Wei Chu. National Jewish Health, Denver, CO; University of Colorado Anschutz Medical Campus, Aurora, CO.
Friday, June 9, 2023 -- Morning

Future of Asthma: Moderators-Sunita Sharma, M.D. and Victor Ortega, M.D., Ph.D.

8:00-8:35 AM STATE OF THE ART
Blanca E. Himes, Ph.D.
Perelman School of Medicine/University of Pennsylvania, Philadelphia, Pennsylvania
“Decoding Asthma Heterogeneity Via the Integration of Omics Data”

8:35-9:00 AM Discussion

9:00-9:15 AM LEVERAGING GENETICS & PROTEOMICS TO DISSECT ORIGINS OF ASTHMA ENDOTYPES. Lauren Donoghue*, Christian Benner, Diana Chang, Rion Pendergrass, Brian Yaspan, Mark McCarthy, Department of Human Genetics, Genentech Inc, South San Francisco, CA.

9:15-9:30 AM DISTINCT ASTHMA SUBGROUPS IDENTIFIED BY MICRORNA AND MRNA NETWORK INTEGRATION. Maria A. Ramirez1*, Ningya Wang1, Maria Díaz-Soto1, Xiting Yan1, Anita Wang1, Shannon Kay1, Geoffrey Chupp1, Jose L. Gomez1, 1Section of Pulmonary, Critical Care, and Sleep Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT.

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

Future of Asthma: Moderators: Praveen Akuthota, M.D. and Vamsi Guntur, M.D.

10:00-10:35 AM THOMAS A. NEFF LECTURE
“INCORPORATING PRECISION MEDICINE IN ASTHMA CLINICAL TRIALS”
Njira Lucia Lugogo, M.D.
Associate Professor of Internal Medicine
Division of Pulmonary and Critical Care Medicine
Asthma Program Director
Michigan Medicine
University of Michigan Health
Ann Arbor, Michigan

10:35-11:00 AM Discussion

11:00-11:15 AM A CLINICAL ASSAY FOR CHARACTERIZING MULTIPLE PHENOTYPES IN UNCONTROLLED ASTHMA. Tasha Fingerlin1,2*, Kelsey Anderson2, Kendra Walton2, Roland Marcus2, Richard Martin1,2, 1Peak Diagnostic Partners, Inc. Aurora CO; 2National Jewish Health, Denver CO.

11:15-11:30 AM MEPOLIZUMAB INDUCED CHANGES IN NASAL METHYLOME TRANSCRIPTOME TO PREDICT RESPONSE IN ASTHMA. Kamini Rakkar1,2, Yik Lam Pang1,3, Poojitha Rajasekar1,2, Michael A Portelli1,2, Robert J Hall1,2, Rachel L Clifford1,2, Dominick Shaw1,3 and Ian Sayers1,2*, 1Centre for Respiratory Research, National Institute for Health Research Nottingham, Biomedical Research Centre, School of Medicine, 2Nottingham University Biodiscovery Institute; and 3Clinical Sciences Building, City Hospital, University of Nottingham, Nottingham, United Kingdom.
Friday, June 9, 2023 – Morning

Introduction of the Conference Summarizer by Anthony N. Gerber, M.D., Ph.D.

11:30-12:30 PM

CONFERENCE SUMMARY
Sally E. Wenzel, M.D.
Professor of Medicine and Immunology
Chair, Department of Environmental and Occupational Health
Rachel Carson Chair in Environmental Health
Director, University of Pittsburgh
Asthma and Environmental Lung Health Institute@UPMC
School of Public Health
Pittsburgh, Pennsylvania

12:30-1:00 PM

Discussion and Adjourn