

INTERNATIONAL CONFERENCE May 15-20, 2020 Philadelphia, PA

# ADVANCE PROGRAM

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## ATS 2020 INTERNATIONAL CONFERENCE MAY 15-20, PHILADELPHIA, PENNSYLVANIA

This is the virtual Advance Program for the ATS 2020 International Conference, which is one of the largest gatherings of pulmonary, critical care and sleep medicine clinicians and researchers in the world. This publication contains the programs and speakers for the postgraduate courses, scientific and educational sessions to be held at the International Conference confirmed as of January 7, 2020. For a brief description of the session types, please go to: https://conference.thoracic.org/program/session-information/.

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For information on conference registration, hotel accommodations and other conference details, please visit the ATS International Conference website at https://conference.thoracic.org/index.php.

- 1 Friday Postgraduate Courses
- 17 Saturday Postgraduate Courses
- 36 Sunday Conference Sessions
- 65 Monday Conference Sessions
- 99 Tuesday Conference Sessions
- 123 Wednesday Conference Sessions

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Tristan J. Huie, MD: Boehringer Ingelheim (Research Support, Other Transfers of Value); Promedior, Pulmonary Fibrosis Foundation (Research Support) Robert L. Owens, MD: Novartis Pharmaceuticals (Consultant)

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The following members of the International Conference Committee have disclosed the following financial relationships with commercial interests:

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The American Thoracic Society is committed to providing education and scientific exchange of the highest quality at our International Conference and other programs.

As an accredited provider of the Accreditation Council for Continuing Medical Education (ACCME), the ATS must ensure objectivity, scientific rigor, balance, and freedom from commercial bias in Conference presentations.

ATS relies on the assistance of Conference Session organizers, chairs and presenters, Assembly Program Committees, the ATS Education Committee, and the ATS International Conference Committee to accomplish this. In keeping with ACCME standards and ATS policies on management of conflict of interest, all moderators and speakers must complete conflict of interest review and resolution prior to the Conference.

ATS thanks Conference presenters for their cooperation in completing disclosure forms by announced deadlines, and thanks Conference session organizers and all those involved in this important process.



#### CLINICAL

#### POSTGRADUATE COURSE

#### PG1A CRITICAL CARE ULTRASOUND AND ECHOCARDIOGRAPHY I

This is part 1 of a two-part course which includes PG1B on Saturday, May 16. Those registering for PG1A will be registered for PG1A and PG1B.

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$900 Non-Member: \$1,200

In-Training Member: \$675 In-Training Non-Member: \$775

Assembly on Critical Care

## POSTGRADUATE COURSES

8:00 a.m. - 4:00 p.m.

Target Audience Providers of critical care or emergency medicine

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply ultrasound at bedside to assess critically ill patients;
- · apply ultrasound to guide common ICU procedures;
- diagnose alternate etiologies of shock in the critically ill patient.

This is a 2-day postgraduate course that consists of didactic lectures and hands-on stations. The focus is primarily bedside transthoracic echocardiography, with some diagnostic ultrasound. The topics include basic and intermediate critical care echocardiography (including hemodynamic measures), assessment of fluid status, procedural guidance for vascular access and thoracentesis, venography. The hands-on stations will include both healthy models and laptops that can demonstrate abnormal pathology.

- Chairing: M.J. Lanspa, MD, MSCR, ATSF, Salt Lake City, UT X. Monnet, MD, PhD, Le Kremlin-Bicetre, France
- 8:00 Welcome and Introduction to Critical Care Ultrasound: Training and Competency M.J. Lanspa, MD, MSCR, ATSF, Salt Lake City, UT

- 8:15 Basic Physics, Artifacts, and Knobology Z. Shaman, MD, Cleveland, OH
- 8:45 Transthoracic Windows and Views S. Nikravan, MD, Seattle, WA
- 9:15 Basic Evaluation of LV Systolic Function, Measurement of Cardiac Output J.C. Klick, MD, Hershey, PA
- 9:45 Basic Evaluation of RV Size and Function, Pulmonary Embolus D. Pradhan, MD, New York, NY
- 10:15 Break
- 10:30 Practical Skills Session: Apical Window V.A. Dinh, MD, Loma Linda, CA D.A. Sweeney, MD, San Diego, CA P.K. Mohabir, MD, Stanford, CA T. Brakke, MD, Omaha, NE L. Rapoport, MD, Santa Clara, CA

Practical Skills Session: ParasternalWindow X. Monnet, MD, PhD, Le Kremlin-Bicetre, France Z. Shaman, MD, Cleveland, OH J.C. Klick, MD, Hershey, PA L. Grecu, MD, Durham, NC J.E. Pittman, MD, Salt Lake City, UT

Practical Skills Session: Subcostal Window G.B. Allen, MD, Burlington, VT J. Kasal, MD, St. Louis, MO D. Pradhan, MD, New York, NY S. Nikravan, MD, Seattle, WA S. Cha, MD, Baltimore, MD

- 12:00 LUNCH
- 12:30 LUNCH and Clinical Cases I L. Grecu, MD, Durham, NC
- 12:45 Chest Ultrasound P.K. Mohabir, MD, Stanford, CA
- 1:15 Valvulopathy and Endocarditis T. Brakke, MD, Omaha, NE
- 1:45 Basic Assessment of Diastolic Function A. Leibowitz, MD, Boston, MA
- 2:15 Break

- 2:30 Practical Skills Session: Lung Ultrasound (Model and Mannequin)
  Z. Shaman, MD, Cleveland, OH
  D. Pradhan, MD, New York, NY
  P.K. Mohabir, MD, Stanford, CA
  J.E. Pittman, MD, Salt Lake City, UT
  L. Rapoport, MD, Santa Clara, CA
  Practical Skills Session: Cardiac Output
  L. Grecu, MD, Durham, NC
  V.A. Dinh, MD, Loma Linda, CA
  T. Brakke, MD, Omaha, NE
  - D.A. Sweeney, MD, San Diego, CA
  - S. Cha, MD, Baltimore, MD
  - Practical Skills Session: Diastolic Measurements J. Kasal, MD, St. Louis, MO X. Monnet, MD, PhD, Le Kremlin-Bicetre, France A. Leibowitz, MD, Boston, MA S. Nikravan, MD, Seattle, WA J.C. Klick, MD, Hershey, PA

#### CLINICAL

#### POSTGRADUATE COURSE

#### PG2 PEDIATRIC DIAGNOSTIC, ADVANCED DIAGNOSTIC, AND INTERVENTIONAL BRONCHOSCOPY

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$475
 In-Training Member: \$300

Non-Member: \$550

In-Training Member: \$300 In-Training Non-Member: \$400

Assembly on Pediatrics

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Pediatric pulmonary physicians will be interested.

#### Objectives

At the conclusion of this session, the participant will be able to:

 learn new findings about diagnostic, advanced diagnostic and interventional bronchoscopy in children;

- more accurately evaluate airway dynamics in children;
- identify children who could benefit from advanced diagnostic and therapeutic bronchoscopy procedures.

This course will introduce attendees to a broad spectrum of diagnostic, advanced diagnostic and interventional pediatric flexible bronchoscopy techniques from endobronchial and transbronchial biopsies to EBUS and CT-guided navigational procedures. Indications, risks and potential benefits will be discussed, followed by opportunity for hands-on practice under the guidance of leaders in the field of advanced pediatric bronchoscopy. The course will offer insights relevant to both trainees and experienced bronchoscopists.

- Chairing: J.C. Piccione, MS, DO, Philadelphia, PA E. Hysinger, MD, Cincinnati, OH A. Vicencio, MD, New York, NY
- 8:00 The Future of Pediatric Flexible Bronchoscopy: Advice for the Next Generation R.E. Wood, PhD, MD, Cincinnati, OH
- 8:25 Sleep State Endoscopy for Evaluation of Upper Airway Obstruction R.P. Boesch, DO, MS, Rochester, MN
- 8:50 Assessment and Impact of Abnormal Lower Airway Dynamics E. Hysinger, MD, Cincinnati, OH
- 9:15 Bronchoalveolar Lavage Techniques and Microbial Analyses in Chronic Suppurative Bronchitis and Immunocompromised Children A.B. Chang, PhD, Brisbane, Australia
- 9:40 Break
- 9:55 Endobronchial Brushings in Cystic Fibrosis and Primary Ciliary Dyskinesia J. Brewington, MD, Cincinnati, OH
- 10:20 Endobronchial Forceps and Cryobiopsy C. Spencer, MD, New York, NY
- 10:45 Transbronchial Lung Biopsy in Children S.B. Goldfarb, MD, ATSF, Philadelphia, PA

- 11:10 Endobronchial Ultrasound (EBUS) Techniques in Children J.C. Piccione, MS, DO, Philadelphia, PA
- 11:35 Endobronchial Valves for Persistent Air Leak in Children J.W. Toth, MD, Hershey, PA
- 12:00 LUNCH
- 12:30 Station 1 Endrobronchial Biopsy E.M. DeBoer, MD, Aurora, CO
- 1:05 Station 2 Foreign Body Retrieval R.P. Boesch, DO, MS, Rochester, MN
- 1:40 Station 3 Cryoprobe C. Spencer, MD, New York, NY
- 2:15 Station 4 Radial EBUS J.C. Piccione, MS, DO, Philadelphia, PA
- 2:50 Station 5 Linear EBUS J.W. Toth, MD, Hershey, PA
- 3:25 Station 6 Fiberoptic Intubation E. Hysinger, MD, Cincinnati, OH

#### **BEHAVIORAL** • CLINICAL

#### POSTGRADUATE COURSE

- PG3 UPDATE IN ADULT AND PEDIATRIC PULMONARY AND CRITICAL CARE PROCEDURES: HANDS-ON TRAINING FOR BEST PRACTICES
- Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
  - Member: \$475 Non-Member: \$550

In-Training Member: \$300 In-Training Non-Member: \$400

Assemblies on Clinical Problems; Critical Care; Education Committee

8:00 a.m. - 4:00 p.m.

#### Target Audience

Providers and trainees who practice emergency and critical care medicine. This course will benefit physicians,

nurses, advanced practice providers, and other health care professionals, adult and pediatric practitioners.

#### Objectives

At the conclusion of this session, the participant will be able to:

- effectively utilize difficult airway algorithms, LMAs and fiber-optic intubation techniques to manage difficult airways in the ICU;
- apply bronchoscopic interventions for management of hemoptysis;
- use ultrasound to effectively gain central access from several sites including the subclavian vein.

This postgraduate course is designed to address best practices in key procedural skills for practicing adult and pediatric intensivists. The course will include small group didactics and extensive hands-on training in order to maintain an active learning environment and continuous learner participation. Hands-on stations will use both simulators and human models. Key stations will have pediatric faculty members and mannequins/equipment in order to address pediatric specific procedures. Major topics to be covered include: basic airway management, difficult airway management, bronchoscopic management of hemoptysis, cricothyrotomy, pleural procedures, and advanced vascular access with ultrasound guidance.

- Chairing: J.I. McSparron, MD, Ann Arbor, MI D. Claar, MD, Ann Arbor, MI K. Pendleton, MD, Minneapolis, MN J.S. Rettig, MD, Boston, MA
- 8:00 Station 1: Basic Airway Management D. Kelm, MD, Rochester, MN I. Co, MD, Ann Arbor, MI
- 8:47 Station 1: Basic Airway Management (PEDS) S. Viteri, MD, Wilmington, DE
- 9:10 Station 2: Difficult Airway Management M.E. Prekker, MD, MPH, Minneapolis, MN L. Lief, MD, New York, NY
- 9:57 Station 2: Difficult Airway Management (PEDS) J.S. Rettig, MD, Boston, MA

10:20 Break

- 10:30 Station 3: Bronchoscopic Management of Hemoptysis
   G.Z. Cheng, MD, PhD, Durham, NC
   J. Cardenas-Garcia, MD, Ann Arbor, MI
- 11:40 *LUNCH*
- 12:20 Station 4: Advanced Airway Management -Emergent Cricothyrotomy S.S. Oh, DO, Santa Monica, CA A. Levine, MD, Baltimore, MD
- 1:07 Station 4: Advanced Airway Management -Emergent Cricothyrotomy (PEDS) M.G. Duvall, MD, PhD, Boston, MA
- 1:30 Station 5: Pleural Procedures in the ICU C.L. Channick, MD, Los Angeles, CA S. Rafeq, MD, New York, NY
- 2:40 Break
- 2:50 Station 6: Advanced Vascular Access T.T. Bellamkonda, DO, Bellevue, WA N. Qadir, MD, Los Angeles, CA J.T. Chen, MD, Bronx, NY
- 3:43 Station 6: Advanced Vascular Access (PEDS) K. Ryan, MD, Palo Alto, CA

#### BASIC · CLINICAL · TRANSLATIONAL

#### POSTGRADUATE COURSE

# PG4 ASTHMA: LATEST TECHNIQUES AND TOOLS FOR THE INVESTIGATOR

- Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
  - Member: \$350 Non-Member: \$425

In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Allergy, Immunology and Inflammation; Respiratory Structure and Function

8:00 a.m. - 4:00 p.m.

Target Audience Investigators or potential investigators who are interested in basic, translational, and clinical research in asthma.

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- understand the basic biology and physiology of asthma;
- learn about the latest techniques in clinical trial design, genomics and translational research in asthma;
- understand the latest techniques for basic research in asthma.

This course is focused on providing a comprehensive overview of major techniques and tools in asthma investigation, ranging from clinical trials to translational tools to basic models. The course will feature investigators of different backgrounds and focus to get a broad view of the current state of asthma research.

- Chairing: P. Akuthota, MD, La Jolla, CA B.D. Medoff, MD, Boston, MA M. Kraft, MD, ATSF, Tucson, AZ
- 8:00 Introduction B.D. Medoff, MD, Boston, MA
- 8:05 Advances in Clinical Trial Design L.C. Denlinger, MD, PhD, Madison, WI
- 8:35 Translational Research Tools: Bronchoscopy with Segmental Allergen Challenge J.L. Cho, MD, Iowa City, IA
- 9:05 Studying Innate Immunity in Asthma M. Kraft, MD, ATSF, Tucson, AZ
- 9:35 New Concepts in Mouse Models of Asthma J.G. Ledford, PhD, Tucson, AZ
- 10:05 Break
- 10:20 Studying Human Eosinophils in Asthma and Beyond P. Akuthota, MD, La Jolla, CA
- 10:40 Leveraging Clinical Informatics for the Study of Asthma J. Ryu, MD, San Diego, CA
- 11:05 Adaptive Immunity in Asthma I: T cells R.A. Rahimi, MD, PhD, Charlestown, MA
- 11:35 LUNCH
- 12:15 Adaptive Immunity in Asthma II: Dendritic Cells B.D. Medoff, MD, Boston, MA

- 12:45 Advanced Imaging Techniques in the Study of Asthma E.A. Hoffman, PhD, ATSF, Iowa City, IA
- 1:10 Asthma Genetics and Genomics S. Sharma, MD, MPH, Aurora, CO
- 1:40 Microscaled and Single Cell Sequencing Approaches in Asthma Research B. Modena, MD, MSc, Denver, CO
- 2:05 Break
- 2:20 Epithelial Cells in Asthma J.L. Ingram, PhD, Durham, NC
- 2:40 Rare Cell Types in Asthma X. Sun, PhD, San Diego, CA
- 3:00 Immune Cell Phenotyping in Asthma R.M. Tighe, MD, Durham, NC
- 3:30 Studying Physiology in Asthma R.A. Panettieri, MD, New Brunswick, NJ

#### CLINICAL

#### POSTGRADUATE COURSE

#### PG5 INTERSTITIAL LUNG DISEASE: DELIVERING OPTIMAL, PATIENT CENTERED CARE

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation; Behavioral and Health Services Research; Nursing; Pulmonary Circulation; Pulmonary Rehabilitation

8:00 a.m. - 4:00 p.m.

#### Target Audience

This course should be broadly relevant to those who provide clinical care for patients with ILD. This will include pulmonary fellows, general pulmonologists, ILD specialists, and advanced care nurses.

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply a consistent, effective strategy to ILD/IPF diagnosis;
- understand the range of therapeutics available for ILD and how and when to prescribe them;
- integrate a holistic and interdisciplinary approach to ILD patient care.

This course will provide a practical approach to the diagnosis and management of patients with ILD. It will bring the most recent recommendations and guidelines into a usable strategy that will facilitate the care of patients with ILD. This will be accomplished through didactics, simulated MDD and panel discussion of difficult cases which will provide a range of learning methods to reach the largest number of learners.

Chairing: M. Kreider, MD, MSCE, ATSF, Philadelphia, PA S.K. Danoff, MD, PhD, ATSF, Baltimore, MD

- 8:00 Introduction M. Kreider, MD, MSCE, ATSF, Philadelphia, PA
- 8:15 Putting New Guidelines into Practice: Distinguishing IPF from Non-IPF ILD A. Podolanczuk, MD, New York, NY
- 8:45 GGOs, Reticulations, Honeycombing: Using Radiologic Patterns in the Diagnosis of ILD S. Hobbs, MD, Lexington, KY
- 9:15 Is Tissue the Issue: When, Who, and How to Biopsy K.A.M. Johannson, MD, MPH, ATSF, Calgary, Canada
- 9:45 Telomeres, SNPs and Surfactants: What's the Role of Genetic Testing in ILD? J. Kropski, MD, Nashville, TN
- 10:15 Break
- 10:30 Speed MDD: Pulling It All Together
  L.P. Hariri, BS, MD, PhD, Boston, MA
  S. Hobbs, MD, Lexington, KY
  E.M. Wilfong, MD, PhD, Nashville, TN
  A.O. Adegunsoye, MD, MS, Chicago, IL
  T. Luckhardt, MD, Birmingham, AL
  M. Kreider, MD, MSCE, ATSF, Philadelphia, PA

- 11:45 *LUNCH*
- 12:15 IPF Therapy: Which One, When, and Why? T.M. Maher, MD, MSc, PhD, London, United Kingdom
- 12:45 Therapies for CTD-ILD: Moving Beyond Steroids C. Johnson, MD, Philadelphia, PA
- 1:15 The Nuts and Bolts of Monitoring Patients with ILD S.K. Danoff, MD, PhD, ATSF, Baltimore, MD
- 1:45 Controversies in Therapy- NAC, PH, GERD, Stem Cells J. Oldham, MD, MS, Sacramento, CA
- 2:15 Break
- 2:30 Tough Cases
  T.M. Maher, MD, MSc, PhD, London, United Kingdom
  K.A.M. Johannson, MD, MPH, ATSF, Calgary, Canada
  A.O. Adegunsoye, MD, MS, Chicago, IL
  T. Luckhardt, MD, Birmingham, AL
  E.M. Wilfong, MD, PhD, Nashville, TN
  J. Oldham, MD, MS, Sacramento, CA
  M. Kreider, MD, MSCE, ATSF, Philadelphia, PA
  L.P. Hariri, BS, MD, PhD, Boston, MA

#### CLINICAL · TRANSLATIONAL

#### POSTGRADUATE COURSE

#### PG6 COPD 2020: STATE OF THE ART

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350In-Training Member: \$200Non-Member: \$425In-Training Non-Member: \$300

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation; Pulmonary Rehabilitation; Respiratory Structure and Function

8:00 a.m. - 4:00 p.m.

Target Audience Clinicians, nurses, other allied health staff, researchers, investigator in basic and clinical pertinent to COPD, and sponsors of research.

#### Objectives

At the conclusion of this session, the participant will be able to:

- identify challenges associated with the contemporary assessment and management of chronic obstructive pulmonary disease (COPD) based on evidence-based clinical practice guidelines recommendations;
- learn new findings and gain competence in providing pharmacological and non-pharmacological management of COPD;
- recognize unmet needs for future research in the field.

This course will provide a state of the art update on the pathophysiology, clinical progression and course, assessment and management of COPD. It will also shed light on recent and ongoing clinical trials and outline evidence-based pharmacological and non-pharmacological management strategies. In addition, interventions to prevent of COPD exacerbation will be discussed. Attendees will be updated on the evolving knowledge on COPD phenotypes, endotypes and biomarkers as well as recent advances in understanding the genetic aspect of this disease. Finally, the course will also outline unmet and future research needs.

- Chairing: N.A. Hanania, MD, MS, ATSF, Houston, TX J.M. Bon, MD, MS, ATSF, Pittsburgh, PA M.T. Dransfield, MD, Birmingham, AL R. Kalhan, MD, MS, Chicago, IL
- 8:00 Introduction N.A. Hanania, MD, MS, ATSF, Houston, TX
- 8:05 Disease Progression of COPD: What Have We Learned from Clinical and Cohort Studies? R. Kalhan, MD, MS, Chicago, IL
- 8:25 Novel Insights on the Immunopathology of COPD P.J. Barnes, MD, DSc, ATSF, London, United Kingdom
- 8:45 Insights from COPD Genetics C.P. Hersh, MD, MPH, ATSF, Boston, MA

- 9:05 The Role of Microbiome in COPD: Evolving Knowledge Y.J. Huang, MD, Ann Arbor, MI
- 9:25 New Concepts in the Diagnosis and Management of Chronic Bronchitis V. Kim, MD, ATSF, Philadelphia, PA
- 9:45 Questions and Answers
- 9:55 Break
- 10:10 Biomarkers for COPD: Are We There Yet? D. Singh, MD, NP, Manchester, United Kingdom
- 10:30 Role of Radiologic Imaging in COPD G.R. Washko, MD, Boston, MA
- 10:50 Prevention of COPD Exacerbations J.A. Wedzicha, MD, PhD, ATSF, London, United Kingdom
- 11:10 GOLD 2020: An Update G.J. Criner, MD, ATSF, Philadelphia, PA
- 11:30 Questions and Answers
- 11:50 LUNCH
- 12:50 Bronchoscopic Interventions in COPD F.C. Sciurba, MD, Pittsburgh, PA
- 1:10 Non-Invasive Ventilation in COPD N. Hart, MD, London, United Kingdom
- 1:30 Pulmonary Rehabilitation at Home: Can It Be Done? A.E. Holland, PhD, Melbourne, Australia
- 1:50 Assessment and Management of Comorbidities in COPD J.M. Bon, MD, MS, ATSF, Pittsburgh, PA
- 2:10 Promoting Self-Management in COPD R. Benzo, MD, MSc, Rochester, MN
- 2:30 Questions and Answers
- 2:40 Break
- 2:45 Bronchodilators in COPD: An Update N.A. Hanania, MD, MS, ATSF, Houston, TX
- 3:05 Inhaled Steroids in COPD: Friend or Foe? M.T. Dransfield, MD, Birmingham, AL

- 3:25 Novel Pharmacologic Targets for COPD I.D. Pavord, MD, Oxford, United Kingdom
- 3:45 Questions and Answers
- 3:55 Closing Remarks J.M. Bon, MD, MS, ATSF, Pittsburgh, PA

#### POSTGRADUATE COURSE

#### PG7 PLEURAL DISEASE IN 2020: WHAT'S NEW?

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 In Non-Member: \$425 In

In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Clinical Problems; Pulmonary Infections and Tuberculosis; Thoracic Oncology

8:00 a.m. - 4:00 p.m.

#### Target Audience

Specialists and trainees in pulmonary and critical care medicine, infectious disease physicians, intensivists, general practitioners, research scientists and related health care professionals including surgeons and nurses.

#### Objectives

At the conclusion of this session, the participant will be able to:

- describe the investigation of patients with pleural disease, including pleural fluid analysis, advanced ultrasound and the role of invasive diagnostic strategies;
- understand and describe diagnosis and management of malignant pleural disease, including pleural fluid mangement strategies;
- describe current evidence and best practice in assessment and management of infectious pleural disease, including tuberculosis and bacterial etiologies.

This course will describe the latest, evidence-based approach to diagnosis and management of a broad

range of pleural disease, from recognized world experts. The session will provide a strong base from which clinicians can go on to provide excellent, rational and evidence based patient focused care in pleural disease.

Chairing: D.J. Feller-Kopman, MD, Baltimore, MD

- 8:00 Pleural Physiology: Why Are Patients with Effusions Breathless? Speaker To Be Announced
- 8:20 Investigation of the Undiagnosed Effusion: Established and New Biomarkers V.B. Antony, MD, Birmingham, AL
- 8:50 Thoracoscopy and Pleural Biopsy: When and in Whom? D.J. Feller-Kopman, MD, Baltimore, MD
- 9:20 Advanced Ultrasound C.B. Laursen, MD, PhD, Odense, Denmark
- 9:50 Break
- 10:20 Management of Malignant Pleural Effusion (Incl. ATS Guidelines) N. Maskell, DM, Bristol, United Kingdom
- 10:50 Interesting Cases in Malignant Effusion N. Maskell, DM, Bristol, United Kingdom
- 11:10 Mesothelioma Latest Trials and Biomarkers A. Bibby, MBChB, BSc(Hons), DTM, Bristol, United Kingdom
- 11:35 Updates in the Management of Pneumothorax R. Hallifax, PhD, Oxford, United Kingdom
- 12:00 LUNCH
- 12:55 Management of Empyema N. Rahman, BM BCH, MSc, Oxford, United Kingdom
- 1:25 Interesting Cases in Pleural Infection N. Rahman, BM BCH, MSc, Oxford, United Kingdom
- 1:45 Management of Pleural TB and Unusual Pleural Disease C.F.N. Koegelenberg, MD, PhD, Cape Town, South Africa
- 2:15 Break

- 2:45 Intrapleural Therapies for Pleural Malignancy D.H. Sterman, MD, ATSF, New York, NY
- 3:10 Novel Technology and Pleural Manometry F. Maldonado, MD, Nashville, TN
- 3:35 Future Directions in Pleural Disease Y.C.G. Lee, MBChB, PhD, Perth, WA

#### POSTGRADUATE COURSE

#### PG8 A PHYSIOLOGIC APPROACH TO RESPIRATORY FAILURE: PRACTICAL PRINCIPLES FOR MANAGEMENT

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 In-Training Member: \$200 Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Critical Care; Respiratory Structure and Function

8:00 a.m. - 4:00 p.m.

#### Target Audience

Clinicians who care for mechanically ventilated patients in the ICU. This course will also be of interest to students, fellows and researchers who wish to better understand the physiologic basis of common ventilatory strategies

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- apply appropriate oxygen targets for mechanically ventilated patients;
- more appropriately choose candidates for prone ventilation;
- improve understanding of heart-lung interaction in mechanical ventilation in order to more appropriately target volume status and PEEP level in respiratory failure.

The clinical literature on mechanical ventilation is notable for conflicting trials (on neuromuscular blockade, PEEP titration etc) which make it difficult to arrive at a standardized, evidence based approach to all patients. This course will stress a physiologic approach to managing the ventilator and interpreting the effects of interventions. At its conclusion, participants will have developed the skills needed to individualize ventilatory strategies and appropriately apply clinical evidence based on bedside assessment of respiratory physiology. We will cover appropriate oxygenation goals, uses and physiologic effects of PEEP, ventilation of severe asthma, heart lung interaction as it relates to mechanical ventilation, and the physiology of prone ventilation in severe ARDS.

- Chairing: C.C. Hardin, MD, PhD, ATSF, Boston, MA K. Hibbert, MD, Boston, MA
- 8:00 Introduction to Course C.C. Hardin, MD, PhD, ATSF, Boston, MA
- 8:15 Heart-Lung Interaction in Critical Illness S.A. Magder, MD, Montreal, Canada
- 9:00 Mechanisms of Hypoxemia in Respiratory Failure S.R. Hopkins, MD, PhD, La Jolla, CA
- 9:40 Bedside Assesment of Respiratory Mechanics K. Hibbert, MD, Boston, MA
- 10:20 Break
- 10:40 Case Presentations S.A. Magder, MD, Montreal, Canada S.R. Hopkins, MD, PhD, La Jolla, CA K. Hibbert, MD, Boston, MA
- 11:25 LUNCH
- 12:10 Appropriate Oxygen Targets in Critical Care B. Coruh, MD, Seattle, WA
- 12:40 PEEP Titration in Respiratory Failure S. Sahetya, MD, MHS, Baltimore, MD
- 1:20 When to Use Prone Ventilation I.S. Douglas, MD, Denver, CO
- 2:00 Ventilation of Severe Obstructive Disease S. Sharma, MD, MPH, Aurora, CO
- 2:40 Break

3:00 Case Presentations
S. Sharma, MD, MPH, Aurora, CO
S. Sahetya, MD, MHS, Baltimore, MD
B. Coruh, MD, Seattle, WA
I.S. Douglas, MD, Denver, CO

#### **BASIC • TRANSLATIONAL**

#### POSTGRADUATE COURSE

#### PG9 A HANDS-ON INTRODUCTION TO STUDYING THE LUNG MICROBIOME

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 Non-Member: \$425

In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Pulmonary Infections and Tuberculosis; Allergy, Immunology and Inflammation; Section on Genetics and Genomics

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Research scientists interested in designing, performing, and understanding the analysis of lung and airway microbiota using sequencing-based techniques

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand research design and analytical approaches needed to conduct culture independent assessment of microbial communities in respiratory specimens;
- integrate microbiota sequencing results with current culture-based models of respiratory infection. Audience will appreciate the complexity of re-evaluating our disease paradigms and apply this knowledge when designing studies of lung microbiota;
- illustrate the use of a combination of basic and multi-dimensional computational approaches for investigating microbial function and mechanisms of disease. Audience will be equipped to prioritize mechanistic approaches to lung microbiota.

This course will introduce methodologies used to study lung microbiota using culture-independent methods. Participants will learn how to design, execute, analyze and interpret a lung microbiome study. Hands-on experiences will include facilitated small group discussions on designing and executing lung microbiome studies, as well as demonstrations on the use of statistical software to analyze microbiome data. Participants will be challenged to develop their own study design and analytic plan for a hypothetical microbiome study, and will be provided both with sample microbiome data as well as executable, annotated code to make sense of it. They will be walked through each step in the didactic sessions, and faculty will provide hands-on support to assist. This code file will be easily adaptable by attendees for later use on their own microbiome data. No prior training is necessary on the part of trainees.

- Chairing: R.P. Dickson, MD, Ann Arbor, MI A. Pragman, MD, PhD, Minneapolis, MN L.N. Segal, MD, New York, NY
- 8:00 An Introduction to Thinking About the Microbiome R.P. Dickson, MD, Ann Arbor, MI
- 8:50 Integrating Microbiota Findings with Our Disease Models A. Pragman, MD, PhD, Minneapolis, MN
- 9:20 Hands-on Breakout Session: Study Design
- 9:40 Studying Viruses and Fungi in Lung Microbiome Studies R.G. Collman, MD, Philadelphia, PA
- 10:10 Break
- 10:20 Contaminomics M.J. Cox, BSc(Hons), PhD, London, United Kingdom
- 10:50 Hands-On Breakout Session: Sampling and Controls
- 11:10 Hands-On: A Crash Course in Microbiome Analysis: Part 1 C. Brown, BS, Ann Arbor, MI
- 11:50 LUNCH
- 12:50 Hands-On: A Crash Course in Microbiome Analysis: Part 2 C. Brown, BS, Ann Arbor, MI

- 1:30 Hands-On Breakout Session: Hypothesis-Testing
- 1:50 Real-Time Metagenomics J. Erb-Downward, PhD, Ann Arbor, MI
- 2:10 Studying the Host-Microbiome Interface L.N. Segal, MD, New York, NY
- 2:30 Longitudinal Microbiome Studies D. Bogaert, MD, PhD, Edinburgh, United Kingdom
- 2:50 Break
- 3:00 Hands-On Breakout Session: Data Visualization
- 3:20 Integrating Multiple "Omes" M.H. Badri, BS, New York, NY
- 3:40 Questions and Answers with Panel Discussion

#### CLINICAL • TRANSLATIONAL

#### POSTGRADUATE COURSE

#### PG10 BRONCHIECTASIS AND PULMONARY NONTUBERCULOUS MYCOBACTERIA INFECTION 2020

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350	In-Training Member: \$200	
Non-Member: \$425	In-Training Non-Member: \$300	)

Assembly on Pulmonary Infections and Tuberculosis

#### 8:00 a.m. - 4:00 p.m.

#### Target Audience

Pulmonologists, infectious diseases specialists; fellows in pulmonary medicine, fellows in infectious diseases, respiratory therapists, advanced practice nurses and internal medicine residents.

#### Objectives

At the conclusion of this session, the participant will be able to:

- integrate new pulmonary nontuberculous mycobacteria guidelines into daily practice;
- gain new findings about recent science that underlies pathophysiology of bronchiectasis and pulmonary nontuberculous mycobacteria infection;

 foster an environment of collegiality while improving care for bronchiectasis patients by way of excellence in clinical management, development of clinical trials and scientific research.

The course will begin with the epidemiology and evaluation for etiology with attention to identifying treatable causes. Updated pulmonary NTM treatment guidelines with a pro-con debate in pulmonary mycobacterium abscessus infection will be presented. A comprehensive approach to the management of bronchiectasis will be reviewed and include airway clearance strategies, the use of inhaled antibiotics, and the role of surgery in bronchiectasis and pNTM infection. Emerging data in genetics, immunology, inflammation, and the microbiome that are beginning to elucidate the pathophysiology of bronchiectasis and pNTM susceptibility will be highlighted. Real-world difficult cases will be presented and discussed with expert panelists. For lunch, faculty speakers will be assigned to dedicated tables to allow participants for continued interaction and guestions. Difficult cases will be discussed at the end of the course and will be provided pre-meeting to the participants.

- Chairing: P.J. McShane, MD, Chicago, IL A. Basavaraj, MD, ATSF, New York, NY S.H. Kasperbauer, MD, ATSF, Denver, CO
- 8:00 Epidemiology and Evaluation of Bronchiectasis and Nontuberculous Mycobacteria R. Thomson, MBBS, PhD, Greenslopes, Australia
- 8:30 Airway Clearance Techniques in Bronchiectasis M. McIlwaine, PhD, Vancouver, Canada
- 9:00 Antimicrobial Management in Bronchiectasis A.E. O'Donnell, MD, Washington, DC
- 9:30 Surgery for the Patient with Bronchiectais and Pulmonary Nontuberculosis Infection J.S. Donington, MD, MSCR, Chicago, IL
- 10:00 Break
- 10:15 Nontuberculosis Mycobacteria: New Guidelines C.L. Daley, MD, Denver, CO
- 10:45 Mycobacterium Abscessus Taxonomy and Treatment B. Brown-Elliott, MS, MT(ASCP)SM, Tyler, TX

- 11:15 Pro/Con Debate: Treatment of Mycobacterium Abscessus Infection J. Philley, MD, Tyler, TX D.E. Griffith, MD, Tyler, TX
- 11:45 Questions and Answers
- 12:00 LUNCH
- 1:00 Inflammation in Bronchiectasis J.D. Chalmers, MD, PhD, Dundee, United Kingdom
- 1:30 Immunology of Bronchiectasis and Pulmonary Nontuberculous Mycobacteria K.N. Olivier, MD, MPH, ATSF, Bethesda, MD
- 2:00 The Microbiome in Pulmonary NTM I. Sulaiman, MD, Dublin, Ireland
- 2:30 **Ouestions and Answers**
- 2:45 Break
- 3:00 Case Based Panel Discussion P.J. McShane, MD, Chicago, IL A. Basavaraj, MD, ATSF, New York, NY S.H. Kasperbauer, MD, Denver, CO

#### **BASIC • CLINICAL • TRANSLATIONAL**

#### POSTGRADUATE COURSE

#### PG11 PULMONARY HYPERTENSION IN HEART FAILURE WITH PRESERVED **EJECTION FRACTION: A CLOSER LOOK** AT THE LEFT HEART

R Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited. Member: \$350 In-Training Member: \$200 Non-Member: \$425

In-Training Non-Member: \$300

Assembly on Pulmonary Circulation

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Basic scientists, residents, fellows, pulmonologists, nurse practitioners, physician assistants, cardiologists, early career professionals, nurses

#### Objectives

At the conclusion of this session, the participant will be able to:

- improve recognition and diagnosis of pulmonary hypertension associated with heart failure with preserved ejection fraction;
- review the evidence for the use of pulmonary vasodilator therapy and avoid misuse of non-evidence based therapies for patients with PH-HFpEF;
- review ongoing clinical trials in PH-HFpEF and novel potential therapeutic targets in PH-HFpEF.

Pulmonary hypertension due to left heart disease (Group 2 PH) is the most prevalent form of PH worldwide. 12-13% of Group 2 PH patients display pulmonary arterial remodeling and are associated with poor prognosis, imposing an economic burden of about 8 billion dollars per annum. Despite increasing interest and a growing number of related publications, no approved specific medication or consensus therapeutic strategy for Group 2 PH is available at present. In this course, we want the audience to learn about current developments in Group 2 PH, from bench to bedside, focusing on pathogenesis, clinical phenotypes, diagnostic factors, clinical trial updates and future perspectives.

- Chairing: N. Al-Naamani, MD, MS, Philadelphia, PA Y.C. Lai, PhD, Indianapolis, IN J.A. Mazurek, MD, Philadelphia, PA
- The Pathogenesis and Epidemiology of 8:00 PH-HFpEF J.A. Mazurek, MD, Philadelphia, PA
- 8:40 Diagnostic Role of Exercise and Dynamic Challenge in PH-HFpEF A.B. Waxman, MD, PhD, Boston, MA
- 9:20 Look into My Heart (and Lungs): RV Imaging in PH-HpEF R.R. Vanderpool, BS, MS, PhD, Tucson, AZ
- **Biomarkers in PH-HFpEF** 10:00 Y.C. Lai, PhD, Indianapolis, IN
- 10:20 Break
- Myocardial and Vascular Stiffness in PH-HFpEF 10:35 I.M. Lang, MD, Vienna, Austria

- 11:15 The Metabolic Syndrome and PH-HFpEF M.T. Gladwin, MD, Pittsburgh, PA
- 11:55 LUNCH
- 12:55 Challenging Cases in PH-HFpEF: The Great Masquerader N. Al-Naamani, MD, MS, Philadelphia, PA
- 1:35 Panel Discussion
- 1:40 Pulmonary Venous Remodeling in PH-HFpEF J. Leopold, MD, Boston, MA
- 2:20 Break
- 2:35 Trials and Tribulations in PH-HFpEF T. Thenappan, MD, Minneapolis, MN
- 3:15 Clinical Trial Updates and Future Perspectives in PH-HFpEF M. Simon, MD, MS, Pittsburgh, PA
- 3:55 Closing Remarks J.A. Mazurek, MD, Philadelphia, PA

#### **BASIC • TRANSLATIONAL**

POSTGRADUATE COURSE

#### PG12 HOW THE EXTRACELLULAR MATRIX INSTRUCTS LUNG REGENERATION: TRANSLATING TOOLS AND TECHNIQUES

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Pediatrics; Pulmonary Circulation; Respiratory Structure and Function

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Physicians, physician scientists, scientists, fellows and trainees with an interest in the area of lung regeneration, in particular how the extracellular matrix (ECM) drives proper function of resident and non-resident cell types

#### Objectives

At the conclusion of this session, the participant will be able to:

- improve participants knowledge on ECM-driven effects in lung regeneration. To Identify opportunities for novel investigation into understudied aspects of lung matrix biology and cell-ECM interactions;
- contrast the strengths and weaknesses of model systems and approaches recently developed to study lung ECM and cell-ECM interactions;
- understand how advances in lung matrix biology are revealing new tools to initiate and maintain lung regeneration for future therapeutic options.

The primary objective of this course is to provide comprehensive state of the art current approaches and findings that demonstrate ECM-driven cell function during lung injury, inflammation, and repair. The lectures of this PG course will feature the basics of the ECM, ECM scaffold bioengineering, ECM-cell interactions and, finally, how to modify the ECM as a therapeutic target in chronic lung diseases such as lung fibrosis, COPD or bronchiolitis obliterans.

- Chairing: O. Eickelberg, MD, ATSF, Aurora, CO D.J. Tschumperlin, PhD, Rochester, MN E.R. Neptune, MD, Baltimore, MD C.A. Staab-Weijnitz, PhD, Munich, Germany
- 8:00 Welcome and Introduction to the Course O. Eickelberg, MD, ATSF, Aurora, CO
- 8:15 Extracellular Matrix in Lung Development, Homeostasis, and Disease V.J. Thannickal, MD, Birmingham, AL
- 8:45 The Physical and Biochemical Properties of the Extracellular Matrix that Regulate Cell Fate E. Cukierman, PhD, Philadelphia, PA
- 9:15 Novel ECM Components Revealed by Deep Discovery Proteomics H. Schiller, PhD, Munich, Germany
- 9:45 General Discussion Topic A
- 10:00 Break
- 10:15 Lung Slices to Study Matrix Remodeling D.E. Wagner, PhD, Lund, Sweden

- 10:45 Lung-on-a-Chip: A Novel Technology Reproducing Cell-ECM Interaction K. Hajipouran Benam, PhD, Aurora, CO
- 11:15 Bioengineering ECM Scaffolds for Tissue Remodeling Speaker To Be Announced
- 11:45 General Discussion Topic B
- 12:00 LUNCH
- 12:45 Mechanisms, Hallmarks, and Implications of How the ECM Directs Stem Cell Quiescence F. Watt, PhD, London, United Kingdom
- 1:15 Defining Cell and ECM Niches in Fibrosis Progression P.B. Bitterman, MD, Minneapolis, MN
- 1:45 The Cancer Matrisome: From Comprehensive Characterization to Biomarker Discovery A. Naba, PhD, Chicago, IL
- 2:15 Break
- 2:30 Glycosaminoglycans: A Link Between Development and Regeneration in the Lung G. Westergren Thorsson, PhD, Lund, Sweden
- 3:00 Thrombospondin 1, Master Regulator of Extracellular Matrix in Fibrotic Disease J.E. Murphy-Ullrich, MD, Birmingham, AL
- 3:30 General Discussion Topic C

#### POSTGRADUATE COURSE

#### PG13 SLEEP DISTURBANCES ACROSS VARIOUS MEDICAL DISORDERS

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 Non-Member: \$425 In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Sleep and Respiratory Neurobiology, Clinical Problems

8:00 a.m. - 4:00 p.m.

#### Target Audience

Physicians, nurses and research physiologists involved in the care of respiratory, non respiratory medicine from a sleep perspective

#### Objectives

At the conclusion of this session, the participant will be able to:

- diagnose sleep disorders in common medical conditions;
- optimize medical management of common medical problems with sleep related therapies;
- improve clinical care and appreciate circadian rhythm aspects to health care.

The course will discuss the impact of sleep in the pathophysiology of, and potential therapeutic options for, a number of common medical conditions, most of which sleep is not the primary condition.

- Chairing: M.T. Naughton, MD, ATSF, Prahran, Australia B.J. Yee, MBChB, PhD, Sydney, Australia
- 8:00 Sleep and Asthma: Nighttime Is Not the Right Time M. Teodorescu, MD, MS, Madison, WI
- 8:25 Sleep in Chronic Obstructive Pulmonary Disease: A Hard Day's Night R.L. Owens, MD, La Jolla, CA
- 8:50 Sleep in Cystic Fibrosis: Cough, Cognition and Carbon Dioxide A. Young, MBBS, PhD, Melbourne, Australia
- 9:15 Sleep Disordered Breathing and Interstitial Lung Disease: Dangerous Bedfellows L.K. Troy, PhD, MBBS, BMedSci, Sydney, Australia
- 9:40 Break
- 9:55 Obesity Hypoventilation: From Start to Finish B.J. Yee, MBChB, PhD, Sydney, Australia
- 10:20 Diabetes and Sleep Apnea: Is Sleep or Apnea More Important Therapeutically? N.M. Punjabi, MD, PhD, Baltimore, MD
- 10:45 Atrial Fibrillation and Sleep Apnea: Hard Mattresses with Soft Data S.M. Caples, DO, Rochester, MN

- 11:10 Heart Failure and Sleep: Why Worry? G. Lorenzi-Filho, MD, Sao Paulo, Brazil
- 11:35 Renal Failure, Dialysis and Sleep Apnea: Who Is to Blame for a Poor Nights Sleep? P. Hanly, MD, Calgary, Canada
- 12:00 LUNCH
- 12:50 Opioids and Sleep: For Better or Worse? M. Cao, DO, Redwood City, CA
- 1:15 Sleep Apnea and Obesity Hypoventilation Syndrome: A Time Bomb for Surgery? F. Chung, MD, Toronto, Canada
- 1:40 Sleep in ICU: Is It Possible? R.J. Schwab, MD, Philadelphia, PA
- 2:05 Neuromuscular Disease and Sleep: Ruffled Muscles Make a Restless Pillow L.S. Aboussouan, MD, Cleveland, OH
- 2:30 Break
- 2:45 Pregnancy and Sleep: Should We Be Concerned? G.W. Pien, MD, MS, Baltimore, MD
- 3:10 What the Savvy Pulmonologist Should Know About Sleep and Breathing Disorders in Children C.L. Rosen, MD, Cleveland, OH
- 3:35 Clinical Cases M.T. Naughton, MD, ATSF, Prahran, Australia

#### POSTGRADUATE COURSE

#### PG14 PFT 2020 FOCUS: UPDATES IN CLINICAL PULMONARY FUNCTION AND EXERCISE TESTING

 Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Respiratory Structure and Function; Clinical Problems

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Current and future directors of PFT labs, attending physicians, respiratory therapists, trainees, fellows, and other interested health care providers

#### Objectives

At the conclusion of this session, the participant will be able to:

- gain further understanding of the principles and practice of pulmonary function diagnostic tests;
- develop greater confidence interpreting pulmonary function test results in clinical practice;
- identify strategies to approach the interpretation of pulmonary function test results in complex patients.

This course will focus on clinical lung function testing, combining guidelines from new technical standards published in the past 3 years with interactive small group experiences focusing on the performance, interpretation, and reporting of pulmonary function testing (PFT) and cardiopulmonary exercise testing (CPET). This course will combine didactic lectures with case-based instruction, small group discussion, and live demonstration of spirometry and diffusing capacity measurement. We will offer participants the opportunity to submit their own cases for review by expert clinicians and physiologists. We will use a multidisciplinary team approach to facilitate case discussions including content experts, clinicians, respiratory therapists, and pulmonary function laboratory medical directors from around the world.

- Chairing: R. Clay, MD, Clackamas, OR T. DeCato, MD, Spokane, WA C. Oropez, MD, MHS, Tucson, AZ
- 8:00 Introduction R. Clay, MD, Clackamas, OR
- 8:05 Spirometry 2020: State Of The Art View of Measurement and Interpretation S. Stanojevic, PhD, Toronto, Canada
- 8:30 Looking at Lung Volumes: Measurement, Reporting, and Interpretation B. Borg, BappSc, CRFS, Melbourne, Australia

- 8:55 Diffusing Capacity: A Closer Look at the Challenges of Gas Transfer Measurement T. DeCato, MD, Spokane, WA
- 9:20 Another Vantage Point: Pediatric Pulmonary Perspectives on PFT D.J. Weiner, MD, ATSF, Pittsburgh, PA
- 9:45 Real-Time Look at PFT Coaching and Troubleshooting G.L. Ruppel, RRT, RPFT, MEd, Saint Louis, MO
- 10:15 Break
- 10:30 Viewing the Forest from the Trees: Cardiopulmonary Exercise Testing C. Mottram, RRT, RPFT, Rochester, MN
- 11:05 See for Yourself: Small Group PFT Case DiscussionsM.C. McCormack, MHS, MD, Baltimore, MD C. Oropez, MD, MHS, Tucson, AZ
- 12:15 LUNCH
- 12:45 Forced Oscillation Technique: A Clinical Viewpoint D.A. Kaminsky, MD, Burlington, VT
- 1:10 Bronchial Challenge: Insights into New Guidelines for Clinical Testing T.S. Hallstrand, MD, MPH, ATSF, Seattle, WA
- 1:50 Not on my Watch! A Manager's View of PFT Laboratory Practices and Quality Control C. Mottram, RRT, RPFT, Rochester, MN
- 2:15 Break
- 2:30 A Closer Look: PFT Case Presentation P.D. Scanlon, MD, Rochester, MN
- 2:45 A Closer Look: CPET Case Presentation N.R. MacIntyre, MD, Durham, NC
- 3:00 It's All in How You Look at It: Expert Panel Case Debate R. Clay, MD, Clackamas, OR N.R. MacIntyre, MD, Durham, NC P.D. Scanlon, MD, Rochester, MN M.C. McCormack, MHS, MD, Baltimore, MD D.J. Weiner, MD, ATSF, Pittsburgh, PA D.A. Kaminsky, MD, Burlington, VT C. Oropez, MD, MHS, Tucson, AZ



#### POSTGRADUATE COURSE

#### PG1B CRITICAL CARE ULTRASOUND AND ECHOCARDIOGRAPHY II

This is part 2 of a two-part course which includes PG1A on Friday, May 15.

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

See PG1A for course fees.

Assembly on Critical Care

8:00 a.m. - 4:00 p.m.

Target Audience Providers of critical care or emergency medicine

Objectives

At the conclusion of this session, the participant will be able to:

- apply ultrasound at bedside to assess critically ill patients;
- · apply ultrasound to guide common ICU procedures
- diagnose alternate etiologies of shock in the critically ill patient

This is a 2-day postgraduate course that consists of didactic lectures and hands-on stations. The focus is primarily bedside transthoracic echocardiography, with some diagnostic ultrasound. The topics include basic

and intermediate critical care echocardiography (including hemodynamic measures), assessment of fluid status, procedural guidance for vascular access and thoracentesis, venography. The hands-on stations will include both healthy models and laptops that can demonstrate abnormal pathology.

Chairing: M.J. Lanspa, MD, MSCR, ATSF, Salt Lake City, UT X. Monnet, MD, PhD, Le Kremlin-Bicetre, France

- 8:00 Vascular Ultrasound: DVT Evaluation L. Rapoport, MD, Santa Clara, CA
- 8:25 Vascular Access M.J. Lanspa, MD, MSCR, ATSF, Salt Lake City, UT
- 8:45 Tamponade G.B. Allen, MD, Burlington, VT
- 9:15 Using Ultrasound to Assess Intravascular Volume and Fluid Responsiveness X. Monnet, MD, PhD, Le Kremlin-Bicetre, France
- 9:45 Ultrasound for Diuresis and Dialysis E.L. Hirshberg, MD, ATSF, Murray, UT
- 10:15 Break
- 10:30 Practical Skills Session: Vascular Ultrasound (Model and Mannequin)
  T. Brakke, MD, Omaha, NE
  Z. Shaman, MD, Cleveland, OH
  L. Grecu, MD, Durham, NC
  - L. Rapoport, MD, Santa Clara, CA
  - D. Pradhan, MD, New York, NY

Practical Skills Session: Tamponade Evaluation V.A. Dinh, MD, Loma Linda, CA G.B. Allen, MD, Burlington, VT J.C. Klick, MD, Hershey, PA P.K. Mohabir, MD, Stanford, CA A. Leibowitz, MD, Boston, MA

Practical Skills Session: Volume Status X. Monnet, MD, PhD, Le Kremlin-Bicetre, France J. Kasal, MD, St. Louis, MO D.A. Sweeney, MD, San Diego, CA J.E. Pittman, MD, Salt Lake City, UT S. Cha, MD, Baltimore, MD

12:00 LUNCH

- 12:30 LUNCH and Clinical Cases II D.A. Sweeney, MD, San Diego, CA
- 12:45 Abdominal Ultrasound V.A. Dinh, MD, Loma Linda, CA
- 1:15 Goal Directed Management of Shock Using Echocardiography J. Kasal, MD, St. Louis, MO
- 1:45 Incorporating Echocardiography into CPR S. Cha, MD, Baltimore, MD
- 2:15 Break
- 2:30 Practical Skills Session: Abdominal Ultrasound T. Brakke, MD, Omaha, NE
  Z. Shaman, MD, Cleveland, OH
  V.A. Dinh, MD, Loma Linda, CA
  D. Pradhan, MD, New York, NY
  J.E. Pittman, MD, Salt Lake City, UT

Practical Skills Session: Echo in Shock and CPR L. Rapoport, MD, Santa Clara, CA G.B. Allen, MD, Burlington, VT S. Cha, MD, Baltimore, MD J.C. Klick, MD, Hershey, PA L. Grecu, MD, Durham, NC

Practical Skills Session: Ask the Expert A. Leibowitz, MD, Boston, MA J. Kasal, MD, St. Louis, MO X. Monnet, MD, PhD, Le Kremlin-Bicetre, France S. Nikravan, MD, Seattle, WA P.K. Mohabir, MD, Stanford, CA

#### CLINICAL

#### POSTGRADUATE COURSE

PG15 BRONCH DAY 2020: A COMPREHENSIVE, HANDS-ON GUIDE TO BASIC BRONCHOSCOPY, EBUS, AND NAVIGATIONAL BRONCHOSCOPY

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$475 In-Training Member: \$300 Non-Member: \$550 In-Training Non-Member: \$400 Assemblies on Clinical Problems; Critical Care; Pediatrics; Thoracic Oncology

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Adult and pediatric pulmonologists and intensivists, thoracic surgeons, physicians in training, allied health professionals, and anesthesiologists interested in improving their skills in diagnostic and therapeutic flexible bronchoscopy and EBUS

#### Objectives

At the conclusion of this session, the participant will be able to:

- diagnose and manage adults and children with benign and malignant respiratory diseases;
- improve knowledge of basic flexible bronchoscopy and strengthen procedural skills;
- understand the indications for linear and radial endobronchial ultrasound and the skills necessary to perform these procedures.

This course is designed to provide a comprehensive introduction to diagnostic and therapeutic flexible bronchoscopy. Participants will acquire the knowledge and skills to improve their proficiency in basic bronchoscopic techniques and be introduced to more advanced diagnostic bronchoscopy, including linear and radial endobronchial ultrasound and navigational bronchoscopy. A series of didactic lectures will be followed by intensive, hands-on training, through the use of physical and virtual reality simulators which will help participants strengthen their procedural skills. This course will be of particular interest to providers seeking to refine their flexible bronchoscopy skills and wish to review the data behind the various bronchoscopic techniques. Audience Response System will be used during lectures.

Chairing: C.L. Channick, MD, Los Angeles, CA S.S. Oh, DO, Santa Monica, CA C. Keyes, MD, MPH, Boston, MA

8:00 Introduction C.L. Channick, MD, Los Angeles, CA

- 8:10 Optimizing Basic Bronchoscopy Skills: Bronchoalveolar Lavage, Brushings, and Biopsies S.S. Oh, DO, Santa Monica, CA
- 8:35 Performing Flexible Bronchoscopy in High-Risk Patients: How to Maximize Outcomes C. Argento, MD, Chicago, IL
- 9:00 The Role of Flexible Bronchscopy in the Management of Hemoptysis C. Keyes, MD, MPH, Boston, MA
- 9:25 Break
- 9:40 Pediatric Flexible Bronchoscopy for the Adult and Pediatric Bronchoscopists C. Spencer, MD, New York, NY
- 10:05 The Fundamentals of Linear EBUS: Overview of the Basic Technique and the Data C.L. Channick, MD, Los Angeles, CA
- 10:30 Navigational Bronchoscopy: From Fluoroscopy to Robotics C.L. Oberg, MD, Los Angeles, CA
- 10:55 Bronchoscopic Lung Volume Reduction A. Majid, MD, Boston, MA
- 11:20 LUNCH
- 12:09 Practical Skills Session: Bronchoscopy with Biopsy and Needle Aspiration of Endobronchial Lesion
   M.S. Parikh, MD, Boston, MA
   A.Z. Jiwani, MD, MSc, Houston, TX
- 12:33 Practical Skills Session: Management of the Difficult AirwayI. Susanto, MD, Santa Monica, CAM. Shafiq, MD, MPH, Boston, MA
- 12:57 Practical Skills Session: Bronchoscopic Management of Hemoptysis C. Keyes, MD, MPH, Boston, MA E.E. Folch, MD, MS, Boston, MA
- 1:21 Practical Skills Session: Techniques for Foreign Body Removal Using Flexible Bronchoscopy S. Rafeq, MD, New York, NY M. Barry, MD, Boston, MA

- 1:45 *Break*
- 2:00 Practical Skills Session: Endobronchial Valve Placement
   V.K. Holden, MD, Baltimore, MD
   A. Majid, MD, Boston, MA
- 2:24 Practical Skills Session: Navigational Bronchoscopy - Radial Endobronchial Ultrasound B. Husta, MD, New York, NY P. Lee, MD, Singapore, Singapore
- 2:48 Practical Skills Session: Electromagnetic Navigational Bronchoscopy G.Z. Cheng, MD, PhD, Durham, NC J. Cardenas-Garcia, MD, Ann Arbor, MI
- 3:12 Practical Skills Station: Endobronchial Ultrasound Anatomy
   C. Argento, MD, Chicago, IL
   A.K. Mahajan, MD, Falls Church, VA
- 3:36 Practical Skills Session: Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration
   C. Manley, MD, Philadelphia, PA
   S. Shojaee, MD, MPH, Richmond, VA

#### POSTGRADUATE COURSE

#### PG16 ADVANCES IN THE MANAGEMENT OF CHRONIC RESPIRATORY FAILURE SYNDROMES: STATE OF THE ART NONINVASIVE VENTILATION AND MECHANICAL AIRWAY CLEARANCE

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$475 Non-Member: \$550 In-Training Member: \$300 In-Training Non-Member: \$400

Assemblies on Sleep and Respiratory Neurobiology; Clinical Problems; Pediatrics

8:00 a.m. - 4:00 p.m.

#### Target Audience

All health care providers who manage acute on chronic respiratory failure syndromes and home mechanical ventilation, including physicians, advanced practice providers, nurses, respiratory therapists, and junior faculty including fellows

#### Objectives

At the conclusion of this session, the participant will be able to:

- develop skills for the management of chronic hypercapnic respiratory failure syndromes in the ambulatory or home setting;
- develop knowledge on algorithms and features of respiratory assist devices, portable home ventilators, and understand how to interpret downloaded report from devices in order to improve patient compliance and outcomes;
- develop knowledge on use of mechanical cough assist devices in the home setting.

Patients with chronic hypercapnic respiratory failure are unable to breathe independently without ventilatory support, most commonly noninvasive route. In order to properly care for this patient population, a solid understanding of home ventilators, respiratory assist devices, and mechanical airway clearance is critical. The course aims to highlight advances in home mechanical ventilation for specific to disease states including hypercapnic COPD, obesity hypoventilation syndrome, and neuromuscular disorders. There will be a hands-on component that will provide the opportunity for learners to dive into specific algorithms and functionalities of each device.

- Chairing: M. Cao, DO, Redwood City, CA J.O. Benditt, MD, Seattle, WA K.A. Provost, DO, PhD, Buffalo, NY J.H. Hansen-Flaschen, MD, ATSF, Philadelphia, PA
- 8:00 The Basics of NIPPV: Understanding Modes of Noninvasive Ventilatory Support L.F. Wolfe, MD, Chicago, IL
- 8:20 Advances in Ambulatory CO2 Monitoring R. Amin, MD, Toronto, Canada

- 8:40 Optimizing Mechanical Airway Clearance Strategies K.A. Provost, DO, PhD, Buffalo, NY
- 9:00 Questions and Answers with Panel M. Cao, DO, Redwood City, CA
- 9:10 Break
- 9:25 Obesity Hypoventilation Syndrome: When Is NIV Superior to CPAP? A.J. Piper, MEd, PhD, Camperdown, Australia
- 9:45 NIV in Stable Hypercapnic COPD B. Selim, MD, Rochester, MN
- 10:05 NIV for the Neuromuscular Patient M. Cao, DO, Redwood City, CA
- 10:25 Daytime Applications of Noninvasive Ventilation W. Lee, MD, Dallas, TX
- 10:45 Questions and Answers with Panel M. Cao, DO, Redwood City, CA
- 10:55 LUNCH
- 11:55 Station 1: Bilevel S and ST D. Zielinski, MD, Montreal, Canada R. Amin, MD, Toronto, Canada
- 12:35 Station 2: VAPS (Volume Assured Pressure Support)B. Selim, MD, Rochester, MNJ.P. Brown, MD, PhD, Salt Lake City, UT
- 1:15 Station 3: Astral Ventilator and Sip Ventilation L.F. Wolfe, MD, Chicago, IL H. Sawnani, MD, Cincinnati, OH
- 1:55 Break
- 2:10 Station 4: Trilogy Ventilator and Sip Ventilation W. Lee, MD, Dallas, TX K.A. Provost, DO, PhD, Buffalo, NY
- 2:50 Station 5: Mechanical Airway Clearance and Vest Therapy, Bag Valve S.L. Katz, MD, Ottawa, Canada J. Ackrivo, MD, Philadelphia, PA
- 3:30 Station 6: VOCSN Multifunction Ventilator J.O. Benditt, MD, Seattle, WA

3:50 Questions and Answers M. Cao, DO, Redwood City, CA

#### CLINICAL • TRANSLATIONAL

#### POSTGRADUATE COURSE

#### PG17 A PRACTICAL, HANDS-ON INTRODUCTION TO GENOMIC ANALYSIS IN PULMONARY MEDICINE

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Allergy, Immunology and Inflammation; Critical Care; Pediatrics; Respiratory Cell and Molecular Biology; Respiratory Structure and Function

#### 8:00 a.m. - 4:00 p.m.

#### Target Audience

Pulmonary, pediatric pulmonology, sleep, and critical care physicians interested in better understanding the basis of genomic analysis. Physicians, providers, and researchers who want to acquire basic skills to design and conduct genomic studies

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- understand the importance of study design and data quality control when performing studies on the genomics of respiratory, sleep, and critical care medicine;
- perform basic analyses of genome-wide association using microarray data (e.g. GWAS) and sequencing data (e.g. RNA-seq);
- understand the principles behind single-cell RNA-sequencing and its implications for research in respiratory medicine.

Our ability to study the human genome, including epigenomics, transcriptomics, and other "omics" has fueled a revolution in the study of disease. The field has continuously evolved at a fast pace, which can be intimidating. This hands-on course will help clinicians and investigators take their first steps into the field of genomics in respiratory medicine. We will cover the basics of study design and quality control, learn about the NHLBI's new cloud-based DataSTAGE platform, and go through practical hands-on examples of GWAS, RNA-seq, single-cell RNA-seq, and pathway analysis.

- Chairing: E. Forno, MD, MPH, ATSF, Pittsburgh, PA B.E. Himes, PhD, Philadelphia, PA V.E. Ortega, MD, PhD, ATSF, Winston Salem, NC
- 8:00 Introduction E. Forno, MD, MPH, ATSF, Pittsburgh, PA
- 8:20 Study Design and Quality Control X. Li, PhD, Tucson, AZ
- 8:50 NHLBI TOPMed and DataSTAGE W. Gao, PhD, Bethesda, MD
- 9:10 DataSTAGE Practical Applications P. Avillach, PhD, MD, Boston, MA
- 9:30 Break
- 9:40 GWAS: Data Processing and Analysis Example D.G. Torgerson, PhD, Montreal, Canada
- 10:40 RNA-Seq: Alignment, QC, and Analysis M. Kan, PhD, Philadelphia, PA
- 11:40 LUNCH
- 12:35 RNA-Seq Part Two: Practical Analysis Examples B.E. Himes, PhD, Philadelphia, PA
- 1:35 Pathway Analysis I.V. Yang, BS, PhD, Aurora, CO
- 2:35 Break
- 2:45 Single-Cell RNA-Seq Demo and Examples W. Chen, PhD, Pittsburgh, PA
- 3:45 Conclusions V.E. Ortega, MD, PhD, ATSF, Winston Salem, NC

#### POSTGRADUATE COURSE

#### PG18 THORACIC IMAGING FOR THE PULMONOLOGIST AND CRITICAL CARE PHYSICIAN

R Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 In-Training Member: \$200 Non-Member: \$425

In-Training Non-Member: \$300

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation; Critical Care; Pulmonary Circulation; Thoracic Oncology

#### 8:00 a.m. - 4:00 p.m.

#### Target Audience

Pulmonologists, critical care physicians, thoracic surgeons, advanced practice providers, residents, fellows, respiratory therapists, and students

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- formulate a differential diagnosis of respiratory diseases based on diagnostic imaging findings;
- improve strategies for the evaluation of solitary pulmonary nodules and for approaching challenging cases encountered during lung cancer screening;
- state the value of a multidisciplinary approach to diagnosis and management of patients with diffuse lung disease in light of new and upcoming recommendations on diagnosis of idiopathic pulmonary fibrosis.

This course will review major aspects of thoracic imaging with presentations targeted towards practitioners in the fields of pulmonary and critical care medicine. Dedicated thoracic radiologists will give case-based reviews focusing on the practical aspects of chest imaging. Presentations will be image rich and focus on key imaging findings, differential diagnoses, and potential pitfalls. Topics will cover a broad range of chest disease and will be relevant to trainees.

generalists, and specialists, alike. At the conclusion of the course, learners will have increased knowledge about thoracic imaging and be able to apply this knowledge to their respective practices.

Chairing: J.P. Kanne, MD, Madison, WI C. Wu, MD, Houston, TX

- 8:00 Large Airways Diseases S. Rossi, MD, Buenos Aires, Argentina
- 8:30 Small Airways Diseases T. Henry, MD, San Francisco, CA
- Diseases of the Pleura 9:00 C. Wu, MD, Houston, TX
- 9:30 Break
- Solitary Pulmonary Nodule 9:45 J. Mammarappallil, MD, PhD, Durham, NC
- 10:15 Lung Cancer Screening M.D. Martin, MD, Madison, WI
- 10:45 LUNCH
- 11:45 Pulmonary Infections L. Ketai, MD, Albuquerque, NM
- 12:15 Acute Lung Injury K. Batra, MD, Dallas, TX
- 12:45 Pulmonary Hypertension M.D. Martin, MD, Madison, WI
- 1:15 Break
- 1:30 Multidisciplinary Approach to Diffuse Lung Diseases K.K. Brown, MD, Denver, CO S. Hobbs, MD, Lexington, KY S.D. Groshong, MD, PhD, Denver, CO

#### POSTGRADUATE COURSE

#### PG19 INTERSTITIAL LUNG DISEASE: UPDATE AND EVOLVING TRENDS IN DIAGNOSIS AND MANAGEMENT

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350 Non-Member: \$425 In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation; Behavioral and Health Services Research; Environmental, Occupational and Population Health; Nursing; Pulmonary Rehabilitation

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Clinicians, nurses, other allied health staff, researchers and investigators in basic and clinical fields of interstitial lung disease, and sponsors for research.

#### Objectives

At the conclusion of this session, the participant will be able to:

- accurately diagnose patients with specific forms of interstitial lung disease, even those without clear radiologic or histopathologic patterns;
- gain additional tools to improve quality of life and symptom management among patients with advanced interstitial lung disease;
- gain increased competence to provide evidence based care to patients with ILD and will also have increased comfort in discussing available clinical trials and recent research and clinical developments with colleagues and patients.

This course will provide an update on diagnosis and management of interstitial lung diseases (ILDs) of unknown etiology as well as ILD in the setting of connective tissue disease, vasculitis, and environmental exposures. The course will start with an overview and introduction to ILD with an approach to diagnosis. Trends in imaging and histopathology will be reviewed. Idiopathic pulmonary fibrosis, cystic lung disease, granulomatous ILD (HP) are among the diseases that will be discussed. Live discussion between a panel of experts (pulmonology, radiology, pathology, rheumatology) reviewing cases unknown to them (clinical history, imaging, histopathology) will illustrate the importance of multi disciplinary discussion in making an accurate diagnosis of the specific ILD.

- Chairing: G. Raghu, MD, Seattle, WA L. Richeldi, PhD, MD, Rome, Italy B. Collins, MD, Seattle, WA
- 8:00 Introduction G. Raghu, MD, Seattle, WA
- 8:05 ILD Overview and Approach to Diagnosis B. Collins, MD, Seattle, WA
- 8:25 ILD Pathogenesis: From Mice to Men M.R.J. Kolb, PhD, MD, Hamilton, Canada
- 8:45 Imaging for ILD: Patterns, Distribution and Clues for Diagnosis and Prime Time for Machine Learning Tools D.A. Lynch, MBBCh, Denver, CO
- 9:05 Histopathologic Patterns of Idiopathic Interstitial Pneumonias and Granulomatous Interstitial Lung Diseases J.L. Myers, MD, Ann Arbor, MI
- 9:25 Lung Biopsy for Histopathology for Diagnosis of ILD: Risks and Benefits of Cryobiopsy and Surgical Lung Biopsy - Lessons Learned L.K. Troy, PhD, MBBS, BMedSci, Sydney, Australia
- 9:45 Cutting Edge Diagnostic Modalities in ILD: Molecular Classifier and Biomarkers M. Kreuter, MD, Heidelberg, Germany
- 10:05 *Break*
- 10:20 Connective Tissue Disease ILD: Role of Serology in Diagnosis and Role of Immune Modulating Agents and Antifibrotics for Treatment M.E. Strek, MD, ATSF, Chicago, IL
- 10:40 Role of Genetic Testing in Diagnosis, Treatment, and Prognosis of ILD B. Crestani, MD, PhD, Paris, France

- 11:00 Occupational Associated Interstitial Lung Diseases: Taking a Thorough Occupational History and Role of Industrial Hygienists in Accurate Diagnosis C.A. Redlich, MD, MPH, New Haven, CT
- 11:20 Cystic "Interstitial Lung Disease": LAM and Beyond L.A. Ho, MD, Seattle, WA
- 11:40 Multidisciplinary Discussions for an Accurate Diagnosis: Case Discussion
  C.J. Scallan, MB BCh, Hamilton, Canada
  B. Collins, MD, Seattle, WA
  L.A. Ho, MD, Seattle, WA
- 12:50 LUNCH
- 1:20 Hypersensitivity Pneumonitis G. Raghu, MD, Seattle, WA
- 1:40 Hypersensitivity Pneumonitis: Challenges in Tools for Assessing Exposures and Tools for Antigen Assessment K.A.M. Johannson, MD, MPH, ATSF, Calgary, Canada
- 2:00 Lumping and Splitting: IPF and Progressive Fibrotic Lung Disease, Evolving Concepts G. Raghu, MD, Seattle, WA
- 2:10 Pulmonary Hypertension Among Patients with Fibrotic Lung Disease: Diagnosis and Treatment M. Humbert, MD, PhD, Bicetre, France
- 2:30 Sarcoidosis: Second and Third Line Treatment Agents V. Mihailovic-Vucinic, MD, Belgrade, Serbia
- 2:50 Break
- 3:00 Comorbid Conditions in ILD with Particular Focus on Lung Cancer: Diagnosis and Treatment D. Bouros, MD, PhD, Athens, Greece
- 3:20 Patient Centered Outcomes in ILD-Subgroups K.I. Aronson, MD, New York, NY
- 3:40 Treatment of IPF and Fibrotic Lung Disease: Update on Current Status and New Horizons L. Richeldi, PhD, MD, Rome, Italy

#### CLINICAL • TRANSLATIONAL

#### POSTGRADUATE COURSE

#### PG20 DOES MY PATIENT HAVE ENVIRONMENTAL OR OCCUPATIONAL LUNG DISEASE?

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425

In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Environmental, Occupational and Population Health; Clinical Problems; Section on Terrorism and Inhalation Disasters

8:00 a.m. - 4:00 p.m.

#### Target Audience

Clinicians, trainees and allied health personnel

Objectives

At the conclusion of this session, the participant will be able to:

- diagnose lung disease due to or exacerbated by environmental and occupational exposures, leading to broader differential diagnoses, larger toolbox for managing this type of lung disease, and improved patient outcomes;
- learn new findings about emerging exposures that cause lung disease, and have new strategies to provide counseling for patients on how to improve lung health through environmental interventions;
- gain new strategies to assess for lung diseases due to environmental and occupational exposures, including using a multi-disciplinary approach with the input of radiologists and occupational health practitioners.

The contribution of environmental and occupational exposures to the burden of many common lung diseases is under-appreciated. Failure to recognize these contributions can lead to misdiagnosis or suboptimal treatment. Many clinicians are often unsure of how to respond to patient questions regarding whether exposures caused their lung disease. This highly interactive session will provide a multi-disciplinary approach to the diagnosis and treatment of environmental and occupational lung diseases, teach clinicians about environmental contributors to common lung diseases, and update the audience on emerging exposure-related lung diseases.

- Chairing: P.S. Lai, MPH, MD, ATSF, Boston, MA M.E. Rebuli, PhD, Chapel Hill, NC J.J. Rose, MD, MBA, Pittsburgh, PA
- 8:00 Opening Remarks P.S. Lai, MPH, MD, ATSF, Boston, MA
- 8:05 How Do I Ask? A Clinician's Approach S.D. Krefft, MD, MPH, Denver, CO
- 8:40 Workers Compensation: How Do I Establish Causation? D.C. Christiani, MD, MPH, MS, ATSF, Boston, MA
- 9:15 How Will Imaging Help? A Radiologist's Approach S. Hobbs, MD, Lexington, KY
- 9:50 Wheezing on the Job: Work-Related Asthma S.M. Tarlo, MBBS, Toronto, Canada
- 10:25 Break
- 10:35 Hypersensitivity Pneumonitis: Difficult to Diagnose, Often Harder to Treat K.A.M. Johannson, MD, MPH, ATSF, Calgary, Canada
- 11:10 The Lingering Effects of Military Deployment C.S. Rose, MD, MPH, Denver, CO
- 11:45 Are e-Cigarettes Really Better than Tobacco? J.E. Gotts, MD, PhD, San Francisco, CA
- 12:20 LUNCH
- 12:50 Doc Is It My Microbiome? P.S. Lai, MPH, MD, ATSF, Boston, MA
- 1:25 Eating Our Way to Lung Health: The Impact of Diet on Lung Disease P. Hansbro, PhD, Sydney, Australia
- 2:00 How Can My Patients Protect Themselves Against Air Pollution? R.J. Laumbach, MD, MPH, Piscataway, NJ
- 2:35 Break

- 2:45 Carbon Monoxide: The Silent Killer J.J. Rose, MD, MBA, Pittsburgh, PA
- 3:20 Inhalational Disasters: Are We Ready? E.R. Svendsen, PhD, Atlanta, GA
- 3:55 Closing Remarks M.E. Rebuli, PhD, Chapel Hill, NC

#### CLINICAL

POSTGRADUATE COURSE

#### PG21 ADVANCES IN THE DIAGNOSIS AND MANAGEMENT OF PEDIATRIC SEVERE ASTHMA

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

In-Training Member: \$200 In-Training Non-Member: \$300

Assembly on Pediatrics

Non-Member: \$425

8:00 a.m. - 4:00 p.m.

Target Audience Providers caring for children with severe asthma

#### Objectives

At the conclusion of this session, the participant will be able to:

- perform a stepwise evaluation for pediatric patients referred for severe asthma;
- list biomarkers for asthma and describe their role in the asthma inflammatory pathways;
- choose biologic or advanced non-T2 directed therapies for patients with severe asthma who have not responded to standard therapies.

This course provides state of the art information on the evaluation and management of severe asthma in children. The focus of this course will be to synthesize recent advances in the field, focusing on newly available biologic treatments and work targeting novel pathways for new therapies. Speakers will review best practices for evaluation including medication adherence monitoring and support. They will demonstrate appropriate use of targeted therapies, and describe best practices for monitoring for adverse effects of therapies. Topics will also cover clinically relevant biologic mechanisms of asthma, and address whether phenotyping and endotyping can improve outcomes. We will also discuss strategies for developing partnerships with other health care disciplines and community resources in order to achieve a patient-centered approach.

- Chairing: K.R. Ross, MD, MS, Cleveland, OH J. Gaffin, MD, Boston, MA L.B. Bacharier, MD, Saint Louis, MO
- 8:00 Welcome and Introduction J. Gaffin, MD, Boston, MA
- 8:05 One Size Does Not Fit All: Diagnostic Tools and Framework for Characterizing Severe Pediatric Asthma K.R. Ross, MD, MS, Cleveland, OH
- 8:35 Asthma Immunology: Framework for Drug Targets M.H. Grayson, MD, Columbus, OH
- 9:05 Therapeutics: Non-Biologic Therapies and T2-Low Options (SMART, LAMA, Azithro) J. Gaffin, MD, Boston, MA
- 9:35 Therapeutics: Biologic and T2-High Options S.J. Szefler, MD, Aurora, CO
- 10:05 Break
- 10:20 Monitoring Adverse Effects of Treatments M. Federico, MD, Aurora, CO
- 10:50 Asthma Plus: Addressing Comorbidities E. Forno, MD, MPH, ATSF, Pittsburgh, PA
- 11:20 Small Group Discussions
- 12:00 LUNCH
- 12:45 Psychological Assessments and Interventions to Improve Self-Management P. Marik, PsyD, Milwaukee, WI
- 1:15 Adherence Monitoring and Strategies for Improvement C.L. Yang, MD, MSc, Vancouver, Canada
- 1:45 Advocacy at Home and at School L.B. Gerald, PhD, MSPH, Tucson, AZ

- 2:15 Break
- 2:35 Severe Preschool Wheeze: What Works and What Doesn't K. Rivera-Spoljaric, MD, St Louis, MO
- 3:05 Putting It All Together with Multidisciplinary Severe Asthma Programs T.W. Guilbert, MD, MS, Cincinnati, OH
- 3:35 Panel Discussion

#### BASIC • CLINICAL • TRANSLATIONAL POSTGRADUATE COURSE

#### PG22 PEDIATRIC PULMONARY PHYSIOLOGY IN THE ICU

 Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
 Member: \$350 In-Training Member: \$200 Non-Member: \$425 In-Training Non-Member: \$300

Assemblies on Pediatrics; Clinical Problems; Critical Care; Pulmonary Circulation; Respiratory Structure and Function

8:00 a.m. - 4:00 p.m.

#### Target Audience

Fellows in training as well as established physicians in the practice of pediatric pulmonology, critical care, or neonatal medicine who are interested in reviewing basic physiology principles as they apply to clinical care

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply several basic respiratory principles to the diagnosis and management of common pediatric respiratory disorders;
- learn how physiologic measurements can be used to change interventions and enhance outcomes;
- learn how different aspects of the respiratory system are affected in various categories of disorders (restrictive/obstructive/respiratory muscle dysfunction), and how treatment is tailored based on these categories.

This course will consist of four groups of lectures covering topics in pediatric respiratory physiology and pathophysiology involving diseases that cause severe respiratory compromise. The first group will address physiologic principles that span many of the diseases discussed. The second group will review the pathophysiology of severe obstructive lung diseases. The third group will include diseases that are associated with restrictive processes. The last group will cover issues related to disorders of the respiratory pump. An interactive format will be used to enhance audience participation. There will also be time for panel discussions between groups to enhance audience participation.

- Chairing: H.B. Panitch, MD, Philadelphia, PA J.L. Allen, MD, Philadelphia, PA
- 8:00 Cardiopulmonary Interactions R.K. Hopper, MD, Palo Alto, CA
- 8:35 Ventilator Graphics and PEEP H.B. Panitch, MD, Philadelphia, PA
- 9:10 Panel Discussion
- 9:17 Respiratory Muscle Weakness and Neuromuscular Disease R. Amin, MD, Toronto, Canada
- 9:52 Break
- 10:02 Thoracic Insufficiency Syndrome in the ICU G.J. Redding, MD, Seattle, WA
- 10:37 Weaning from Mechanical Ventilation R.G. Khemani, MD, Los Angeles, CA
- 11:12 Panel Discussion
- 11:21 LUNCH
- 12:01 Severe Asthma C.L. Carroll, MD, ATSF, Hartford, CT
- 12:36 Severe Bronchopulmonary Dysplasia C.D. Baker, MD, Aurora, CO
- 1:11 Pathophysiology of Lung Rejection: What We Know and What We Don't G. Kurland, MD, ATSF, Pittsburgh, PA
- 1:46 Panel Discussion
- 1:56 Break

- 2:06 The Pathophysiology of ARDS I.M. Cheifetz, MD, Durham, NC
- 2:41 Sickle Cell Disease, Acute Chest Syndrome, and Respiratory Failure J.L. Allen, MD, Philadelphia, PA
- 3:16 Childhood Interstitial Lung Disease E.K. Fiorino, MD, New York, NY
- 3:51 Panel Discussion

#### CLINICAL

#### POSTGRADUATE COURSE

#### PG23 DIFFICULT CLINICAL QUESTIONS IN PULMONARY AND CRITICAL CARE INFECTIONS

 Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
 Member: \$400 In-Training Member: \$250 Non-Member: \$475 In-Training Non-Member: \$350

Assemblies on Pulmonary Infections and Tuberculosis; Clinical Problems; Critical Care

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Clinicians who manage patients with lung infections and those who manage intensive care unit patients with infections related to critical illness.

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply contemporary diagnostic and treatment approaches in the local practice setting to improve the care of the pulmonary/critical care patient with infection;
- understand contemporary epidemiology of infections in the immunocompromised host and select appropriate diagnostic modalities based on guideline-consistent application of appropriate tests;
- understand the role of the respiratory clinician in the modern multidisciplinary management paradigm for

difficult infections such as empyema, refractory pulmonary MAC, pulmonary TB, and infectious complications of bronchiectasis.

This course will provide clinicians with a broad overview of and recent updates on current challenges in pulmonary and critical care infections, including those caused by bacteria, mycobacteria, viruses, and fungal pathogens. General approaches to infections in the immunocompromised host will likewise be discussed. Each talk will begin with a challenging case example followed by a multiple-choice question, which the attendees will answer using an audience response system (ARS).

- Chairing: O. Epelbaum, MD, ATSF, Valhalla, NY R. Thomson, MBBS, PhD, Greenslopes, Australia C.A. Hage, MD, ATSF, Indianapolis, IN
- 8:00 Introduction O. Epelbaum, MD, ATSF, Valhalla, NY
- 8:05 Resistant Pathogens in Severe CAP: Exaggerated or Underestimated? G.W. Waterer, MBBS, MBA, PhD, Perth, Australia
- 8:30 How Should We Define and Diagnose VAP? R.G. Wunderink, MD, Chicago, IL
- 8:55 Pleural Space Infection: Medical or Surgical Disease? N. Rahman, BM BCH, MSc, Oxford, United Kingdom
- 9:20 Panel Discussion
- 9:35 Break
- 9:50 Can We Reduce Infectious Exacerbations in Non-CF Bronchiectasis? G. Tino, MD, ATSF, Philadelphia, PA
- 10:15 What Are the Options for Managing Treatment Failure in Pulmonary MAC? R. Thomson, MBBS, PhD, Greenslopes, Australia
- 10:40 What Is the Current Role of the Respiratory Clinician in Pulmonary TB? S.E. Dorman, MD, Charleston, SC
- 11:05 Panel Discussion
- 11:20 LUNCH

- 12:20 Empiric Therapy for Invasive Candidiasis in the ICU: Who, When, How? S. Jacobs, MD, New York, NY
- 12:45 Viruses in the Critically III: Bystanders or Offenders? C. Dela Cruz, MD, PhD, ATSF, New Haven, CT
- 1:10 Is There a Right and Wrong Way to Use Procalcitonin in the ICU? C. Rhee, MD, MPH, Boston, MA
- 1:35 Panel Discussion
- 1:50 Break
- 2:05 Lung Infections on Biologics: What to Consider Before and During Therapy? K.L. Winthrop, MD, MPH, Portland, OR
- 2:30 What Has Changed in the Landscape of Pneumocystis Pneumonia? K.A. Crothers, MD, Seattle, WA
- 2:55 ATS Fungal Diagnosis Guidelines: How Do They Apply to the Immunocompromised? C.A. Hage, MD, ATSF, Indianapolis, IN
- 3:20 Panel Discussion
- 3:35 Post-Test C.A. Hage, MD, ATSF, Indianapolis, IN
- 3:50 Conclusion R. Thomson, MBBS, PhD, Greenslopes, Australia

#### CLINICAL

#### POSTGRADUATE COURSE

#### PG24 FULL CIRCLE OF PULMONARY EMBOLISM (PE) CARE: ACUTE TO CHRONIC AND EVERYTHING IN BETWEEN

Pre-registration and additional fees required.
 Continental breakfast and box lunch included.
 Attendance is limited.
 Member: \$350
 In-Training Member: \$200

Non-Member: \$425

In-Training Member: \$200 In-Training Non-Member: \$300

Assemblies on Pulmonary Circulation; Clinical Problems; Critical Care

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Providers of varied clinical specialties - pulmonology, cardiologist, early career professional, early career professionals (residents, fellows), nursing, medical students, physician extenders.

#### Objectives

At the conclusion of this session, the participant will be able to:

- better diagnose and treat the patient with acute and chronic pulmonary embolism;
- learn about differentiating from acute to chronic disease based on various imaging modalities like CTA, Echo and V/Q scan;
- improve the quality of life of the patient with pulmonary embolism (acute or chronic) by integrating multi-disciplinary approach.

This course will provide comprehensive learning experience about acute pulmonary embolism and its chronic complications. The session is aimed towards creating a foundation for a practicing clinician who take care of patients with pulmonary embolism (acute or chronic). Session will provide general approach on screening, diagnosis, risk stratification and management of acute and chronic PE (CTED/CTEPH). Special focus will be given on how to differentiate from acute to chronic disease based on imaging modalities (CTA, Echo, V/Q) and clinical stand point as there can be significant overlap from what thought to be acute disease, potentially could be chronic disease.

- Chairing: P. Rali, MD, Philadelphia, PA I.M. Lang, MD, Vienna, Austria R.P. Rosovsky, MD, Boston, MA
- 8:00 Welcome and Introduction P. Rali, MD, Philadelphia, PA
- 8:05 Epidemiology of PE V.F. Tapson, MD, West Hollywood, CA
- 8:25 Screening for Pulmonary Embolism (PE) P. Wells, MD, Ottawa, Canada
- 8:45 Imaging in PE: CT Pulmonary Angiogram (CTPA) D. Gopalan, MD, Cambridge, United Kingdom

- 9:05 Imaging in PE: Echocardiography T. Thenappan, MD, Minneapolis, MN
- 9:25 Imaging in PE: V/Q Scan and Cardiac MRI D. Gopalan, MD, Cambridge, United Kingdom
- 9:45 Questions and Answers Session: Part 1
- 10:05 Break
- 10:20 Management of Acute PE: Anticoagulation R.P. Rosovsky, MD, Boston, MA
- 10:40 Management of Acute PE: Reperfusion Therapies D. Jimenez, MD, PhD, Madrid, Spain
- 11:00 Management of Acute PE: Hemodynamic Support P. Rali, MD, Philadelphia, PA
- 11:20 Questions and Answers Session: Part 2
- 11:40 Interesting PE Cases: Part 1 S. Pugliese, MD, Philadelphia, PA
- 12:00 LUNCH
- 12:40 Follow Up Care After Acute PE L.K. Moores, MD, Bethesda, MD
- 1:00 Post PE Syndrome and Post PE Functional Impairment B.N. Rivera-Lebron, MD, MS, Pittsburgh, PA
- 1:20 Diagnosis of Chronic Thromboembolic Disease/Pulmonary Hypertension W.R. Auger, MD, Philadelphia, PA
- 1:30 Surgical Management of Chronic Thromboembolic Pulmonary Hypertension W.R. Auger, MD, Philadelphia, PA
- 1:50 Interventional Management of Chronic Thromboembolic Pulmonary Hypertension I.M. Lang, MD, Vienna, Austria
- 2:10 Medical Management of Chronic Thromboembolic Pulmonary Hypertension G.A. Heresi, MD, Cleveland, OH
- 2:30 Questions and Answers Session: Part 3
- 2:50 Break
- 3:05 Interesting PE Cases: Part 2 S. Pugliese, MD, Philadelphia, PA

- 3:25 Pulmonary Embolism Response Team (PERT) R.N. Channick, MD, Los Angeles, CA
- 3:40 Questions and Answers, Panel Discussion, and Wrap Up

#### **BEHAVIORAL • CLINICAL • TRANSLATIONAL**

#### POSTGRADUATE COURSE

#### PG25 PULMONARY REHABILITATION: CREATING AN EFFECTIVE PROGRAM

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350In-Training Member: \$200Non-Member: \$425In-Training Non-Member: \$300

Assemblies on Pulmonary Rehabilitation; Behavioral and Health Services Research; Clinical Problems; Nursing; Pulmonary Rehabilitation

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Fellows in training, medical residents and students. New and established clinicians, nurses, respiratory therapists, advanced practice providers, physical therapists.

#### Objectives

At the conclusion of this session, the participant will be able to:

- initiate and develop a pulmonary rehabilitation program in the learner's community;
- help health care providers develop strategies to improve their current programs.

This course will discuss the latest developments in the field of pulmonary rehabilitation with particular emphasis on how one might develop and implement a new pulmonary rehabilitation program. It will also enable the experienced provider, information regarding how to improve the quality of his/her existing program. The course will use a combination of educational strategies (e.g. didactic, case and problem based learning, evidence based learning, audience response) to facilitate the educational experience. Chairing: B.W. Carlin, MD, Sewickley, PA

- 8:00 Introduction and History of Pulmonary Rehabilitation B.W. Carlin, MD, Sewickley, PA
- 8:20 Identification and Assessment of Candidates for Pulmonary Rehabilitation J.P. Lamberti, MD, Annandale, VA
- 9:00 Rehabilitation for Non-COPD Populations K. Menson, DO, Burlington, VT
- 9:30 Break
- 9:45 Exercise Training: An Evidence Based Approach S.J. Singh, PhD, Leicester, United Kingdom B.W. Carlin, MD, Sewickley, PA J.P. Lamberti, MD, Annandale, VA
- 11:00 Developing a Self Management/Educational Component for Your Program J. Bourbeau, MD, Montreal, Canada
- 11:30 LUNCH
- 12:30 Psychosocial Assessment and Therapy. Using Motivational Interviewing in Your Program R. Benzo, MD, MSc, Rochester, MN
- 1:15 Outcome Assessment: What Can and Should Be Measured in Your Program G.S. Bauldoff, RN, PhD, Columbus, OH
- 1:45 Quality Improvement Metrics: The Big Picture S.J. Singh, PhD, Leicester, United Kingdom
- 2:15 Break
- 2:30 Telemedicine and PR: The New Frontier A.E. Holland, PhD, Melbourne, Australia
- 3:00 The Business Model for Pulmonary Rehabilitation Reimbursement (Around the World) B.W. Carlin, MD, Sewickley, PA
- 3:30 What Else Would You Like to Know (Faculty Questions and Answers) B.W. Carlin, MD, Sewickley, PA
# TRANSLATIONAL

## POSTGRADUATE COURSE

## PG26 JUMP START: A BEGINNER'S GUIDE TO DRUG AND COMPANY DEVELOPMENT AND IN AN ACADEMIC SETTING

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$400 In-Train Non-Member: \$475 In-Train

In-Training Member: \$250 In-Training Non-Member: \$350

Assembly on Respiratory Cell and Molecular Biology; Drug Device Discovery and Development Committee

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Investigators pursuing basic and translational or clinical who are interested in entrepreneurship and forming a NewCo at University.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand drug development within academic setting with an entrepreneurial approach;
- learn about essentials in intellectual property (patents), target engagement, pre-IND enabling and clinical study design;
- understand challenges with business-related grant proposals and importance in working with Venture Capitalists to build the NewCo at University. Design a presentation to investors and integrate business related thinking into an academic project.

This course will show the best practices to develop a new drug and form a company from a discovery made in an academic lab. Innovative thinking and cutting-edge research in medicine shows promise to translate key discoveries into novel drugs. However, many researchers and clinicians are not familiar with the best practices when developing novel drugs in academia. Here, attendees will discover real-life examples about building a NewCo at a University with particular focus on lung diseases relevant to the ATS. This course will focus on how to decide if an idea is ready for commercialization, approaches to strengthen Intellectual Property (patents) and what is required to enable application for an IND. The session will also discuss business grant proposals and work with Venture Capitalists (VCs) to raise funds.

- Chairing: M. Vukmirovic, PhD, New Haven, CT K.H. Benam, PhD, Aurora, CO S.V. Raju, BPharm, PhD, Birmingham, AL T.M. Maher, MD, MSc, PhD, London, United Kingdom
- 8:00 Introduction and General Welcome M. Vukmirovic, PhD, New Haven, CT
- 8:10 An Introduction to Drug Development in Lung Diseases - Academic Perspective D. Sheppard, MD, San Francisco, CA
- 8:35 What's Mine Is Mine: Promoting and Protecting Your IP After Publication N.J. Kenyon, MD, MSCR, Sacramento, CA
- 9:00 The Importance of Target Engagement Studies in Preclinical Research L. Murray, PhD, Cambridge, United Kingdom
- 9:25 Questions and Answers
- 9:40 Break
- 9:50 Expert Fireside Chats: The Future of Pulmonary Medicine S. Hobbie, Biberach, Germany J.G. Garcia, MD, Tucson, AZ
- 10:20 Panel Discussion: Taking the Next Steps After Discovery
  R. Tarran, PhD, Chapel Hill, NC
  A.H. Cohen, MD, Menlo Park, CA
  M. Vukmirovic, PhD, New Haven, CT
- 11:05 Introduction to Pre-IND Enabling Studies and Clinical Trials T.M. Maher, MD, MSc, PhD, London, United Kingdom
- 11:30 Power Lunch: Navigating and Growing an Academic Startup J.J. Rose, MD, MBA, Pittsburgh, PA R.K. Mallampalli, MD, Columbus, OH

- 12:25 Expert Chats: Funding Made Easy J.S. Brenner, MD, PhD, Philadelphia, PA C.M. Magin, PhD, Aurora, CO S.V. Raju, BPharm, PhD, Birmingham, AL
- 12:55 Lessons from Venture Capitalists Dos and Don'ts When Developing a New Drug D.G. Morris, MD, Basel, Switzerland
- 1:25 Early Stage Drug Development Presentation-Fibronox L. Hecker, PhD, Tucson, AZ
- 1:32 Early Stage Drug Development Presentation-Mediar Therapeutics D. Lagares, PhD, MSc, Charlestown, MA
- 1:39 Early Stage Drug Development Presentation-Pilant Therapeutics S. Turner, PhD, South San Francisco, CA
- 1:49 Early Stage Drug Development Presentation-Pneumax K.H. Benam, PhD, Aurora, CO
- 1:55 Break
- 2:05 Work in Groups to Prepare 5 Min Pitch Slide Deck
- 3:05 5 Min Presentations from PG Course Participants and Feedback
- 3:55 Closing Remarks- Chairpersons

# **BASIC • CLINICAL**

## POSTGRADUATE COURSE

# PG27 INTERACTIVE PHYSIOLOGY: HEMODYNAMICS

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350In-Training Member: \$200Non-Member: \$425In-Training Non-Member: \$300

Assemblies on Respiratory Structure and Function; Critical Care; Pulmonary Circulation

8:00 a.m. - 4:00 p.m.

#### **Target Audience**

Practicing physicians, advanced practice providers, residents, and fellows with an interest in pulmonary and critical care medicine.

#### Objectives

At the conclusion of this session, the participant will be able to:

- describe the basic principles of cardiac and pulmonary circulatory physiology;
- understand and describe key features of the cerebral, splanchnic, and renal vascular systems and their application to the care of critically ill patients;
- better apply physiologic principles in the application of extracorporeal life support and the interpretation of ultrasound images and pulmonary artery catheter waveforms.

This course uses principles of active learning to review the physiology of the major vascular beds (pulmonary, abdominal, cerebrovascular), cardiac physiology, and the physiology of extracorporeal life support. In follow-up to a successful model last year, the course will use a flipped classroom approach: five topics with 15-minute mini-lectures followed by small group learning, as well as case-based discussions on pulmonary artery catheter waveform analysis and ultrasound. Our goal is for learners to reinforce their knowledge of physiology so that they may integrate this into the care of patients and the teaching of trainees.

- Chairing: B. Coruh, MD, Seattle, WA A. Luks, MD, Seattle, WA
- 8:00 Introduction B. Coruh, MD, Seattle, WA
- 8:10 Cardiovascular Physiology J.T. Poston, MD, Chicago, IL
- 9:10 Pulmonary Vascular Physiology B.A. Cockrill, MD, Boston, MA
- 10:00 Break
- 10:10 Cerebrovascular Physiology J. Levine, MD, Philadelphia, PA
- 11:10 Pulmonary Artery Catheter Waveform Interpretation K. Hibbert, MD, Boston, MA

## 12:10 LUNCH

- 1:00 Abdominal Vascular Bed Physiology M. Hoenig, MD, Boston, MA
- 1:50 Ultrasound Cases C. Baston, MD, MSCE, Philadelphia, PA
- 2:50 Break
- 3:00 Physiology of ECMO M.E. Prekker, MD, MPH, Minneapolis, MN

## CLINICAL • TRANSLATIONAL

## POSTGRADUATE COURSE

## PG28 STATE OF THE ART: LUNG CANCER IN 2020

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.

Member: \$350In-Training Member: \$200Non-Member: \$425In-Training Non-Member: \$300

Assemblies on Thoracic Oncology; Clinical Problems

#### 8:00 a.m. - 4:00 p.m.

#### **Target Audience**

All providers caring for patients with lung nodules/lung cancer(pulmonologists, thoracic surgeons, radiation oncologists, NP/PAs). Those interested in the translational research being done in this field.

## Objectives

At the conclusion of this session, the participant will be able to:

- improve the use of CT screening in your practice setting/community;
- integrate new treatment options for patients with stage III lung cancer;
- gain new findings about the toxicities of immunotherapy.

This course will provide a comprehensive review of topics in the evaluation and management of patients with lung cancer. We will start with an outstanding international example of tobacco control, discuss guidelines and practical tips for lung cancer screening, the new staging system and use of biomarkers for lung cancer detection and disease progression. The treatment of early stage, locally advanced and metastatic disease will be addressed, highlighting novel/minimally invasive approaches as well as the use, and toxicities of immunotherapy. Advancements in the evaluation and treatment of carcinoid and atypical carcinoid will also be highlighted. Interactive tumor boards will be held to highlight main teaching points and facilitate audience engagement

- Chairing: D.J. Feller-Kopman, MD, Baltimore, MD M.P. Rivera, MD, ATSF, Chapel Hill, NC
- 8:00 Introduction D.J. Feller-Kopman, MD, Baltimore, MD
- 8:05 BIG Tobacco and Electronic Nicotine Delivery Systems: Preventing Another Epidemic P. Galiatsatos, DrMed, Baltimore, MD
- 8:30 Lung Cancer Screening: The Data and the Disconnect R.S. Wiener, MD, MPH, Boston, MA
- 8:55 Liquid Biopsy: Ready for Prime Time? T. Evans, MD, Wynnewood, PA
- 9:20 Interactive Tumor Board D.J. Feller-Kopman, MD, Baltimore, MD
- 9:45 Break
- 10:00 Lung Cancer Staging: Past, Present, and Future A.V. Gonzalez, MD, MSc, Montreal, Canada
- 10:25 Pro/Con: Surgery Remains the Best Option for Early Stage Disease K. Yasufuku, MD, Toronto, Canada
- 10:50 Pro/Con: SBRT Is the Best Option for Early Stage Disease S. Feigenberg, MD, Philadelphia, PA
- 11:15 Interactive Tumor Board M.P. Rivera, MD, ATSF, Chapel Hill, NC
- 11:45 LUNCH
- 12:30 The Heterogeneity of Stage III Disease F. Detterbeck, MD, New Haven, CT

- 12:55 The Good: Immunotherapy in Lung Cancer from Neo-Adjuvant to Advanced-Stage Disease T. Peikert, MD, Rochester, MN
- 1:20 The Bad: Recognizing and Managing Immune-Related Toxicity K. Suresh, MD, Baltimore, MD
- 1:45 Targeted Therapy in Stage IV Disease S. Patel, MD, MSc, Raleigh, NC
- 2:05 Break
- 2:20 Oligometastatic Disease M.P. Rivera, MD, ATSF, Chapel Hill, NC
- 2:45 Typical and Atypical Carcinoid: How Are They Even Related D.J. Feller-Kopman, MD, Baltimore, MD
- 3:10 Lung Cancer in the Elderly, Minority and Female Populations C. Langer, MD, Philadelphia, PA
- 3:35 Lung Cancer Journal Club: The Year's Top 5 Manuscripts G.A. Silvestri, MD, Charleston, SC

#### 4:15 p.m. - 5:30 p.m.

#### **OPENING CEREMONY**

The American Thoracic Society invites you to attend the Opening Ceremony for the 2020 International Conference. The Ceremony will feature ATS Member Rana Awdish, MD, author of In Shock: My Journey from Death to Recovery and the Redemptive Power of Hope, a critically-acclaimed, bestselling memoir based on her own illness. She is a critical care physician and faculty member of Wayne State University School of Medicine in Detroit, Michigan. Dr. Awdish will discuss the importance of improving the overall patient experience while in the hospital, focusing on empathy and communication, drawing on her own personal experience. She has also generously donated copies of her book which will be available at the Opening Ceremony with all proceeds going to support the ATS Research Program.

Also during the Opening Ceremony will be an address by ATS President James Beck, MD, ATSF and the presentation of the following ATS Awards:

Breathing for Life Award: Homer A. Boushey, MD, San Francisco, CA

Several Respiratory Health Awards:

- Public Service Award: Janice E. Nolen, MA, Washington, DC
- World Lung Health Award: Diane R. Gold, MD, MPH, Boston, MA
- Jo Rae Wright Award for Outstanding Science: Mary B. Rice, MD, MPH, Boston, MA

5:30 p.m. - 6:30 p.m.

## THE NETWORKING EXCHANGE FOR EARLY CAREER PROFESSIONALS

The Networking Exchange for Early Career Professionals is an annual networking event for early career professionals and first time conference attendees. This one hour event is intended to provide a relaxed atmosphere where attendees can network with peers, ATS leaders, program directors, associate program directors and division directors, as well as other prominent thought leaders. Cocktails and appetizers will be provided.

The Membership Committee, Training Committee, and the Members in Transition and Training Committee (MITT) jointly host the Networking Exchange for Early Career Professionals.

Space is limited and admittance is on a first-come, first-served basis.



## **BASIC • CLINICAL • TRANSLATIONAL**

## KEYNOTE SERIES

## 8:00 a.m.-8:45 a.m.

K1 THE LATEST FROM THE CDC ON E-CIGARETTE, OR VAPING, PRODUCT-USE ASSOCIATED LUNG INJURY (EVALI), YOUTH E-CIGARETTE USE, AND THE EVOLVING POLICY ENVIRONMENT

The Keynote Series focuses on topics thought to be timely and of high relevance to the pulmonary, critical care, and sleep medicine community.

Sessions are presented on Sunday, Monday and Tuesday during the Conference.

Speaker: Anne Schuchat, MD, Atlanta, GA

# CLINICAL

## YEAR IN REVIEW

# A1 CLINICAL YEAR IN REVIEW 1

#### <u>9:15 a.m. - 11:15 a.m.</u>

## Target Audience

Providers including physicians, nurses, respiratory therapists, nurse practitioners, physician assistants; trainees including residents and fellows; clinical researchers

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply new clinical research knowledge to clinical practice;
- learn new findings about key conditions in pulmonary, critical care and sleep;
- have new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia provides concise summaries of the most impactful clinical research publications related to specific clinical topics. Speakers are asked to conduct a literature review of the prior year's scientific publications and develop a written summary of the top 20 articles and highlight 5 of the most important and influential publications on their topic in written format and during their talks at the International Conference Clinical Year in Review sessions.

- Chairing: J.S. Lee, MD, Aurora, CO P.A. Kritek, MD, EdM, Seattle, WA J.L. Gomez, MS, MD, ATSF, New Haven, CT
- 9:15 Interstitial Lung Disease A. Podolanczuk, MD, New York, NY
- 9:45 NPPV and Oxygen Delivery O. Roca, MD, PhD, Barcelona, Spain
- 10:15 Cystic Fibrosis K.J. Ramos, MD, MS, Seattle, WA
- 10:45 ARDS C. Summers, MBBS, PhD, Cambridge, United Kingdom

## **BASIC • CLINICAL**

CLINICAL TOPICS IN PULMONARY MEDICINE

A2 JAMA AND THE NEW ENGLAND JOURNAL OF MEDICINE. DISCUSSION ON THE EDGE: REPORTS OF RECENTLY PUBLISHED PULMONARY RESEARCH

#### <u>9:15 a.m. - 11:15 a.m.</u>

This session will provide a forum for attendees to interact with the authors and editors about papers published in JAMA and the New England Journal of Medicine. Papers presented will be recent publications, selected by the editors, to be of significant importance to the field of pulmonary medicine. Attendees will have the opportunity to hear presentations directly from the author and address questions to both the authors and editors. The discussion is intended to provide a unique insight into these papers, the selection process, and how the research applies directly to the field of pulmonary medicine.

Speakers and Talks to be Announced

## TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# A3 EARLY COPD: GETTING TO THE ROOT OF THE PROBLEM

Assemblies on Clinical Problems; Environmental, Occupational and Population Health; Pulmonary Infections and Tuberculosis; Respiratory Cell and Molecular Biology; Respiratory Structure and Function

9:15 a.m. - 11:15 a.m.

Target Audience

Clinicians providing care to patients with obstructive disease, and translational investigators.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the burden of early COPD;
- · learn and understand the pathogenesis of early COPD;
- utilize imaging characteristics to define this population and its long term outcome.

Chronic obstructive pulmonary disease (COPD) is a heterogeneous disorder with varying presentations and progression, but limited disease-modifying therapies. "Early disease" should be distinguished from "late mild disease." An operational definition of early COPD has been recently proposed: ever-smokers (=10 pack-years) younger than 50 years with any of these abnormalities: FEV1/FVClower limit of normal; compatible CT abnormalities; or FEV1 decline (=60 mL/year). To reduce COPD's long-term societal impact, the goal of interventions must change, from solely focusing on reducing symptoms and exacerbations in advanced disease, to halting pathological progression in early disease.

Chairing: J.A. Wedzicha, MD, PhD, ATSF, London, United Kingdom W. Zhang, MD, New York, NY J.L. Curtis, MD, ATSF, Ann Arbor, MI

- 9:15 Overview of and Definition of Early COPD F.J. Martinez, MD, MS, New York, NY
- 9:25 GOLD 0: Do Symptoms Predict the Development of COPD? J. Allinson, MD, PhD, London, United Kingdom
- 9:39 Contribution of Early life Exposures to the Development of COPD A. Agusti, MD, Barcelona, Spain
- 9:53 Role of Immune System Alterations C.M. Freeman, PhD, Ann Arbor, MI
- 10:07 Mucin Abnormalities in Early COPD M. Kesimer, PhD, MSci, Chapel Hill, NC
- 10:21 Can We Use Imaging to Identify Early COPD? M.K. Han, MD, MS, Ann Arbor, MI
- 10:35 Therapeutic Trials in Early COPD J.A. Wedzicha, MD, PhD, ATSF, London, United Kingdom
- 10:50 Where Do We Go from Here? B.R. Celli, MD, Boston, MA
- 11:05 Discussion F.J. Martinez, MD, MS, New York, NY

# CLINICAL • TRANSLATIONAL

## CRITICAL CARE TRACK

# A4 THE NEW ERA OF CRITICAL CARE FOR CANCER PATIENTS: CELLS TO SYSTEMS

Assemblies on Critical Care; Clinical Problems; Thoracic Oncology

9:15 a.m. - 11:15 a.m.

## Target Audience

This session is of interest to trainees and clinicians who care for critically ill cancer patients as well as decision-makers adapting health care delivery systems in North America and abroad.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand the complexities of prognostication in cancer critical care;
- strengthen systems for delivering critical care to cancer patients at their home institution;
- initiate management for several specialized medical problems among critically ill cancer patients.

As cancer treatment rapidly evolves, there is burgeoning interest among critical care providers to deepen knowledge specific to delivering expert and optimal care to cancer patients. This symposium comprehensively addresses information needed to advance our care of critically ill cancer patients, including resource allocation, systems of health care delivery, clinical needs specific to this growing population, and emerging science in the oncology field that translates to critical illness.

- Chairing: L. Munshi, MD, Toronto, Canada R.S. Stephens, MD, Baltimore, MD
- 9:15 Critical Care for All, Some, or None? E. Azoulay, MD, PhD, Paris, France
- 9:30 PRO: The Gains of Oncology-Dedicated ICUs Are Worth the Costs S.M. Pastores, MD, New York, NY
- 9:45 CON: The Costs of Oncology-Dedicated ICUs Outweigh the Gains J.M. Kahn, MD, MSc, Pittsburgh, PA
- 10:00 What an Oncologist Would Like an Intensivist to KnowA. DeZern, MD, MHS, Baltimore, MD
- 10:15 Critical Illness and the Oncology Patient: Are We Speaking the Same Biological Language? R.S. Stephens, MD, Baltimore, MD

- 10:30 Respiratory Failure: Should This Common ICU Admission Be Approached Differently in Immunocompromised Patients? L. Munshi, MD, Toronto, Canada
- 10:45 Immunotherapies: Advances and Toxicities Encountered in Critical Care C. Gutierrez, MD, Houston, TX
- 11:00 Unleashing the Immune System: Immunotherapies and Stem Cell Transplant for Sepsis - What We Have Learned from Oncology P. Torabi-Parizi, MD, Bethesda, MD

# **BASIC • TRANSLATIONAL**

## BASIC SCIENCE CORE

# A5 LUNG REGENERATION: WHAT DO WE WANT?

<u>9:15 a.m. - 11:15 a.m.</u>

## **Target Audience**

Basic and translational scientists as well as providers who manage patients with chronic and end stage lung disease

Objectives

At the conclusion of this session, the participant will be able to:

- · learn new findings about lung regeneration;
- apply new techniques for studying lung regeneration in model systems;
- gain a current understanding of the roles that stem and progenitor cells as well as the mesenchyme can serve in lung regeneration.

In this first of two thematically linked basic science core sessions, the topic of lung regeneration will be introduced and recent progress in the field will be highlighted. In particular, three main subject areas will be addressed: a) Rebuilding a Lung: Bioengineered Lungs and Cell Replacement Strategies b) Identification and Characterization of Regenerative Cells: Endogenous Compartmental Stem Cells and Exogenous Progenitor Cells c) Discovery of Lung Regenerative Cocktails (Beyond Anti-Inflammatory Strategies): Growth Factors (HGF/KGF/FGF10), Senolytics (mTOR/Rapamycin), and Morphogens (Wnt/Notch)

- Chairing: J.K. Burgess, PhD, Groningen, Netherlands W.P. Drake, MD, Nashville, TN E.R. Neptune, MD, Baltimore, MD
- 9:15 Towards Lung Regeneration: Tools and Mechanisms C. Dean, BSc(Hons), PhD, London, United Kingdom
- 9:45 Building and Rebuilding the Lung: Insights from the Human Embryo K. Lim, Cambridge, United Kingdom
- 10:15 Alveolarization in Lung Regeneration R.E. Morty, PhD, Giessen, Germany
- 10:45 Differentiation and Morphogenesis of the Pulmonary Mesenchyme C.M. Nelson, PhD, Princeton, NJ

## BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

## A6 CONTROVERSIES IN SLEEP APNEA PATHOPHYSIOLOGY DEBATE

Assembly on Sleep and Respiratory Neurobiology

9:15 a.m. - 11:15 a.m.

#### Target Audience

Clinicians and investigators who are interested in sleep disordered breathing and the future of the field.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about non-genioglossus and genioglossus contributions to obstructive sleep apnea;
- gain new findings about carotid chemoreflex contributions to central sleep apnea;
- learn about the extent to which phenotyping has potential for guiding clinical interventions.

Recent studies are challenging established theories about the mechanisms underlying obstructive and central sleep apnea and existing treatment paradigms. Leaders in the field will debate key controversies with the goals of highlight the exciting and underappreciated recent findings and identifying knowledge gaps for future treatment-focused physiological studies.

- Chairing: S.C. Veasey, MD, Philadelphia, PA J.H. Walsh, PhD, Nedlands, Australia J.E. Orr, MD, La Jolla, CA
- 9:15 Genioglossus Muscle Hypotonia as the Major Cause of Pharyngeal Obstruction During Sleep A. Jordan, PhD, Parkville, Australia
- 9:35 Non-Genioglossus Muscle Hypotonia as the Major Cause of Pharyngeal Obstruction During Sleep A. Oliven, MD, Haifa, Israel
- 9:55 Carotid Body Hyperreflexia as the Leading Cause of Central Sleep Apnea and Sympathoexcitation in Heart Failure J. Paton, PhD, Auckland, New Zealand
- 10:15 Pulmonary Congestion and Filling Pressures as the Leading Cause of Central Sleep Apnea and Sympathoexcitation in Heart Failure G. Lorenzi-Filho, MD, Sao Paolo, Brazil
- 10:35 Pathophysiological Endotypes Will Be Useful for Predicting Treatment Outcomes S.A. Sands, BSc, PhD, Cambridge, MA
- 10:55 Pathophysiological Endotypes Will Never Be Useful for Predicting Treatment Outcomes R.J. Schwab, MD, Philadelphia, PA

## **BASIC • CLINICAL • TRANSLATIONAL**

## SCIENTIFIC SYMPOSIUM

# A7 SYSTEMS BIOLOGY PLATFORMS FOR DRUG REPURPOSING IN PULMONARY HYPERTENSION AND BEYOND

Assemblies on Pulmonary Circulation; Respiratory Cell and Molecular Biology

9:15 a.m. - 11:15 a.m.

Target Audience The primary professional audiences are pulmonary hypertension The secondary professional audiences are basic, translational and clinical scientists

## Objectives

At the conclusion of this session, the participant will be able to:

- define new strategies to identify already existing drugs that could be used in the treatment of cardiopulmonary disease;
- learn new ways to apply machine learning and artificial intelligence in the practice of managing cardiopulmonary disease;
- familiarize novel therapeutic agents for PAH that are in early phase 2 and phase 3 clinical trials.

PAH continues to remain a fatal disease with a median survival of 5-7 years. Currently there are 13 FDA approved PAH-specific therapies for the management of PAH. They increase exercise capacity modestly and reduce hospital admission, but are expensive and not curative. Since 2005, no new therapeutic pathways have been identified for the treatment of PAH. There is a clear unmet need for novel treatments for PAH that iimprove long-term outcomes. Advances in computational and systems biology coupled with the rapidly growing data from electronic health records as well as human molecular profiling provides opportunities to leverage big data and repurpose existing drugs for novel clinical purposes to promote cardiopulmonary health. This session intends to explore the current state of the art methods and ongoing challenges to utilize network biology, machine learning, and artificial intelligence for defining novel uses for existing drugs, the experimental platforms needed for those predictions, and the clinical ramifications for incorporating these processes in translational practice. In addition, this session will highlight novel therapies that are in phase 2 clinical trials for the treatment of PAH.

- Chairing: V.V. McLaughlin, MD, Ann Arbor, MI E.F. Spiekerkoetter, MD, Palo Alto, CA
- 9:15 A Patient's Perspective Speaker To Be Announced
- 9:20 Systems and Network Strategies for Drug Repurposing J. Loscalzo, MD, PhD, Boston, MA

- 9:39 Rituximab for Scleroderma-Associated PAH: Hype or Hope? R.T. Zamanian, MD, Stanford, CA
- 9:58 Computational Drug Repurposing of Chemotherapeutics in Pulmonary Hypertension S.Y. Chan, MD, PhD, Pittsburgh, PA
- 10:17 IL-1 Blockade in Pulmonary Arterial Hypertension and Right Ventricular Failure D.C. Grinnan, MD, Richmond, VA
- 10:36 Drug Discovery Using Artificial Intelligence Engines: Challenges and Opportunities K. Rhee, MD, MPP, Boston, MA
- 10:55 Sotatercept for Treatment of PAH P.B. Yu, MD, PhD, Boston, MA

## CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# A8 PRECISION MEDICINE IN PEDIATRIC RESPIRATORY DISEASES: READY FOR PRIME TIME?

Assemblies on Pediatrics; Allergy, Immunology and Inflammation; Clinical Problems; Section on Genetics and Genomics

9:15 a.m. - 11:15 a.m.

#### **Target Audience**

Pediatricians and pulmonary specialists taking care of children with chronic lung disease. Translational and clinical scientists whose research focuses on improving the management of children and adolescents with respiratory disorders.

## Objectives

At the conclusion of this session, the participant will be able to:

- review the current state of research towards precision and gene-based medicine in different diseases that affect respiratory health in children and adolescents;
- understand the evidence supporting the clinical use of precision medicine approaches in pediatric lung diseases;

 highlight areas of uncertainty regarding the use of precise therapeutics, including eligibility, cost, and other ethical considerations.

In this session, we will discuss disease-altering and potentially life-saving "precision medicine" therapeutics for pediatric respiratory diseases, including genotype-based treatments and gene therapies. We will focus on cystic fibrosis, neuromuscular diseases, sickle cell disease, and asthma as examples of what the field has accomplished and the road ahead. In addition, we will discuss important ethical and cost-effectiveness considerations that researchers, clinicians, and patients will have to face as we move forward.

- Chairing: E. Forno, MD, MPH, ATSF, Pittsburgh, PA G.S. Sawicki, MD, MPH, Boston, MA
- 9:15 Introduction E. Forno, MD, MPH, ATSF, Pittsburgh, PA
- 9:20 Precision Medicine in Action: The Promise of Genetic Based Therapies in Cystic Fibrosis G.S. Sawicki, MD, MPH, Boston, MA
- 9:38 Questions
- 9:43 Progress to Date and Ongoing Studies for Gene Therapy in Sickle Cell Disease M.R. DeBaun, MD, MPH, Nashville, TN
- 10:01 Questions
- 10:06 Precision Therapeutics for Spinal Muscular Atrophy and Other Neuromuscular Diseases M. Buu, MD, Palo Alto, CA
- 10:24 Questions
- 10:29 Precision Medicine in Childhood Asthma: The Long Road Ahead A.H. Maitland-van der Zee, PharmD, PhD, Amsterdam, Netherlands
- 10:47 Questions
- 10:52 Cost-Effectiveness and Ethics Considerations of Precision Medicine for Pediatric Lung Diseases A.C. Wu, MD, MPH, Boston, MA
- 11:10 Questions

# CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

## A9 SEX, LUNGS, AND ENVIRONMENTAL EXPOSURES

Assemblies on Environmental, Occupational and Population Health; Behavioral and Health Services Research; Pulmonary Infections and Tuberculosis

<u>9:15 a.m. - 11:15 a.m.</u>

#### Target Audience

Providers of lung health, basic and translational researchers who are interested in translational and impacts of environmental exposures, those with clinical or research responsibilities.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about sex specific responses to environmental exposures;
- apply and integrate sex as a biological variable appropriately in environmental exposure assessment research;
- improve ability to identify environmental lung disease by better understanding sex-specific effects and susceptibilities.

Lung disease susceptibility is often sex specific. However, only recently, have clinical and translational research studies incorporated a thorough analysis of sex differences in response to environmental exposures and the potential link of these differences to disease susceptibility. This session will explore the interaction of sex with environmental exposures to increase susceptibility to lung disease and infection. Studies in rodents, non-human primates, and humans will be described, providing an overview of this emerging field. This session will also provide recommendations on next steps for the study of respiratory sex differences in response to environmental exposures and best practices in study design and analysis to facilitate the incorporation of sex as a biological variable.

- Chairing: M.E. Rebuli, PhD, Chapel Hill, NC L.S. Van Winkle, PhD, Davis, CA J.P. Reilly, MD, MSCE, Philadelphia, PA
- 9:15 Sex Differences in Respiratory Disease Programming: Insights from Cohort Studies and Need for an Exposomic Framework R.J. Wright, MD, MPH, New York, NY
- 9:35 Where There Is Smoke, There Are Sex Differences: Part 1 - Wildfire Smoke L.A. Miller, PhD, Davis, CA
- 9:55 Where There Is Smoke, There Are Sex Differences: Part 2 - Secondhand Tobacco Smoke A. Noel, PhD, MSc, BSc, Baton Rouge, LA
- 10:15 Can Sex and Environmental Exposures Make Your Flu Worse? M.E. Rebuli, PhD, Chapel Hill, NC
- 10:35 Sex Differences in Ozone Responses and the Influence of Diet and Microbiome H. Tashiro, MD, PhD, Saga, Japan
- 10:55 Sex Differences with Environmental Exposure: What Do We Know and Where Do We Go from Here?P. Silveyra, PhD, MSc, Chapel Hill, NC

# **BASIC** • TRANSLATIONAL

# SCIENTIFIC SYMPOSIUM

# A10 LINKING LUNG DEVELOPMENT AND CARCINOGENESIS: FROM PATHWAYS TO LUNGMAP AND THE PRECANCER ATLAS

Assemblies on Thoracic Oncology; Respiratory Cell and Molecular Biology

<u>9:15 a.m. - 11:15 a.m.</u>

## Target Audience

Translational and basic scientists interested in development, lung cancer, emerging technologies like single-cell sequencing, those interested in hearing about advances in the LungMAP Consortium and the Precancer Atlas

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about lung developmental pathways that have relevance in carcinogenesis. This will inform future research efforts and establish new collaborative approaches for the diagnosis, prevention, and treatment of lung cancer;
- improve knowledge about the multi-center LungMAP Consortium and Precancer Atlas efforts, and to understand the strengths and limitations of single cell sequencing and other advanced profiling technologies;
- learn new findings about new directions in lung cancer research. This will improve the learner's knowledge on new advances in early diagnosis, biomarkers, prognosis, prevention, and treatment.

This session will explore the links between lung development and lung carcinogenesis. There are many known and emerging links between the processes, and insights from the study of development continue to inform new directions in cancer research. Efforts like the LungMAP Consortium and the Precancer Atlas can accelerate this work.

- Chairing: E. Ostrin, MD, PhD, Houston, TX Z. Borok, MD, ATSF, Los Angeles, CA
- 9:15 Regulation of Lung Progenitor Cell Homeostasis and Tumorigenesis Z. Borok, MD, ATSF, Los Angeles, CA
- 9:39 Premalignancy of Lung Squamous Cell Carcinoma A. Spira, MD, Boston, MA
- 10:03 Premalignancy of Lung Adenocarcinoma H. Kadara, PhD, Houston, TX
- 10:27 Transcriptional Networks Regulating Lung Morphogenesis and Tumorigenesis J.A. Whitsett, MD, Cincinnati, OH
- 10:51 Fibrosis, Development, and Cancer H.A. Chapman, MD, San Francisco, CA

# **BASIC • BEHAVIORAL**

## SCIENTIFIC SYMPOSIUM

# A11 BEYOND REPRESENTATION: ACHIEVING GENDER EQUITY IN ACADEMIC MEDICINE

Assemblies on Behavioral and Health Services Research; Critical Care; Members in Training and Transition (MITT) Committee; Health Equity and Diversity Committee; Membership Committee

#### <u>9:15 a.m. - 11:15 a.m.</u>

#### Target Audience

Clinicians (attending physicians, fellows, residents, NPs/PAs/CRNAs, nurses, allied health professionals), researchers and administrators

#### Objectives

At the conclusion of this session, the participant will be able to:

- define the current state of gender inequity in medicine including disparities in recruitment, retention, promotion and compensation;
- describe the role of recruitment and compensation strategies in creating a more equitable workforce;
- identify strategies for creating a more equitable environment in medical training and scientific funding.

The primary purpose of this course is to define and address current challenges in achieving gender equity within medicine. This session will directly support a 2019-2020 benchmarks of the Membership Committee, which include promoting the wellness of ATS members and identifying barriers to recruitment and retention of members who will increase diversity of ATS. In addition to defining the current scope of gender inequity, each of our speakers will explore strategies to create a more equitable professional environment in all aspects of medicine including training, science, and clinical work.

Chairing: N.S. Mangalmurti, MD, Philadelphia, PA K. Hibbert, MD, Boston, MA D. Sheppard, MD, San Francisco, CA M.K. Glassberg Csete, MD, Miami, FL

- 9:15 The Time for Change is Now D. Lautenberger, MAT, Washington, DC
- 9:40 Creating an Equitable Work Environment: The BRIM Initiative, Current Status and Future Plans M.K. Glassberg Csete, MD, Miami, FL
- 10:05 Sustainable Support: The Funding Gender Gap and How to Fix It J. Kiley, PhD, Bethesda, MD
- 10:30 Making Equity a Reality: Recruiting, Compensation, Promotion S.I. Rounds, MD, ATSF, Providence, RI
- 10:55 Panel Discussion D. Sheppard, MD, San Francisco, CA

## **BEHAVIORAL** • CLINICAL

#### SCIENTIFIC SYMPOSIUM

# A12 PALLIATIVE CARE IN CHRONIC RESPIRATORY DISEASE: A STATE OF THE SCIENCE

Assemblies on Behavioral and Health Services Research; Clinical Problems; Nursing

#### <u>9:15 a.m. - 11:15 a.m.</u>

#### Target Audience

Trainees, clinicians, and investigators from pulmonary and palliative care who care for chronic respiratory disease. This includes physical and occupational therapists, respiratory therapists, pharmacists, nurses, nurse practitioners, and physicians.

#### Objectives

At the conclusion of this session, the participant will be able to:

- identify unmet palliative care needs and barriers to early integration of palliative care into the routine care of chronic respiratory diseases;
- understand strategies for delivering primary palliative care in chronic respiratory disease;
- describe novel nursing, system, and health policy interventions for palliative care in chronic respiratory disease.

Patients who live with serious, non-malignant chronic respiratory diseases have significant unmet palliative care needs. Despite this, timely palliative care is rarely implemented in these populations and remains under appreciated and underutilized in pulmonary medicine. This jointly-developed session features multidisciplinary, multi-institutional perspectives from palliative-pulmonary researchers and clinicians to provide a state of the science on palliative care in chronic respiratory disease, including novel research, innovative delivery models, and health policy recommendations to break down barriers to early integration.

- Chairing: A.S. Iyer, MD, Birmingham, AL K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA L.F. Reinke, PhD, APRN, BC, ATSF, Seattle, WA
- 9:15 Palliative Care in Pulmonary Medicine: How Does Where We've Been Inform Where We're Going? J.R. Curtis, MD, MPH, Seattle, WA
- 9:30 Caring for a Loved One Living with Chronic Respiratory Disease: A Caregiver's Perspective Speaker To Be Announced
- 9:37 Uncovering Unmet Needs in Chronic Respiratory Disease: The Role of Qualitative Research A.S. Iyer, MD, Birmingham, AL
- 9:51 From Cancer to Chronic Respiratory Disease: Translating Successful Models of Early Palliative Care T.C. Campbell, MD, MSCI, Madison, WI
- 10:05 Symptom Management in Chronic Respiratory Disease: A "Pallipulm" Perspective D. Khateeb, DO, New York, NY
- 10:19 Prognostic Awareness in Chronic Respiratory Disease: Why Are We Whispering? A.E. Turnbull, DVM, MPH, PhD, Baltimore, MD
- 10:33 Novel Nurse-Led Palliative Care Interventions in Chronic Respiratory Disease K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA

10:47 Innovative System-Level Palliative-Pulmonary Interventions: The Breathlessness Service and Beyond

M. Maddocks, PhD, London, United Kingdom

11:01 From Policy to Primary Palliative Care: Big Picture Solutions in Chronic Respiratory Disease L.F. Reinke, PhD, APRN,BC, ATSF, Seattle, WA

## 9:15 a.m. - 11:15 a.m

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.



## 11:45 a.m. - 1:15 p.m.

## ATS DIVERSITY FORUM

The annual ATS Diversity Forum focuses on diversity within the fields of pulmonary, critical care, and sleep medicine and research. All conference attendees, including past MTDS recipients, are invited to attend this luncheon which provides an opportunity for discussion, delicious three course lunch and networking. Attendees will find inspiration and valuable career insights.

Our speaker will be Horace M. Delisser, MD, the Associate Professor of Medicine at the Perelman School of Medicine-University of Pennsylvania, who will address career and diversity issues followed by a question and answer period.

The Minority Trainee Development Scholarships (MTDS), which recognize trainees who are members of underrepresented minority groups will also be presented at this forum. MTDS recipients are selected for the quality of the science in their submitted abstract, among other criteria. At this Forum we will also recognize the recipient of the 2020 ATS Fellowship in Health Equality.

The Diversity Forum is organized and presented by the ATS Membership Committee and will be hosted by its chair Clement Ren MD, MBA, ATSF. The Minority Trainee Development Scholarships are supported by the American Thoracic Society.

Registration Fee: \$20 (includes lunch)

Seating is limited. Pre-registration is required. Please register through online general registration by clicking the Register Now button above

## PEDIATRIC CLINICAL CORE CURRICULUM

## PCC1 PEDIATRIC CLINICAL CORE CURRICULUM

#### 11:45 a.m. - 12:45 p.m.

#### Target Audience

Pediatric pulmonary and critical care physicians who work in a clinical setting and are currently engaged in maintenance of certification

#### Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pediatric pulmonology;
- evaluate their knowledge and skills in content areas in pediatric pulmonology.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The Pediatric Core Curriculum symposia promote lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatrician.

Chairing: J.S. Rettig, MD, Boston, MA

- 11:45 Management of Acute Hypoxemic Respiratory Failure in Children N. Yehya, MD, Philadelphia, PA
- 12:15 New Modalities in Non-Invasive Management of Chronic Respiratory Failure in Childhood C.D. Baker, MD, Aurora, CO

## **BEHAVIORAL**

#### WORKSHOP

## WS1 DIAGNOSING AND TREATING MICROAGGRESSIONS IN YOUR HEALTH CARE TEAM

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Behavioral and Health Services Research; Section on Medical Education

#### 11:45 a.m. - 1:15 p.m.

## **Target Audience**

Since a team based approach to the delivery of exemplary health care has become of increasing importance, research, administrative, and bedside care teams will benefit from content which addresses microaggressions as they threaten team dynamics.

## Objectives

At the conclusion of this session, the participant will be able to:

- elevate awareness surrounding racism, discrimination, and microaggressions occurring in our own educational and professional spaces; and how this will foster a psychological safe learning environment for our trainees and faculty;
- learn our role in contributing to a safe working environment through improved awareness and timely feedback, ultimately reducing the occurrence of microaggressions and minimizing becoming the perpetrator;
- practice implementation of our tool to address microaggressions and be charged to utilize this in their respective fields.

Microaggressions are subtle, intentional or unintentional discriminatory statements or actions made against a marginalized group of people. Some individuals rarely experience them, while other learners and colleagues encounter them daily. This interactive workshop will include a real life re-enactment of a racist patient encounter, define microaggressions and other terms, and allow participants to role play challenging situations in their work environment while utilizing a tool to identify, address, and ameliorate microaggressions.

- Chairing: F. Duncan, MD, MS, Indianapolis, IN J.P. Smith, BSc, MD, Indianapolis, IN M. Johnson, MD, San Francisco, CA
- 11:45 Workshop Introduction F. Duncan, MD, MS, Indianapolis, IN
- 11:50 Enough is Enough G.T. Bosslet, MD, MA, Indianapolis, IN

- 11:55 Can We Talk? S. Sotto, PhD, Indianapolis, IN M. Johnson, MD, San Francisco, CA
- 12:15 Defining the Problem J.P. Smith, BSc, MD, Indianapolis, IN
- 12:30 Microaggression Themes and Implied Messages F. Duncan, MD, MS, Indianapolis, IN
- 12:40 Why Are Microaggressions so Taxing? J.P. Smith, BSc, MD, Indianapolis, IN
- 12:45 Treating Microaggressions to Build a Better Team Through Active Learning F. Duncan, MD, MS, Indianapolis, IN
- 1:10 Summary and Closing Remarks S. Sotto, PhD, Indianapolis, IN

# CLINICAL

## WORKSHOP

# WS2 BABY, BABY, BABY: EXPLORING OBSTRUCTIVE SLEEP APNEA IN INFANTS

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assemblies on Pediatrics; Sleep and Respiratory Neurobiology

11:45 a.m. - 1:15 p.m.

## **Target Audience**

Clinicians, health care professionals, researchers and other non-clinician health professionals who want to increase their knowledge of infant obstructive sleep apnea and the challenges in management.

## Objectives

At the conclusion of this session, the participant will be able to:

- recognize different presentations of obstructive sleep apnea in infants;
- evaluate potential diagnostic or screening tools for use in infants with suspected obstructive sleep apnea;

 develop a management plan for individual infants with obstructive sleep apnea.

This session will provide an overview of currently available assessments, as well as emerging treatment options for obstructive sleep apnea in infants. In an interactive, case-based format, the participant will learn about different phenotypes associated with infant obstructive sleep apnea and integrated treatment options to provide tailored and personalized care for for these patients. This 90-minute workshop will include three 20-minute presentations from a diverse panel of faculty and a 20-minute Q&A session with the entire panel at the end for the audience to explore participants' questions.

Chairing: Z. Ehsan, MD, Kansas City, MO

- 11:45 Clinical Presentation of Obstructive Sleep Apnea in Infants Z. Ehsan, MD, Kansas City, MO
- 12:10 Evaluation of Infants with Suspected Obstructive Sleep Apnea J.E. Maclean, BSc(Hons), MD, PhD, Edmonton, Alberta, Canada
- 12:35 Management Options for Obstructive Sleep Apnea in Infants R. Amin, MD, Toronto, Canada
- 12:55 Questions and Answers with Panel Z. Ehsan, MD, Kansas City, MO

## CLINICAL

#### ADULT CLINICAL CORE CURRICULUM

## CC1 CRITICAL CARE CLINICAL CORE CURRICULUM I

#### 11:45 a.m. - 1:15 p.m.

#### Target Audience

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

#### Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: B. Coruh, MD, Seattle, WA M.M. Hayes, MD, ATSF, Boston, MA
- 11:45 Decompensated Liver Disease A. Gallo de Moraes, MD, Rochester, MN
- 12:15 Upper GI Bleeding C. Baston, MD, MSCE, Philadelphia, PA
- 12:45 Management of Alcohol Withdrawal Syndrome M. Leveno, MD, Dallas, TX

#### VARIOUS ORGANIZATIONS

## L1 OPPORTUNITIES FOR RESEARCH FUNDING

#### <u>12:15 p.m. - 1:15 p.m.</u>

#### Target Audience

ATS International Conference attendees who are currently conducting, or interested in conducting research and seeking research funding opportunities.

#### Objectives

At the conclusion of this session, the participant will be able to:

- describe the research priorities of each funding agency represented on the panel;
- identify specific criteria required and mechanisms of funding from each agency on the panel;
- identify a funding agency that is most closely aligned with the attendee's interest and program of research.

This session will introduce programs and research funding opportunities offered from various government and non-government agencies. Speakers will present current research priorities and mechanisms of funding available within their respective agency. Time will be provided for audience members to ask questions of the panel of speakers.

- Chairing: N.E. Bracken, ACNPC, MSN, Chicago, IL A.M. Russell, PhD, RN, ATSF, London, United Kingdom
- 12:15 Welcome and Introductions N.E. Bracken, ACNPC, MSN, Chicago, IL
- 12:20 American Lung Association M.F. Busk, MD, MPH, Indianapolis, IN
- 12:32 The Patient Centered Outcomes Research Institute (PCORI) S. Daugherty, PhD, MPH, Washington, DC
- 12:44 National Institute of Nursing Research K. Huss, PhD, Bethesda, MD
- 12:56 ATS Foundation E.M. Nebel, MA, New York, NY
- 1:08 Discussion and Closing Remarks A.M. Russell, PhD, RN, ATSF, London, United Kingdom

# VETERANS ADMINISTRATION

# L2 NEW VA PROGRAM IN PRECISION ONCOLOGY FOR LUNG CANCER CARE AND RESEARCH

<u>12:15 p.m. - 1:15 p.m.</u>

#### **Target Audience**

Those involved in care and/or research related to lung cancer; all ATS members based in the VA.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings related to the VA's new Precision Oncology Program for Lung Cancer Care and Research, including new opportunities for research and for access to clinical trials for veterans with lung cancer;
- learn new findings about precision oncology and evaluation of patients with advanced non-small cell lung cancer for appropriateness of treatment with targeted tyrosine kinase inhibitors and immune enhancing therapies;
- apply for research support from the VA's new Precision Oncology Program for lung cancer care and research.

In 2016, the VA instituted a national precision oncology program for prostate cancer. Elements included establishing 10 VA centers of excellence, as well as standardized genomic sequencing of tumors, to identify targetable mutants, and of circulating tumor DNA, for screening. Networking across sites ensured consistent levels of care. Through partnering with philanthropy and industry, the VA has provided funding for research and clinical trials, emphasizing support for young investigators. Leadership of Veterans Health Administration now is beginning a similar program for precision oncology in lung cancer. The goal of this session is to provide information about this new program.

- Chairing: J.K. Brown, MD, San Francisco, CA K.A. Myrie, PhD, Washington, DC
- 12:15 VHA's New Precision Oncology Program for Lung Cancer M.J. Kelley, MD, Durham, NC
- 12:45 Rationale and Opportunity for Combination Immunotherapy for Non-Small Cell Lung Cancer S.M. Dubinett, MD, Los Angeles, CA
- 1:05 Lung Cancer Screening in the VA J.K. Brown, MD, San Francisco, CA

#### NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES

## L3 SEPSIS RESEARCH AT THE NIH

#### 12:15 p.m. - 1:15 p.m.

#### Target Audience

Sepsis researchers, clinical and basic, and anyone interested in applying for NIH funding, fellows/trainees with an interest in critical care or sepsis.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn and understand the types of sepsis research supported by different NIH institutes;
- understand the different types of grant mechanisms that NIH uses to support sepsis research;
- identify new and emerging areas of sepsis research that are needed to improve patient outcomes.

This session will provide a brief overview of how sepsis research is funded by the NIH. Representatives from the primary NIH institutes that fund sepsis research (NIGMS, NHLBI, NIAID, NICHD) will describe their portfolios in terms of grant mechanisms and scientific topics. Emerging areas of sepsis research and shared resources available to sepsis researchers will be highlighted.

- Chairing: S. Dunsmore, PhD, Bethesda, MD L. Reineck, MD, Bethesda, MD
- 12:15 NHLBI Sepsis Research L. Reineck, MD, Bethesda, MD
- 12:30 NIAID Sepsis Research N. Ernst, PhD, Rockville, MD
- 12:45 NICHD Sepsis Research R.F. Tamburro, MD, MSc
- 1:00 NIGMS Sepsis Research S. Dunsmore, PhD, Rockville, MD

NIAID, TB, LEPROSY AND OTHER MYCOBACTERIAL DISEASES

# L4 INHALATION THERAPY FOR NON-TUBERCULAR MYCOBACTERIAL PULMONARY INFECTIONS

#### <u>12:15 p.m. - 1:15 p.m.</u>

#### Target Audience

Scientists and clinicians studying therapeutic care for patients with non-tubercular mycobacterial infections or co-infections of the lung.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn the characteristics of successful delivery of antibiotic drugs by inhalation;
- understand the therapeutic options available for patients with cystic fibrosis and mac infections;
- · learn new antibiotic approaches in the pipeline.

Novel approaches for delivery of antibiotics directly to the lungs through inhalation are being developed by research scientists supported by the National Institutes of Health. An overview of the current pipeline of new or re-purposed drugs for non-tuberculosis mycobacterial infections will be described. Three ongoing projects will be presented on development of novel formulations and approaches for treatment.

Chairing: B.E. Laughon, PHD, Baltimore, MD J. Boyce, PhD, Bethesda, MD

- 12:15 Introduction to Session B.E. Laughon, PhD, Baltimore, MD
- 12:20 Drug Development Pipeline for NTMs C.L. Daley, MD, Denver, CO
- 12:25 Overview of Inhalation Approach to NTM Treatment A. Hickey, PhD, Research Triangle Park, NC
- 12:40 Pulmonary Clofazimine for M. abscessus B. Hansen, PhD, Longmont, CO

- 12:52 Liposomal Preparations of Ciprofloxacin for the Inhalation Treatment of M avium and M abscessus: Assessment of Preclinical Efficacy and Safety I. Gonda, PhD, San Francisco, CA
- 1:02 Liposomal Amikacin for Inhalation in NTM K.N. Olivier, MD, MPH, ATSF, Bethesda, MD

## FDA CENTER FOR REAL WORLD EVIDENCE ANALYTICS

## L5 FDA REAL WORLD EVIDENCE PROGRAM UPDATE

## <u>12:15 p.m. - 1:15 p.m.</u>

## **Target Audience**

Practicing clinicians, researchers, pharmaceutical industry and payer representatives, international regulators

## Objectives

At the conclusion of this session, the participant will be able to:

- understand the framework for FDA's Real World Evidence program;
- review current FDA Real World Evidence demonstration projects with a focus on those potentially impacting the pulmonary disease space;
- review resources, findings, and considerations stemming from FDA's Real World Evidence Program.

The FDA Real World Evidence Program will be outlined. Two pulmonary disease demonstration projects using Real World Data and their interim findings will be reviewed. Additional learnings from other FDA demonstration projects and submissions containing RWE will be described. Publicly available resources resulting from the FDA Real World Evidence Program will be shared.

Chairing: D. Martin, MD, MPH, Silver Spring, MD

- 12:15 Introduction to the FDA RWE Program D. Martin, MD, MPH, Silver Spring, MD
- 12:25 Overview of the RELIANCE Real World Clinical Trial J.A. Krishnan, MD, PhD, ATSF, Chicago, IL

- 12:40 Overview of the COPD, Asthma, and Respiratory Disease Effectiveness Project R. Busch, MD, Silver Spring, MD
- 12:55 Learnings From Other FDA Demonstration Projects and Submissions Containing RWE K. Quinto, MD, MPH, Silver Spring, MD
- 1:10 Questions and Answers D. Martin, MD, MPH, Silver Spring, MD

NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH

# L6 UPDATE ON NON-INFECTIOUS RESPIRATORY HAZARDS IN HEALTH CARE

## <u>12:15 p.m. - 1:15 p.m.</u>

## Target Audience

Providers of lung health and those interested in identifying and controlling non-infectious respiratory hazards in health care settings.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about exposures to non-infectious respiratory hazards in general health care settings and potential related health effects;
- gain understanding and learn new findings about non-infectious respiratory disease, in particular occurrence of idiopathic pulmonary fibrosis, in dental personnel;
- learn new findings about exposures to non-infectious respiratory hazards specifically in dental settings.

The session will provide an update on the range of non-infectious respiratory hazards present in health care settings and recent NIOSH efforts to address them. After a brief discussion of general health care settings, presentations will focus in particular on dental settings, where there have been recent concerns about risk of interstitial lung disease in dental personnel.

Chairing: D.N. Weissman, MD, ATSF, Morgantown, WV

- 12:15 Introduction to Session D.N. Weissman, MD, ATSF, Morgantown, WV
- 12:18 Overview of Non-Infectious Respiratory Hazards in Health Care Settings M.A. Virji, ScD, Morgantown, WV
- 12:37 Occupational Respiratory Disease in Dental Personnel R.J. Nett, MD, MPH, Morgantown, WV
- 12:56 Hazardous Respiratory Exposures in Dental Settings B. Blackley, MS, PhD, Morgantown, WV

#### DIVISION OF LUNG DISEASES/NHLBI

## L7 NEW FINDINGS FROM THE NHLBI PVDOMICS PROGRAM IN PATIENTS WITH PULMONARY HYPERTENSION

#### 12:15 p.m. - 1:15 p.m.

Target Audience

Health care providers, trainees, and researchers.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about the new clinical findings in PVDOMICS patients across the WHO groups of pulmonary hypertension;
- gain understanding on new clinical phenotypes clustering based on new omics findings in PH;
- learn about the new hemodynamic, imaging, 6 minute walk, lung physiology findings in PVDOMICS patients with pulmonary hypertension.

Pulmonary hypertension (PH) has no cure, and PH research remains a high priority for NHLBI. The current PH classification is difficult to apply clinically for precision medicine therapy. In 2014, NHLBI launched a multi-center clinical study named: Redefining Pulmonary Hypertension through Pulmonary Vascular Disease Phenomics (PVDOMICS) to conduct an observational study in PH patients. The overall goal of the PVDOMICS is to perform deep phenotyping across all PH groups and intermediate phenotypes in order to reconstruct the traditional classification and define new meaningful subclassifications. Over 1100 participants are enrolled, and the clinical and omics results from these subjects will be presented at this noon session.

- Chairing: L. Xiao, MD, PhD, Bethesda, MD N.S. Hill, MD, Boston, MA
- 12:15 PVDOMICS Study: A Real World Look at Pulmonary Vascular Disease E. Horn, MD, New York, NY
- 12:30 Relationship Between the Six Minute Walk and Key Clinical Physiologic and Imaging Variables Across PH Subsets Enrolled In PVDOMICS K.B. Highland, MD, Cleveland, OH
- 12:45 Clinical and Hemodynamic Implications of WSPH Group Overlap in Pulmonary Hypertension B. Borlaug, MD, Rochester, MN
- 1:00 PVDOMICS: An Initial Look at Clinical and Omics Clustering A. Hemnes, MD, ATSF, Nashville, TN

#### DIVISION OF LUNG DISEASES/NHLBI

## L8 UPDATES FROM THE COPDGENE STUDY

#### 12:15 p.m. - 1:15 p.m.

#### **Target Audience**

Researchers, medical trainees, those with an interest in COPD pathogenesis.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about imaging in the COPDGene study;
- understand and learn subtypes identified by the COPDGene study;
- learn about longitudinal follow-up in the COPDGene study.

Chronic obstructive pulmonary disease (COPD), the fourth leading cause of death in the U.S. is a heterologous syndrome. The COPDGene study has

created the largest cohort of well-characterized current and former smokers for respiratory disease research. The primary goals of COPDGene are to identify new genetic loci that influence the development of COPD and COPD-related phenotypes; and to reclassify COPD into subtypes that can ultimately be used to develop effective therapies. Presenters will discuss new results from the COPDGene study, including new ways to diagnose the disease, deep learning approaches to imaging data, genetics, epigenetics, transcriptomics, proteomics, and an integrative Omics approach.

- Chairing: L. Postow, PhD, Bethesda, MD J.D. Crapo, MD, Denver, CO E.K. Silverman, MD, PhD, Boston, MA
- 12:15 New Approaches to COPD Diagnosis and Progression K.A. Young, MSPH, PhD, Aurora, CO
- 12:27 Imaging and Deep Learning S.M. Humphries, PhD, MS, Denver, CO
- 12:39 Updates on Genetics and Epigenetics M. Moll, MD, Boston, MA
- 12:51 Applications of Transcriptomics and Proteomics P. Castaldi, MD, MSc, Boston, MA
- 1:03 Using Integrative Omics to Understand COPD Pathobiology and Heterogeneity B.D. Hobbs, MD, Boston, MA

## DIVISION OF LUNG DISEASES/NHLBI

L9 THE PEDIATRIC PULMONARY VASCULAR DISEASE (PVD) REGISTRY: METHODS, RESULTS AND IMPLICATIONS

## <u>12:15 p.m. - 1:15 p.m.</u>

## Target Audience

Pediatric pulmonologists, pediatric cardiologists, neonatologists, pediatric critical care, epidemiologists, as well as informatics and artificial intelligence experts.

## Objectives

At the conclusion of this session, the participant will be able to:

- utilize electronic health records to create a registry;
- understand characterization and comprehensive phenotyping of pediatric pulmonary hypertension;
- · learn statistical analysis of large datasets.

Pediatric pulmonary hypertension (PH) contributes to high morbidity and mortality in children with diverse lung, heart and systemic diseases, yet major gaps in our understanding of its natural history, pathobiology, diagnostic approaches and therapy persist. Despite sharing similarities with adult disease, many aspects of pediatric PH are distinct from adult PH, as childhood PH is intrinsically linked to issues of lung growth and development, and associated with unique diseases of childhood and has apparent differences in responsiveness to therapies. Thus, pediatric PH has been largely understudied and much remains poorly understood regarding its epidemiology, long-term outcomes and approaches for care.

- Chairing: S.H. Abman, MD, Aurora, CO K. Mandl, MD, PhD, Boston, MA A. Natarajan, MD, PhD, Bethesda, MD
- 12:15 Introduction K. Mandl, MD, PhD, Boston, MA
- 12:20 Classification of Pediatric Pulmonary Hypertensive Disorders from the PPHNet Registry M. Mullen, MD, PhD, Cambridge, MA
- 12:30 Computable Phenotyping Opportunities for Pediatric Pulmonary Hypertension A. Geva, MD, Boston, MA
- 12:40 Racial and Ethnic Diversity in Pediatric PH M.-S. Ong, PhD, Boston, MA
- 12:50 TBX4 and Severe PH in Developmental Neonatal Lung Disorders C. Galambos, MD, PhD, Aurora, CO
- 1:00 Hemodynamic Profile of Pediatric PH E.B. Rosenzweig, MD, New York, NY
- 1:10 Questions and Answers A. Natarajan, MD, PhD, Bethesda, MD

#### DIVISION OF LUNG DISEASES/NHLBI

# L10 A NEW APPROACH TO CLINICAL TRIALS FOR PRECISION INTERVENTIONS IN SEVERE ASTHMA

#### 12:15 p.m. - 1:15 p.m.

#### **Target Audience**

Researchers and clinicians, particularly those with an interest in asthma management, clinical trials, phenotyping and biomarkers. Patient advocacy representatives, biotech/pharma representatives.

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- increase understanding of the design and implementation of adaptive, precision clinical trials protocols in targeted asthma phenotypes;
- differentiate the roles of predictive and monitoring biomarkers in adaptive clinical trial designs;
- increase understanding of how adaptive, precision medicine trials can be used to efficiently evaluate novel interventions in defined populations of severe asthma patients.

This session will address the topic of using adaptive, precision clinical trial approaches in severe and/or exacerbation prone asthma patients. The rationale will be reviewed as well as the readiness of the field, specific interventions and biomarkers used by the NHLBI's PrecISE (Precision Interventions in Severe and/or Exacerbation Prone Asthma) Network, and special considerations related to trial design and implementation. It is anticipated that there will be discussion on adaptive trial design, patient phenotypes, biomarkers, protocol implementation, regulatory considerations, and asthma pathobiology.

- Chairing: P. Noel, PhD, Bethesda, MD S.N. Georas, MD, Rochester, NY
- 12:15 Introduction to PrecISE P. Noel, PhD, Bethesda, MD

- 12:20 Precision Medicine in Asthma and the PrecISE Network R.J. Wright, MD, MPH, New York, NY
- 12:35 Statistical Considerations and Precision Adaptive Trials in Asthma L. LaVange, PhD, Chapel Hill, NC
- 12:50 Protocol Design and Implementation E. Israel, MD, Boston, MA
- 1:10 Discussion S.N. Georas, MD, Rochester, NY

#### MEET THE PROFESSOR SEMINARS

Registration Fee: \$70.00 (includes box lunch.) Attendance is limited. Pre-registration is required.

<u>12:15 p.m. - 1:15 p.m.</u>

- MP401 PRIMARY IMMUNODEFICIENCY AND PULMONARY DISEASE A. Dosanjh, MD, San Diego, CA
- MP402 CYSTIC FIBROSIS THERAPEUTICS: GREAT STRIDES AND FUTURE DIRECTIONS J.L. Taylor-Cousar, MD, MSc, ATSF, Denver, CO
- MP403 ALPHA-1 ANTITRYPSIN DEFICIENCY: STATE OF THE ART J.K. Stoller, MD, ATSF, Cleveland, OH
- MP404 HOT CONTROVERSIES IN PLEURAL DISEASE: A RAPID-FIRE PRO/CON DEBATE O. Epelbaum, MD, ATSF, Valhalla, NY N. Rahman, BMBCH, MSc, Oxford, United Kingdom
- MP405 DRUG-INDUCED SARCOIDOSIS: CASES, QUERIES AND CONTROVERSIES A.S. Morgenthau, MD, New York, NY
- MP406 NEUROLOGIC DISASTERS IN THE ICU T.P. Bleck, MD, ATSF, Chicago, IL
- MP407 MENTORSHIP AND SPONSORSHIP: HOW DO I WORK WITH MENTORS AND SPONSORS TO FURTHER MY CAREER? M.A. Pisani, MD, MPH, New Haven, CT

MP408 CHEMICAL AGENT MASS CASUALTY EVENT: VULNERABLE POPULATIONS CONSIDERATIONS B.J. Polivka, PhD, RN, Kansas City, KS J. Castner, PhD, RN, Buffalo, NY

- MP409 ENGAGING PROFESSIONALS ON THE ROLE OF EARLY PALLIATIVE CARE IN PATIENTS WITH ADVANCED LUNG DISEASE AND THEIR CAREGIVERS K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA
- MP410 BIOLOGICS FOR SEVERE ASTHMA IN CHILDREN: HOW TO CHOOSE YOUR TARGETED THERAPY S.J. Szefler, MD, Aurora, CO C. Rosas-Salazar, MD, MPH, ATSF, Nashville, TN
- MP411 IMAGING IN PULMONARY VASCULAR DISEASE: PRACTICAL TIPS AND CASE STUDIES R.N. Channick, MD, Los Angeles, CA
- MP412 DIAGNOSTICS AND THERAPEUTIC INTERVENTIONS IN LATENT, INCIPIENT, AND SUBCLINICAL TB INFECTIONS P. Escalante, MD, MSc, Rochester, MN
- MP413 ASTHMA IN THE ELDERLY: UNDERSTANDING AND MANAGING A VULNERABLE POPULATION G.S. Skloot, MD, ATSF, New York, NY
- MP414 NON-INVASIVE VENTILATION (NIV) IN CHILDREN INCLUDING NOVEL HYBRID FORMS OF VENTILATION R. Cutrera, MD, Rome, Italy
- MP415 ROLE OF PULMONOLOGISTS IN MULTI-DISCIPLINARY MANAGMENT OF CANCER IMMUNOTHERAPY RELATED COMPLICATIONS T. Peikert, MD, Rochester, MN

## MEDICAL EDUCATION SEMINAR

# ME1 APPROACHES TO DEALING WITH A STRUGGLING LEARNER

Registration Fee: \$70 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Behavioral and Health Services Research

12:15 p.m. - 1:15 p.m.

## **Target Audience**

Those involved at all levels of medical education from UME through fellowship. Skills applied can also be used for working with struggling faculty although that will not be the primary focus of the session

## Objectives

At the conclusion of this session, the participant will be able to:

- apply frameworks to diagnose common barriers to learning among residents and fellows;
- develop learner specific assessment activities to facilitate understanding and assessment of deficits in communication and clinica decision making;
- apply a debriefing framework to understand learner frames of thought that led to a performance gap and provide structure for continued monitoring and improvement.

The goal of this Section of Medical Education workshop is to describe the various domains in which learners are identified for Individual learning plans including procedural competence, medical knowledge and communication. We will then describe strategies used to diagnosis the nature of these lesions and strategies successfully employed in remediation of these learners

Speakers: J.A. Gold, MD, Portland, OR J.A. Frank, MD, San Francisco, CA M. Soffler, MD, Boston, MA



## <u>1:15 p.m. - 2:15 p.m</u>

#### VISIT THE EXHIBIT HALL

Take this opportunity between sessions to visit the Exhibit Hall to gain practical knowledge to advance care and research. Exhibitors will be on hand to provide information on pharmaceutical products, medical equipment, publications and research services.

## **BEHAVIORAL • CLINICAL • TRANSLATIONAL**

#### YEAR IN REVIEW

A81 NURSING YEAR IN REVIEW: COMPLEMENTARY HEALTH APPROACHES FOR PATIENT-REPORTED SYMPTOMS IN PULMONARY, CRITICAL CARE, AND SLEEP MEDICINE

Assemblies on Nursing, Behavioral and Health Services Research, Critical Care, Pulmonary Rehabilitation, Sleep and Respiratory Neurobiology; Clinical Advisory Committee;

#### <u>2:15 p.m. - 4:15 p.m.</u>

#### **Target Audience**

Nurses, Physicians, allied health professionals, junior physicians, care providers with clinical or research interests in complementary health approaches to alleviate anxiety, dyspnea, and promote sleep in the ICU and OP settings

#### Objectives

At the conclusion of this session, the participant will be able to:

- describe evidence-based CHA interventions to alleviate breathlessness, anxiety, pain, and insomnia in pediatric and adult patients with pulmonary conditions across health care settings;
- identify approaches to conceptualizing the meaning of "total breathlessness" from patients' and clinicians' perspectives;
- identify at least three strategies that could be implemented to overcome communication barriers in guiding patients about CHA utilization.

Increasing numbers of patients (and parents of children) with chronic illness are using CHA's regardless of their disclosure or discussion with their providers. Due, in part, to well-known safety concerns regarding opiates, benzodiazepines, and other mind-altering agents, this session will present research evidence supporting the use of selected CHAs in the alleviation of breathlessness, pain, anxiety, and fatigue in patients with lung diseases. Synthesis summary of available research evidence will provide clinical practice recommendations on the integration of CHAs in health promotion and symptom management. The session will also present challenges and barriers to incorporating CHAs into mainstream practice. 1. State of the science for various integrative therapies 2. Best ways of incorporating CHA's for symptom management

- Chairing: T.T. Von Visger, APRN, CCRN, PCCN, CCNS, CNS, PhD, Buffalo, NY A.M. Russell, PhD, RN, ATSF, London, United Kingdom N.E. Bracken, ACNPC, MSN, Chicago, IL
- 2:15 Breath-Body-Mind Integration: A Holistic and Creative Approach to Refractory Breathlessness K. Binnie, MSc, Bristol, United Kingdom
- 2:45 Singing: An Integrative Approach to Breathlessness Management A.M. Russell, PhD, RN, ATSF, London, United Kingdom
- 3:15 Reiki for Pain and Anxiety in ICU and Acutely III Pediatric Patients S. Thrane, PhD, RN, CHPN, Columbus, OH

3:45 Mindful Movement Therapy for Pulmonary Patients T.T. Von Visger, APRN, CCRN, PCCN, CCNS,

CNS, PhD, Buffalo, NY

# CLINICAL • TRANSLATIONAL

## CLINICAL TOPICS IN PULMONARY MEDICINE

# A82 UNDERSTANDING INTERSTITIAL LUNG DISEASE THROUGH MULTI-DIMENSIONAL BIOMARKERS

Assembly on Clinical Problems

<u>2:15 p.m. - 4:15 p.m.</u>

Target Audience

Clinicians and clinician scientists, including fellows, community pulmonologists and academic pulmonologists with interest in clinical and translational interstitial lung disease.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about biomarkers currently being developed in patients with interstitial lung disease;
- better differentiate interstitial lung disease subtypes;
- improve understanding of the genetic basis of some interstitial lung diseases.

This session will introduce and review clinically relevant biomarkers across broad disciplines in patients interstitial lung disease. Biomarkers to be discussed include autoantibodies, HRCT, genomics, transcriptomics, proteomics, telomere biology and the microbiome. This discussion will focus on the clinical utility of biomarkers in ILD, including their use in discriminating ILD subtypes and predicting disease outcomes.

- Chairing: J. Oldham, MD, MS, Sacramento, CA C.K. Garcia, MD, PhD, New York, NY P.L. Molyneaux, MBBS, BS(Hons), London, United Kingdom
- 2:15 Clinical Laboratory Testing to Differentiate and Risk Stratify Common ILDs S.K. Danoff, MD, MPH, ATSF, Baltimore, MD

- 2:35 HRCT as an ILD Biomarker S.L.F. Walsh, MD, PhD, London, United Kingdom
- 2:55 Genomic and Transcriptomic Biomarkers of IPF Susceptibility and Survival N. Kaminski, MD, ATSF, New Haven, CT
- 3:15 Circulating Plasma Biomarkers of ILD Outcomes J. Oldham, MD, MS, Sacramento, CA
- 3:35 Telomere-Based Biomarkers of Survival in ILD C.K. Garcia, MD, PhD, New York, NY
- 3:55 Microbiome-Based Biomarkers of ILD Susceptibility and Survival P.L. Molyneaux, MBBS, BS(Hons), London, United Kingdom

# CLINICAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# A83 GREAT CASES: CLINICAL RADIOLOGIC, AND PATHOLOGIC CORRELATIONS BY MASTER PHYSICIANS

Council of Chapter Representatives

<u>2:15 p.m. - 4:15 p.m.</u>

## Target Audience

Clinicians in areas of pulmonary and critical care medicine, pediatric pulmonology and critical care medicine, sleep medicine, thoracic surgery, and infectious disease

# Objectives

At the conclusion of this session, the participant will be able to:

- integrate the clinical presentation, radiologic, and pathologic findings of 7 challenging cases as an educational experience at the ATS International Conference
- understand the clinical reasoning used to determine differential diagnosis by Master Clinicians using a multidisciplinary approach;
- describe the pathology and radiology of the presented cases.

This session allows young physicians to present challenging cases to a multidisciplinary panel that demonstrates the value of a team approach in the evaluation of difficult diagnostic issues. It will improve knowledge and competency for diagnostic and therapeutic skills.

- Chairing: D. Hayes, MD, MS, MEd, ATSF, Columbus, OH J. Sunderram, MD, ATSF, New Brunswick, NJ
- 2:15 Introduction D. Hayes, MD, MS, MEd, ATSF, Columbus, OH
- 2:20 Master Clinician S.I. Rounds, MD, ATSF, Providence, RI J.H. Hansen-Flaschen, MD, ATSF, Philadelphia, PA P.C. Stillwell, MD, Aurora, CO
- 3:35 Radiologic Findings A.G. Wilcox, MD, Arcadia, CA
- 3:55 Pathologic Findings J.L. Myers, MD, Ann Arbor, MI

## BASIC CLINICAL

CRITICAL CARE TRACK

## A84 THE NEW ENGLAND JOURNAL OF MEDICINE AND JAMA. DISCUSSION ON THE EDGE: REPORTS OF RECENTLY PUBLISHED CRITICAL CARE RESEARCH

#### 2:15 p.m. - 4:15 p.m.

This session will provide a forum for attendees to interact with the authors and editors about papers published in the New England Journal of Medicine and JAMA. Papers presented will be recent publications, selected by the editors, to be of significant importance to the field of critical care medicine. Attendees will have the opportunity to hear presentations directly from the author and address questions to both the authors and editors. The discussion is intended to provide a unique insight into these papers, the selection process, and how the research applies directly to the field of critical care medicine.

Speakers and Talks to be Announced

# BASIC • CLINICAL • TRANSLATIONAL BASIC SCIENCE CORE

# A85 LUNG REGENERATION: HOW DO WE GET THERE?

Assemblies on Allergy, Immunology and Inflammation; Respiratory Cell and Molecular Biology; Respiratory Structure and Function

2:15 p.m. - 4:15 p.m.

#### Target Audience

Any participants interested in the regeneration of lung function and structure, from clinicians to other providers, basic science researchers and translational scientists.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the process of lung regeneration in response to lung injury;
- identify the hurdles facing investigators and clinicians in the regeneration of lung;
- characterize molecular and imaging approaches to track whether lung regeneration is effectively implemented.

This basic science symposium represents Part 2 of a two part series. This seminar focuses on how we begin to address lung regeneration in response to disease states and injury. The fundamental processes regulating lung regeneration is described in Part 1 whereas Part 2 focuses on how investigators, researchers and clinicians can characterize the efficacy of lung regeneration using novel imaging and cellular tracking processes. There will be a particular focus on current molecular approaches that will facilitate lung growth while diminishing the potential for oncogenesis.

Chairing: Y.S. Prakash, MD, PhD, Rochester, MN A. Rogers, MPH, MD, Stanford, CA

2:15 Mechanisms of Primary Graft Dysfunction and the Link to Chronic Lung Allograft Dysfunction: Development of Strategies to Prevent or Reverse Them S. Keshavjee, MD, Toronto, Canada

- 2:45 Immune Modulation of Lung Epithelial Responses During Influenza Infection D.A. Pociask, PhD, New Orleans, LA
- 3:15 Roles for AT1 Cells in Lung Generation and Regeneration J. Chen, PhD, MHS, Houston, TX
- 3:45 Optical Imaging of Regenerative Processes Both in Vitro and in Vivo M.J. Suter, PhD, Boston, MA

# **BASIC** • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# A86 BUILDING RESPIRATORY EPITHELIUM AND TISSUE FOR HEALTH (BREATH): ORGANOIDS AND ENGINEERING

Assembly on Respiratory Cell and Molecular Biology

<u>2:15 p.m. - 4:15 p.m.</u>

Target Audience Researchers, clinicians, and trainees.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand current efforts to characterize human lung cell biology;
- learn about the newest lung organoid culture techniques being used to study lung progenitor cells and to model lung disease;
- discuss the development of cutting-edge platforms and bioengineered materials that will facilitate future regenerative medicine.

This session is organized to highlight cutting-edge developments in progenitor cell biology and engineering that are paving the way for future regenerative medicine for lung disease. Topics include organoid cultures; epithelial, immune and mesenchymal cell interactions in disease; engineering approaches to model and derive tissue; and progenitor cell biology. The session will culminate with a lung disease patient perspective. This session will educate physicians and basic researchers with illustrations of collaborative multidisciplinary studies.

- Chairing: Z. Borok, MD, ATSF, Los Angeles, CA S. Janes, PhD, London, United Kingdom O. Eickelberg, MD, ATSF, Aurora, CO
- 2:15 Disease Specific Challenges for Regeneration Z. Borok, MD, ATSF, Los Angeles, CA
- 2:40 3D Printing and Engineering the Matrix for Repair P. de Coppi, MD, PhD, London, United Kingdom
- 3:00 Organoid Models of Cell-Cell Interactions in Lung Disease C. Kim, PhD, Boston, MA
- 3:20 Human Embryonic Lung Progenitor Cell Biology M. Nikolic, MD, PhD, Cambridge, United Kingdom
- 3:40 Precision Cut Lung Slices for Regenerative Medicine Approaches M. Koenigshoff, MD, PhD, ATSF, Aurora, CO
- 4:00 Living with Lung Disease and Hope for the Future Speaker To Be Announced

# CLINICAL • TRANSLATIONAL

# SCIENTIFIC SYMPOSIUM

# A87 CONTROVERSIES IN PEDIATRIC PULMONOLOGY

Assemblies on Pediatrics; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Pulmonary Infections and Tuberculosis

## <u>2:15 p.m. - 4:15 p.m.</u>

## **Target Audience**

Pediatric pulmonologists, neonatologists, pediatricians, intensivists, infectious disease specialists, cardiologists, respiratory therapists, nurse practitioners, physician assistants, and nurses.

# Objectives

At the conclusion of this session, the participant will be able to:

- identify the benefits, limitations and risks of lung biopsy in identifying and treating rare lung diseases;
- improve the antibiotic stewardship without compromising thetreatment of chronic respiratory symptoms;

 better define the indications for home oxygen therapy based on the patients' underlying conditions.

This symposium presents 3 controversial areas in the diagnosis and/or management of common conditions: a) the need to perform a lung biopsy and/or treat every infant with suspected ILD regardless of their clinical condition; b) the need to treat with antibiotics, organisms that are considered to be physiologic "oral flora" when they are present in the BAL, c) the adoption of a universal "cut-off" value of oxygen saturation that will determine whether supplemental oxygen is needed.

- Chairing: A.C. Koumbourlis, MD, MPH, ATSF, Washington, DC S.A. McGrath-Morrow, MD, Baltimore, MD
- 2:15 Introduction A.C. Koumbourlis, MD, MPH, ATSF, Washington, DC
- 2:18 PRO: A Lung Biopsy Is Needed Before Initiating Treatment for Suspected ILD Speaker To Be Announced
- 2:36 CON: A Lung Biopsy Is Needed Before Initiating Treatment for Suspected ILD L.R. Young, MD, ATSF, Philadelphia, PA
- 2:54 PRO: Organisms From "Normal" Oral Flora Should Always Be Treated if Found in BAL Speaker To Be Announced
- 3:12 CON: Organisms From "Normal" Oral Flora Should Always Be Treated if Found in BAL A. Hahn, MD, Washington, DC
- 3:30 PRO: Supplemental Oxygen Should Be Orescribed on the Basis of a "Cut-Off" Value of HbSaO2 I.M. Balfour Lynn, MD, London, United Kingdom
- 3:48 CON: Supplemental Oxygen Should Be Prescribed on the Basis of a "Cut-Off" Value of HbSaO2 V. Balasubramaniam, MD, Madison, WI
- 4:06 Discussion S.A. McGrath-Morrow, MD, Baltimore, MD

# CLINICAL

## SCIENTIFIC SYMPOSIUM

# A88 THREE IN ONE: UPDATES ON ASTHMA MANAGEMENT FROM 3 GUIDELINE COMMITTEES

Assemblies on Allergy, Immunology and Inflammation; Behavioral and Health Services Research; Clinical Problems

2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Providers of asthma care; those with clinical research, or administrative responsibilities in asthma; those involved in developing asthma guidelines; those involved in quality improvement or value-based care efforts.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the guideline recommendations for severe asthma;
- gain understanding of the guideline recommendations for mild asthma;
- understand the role of guidelines in improving asthma care and outcomes.

The U.S. National Asthma Education and Prevention Program (NAEPP) was launched in 1989 and oversees the development of asthma guidelines (e.g., Expert Panel Reports) and coordinates federal asthma-related activities. The Global Initiative for Asthma (GINA) was launched in 1993 and develops resources such as evidence-based strategy documents and pocket guides for asthma management that are updated each year. The European Respiratory Society (ERS), in conjunction with the American Thoracic Society (ATS), recently completed guidelines for severe asthma. This would be the first session at the ATS International Conference to include presentations from all three different guideline committees for asthma.

Chairing: L.P. Boulet, MD, Quebec, Canada J.A. Krishnan, MD, PhD, ATSF, Chicago, IL S. Khurana, MD, Rochester, NY

- 2:15 NAEPP EPR-4 Working Group: Update A.E. Dixon, MD, ATSF, Burlington, VT
- 2:35 Management of Severe Asthma: Recommendations From the ERS/ATS Guideline Committee F. Holguin, MD, MPH, Aurora, CO
- 2:55 Management of Mild Asthma: Update From GINA H.K. Reddel, MBBS, PhD, Glebe, Australia
- 3:15 An Unmet Need: Non-Eosinophilic Asthma M. Castro, MD, MPH, Kansas City, KS
- 3:35 Do Guidelines Make a Difference in the Treatment of Severe Asthma? F.D. Martinez, MD, Tucson, AZ
- 3:55 Panel Discussion: Q/A, Known, Unknowns, and Unknown Unknowns, and Next Steps N. Lugogo, MD, Ann Arbor, MI

# CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# A89 BACTERIOPHAGE THERAPY OF COMPLEX PULMONARY INFECTIONS

Assemblies on Pulmonary Infections and Tuberculosis; Pediatrics

## <u>2:15 p.m. - 4:15 p.m.</u>

Target Audience

Clinicians and Physician-Scientists interested in the recent developments using bacteriophage as therapy in complex pulmonary infections

# Objectives

At the conclusion of this session, the participant will be able to:

- describe the lifecycle of bacteriophage and how it might be used to help control infection;
- identify the major challenges for successful phage therapy including patient selection, regulatory barriers, phage selection and measures of successful therapy;

 describe current successes and failures of clinical phage therapy and how these might inform future phage therapy investigations.

Bacteriophage therapy is now used on a compassionate need basis at several institutions for patients with highly resistant microbial communities that no longer responding to standard therapy. Furthermore, clinical trials are being planned in North America and Europe that are designed to answer the challenges of patient selection, phage cocktail design, dosing schedule, and measures of efficacy. This symposium is designed to provide the basic information to health care providers of 1) how the therapy works, 2) potential risks and challenges affecting efficacy, 3) early patient experience, 4) how the therapy might fit into current evaluation and therapeutic strategies.

- Chairing: D.J. Conrad, MD, La Jolla, CA L. Caverly, BA, MD, Ann Arbor, MI
- 2:15 Phage Therapy: Clinical Perspectives and Basic Phage Biology L. Caverly, BA, MD, Ann Arbor, MI
- 2:25 Challenges of Bacteriophage Therapy from the Perspective of a Phage Biologist A. Segall, PhD, San Diego, CA
- 2:50 Early Clinical Experience in Targeted Phage Therapy in Complex Pulmonary Infections J.L. Koff, MD, New Haven, CT
- 3:15 The Challenges of Bacteriophage Therapy of Mycobacterial Disease G. Hatfull, PhD, Pittsburgh, PA
- 3:40 The Integrated Multi-Omic Assessment of Complex Pulmonary Infections Using Viromic, Metagenomic Data: Implications for for Phage Therapy F. Rohwer, PhD, San Diego, CA
- 4:05 A Clinical Perspective on Patient Selection, Outcome Safety and Efficacy Assessments, Regulatory Issues and Ethical Considerations D.J. Conrad, MD, La Jolla, CA

# BASIC • BEHAVIORAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# A90 EMERGING DANGERS FROM E-CIGARETTES: LET'S HAVE A VAPE DEBATE

Assemblies on Environmental, Occupational and Population Health; Clinical Problems; Pediatrics; Respiratory Cell and Molecular Biology; Tobacco Action Committee; Drug/Device Discovery and Development Committee; Environmental Health Policy Committee

#### 2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Health care providers and trainees, public policy advocates and decision makers, tobacco and e-cigarette researchers, critical care physicians

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about how nicotine and flavoring chemicals contained in e-cigarette cause adverse health effects in the lung and modify nicotine addiction
- improve the ability to effectively advocate for evidence-based public policy initiatives that regulated flavored e-cigarettes to protect young people from nicotine addiction
- counsel patients, parents, and teenager, as well as educate the general public about the substantial harms of inhaled flavoring chemicals

The use of e-cigarettes is reaching epidemic proportions, especially among teenagers and young adults. An increasing number of vaping-associated acute lung injury cases and other pathologies raise concerns that unique health effects are caused by e-cigarettes. The many different flavors available for these products can by themselves or as reaction products exert toxicities. In addition, high nicotine concentrations delivered as salts likely have distinct health effects. This session will discuss vaping-related clinical manifestations, summarize evidence on how flavoring chemicals and nicotine may cause respiratory toxicity/addiction, and include a patient perspective to provide a real-life story and how this epidemic is affecting people's lives. Evidence based public policy recommendations will be discussed.

Chairing: I. Jaspers, PhD, Chapel Hill, NC S.E. Jordt, PhD, Durham, NC S.A. McGrath-Morrow, MD, Baltimore, MD

- 2:15 Overview: How Did We Get Here? I. Jaspers, PhD, Chapel Hill, NC
- 2:30 Patient Perspective: Real Life Implications of E-Cig Addiction G. Sullivan, BS, Philadelphia, PA
- 2:40 Nicotine and Flavor-Containing E-Liquid Vapors Cause Mucociliary Dysfunction M.A. Salathe, MD, ATSF, Kansas City, KS
- 2:59 Electronic Cigarette Nicotine-Mediated Lung Damage: Is it Nicotine or DAMPs or Both? S. Ahmad, PhD, Birmingham, AL
- 3:18 Health Effects of Flavors and Flavor-Solvent Reaction Products in Electronic Cigarette Liquids S.E. Jordt, PhD, Durham, NC
- 3:37 How Did This Happen? The Strategies Utilized by Electronic Cigarette Device Makers to Reach the Market A.H. Cohen, MD, Menlo Park, CA
- 3:56 Emerging Data on the Link Between E-Cigarette Use and Acute Lung Injury S.A. McGrath-Morrow, MD, Baltimore, MD

# BEHAVIORAL • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# A91 ATS CLINICAL PRACTICE GUIDELINES: CLINICAL PRACTICE ON THE CUTTING EDGE

Assemblies on Behavioral and Health Services Research; Clinical Problems; Critical Care; Pulmonary Infections and Tuberculosis; Sleep and Respiratory Neurobiology; Quality Improvement and Implementation Committee; Documents Development and Implementation Committee

## 2:15 p.m. - 4:15 p.m.

## **Target Audience**

Physicians, nurses, respiratory therapists, and others who care for adults with Community acquired pneumonia, Obesity Hypoventilation Syndrome, Non-tuberculous Mycobacteria, Sarcoidosis, and COPD.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand how evidence is used to inform diagnostic and treatment recommendations;
- apply clinical recommendations from recently published guidelines in clinical practice, improving patient outcomes;
- obtain new strategies to approach: community acquired pneumonia; obesity hypoventilation syndrome; non-tuberculous mycobacteria; diagnosis of sarcoidosis, and Treatment of COPD.

This session is proposed as the sixth annual scientific symposium highlighting ATS clinical practice guidelines, as originally requested by the ATS Executive Committee several years ago to highlight recently approved or published ATS evidence-based clinical practice guidelines. This year's symposium will highlight guidelines and statements on: - Community acquired pneumonia - Obesity Hypoventilation Syndrome - Non-tuberculous Mycobacteria - Diagnosis of Sarcoidosis - Treatment of COPD Speakers will describe clinical recommendations formulated by the guideline panels, discuss the rationale for each, and critically review the evidence supporting each recommendation. Speakers (usually chairs of the quideline panels) will also describe how the quidelines provide the foundation for improving care.

- Chairing: R.A. Dweik, MD, ATSF, Cleveland, OH C.C. Thomson, MPH, MD, ATSF, Cambridge, MA B. Patel, MD, Houston, TX
- 2:15 Welcome R.A. Dweik, MD, ATSF, Cleveland, OH
- 2:16 Grading Strength of Recommendations and Quality of Evidence K. Wilson, MD, New York, NY

2:20 MDR-TB

P. Nahid, MD, MPH, San Francisco, CA

- 2:35 Community Acquired Pneumonia G.W. Waterer, MBBS, MBA, PhD, Perth, Australia
- 2:55 Obesity Hypoventilation Syndrome B. Mokhlesi, MD, MS, Chicago, IL
- 3:15 Non-Tuberculous Mycobacteria C.L. Daley, MD, Denver, CO
- 3:35 Diagnosis of Sarcoidosis E.D. Crouser, MD, Columbus, OH
- 3:55 Late Breaking Session Speaker To Be Announced
- 4:14 Closing Remarks B. Patel, MD, Houston, TX

## 2:15 p.m. - 4:15 p.m.

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.

#### <u>4:30 p.m. - 5:30 p.m.</u>

#### SUNDAY AWARDS SESSSION

#### Amberson Lecture

The Amberson Lecturer is an individual with a career of major lifetime contributions to clinical or basic pulmonary research and/or clinical practice. The Lecture is given in honor of James Burns Amberson, an international authority on chest disease and tuberculosis. Lecturer: Richard C. Boucher, MD, Chapel Hill, NC

#### Trudeau Medal

The Trudeau Medalist is an individual with lifelong major contributions to prevention, diagnosis and treatment of lung disease through leadership in research, education, or clinical care. This award was established in 1926 and is given in honor of Edward Livingston Trudeau, a founder and the first president of the American Lung Association. Awardee: Peter J. Barnes, MD, DSc, ATSF, London, United Kingdom

#### **Distinguished Achievement Award**

The Distinguished Achievement Award is given to individuals who have made outstanding contributions to fighting respiratory disease through research, education, patient care, or advocacy. Awardees: John R. Balmes, MD, San Francisco, CA Anne E. Dixon, MD, ATSF, Burlington, VT

#### ATS Lifetime Achievement Award

The ATS Lifetime Achievement Award is given to an ATS member who has made outstanding contributions to the field of pulmonary, critical care and/or sleep medicine over the course of his/her career. Awardee: Gerard M. Turino, MD, New York, NY

## ASSEMBLY MEMBERSHIP MEETINGS

The fourteen Assemblies are the primary groups of the American Thoracic Society. Each Assembly holds an annual Membership Meeting at the International Conference. All Assembly members and other interested individuals are invited to attend. The Assembly Membership Meetings will be held on Monday, May 18th, 4:30 p.m. -7:00 p.m., with the exception of the Assemblies on Behavioral Science and Health Services Research, Pediatrics and Thoracic Oncology.

The Assembly Membership Meetings provide an update on the Assembly's activities via the Assembly's Leadership and provide Assembly members the chance to have input on future directions, information on how to get involved and networking opportunities. Voting results for the Assembly's future leaders will also be announced.

<u>5:30 p.m. - 7:30 p.m.</u>

PEDIATRICS Chairing: Paul E. Moore, MD, ATSF, Nashville, TN

THORACIC ONCOLOGY Chairing: Lynn T. Tanoue, MD, New Haven, CT

<u>6:30 p.m. - 8:30 p.m.</u>

BEHAVIORAL SCIENCE AND HEALTH SERVICES RESEARCH

Chairing: J. Daryl Thornton, MD, MPH, ATSF, Cleveland, OH

# 7:30 p.m.-10:30 p.m.

## ASSEMBLY ON PEDIATRICS FOUNDERS DINNER

The Pediatric Assembly will hold a dinner immediately following the Assembly Membership Meeting. Assembly members and non-members, students and fellows are invited to join us for an evening of networking, great company, and camaraderie. This is a wonderful opportunity to introduce young members and trainees to Assembly leaders, to connect with old friends and to set up new interactions and collaborations.

 Pre-registration and an additional fee are required.
 Seating is limited.
 Please register through online general registration by clicking the Register Now button above.

> Member - \$115 Non-Member - \$125 Fellow -\$95

<u>6:30 p.m. - 8:30 p.m.</u>

## SECTION MEMBERSHIP MEETING

The Section meetings are open to all ATS members and other interested individuals. Items to be discussed include the Section's current projects and future directions.

<u>6:30 p.m. - 8:30 p.m.</u>

# SECTION ON GENETICS AND GENOMICS

Chairing: Anthony N. Gerber, MD, PhD, Denver, CO



## SUNRISE SEMINARS

- Registration Fee: \$50.00 (includes continental breakfast.) Attendance is limited. Pre-registration is required.
- <u>6:45 a.m. 7:45 a.m.</u>
- SS101 MANAGEMENT OF NON-CF BRONCHIECTASIS: TARGETING INFLAMMATION AND INFECTION C.M. Bojanowski, MD, New Orleans, LA
- SS102 OUTPATIENT PULMONARY TELEMEDICINE: WHAT TO KNOW BEFORE STARTING YOUR OWN CLINIC K. Artis, MD, MPH, Portland, OR
- SS103 IMPLEMENTATION OF PALLIATIVE CARE INTO AN ILD CLINIC: CHALLENGES, OPPORTUNITIES, AND LESSONS LEARNED R.J. Shah, MD, MSCE, San Francisco, CA
- SS104 NON-INVASIVE VENTILATION: INDICATIONS, MODES, AND MONITORING P. Choi, MD, Ann Arbor, MI
- SS105 HOW TO TEACH PROCEDURES J.B. Richards, MD, MA, ATSF, Boston, MA S. Beesley, MD, MSc, Salt Lake City, UT J. Chiarchiaro, MD, Pittsburgh, PA
  - V. Buntak, MD, Canton, OH
- SS106 CLINICAL EXPOSURE ASSESSMENT IN CHRONIC HYPERSENSITIVITY PNEUMONITIS H. Barnes, MBBS, MPH, Melbourne, Australia

- SS107 CARING FOR THE CAREGIVER: CAREGIVING BURDEN IN ADVANCED LUNG DISEASE B.A. Graney, MD, Aurora, CO
- SS108 IMMUNODEFICIENCY AND PARENCHYMAL LUNG DISEASES D.C. Gomez Manjarres, MD, Gainesville, FL D.C. Patel, DO, MBA, Gainesville, FL L. Cuervo Pardo, MD, Gainesville, FL
- SS109 CTD-ILD IN YOUNG WOMEN: A UNIQUE PATIENT GROUP WITH UNFORESEEN CHALLENGES S. Gulati, MD, MS, Birmingham, AL T. Kulkarni, MD, MPH, Birmingham, AL
- SS110 MULTIDISCIPLINARY APPROACH TO BENIGN CENTRAL AIRWAY OBSTRUCTION D. DiBardino, MD, Philadelphia, PA
- SS111 MANAGING CAR-T CELL RELATED COMPLICATIONS IN THE ICU A. Gallo de Moraes, MD, Rochester, MN N.Dangayach, MD, NY, NY S. Sidana, MD, Palo Alto, CA
- SS112 ACUTE KIDNEY INJURY: WHAT THE INTENSIVIST NEEDS TO KNOW M.G.S. Shashaty, MS, MD, Philadelphia, PA
- SS113 GESTATIONAL EXPOSURES TO INHALED TOXICANTS PROMOTE LUNG DISEASES IN OFFSPRING A. Noel, PhD, MSc, BSc, Baton Rouge, LA
- SS114 TELEHEALTH FOR THE PEDIATRIC PULMONOLOGIST AND SLEEP SPECIALIST: WHAT, WHY, WHEN, HOW? N. Mokhallati, MD, Kansas City, MO Z. Ehsan, MD, Kansas City, MO
- SS115 HOW TO STUDY SEX: IN VIVO AND IN VITRO TECHNIQUES A.L. Frump, MS, PhD, Indianapolis, IN
- SS116 RESCUING REJECTED DONOR LUNGS THROUGH INTERDEPARTMENTAL COLLABORATION J. Kim, PhD, Hoboken, NJ Y.W. Chen, PhD, Los Angeles, CA

- SS117 THE BASICS AND KEY CONSIDERATIONS IN PRECLINICAL DRUG DEVELOPMENT, WITH A FOCUS ON SMALL MOLECULES K. Hajipouran Benam, PhD, Aurora, CO
- SS118 SLEEP-DISORDERED BREATHING AND THE MENOPAUSAL STATUS: PATHOPHYSIOLOGIC, CLINICAL, AND THERAPEUTIC ASPECTS L. Mello, MD, Sao Paulo, Brazil

# **BASIC • CLINICAL • TRANSLATIONAL**

KEYNOTE SERIES

8:00 a.m.-8:45 a.m.

# K2 OBESITY-HYPOVENTILATION SYNDROME: LESSONS FROM THE PICKWICK PAPERS

The Keynote Series focuses on topics thought to be timely and of high relevance to the pulmonary, critical care, and sleep medicine community.

Sessions are presented on Sunday, Monday and Tuesday during the Conference.

Speaker: Babak Mokhlesi, MD, MS, Chicago, IL

# CLINICAL

YEAR IN REVIEW

# B1 CLINICAL YEAR IN REVIEW 2

9:15 a.m. - 11:15 a.m.

## Target Audience

Providers including physicians, nurses, respiratory therapists, nurse practitioners, physician assistants; trainees including residents and fellows; clinical researchers

Objectives

At the conclusion of this session, the participant will be able to:

apply new clinical research knowledge to clinical practice;

- learn new findings about key conditions in pulmonary, critical care and sleep;
- have new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia provides concise summaries of the most impactful clinical research publications related to specific clinical topics. Speakers are asked to conduct a literature review of the prior year's scientific publications and develop a written summary of the top 20 articles and highlight 5 of the most important and influential publications on their topic in written format and during their talks at the International Conference Clinical Year in Review sessions.

- Chairing: J.S. Lee, MD, Aurora, CO P.A. Kritek, MD, EdM, Seattle, WA J.L. Gomez, MS, MD, ATSF, New Haven, CT
- 9:15 Asthma S. Sharma, MD, MPH, Aurora, CO
- 9:45 Sleep Medicine R.L. Owens, MD, La Jolla, CA
- 10:15 Sepsis M. Shankar-Hari, MD, MBBS, MSc, London, United Kingdom
- 10:45 Occupational Lung Disease A. Sood, MD, MPH, Albuquerque, NM

# CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

B2 WHEN CF BECOMES NON-CF BRONCHIECTASIS: THE ONGOING BATTLE AGAINST INFECTION IN CYSTIC FIBROSIS DURING THE CFTR-MODULATOR ERA

Assemblies on Clinical Problems; Pediatrics; Pulmonary Infections and Tuberculosis

# <u>9:15 a.m. - 11:15 a.m.</u>

Target Audience Clinical providers of lung health, translational researchers in areas of microbiology and personalized medicine
## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about the Phase III data of Elexacaftor/Tezacaftor/Ivacaftor (triple combination) for F508del homozygous and F508del heterozygous with minimal function mutations;
- learn and understand the microbial environment of the CF airway through novel detection methods;
- manage chronic respiratory infections in cystic fibrosis, including Pseudomonas aeruginosa, Staphyloccous aureus, filamentous fungi, and multidrug-resistant bacteria/mycobacteria.

Highly-effective cystic fibrosis transmembrane conductance regulator (CFTR) modulators improve lung function and reduce acute pulmonary exacerbations of cystic fibrosis (CF) lung disease. However, the battle against infections responsible for CF lung disease progression remains. This session will highlight and discuss the current research examining the microbial environment and emerging pathogens of the CF airway, management of chronic Pseudomonas aeruginosa colonization, role of anti-staphylococcal prophylaxis, and novel therapies for multi-drug resistant organisms in CF.

- Chairing: J.L. Taylor-Cousar, MD, MSc, ATSF, Denver, CO G. Hong, MD, MHS, Philadelphia, PA A.R. Smyth, MD, Nottingham, United Kingdom
- 9:15 Introduction: The Landscape of Cystic Fibrosis with Highly-Effective CFTR Modulator Therapy J.L. Taylor-Cousar, MD, MSc, ATSF, Denver, CO
- 9:30 A Patient's Perspective Speaker To Be Announced
- 9:35 Microbiota in the CF Airway Across the Disease Spectrum L. Caverly, BA, MD, Ann Arbor, MI
- 9:55 Fungus Among Us: Understanding the Role and Treatment of Fungi in the CFTR Modulator Era G. Hong, MD, MHS, Philadelphia, PA

- 10:15 The Role of Anti-Staphylococcal Antibiotic Prophylaxis in Young Children with Cystic Fibrosis A.R. Smyth, MD, Nottingham, United Kingdom
- 10:35 Azithromycin-Tobramycin Interaction Against Pseudomonas Aeruginosa in CF D.P. Nichols, MD, Seattle, WA
- 10:55 Bacteriophage-Based Therapy for Multi-Drug Resistant Bacteria in CF J.L. Koff, MD, New Haven, CT

# CLINICAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# B3 FELLOWS CASE CONFERENCE

Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Pulmonary Circulation; Pulmonary Infections and Tuberculosis; Thoracic Oncology; Training Committee

<u>9:15 a.m. - 11:15 a.m.</u>

#### **Target Audience**

Clinicians, nurses, fellows, residents, and researchers looking to broaden their clinical acumen to facilitate clinical and translational research.

#### Objectives

At the conclusion of this session, the participant will be able to:

- recognize clinical, radiographic, and pathologic findings of rare diseases;
- gain insight into clinical decision making skills demonstrated by master clinicians, radiologists and pathologists which will improve the quality of learners' practice and potentially improve quality of care for the learner's patients;
- develop strategies to evaluate patients with common symptoms that include uncommon/rare diseases in the differential diagnosis when appropriate.

In this session, six unknown cases will be presented by fellows to a panel of experts in a traditional Clinical Pathology Conference (CPC) format. The panel of clinician experts will discuss the key clinical elements of the history and a differential diagnosis. The expert radiologist and pathologist will interpret the imaging and pathology, respectively, which the expert clinician will then use to further the discussion and ultimately make a diagnosis.

- Chairing: K.M. Burkart, MD, MSc, ATSF, New York, NY A.G. Henderson, MD, Chapel Hill, NC
- 9:15 Clinical Expert A.H. Limper, MD, Rochester, MN M.P. Rivera, MD, ATSF, Chapel Hill, NC M.I. Schwarz, MD, Aurora, CO
- 10:27 Radiologist Expert J.R. Galvin, MD, College Park, MD
- 10:51 Pathologist Expert J.L. Myers, MD, Ann Arbor, MI

# CLINICAL • TRANSLATIONAL

CRITICAL CARE TRACK

# B4 A POSITIVE APPROACH TO NEGATIVE TRIALS: MAKING SENSE OF CONFLICTING TRIALS IN CRITICAL CARE

Assemblies on Critical Care; Clinical Problems; Respiratory Structure and Function

9:15 a.m. - 11:15 a.m.

### Target Audience

This session will target critical care clinicians (attendings, fellows, nurses, respiratory therapists) as well as clinical researchers.

## Objectives

At the conclusion of this session, the participant will be able to:

- More appropriately select patients for Neuromuscular Blockade in ARDS based on recent clinical trials.
- Improve understanding of the challenges of clinical research in critical care and more appropriately apply the results of clinical trials to daily practice.
- Define consensus, evidenced-based strategies for the care of individual patients with critical illness.

Evidenced based practice in critical care is complicated by contradictory evidence and overturned trials. Clinical researchers in critical care have begun to come to a consensus as to what the central challenges to reproducible clinical trials are in this area, but these factors may not be fully appreciated by the practicing clinicians who must incorporate trials into their practice. This session will offer an overview of the issues raised by recent landmark trials and seek to build a consensus approach to common practice dilemmas based on the results of those trials.

- Chairing: C.C. Hardin, MD, PhD, ATSF, Boston, MA B.T. Thompson, MD, Boston, MA
- 9:15 What Can We Learn from Negative Trials? H.C. Prescott, MD, MSc, Ann Arbor, MI
- 9:30 Don't We Just Know? Physiologic Reasoning in the Absence of Clinical Data A. Malhotra, MD, ATSF, La Jolla, CA
- 9:45 Observational Trials Are Not the Answer B.T. Thompson, MD, Boston, MA
- 10:00 Panel Discussion 1 H.C. Prescott, MD, MSc, Ann Arbor, MI A. Malhotra, MD, ATSF, La Jolla, CA B.T. Thompson, MD, Boston, MA
- 10:15 Moving Beyond Mortality as an Endpoint E. Colantuoni, PhD, Baltimore, MD
- 10:27 Beyond P Value M.N. Gong, MS, MD, Bronx, NY
- 10:39 So What Does It All Mean? A Pragmatic Approach to Practice in an Era of Negative Trials G.D. Rubenfeld, MD, MSc, Toronto, Canada
- 10:54 Panel Discussion 2 E. Colantuoni, PhD, Baltimore, MD M.N. Gong, MS, MD, Bronx, NY G.D. Rubenfeld, MD, MSc, Toronto, Canada

# BASIC • CLINICAL • TRANSLATIONAL BASIC SCIENCE CORE

# B5 CELLULAR PLASTICITY AND LUNG TISSUE BIOENGINEERING: NOVEL APPROACHES TO ADVANCED RESPIRATORY DISEASE

Assemblies on Respiratory Structure and Function; Allergy, Immunology and Inflammation; Clinical Problems; Respiratory Cell and Molecular Biology

#### <u>9:15 a.m. - 11:15 a.m.</u>

#### Target Audience

All lung health providers and researchers in regenerative lung biology/tissue bioengineering would benefit from this session. The focus on exciting new approaches to treating lung disease should have broad cross-assembly appeal.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about stem cell-based approaches to repair and regeneration in the lung.
- understand new bioengineering approaches to repair and generate new lung tissue.
- learn about the promises and challenges of lung regenerative and bioengineering strategies as treatments for advanced lung disease.

The session focuses on the regenerative capacity of lung cells and on bioengineering techniques as novel approaches to repairing/replacing injured lung. The learner will be introduced to the basic concepts of cellular plasticity and will understand how the modulating effect of mesenchymal stem cells on inflammation can be harnessed to treat diseases such as COPD and idiopathic pulmonary fibrosis. The learner will also gain insight into technology for engineering new lungs for patients with end-stage disease using scaffolds from human cadavers and the complexity of such methodologies.

Chairing: G.S. Skloot, MD, ATSF, New York, NY R. Gosens, PhD, Groningen, Netherlands I. Petrache, MD, ATSF, Denver, CO

- 9:15 Introduction to Regenerative Lung Medicine I. Petrache, MD, ATSF, Denver, CO
- 9:39 Regenerative Pharmacology/Biology in COPD R. Gosens, PhD, Groningen, Netherlands
- 10:03 Lung Regeneration Strategies as a Novel Treatment for IPF J.K. Burgess, PhD, Groningen, Netherlands
- 10:27 The Six Million Dollar Lung: Rebuilding the Lung in Advanced Disease D.J. Weiss, MD, PhD, ATSF, Burlington, VT
- 10:51 Translating New Lung Structure into Functional Benefit: Overcoming the Challenges C.C. Hsia, MD, Dallas, TX

## CLINICAL

#### SCIENTIFIC SYMPOSIUM

# B6 ADVANCING CARE QUALITY FOR ADULT HOME OXYGEN PATIENTS

Assemblies on Nursing; Behavioral and Health Services Research; Clinical Problems; Pulmonary Rehabilitation; Sleep and Respiratory Neurobiology

<u>9:15 a.m. - 11:15 a.m.</u>

#### **Target Audience**

This symposium will benefit health care professionals who care for adults who use supplemental oxygen.

#### Objectives

At the conclusion of this session, the participant will be able to:

- identify quality metrics for patients who use supplemental oxygen across the continuum of care (hospital to home, during activities of daily living, and with disease progression in palliative care and hospice);
- understand importance of correct selection of oxygen delivery devices for different lung diseases to deliver required prescription at rest, exercise, and sleep;
- define appropriate education materials for patients using supplemental oxygen to achieve compliance and mobility and attain best quality of life.

There are more than 1.4 million oxygen users in the U.S and more worldwide. Reports reveal patients are not receiving manageable equipment, meets their portable oxygen needs, or adequate education and support from equipment providers. At the 2019 ATS Oxygen Symposium, the meeting room and overflow area exceeded attendee capacity highlighting clinician interest for additional guidance. Many care quality questions remain unanswered.

- Chairing: K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA S.S. Jacobs, RN, MS, Stanford, CA
- 9:15 Welcome K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA
- 9:20 Patient Education on Oxygen Equipment: Where We Are and What Do We Need as Patients B. Jackson, MS, Cincinnati, OH
- 9:40 Hospital to Home Oxygen Use in COPD Patients: Can We Decrease Mortality Risk? L.C. Feemster, MSc, MD, Seattle, WA
- 10:00 Standards of Care for Meeting the Oxygen Needs of ILD Patients During Rest, Exercise, and Sleep C.J. Ryerson, MD, Vancouver, Canada
- 10:20 The Finer Points of Portable Oxygen: Providing the Patient with the Most Appropriate Oxygen Delivery System(s) T.J. Kallstrom, MBA, RRT, Irving, TX
- 10:40 Advances in Oxygen Use in the Palliative and Hospice Care Settings A.M. Schneidman, MS, CNS, RN, ATSF, Phoenix, AZ
- 11:00 Panel Discussion with Q & A S.S. Jacobs, RN, MS, Stanford, CA

# BEHAVIORAL • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# B7 LUNG CANCER SCREENING: SOMETHING OLD, SOMETHINGS NEW, SOMETHING BORROWED, SOMETHING BLUE

Assemblies on Thoracic Oncology; Behavioral and Health Services Research; Clinical Problems; Nursing

9:15 a.m. - 11:15 a.m.

### Target Audience

all physicians who care for patients with lung cancer; nurses and APPs who care for patients with lung cancer; health services researchers; translational scientists interested in how novel technologies/procedures can move into clinical practice

### Objectives

At the conclusion of this session, the participant will be able to:

- Learn new findings about landmark trials and influential guideline recommendations
- Improve implementation of lung cancer screening using multidisciplinary care teams
- Integrate new treatment options in discussing lung cancer screening with potentially eligible patients

This symposium will briefly summarize the landmark lung cancer screening trial, the NLST and "lessons learned" on the 10 year anniversary of when the results were dropped. We will then dive deep into the current state of lung cancer screening along with new data and recommendations. We will include talks by representatives from NELSON, the USPSTF, and CMS to describe their data and recommendations. We will close with how new procedures/technologies may be used in the future and a panel discussion for how these new data and recommendations will affect future implementation efforts and outcomes.

Chairing: C.G. Slatore, MD, Portland, OR R.S. Wiener, MD, MPH, Boston, MA N.T. Tanner, MD, MSCR, Charleston, SC

9:15 NLST: History and Lessons Learned C.D. Berg, MD, Bethesda, MD

- 9:35 USPSTF Update M. Barry, MD, Boston, MA
- 9:55 NELSON Update H.J. de Koning, MD, PhD, Rotterdam, Netherlands
- 10:15 CMS Decision Making: An In/Outsider's Perspective M.K. Gould, MD, MS, Pasadena, CA
- 10:35 Radiomics and Risk Prediction Models: What Do We Have and What Have Others Done? C.R. Sears, MD, ATSF, Indianapolis, IN
- 10:55 Why Is No One Doing It and What (If Anything) Should Be Done About It? Speaker To Be Announced

## **BASIC** • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

## B8 INFLAMMATION IN ARDS: TOO MUCH OR TOO LITTLE?

Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Pediatrics; Respiratory Cell and Molecular Biology

<u>9:15 a.m. - 11:15 a.m.</u>

### **Target Audience**

Basic research scientists, Translational researchers, pulmonary biologists, critical care

### Objectives

At the conclusion of this session, the participant will be able to:

- understand the current evidence for high risk phenotypes of ARDS and the evidence for immunologic underpinnings for these phenotypes;
- learn current immunologic mechanisms such as programmed cell death and autophagy that, when dysregulated, may identify a high-risk subset of ARDS;
- understand the concept of immune exhaustion and the inflammation arc over the course of critical illness.

This symposium focuses on emerging understanding of the biology of inflammation in ARDS. Evidence suggests that subsets of ARDS patients with high levels of inflammation are both at increased risk for bad outcomes and may experience differential response to therapy. However, a later anti-inflammatory response, particularly in sepsis-induced ARDS, can produce immune 'exhaustion' which is also associated with adverse outcomes. It has been speculated that 'reviving' the inflammatory response later in the course of critical illness might prove beneficial, though this approach is fraught with potential complications, including the uncertain time course of inflammation in an individual patient and an 'auto-immune' exuberant inflammatory response that might paradoxically promote additional lung injury. There will be 5 minutes of discussion after each speaker.

- Chairing: A. Rogers, MPH, MD, Stanford, CA R.M. Baron, MD, Boston, MA J. Bhattacharya, MD, New York, NY
- 9:15 Introduction: Heterogeneity in ARDS: A Need for Improved Understanding of the Biologic Underpinnings R.M. Baron, MD, Boston, MA
- 9:35 What We Know About Immune Checkpoints in ARDS C. Mikacenic, MD, Seattle, WA
- 9:55 Neutrophil Priming in ARDS C. Summers, MBBS, PhD, Cambridge, United Kingdom
- 10:15 Targeting Inflammation in ARDS: The Right Time and Place B.D. Levy, MD, ATSF, Boston, MA
- 10:35 Does Inflammation in Peripheral Blood Reflect the Injured Lung in ARDS? A. Rogers, MPH, MD, Stanford, CA
- 10:55 Exosomes and Extracellular Vesicles in ARDS: Local Inflammatory Mediators M.A. Matthay, MD, San Francisco, CA

# BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# B9 2020 VISION OF TB

Assemblies on Pulmonary Infections and Tuberculosis; Allergy, Immunology and Inflammation; Environmental, Occupational and Population Health; Nursing; Pulmonary Rehabilitation; Respiratory Cell and Molecular Biology; Respiratory Structure and Function; Thoracic Oncology

### 9:15 a.m. - 11:15 a.m.

## Target Audience

Pulmonary, infectious disease, public health, other clinicians and nurses; basic, clinical and translational investigators; infection control and occupational health practitioners; oncologists; practitioners in pulmonary rehabilitation.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about tuberculosis (TB) pathogenesis and airborne transmission;
- improve the quality of life of patients with post-TB lung disease;
- increase awareness of the risk of reactivation of TB during the use of PD-1 (checkpoint) inhibitors now commonly used in cancer immunotherapy.

This session will present exciting new data about how Mycobacterium tuberculosis gains access to cells and is transmitted by the airborne route. Attendees will learn about a new risk factor for the reactivation of TB among cancer patients. Lung disease after the successful treatment of TB is common, and attendees will learn what can be done to manage 'post-TB lung disease.' Attendees will also learn about how to protect themselves from TB.

- Chairing: P.A. Lobue, MD, Atlanta, GA K.P. Fennelly, MD, MPH, ATSF, Bethesda, MD J.M. Keane, MD, Dublin, Ireland
- 9:15 The Cellular In's and Out's of M. Tuberculosis M. Shiloh, MD, PhD, Dallas, TX

- 9:35 Airborne TB: A New View from Mask Aerosol Sampling C. Williams, MD, PhD, Leicester, United Kingdom
- 9:55 Risk of TB with Checkpoint Inhibitors in Cancer Immunotherapy D. Barber, PhD, Bethesda, MD
- 10:15 Pulmonary Rehabilitation for Post-TB Lung DiseaseB. Kirenga, MBChB, MMED, Kampala, Uganda
- 10:35 New CDC Recommendations on TB Testing and Treatment of Health Care Workers P.A. Lobue, MD, Atlanta, GA
- 10:55 Panel Discussion K.P. Fennelly, MD, MPH, ATSF, Bethesda, MD

## BASIC • CLINICAL • TRANSLATIONAL

## SCIENTIFIC SYMPOSIUM

# B10 EARLY PULMONARY COMPLICATIONS OF PEDIATRIC STEM CELL TRANSPLANT: UPDATE FROM NIH WORKSHOP

Assemblies on Pediatrics; Allergy, Immunology and Inflammation; Pulmonary Infections and Tuberculosis

<u>9:15 a.m. - 11:15 a.m.</u>

### **Target Audience**

Pediatric and adult pulmonologists, fellows, residents and medical students, basic researchers in lung injury

### Objectives

At the conclusion of this session, the participant will be able to:

- understand the many factors involved in early lung injury post hematopoietic stem cell transplantation;
- understand the gaps in knowledge in early lung injury post hematopoietic stem cell transplantation;
- define future direction in research and treatment of early lung disease post hematopoietic stem cell transplantation.

Pediatric hematopoietic stem cell transplantation (HCT) is performed for malignant and non-malignant conditions. Pulmonary complications constitute the

leading cause of death during the initial year after transplantation. Allogeneic HCTs are associated with more severe pulmonary complications such as pneumonitis (infectious and non-infectious) and pulmonary hemorrhage during the first year after transplant. Predictors of these life-threatening conditions are unknown. A recent NIH workshop explored the etiology of lung injury occurring within a year after HCT in children, to identify critical gaps in existing knowledge, and to explore avenues for research to address these knowledge gaps to advance care and optimize outcomes.

- Chairing: S.B. Goldfarb, MD, ATSF, Philadelphia, PA A. Natarajan, MD, PhD, Bethesda, MD
- 9:15 Update Pulmonary Complications of Pediatric Hematopoietic Stem Cell Transplantation (HCT) Current Landscape and Future Research Directions S.B. Goldfarb, MD, ATSF, Philadelphia, PA
- 9:20 Overview of Indications for Hematopoietic Stem Cell Transplants and Early and Late Pulmonary Complications W.A. Gower, MD, MS, Chapel Hill, NC
- 9:35 Early Lung Injury Post Hematopoietic Stem Cell Transplantation S. Davies, MBBS, PhD, Cincinnati, OH
- 9:55 Biomarkers for Early Complications After Hematopoietic Stem Cell Transplantation S. Paczesny, MD, PhD, Indianapolis, IN
- 10:15 Advances in Understanding Pulmonary Infections after Hematopoietic Cell Transplantation M. Zinter, MD, San Francisco, CA
- 10:35 Pathways to Fibrosis: Viral Infections and Animal Models B.B. Moore, PhD, ATSF, Ann Arbor, MI
- 10:55 Imaging and Early Detection of Lung Injury Post Hematopoietic Stem Cell Transplantation J.C. Woods, PhD, Cincinnati, OH

# BASIC • TRANSLATIONAL

#### SCIENTIFIC SYMPOSIUM

# B11 BEYOND DNA: THE UNSEEN GENOME AND NOVEL OMICS APPROACHES TO PULMONARY HYPERTENSION

Assembly on Pulmonary Circulation; Section on Genetics and Genomics

9:15 a.m. - 11:15 a.m.

#### **Target Audience**

Researchers, nurses and physicians interested in learning how state of the art omics are used in lung disease research and translation to the clinic.

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- understand the role of long non-coding RNAs in Pulmonary Hypertension and learn about emerging therapeutic strategies targeting long non-coding RNAs with directions for future research and translational focus;
- describe how single-cell technologies provide more detailed biological insight than traditional analysis of mixed cell populations;
- understand how dysregulated metabolism contributes to pulmonary hypertension and identifies new therapeutic approaches.

The development of powerful new omics tools is providing unprecedented insight into the pathobiology of lung disease, opening up new approaches for diagnosis, prognosis and therapy. Advances in RNA-sequencing techniques have led to the discovery of thousands of non-coding transcripts, including long non-coding RNAs (IncRNA) and microRNAs (miRNA) that are regulated during lung development and disease. This symposium explores the latest technological developments, including state of the art single cell technologies, proteomics and metabolomics, and highlights current knowledge of the function of non-coding RNAs in pulmonary vascular disease and right heart failure. Chairing: M. Aldred, PhD, Indianapolis, IN C.J. Rhodes, PhD, London, United Kingdom

- 9:15 IncRNAs in Pulmonary Vascular Remodeling S.S. Pullamsetti, PhD, Bad Nauheim Hessen, Germany
- 9:35 microRNAs and IncRNAs in Right Heart Hypertrophy and Failure O. Boucherat, PhD, Quebec, Canada
- 9:55 IncRNAs as Biomarkers/Therapeutic Agents for Pulmonary Diseases: A Prospective View S.Y. Chan, MD, PhD, Pittsburgh, PA
- 10:15 CITE-seq: Enabling Multi-Omic Analyses P. Smibert, PhD, New York, NY
- 10:35 Proteomics: From Discovery Research Towards the Clinic C.J. Rhodes, PhD, London, United Kingdom
- 10:55 A Matter of PHat: Lipidomic Analysis in PAH A. Hemnes, MD, ATSF, Nashville, TN

# BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# B12 BREAKING NEWS: CLINICAL TRIAL RESULTS IN PULMONARY MEDICINE

<u>9:15 a.m. - 11:15 a.m.</u>

Target Audience

Clinicians, research scientists, and other allied health professionals

This session will provide late-breaking information on leading clinical trials affecting the pulmonary, critical care and sleep community. The specific trials will be announced.

Chairing: E.S. White, MD, MS, ATSF, Ann Arbor, MI *Speakers and Talks to be Announced* 

# CLINICAL

## ATS PRESIDENT'S SYMPOSIUM

# B13 CLINICAL PRACTICE 2020: EFFECTIVELY LEARNING, TEACHING, AND SHARING MEDICAL INFORMATION

<u>9:15 a.m. - 11:15 a.m.</u>

## Target Audience

All providers and clinicians will benefit from the content in this symposium.

## Objectives

At the conclusion of this session, the participant will be able to:

- recognize the importance of online exchange of medical information;
- employ safe practice in consuming and sharing online information;
- counsel patient and providers on the risks and benefit of online medical information.

The way we learn medicine is evolving. Medical libraries now fit in your pocket as "smart" phones. We have more medical journals today then we have ever had. This explosion of medical information now comes electronically in the form of tweets, vlogs, podcasts, and e-mail. In this symposium we explore the evolution of medical learning and the impact of online mediums on how we learn and share medical information. Our topics will center on how clinicians can engage with and appropriately analyze medical information in the digital age. We will review how to navigate social media, how to assess the quality of online data, and how to leverage online learning for education.

- Chairing: J.M. Beck, MD, ATSF, Aurora, CO W.G. Carlos, MD, MSCR, ATSF, Indianapolis, IN K.M. Burkart, MD, MSc, ATSF, New York, NY
- 9:15 Welcome J.M. Beck, MD, ATSF, Aurora, CO
- 9:17 Introduction W.G. Carlos, MD, MSCR, ATSF, Indianapolis, IN

- 9:20 The Medical Library: Past and Present J.H. Hansen-Flaschen, MD, ATSF, Philadelphia, PA
- 9:40 Partners in Education: Teaching Digital Natives J.W. McCallister, MD, ATSF, Columbus, OH
- 10:00 Best Practices for Clinicians to Safely and Appropriately Navigate Social Media in 2020 L. Santhosh, MD, San Francisco, CA
- 10:30 What Does the Future Hold for Exchanging Medical Information? J. Mandel, MD, ATSF, La Jolla, CA
- 10:50 ATS Scholar N. Seam, MD, ATSF, Bethesda, MD
- 11:10 Summary K.M. Burkart, MD, MSc, ATSF, New York, NY

#### <u>9:15 a.m. - 11:15 a.m</u>

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.



#### <u>11:45 a.m. - 1:15 p.m.</u>

#### ATS WOMEN'S FORUM

The annual ATS Women's Forum recognizes the achievements and supports the advancement of women in pulmonary, critical care, and sleep medicine and research. The forum provides a valuable opportunity for women to meet new colleagues and ATS leaders. Men are also welcome to attend the forum.

Attendees will find value in the inspirational messages, a delicious three course lunch, career insights the speakers share as well as vibrant networking opportunities.

Heather J. Zar, MD, PhD, ATSF, Professor and chair of the Department of Pediatrics and Child Health at Red Cross Children's Hospital, at the University of Cape Town will discuss issues that are relevant to female medical professionals followed by a question and answer period.

We will also recognize and hear remarks from the 2020 recipient of the Elizabeth A. Rich Award, Eileen Collins, PhD, RN, ATSF. The Elizabeth Rich Award is presented to an outstanding woman in ATS who has made significant contributions in the fields of pulmonary, critical car and sleep medicine.

The forum is organized and presented by the ATS Membership Committee, and its chair Clement Ren MD, MBA, ATSF.

Registration Fee: \$20 (includes lunch) Seating is limited. Pre-registration is required. Please register through online general registration by clicking the Register Now button above PEDIATRIC CLINICAL CORE CURRICULUM

# PCC2 PEDIATRIC CLINICAL CORE CURRICULUM

#### 11:45 a.m. - 12:45 p.m.

### **Target Audience**

Pediatric pulmonary and critical care physicians who work in a clinical setting and are currently engaged in maintenance of certification

## Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pediatric pulmonology;
- evaluate their knowledge and skills in content areas in pediatric pulmonology.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The Pediatric Core Curriculum symposia promote lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatrician.

Chairing: F.J. Dy, MD, MS, Worcester, MA

- 11:45 Updates and Management of Congenital Diaphragmatic Hernia N. Mokhallati, MD, Kansas City, MO
- 12:15 Updates in Surgical and Non-Surgical Management of Congenital Lung Malformations W. Peranteau, MD, Philadelphia, PA

# BASIC • BEHAVIORAL CLINICAL • TRANSLATIONAL

WORKSHOP

# WS3 IMPROVING YOUR ACADEMIC FOOTPRINT USING DIGITAL SCHOLARSHIP: THE MYTH OF SOCIAL MEDIA

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assemblies on Sleep and Respiratory Neurobiology; Behavioral and Health Services Research; Critical Care; Pediatrics; Respiratory Cell and Molecular Biology

11:45 a.m. - 1:15 p.m.

### **Target Audience**

Academic clinical providers, health care administrators, researchers (basic, translational, clinical) and trainees.

### Objectives

At the conclusion of this session, the participant will be able to:

- define digital scholarship and learn best practices of its use by academic clinical providers, researchers and trainees;
- integrate digital scholarship to achieve research dissemination and academic promotion;
- apply new knowledge learnt in this workshop to develop a visual abstract.

Social Media use has become ubiquitous and online engagement by members of the medical community is increasing exponentially. This workshop will introduce digital scholarship and responsible professional social media use, along with the use of various platforms of digital scholarship towards research dissemination and ultimately promotion. We will analyze challenges to professional digital scholarship and dissemination of research via social media and share practical tips to apply in ones use of digital scholarship. The workshop will conclude with a hands-on demonstration for twitter setup and creating a visual research abstract.

- Chairing: N.A. Shah, MD, MPH, MSci, New York, NY N.H. Stewart, DO, Omaha, NE
- 11:45 Introduction N.A. Shah, MD, MPH, MSci, New York, NY
- 11:50 Responsible Social Media Use N. Seam, MD, ATSF, Bethesda, MD
- 12:00 Why Use Digital Scholarship to Create Research Impact? A.E. Turnbull, DVM, MPH, PhD, Baltimore, MD
- 12:15 #AcademicTwitter Management M.A. Pisani, MD, MPH, New Haven, CT
- 12:30 Digital Scholarship for Academic Promotion A. Malhotra, MD, ATSF, La Jolla, CA
- 12:45 Facilitated Twitter Setup N.H. Stewart, DO, Omaha, NE
- 12:55 Creating a Visual Research Abstract E. Carlton, MD, Ann Arbor, MI
- 1:10 Summary and Discussion N.A. Shah, MD, MPH, MSci, New York, NY

### CLINICAL

#### WORKSHOP

## WS4 CLOSING THE QUALITY GAP IN MALIGNANT PLEURAL EFFUSION

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Clinical Problems

<u>11:45 a.m. - 1:15 p.m.</u>

**Target Audience** 

Thoracic clinicians involved in the diagnosis and management of malignant pleural effusions.

#### Objectives

At the conclusion of this session, the participant will be able to:

 select among available interventions for symptomatic malignant pleural effusion depending on patient characteristics;

- account for prognosis in choosing the optimal intervention for a given patient with malignant pleural effusion;
- appreciate the most glaring quality gaps in malignant pleural effusion management.

Malignant pleural effusion (MPE) is a challenging clinical entity in respiratory medicine. Its discovery signifies advanced malignancy, therefore demanding that clinicians streamline therapeutics to minimize discomfort, inpatient stay, and impact on quality of life. The approach to MPE management is known to vary greatly and to commonly deviate from recommended best practice. During this workshop, attendees will hear presentations by some of the world's thought leaders in pleural disease on ways to optimize the therapeutic approach to MPE. Attendees will participate by answering case-based questions posed by the presenters using an audience response system. There will be an opportunity for Q&A with the expert panel.

- Chairing: O. Epelbaum, MD, ATSF, Valhalla, NY H. Grosu, DrMed, Houston, TX
- 11:45 Introduction O. Epelbaum, MD, ATSF, Valhalla, NY
- 11:50 Is There a Role for Thoracentesis in MPE Management? J. Akulian, MD, MPH, ATSF, Chapel Hill, NC
- 12:05 Pleurodesis or IPC: Still the Binary Choice for Definitive Management H. Grosu, DrMed, Houston, TX
- 12:20 Is a Combined Approach the Holy Grail? N. Rahman, BM BCH, MSc, Oxford, United Kingdom
- 12:35 Quality Gaps in MPE Management: Take-Home Messages D.E. Ost, MD, MPH, Houston, TX
- 12:50 Wrap-Up: Questions and Answers

# CLINICAL

ADULT CLINICAL CORE CURRICULUM

# CC2 PULMONARY CLINICAL CORE CURRICULUM I

### 11:45 a.m. - 1:15 p.m.

### **Target Audience**

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

## Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: G.W. Garrison, MD, Burlington, VT E. Narewski, DO, Philadelphia, PA
- 11:45 Submassive PE P. Rali, MD, Philadelphia, PA
- 12:15 The Diagnosis and Management of CTEPH A.S. Witkin, MD, Boston, MA
- 12:45 Updates in Pulmonary Hypertension: Highlights of the Sixth World Symposium Proceedings M.R. Lammi, MD, MSCR, New Orleans, LA

## VETERANS ADMINISTRATION

# L11 PULMONARY REHABILITATION IN VA: OPPORTUNITIES AND CHALLENGES FOR HOME-BASED PROGRAMS

## 12:15 p.m. - 1:15 p.m.

### **Target Audience**

Health care providers and clinical researchers, in or outside of the VA, with interests in pulmonary rehabilitation, exercise and physical activity, and models of home-based PR. This includes fellows, nurses, and allied medical professionals.

## Objectives

At the conclusion of this session, the participant will be able to:

- provide an overview of the efficacy, as well as barriers to access and adherence, of center-based PR;
- inform health care providers of the opportunities and challenges to implementation of home based PR;
- provide research based evidence on the current and potential future roles of technology to deliver home-based PR.

Pulmonary rehabilitation (PR) is the standard of care for patients with chronic lung disease to maximize physical function. However, participation in center-based PR programs is impossible for most patients. Therefore, recent clinical and research efforts have focused on bringing exercise programs directly to the patient. Current discussions center on optimal ways for these home-based PR programs to maintain fidelity to the core components (aerobic exercise, strength training, and education by multidisciplinary professionals) of conventional PR. This session will highlight data from a newly implemented home-based PR program in VA and an active trial of a technology-mediated physical activity intervention funded through VA Rehabilitation R&D service.

- Chairing: D.B. Coultas, MD, Portland, OR V.S. Fan, MD, MPH, Seattle, WA
- 12:15 Current State of Center-Based Pulmonary Rehabilitation in VA L. Nici, MD, Providence, RI

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- 12:35 A Novel Home-Based Pulmonary Rehabilitation Program K. Artis, MD, MPH, Portland, OR
- 12:55 Role of a Technology-Mediated Physical Activity Intervention in Pulmonary Rehabilitation M. Moy, MD, MSc, Boston, MA

### NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

## L12 PULMONARY HEALTH IMPACTS OF E-CIGARETTES AND VAPING: WHAT'S EMERGING?

### 12:15 p.m. - 1:15 p.m.

#### Target Audience

Clinicians, clinician scientists, basic research scientists, fellows and residents.

#### Objectives

At the conclusion of this session, the participant will be able to:

- gain understanding of the current state of science on the impacts of e-cigarettes and vaping and emerging biomarkers;
- gain knowledge on the diverse numbers of flavoring agents, toxic metal constituents in the vape;
- understand pulmonary and extrapulmonary impacts of e-cigarettes in utero exposure on adult offspring.

The use of such as electronic cigarettes (e-cigarettes) is gaining popularity all over the world partially due to the addition of multiple flavoring agents. E-cigarettes are widely marketed as safer alternatives to traditional cigarettes because of reduced levels of nicotine delivered by inhalation. The safety claims of e-cigarette usage, however, are not supported by rigorous unbiased evaluation of potential health effects. Research findings from different laboratories suggest that e-cigarette aerosols components may be as harmful as the aerosols from combustion of cigarettes. This session will highlight recent research findings on the adverse health impacts on cardiopulmonary

function, lung injury as well as neurodevelopmental effects associated with exposure to e-cigarette aerosol components.

- Chairing: S.S. Nadadur, PhD, Research Triangle Park, NC I. Rahman, PhD, ATSF, Rochester, NY
- 12:15 Introduction F. Tyson, PhD, Durham, NC
- 12:21 E-Cigarettes and Flavoring Chemicals-Induced Lung Cellular Effects and Their Potential Biomarkers I. Rahman, PhD, ATSF, Rochester, NY
- 12:39 Electronic Cigarettes Disrupt Lung Lipid Homeostasis and Innate Immunity F. Kheradmand, MD, Houston, TX
- 12:57 Health Impacts of Vaping During Pregnancy on Neonates and Adult Offspring Mice J. Zelikoff, PhD, Tuxedo, NY

### NATIONAL CENTER FOR ENVIRONMENTAL HEALTH/CDC

# L13 PREVENTING HOSPITALIZATIONS AND ED VISITS IN CHILDREN WITH ASTHMA

#### 12:15 p.m. - 1:15 p.m.

#### **Target Audience**

Providers serving children with asthma; those who work with public health, communities and natural disasters.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn the national surveillance data for children with asthma;
- understand how multisector partnerships can help to reduce asthma burden;
- understand the role of public health in helping children with asthma after a disaster.

Addressing asthma control is imperative for reducing the large, unequally-distributed burden of disease. Reducing

exposure to environmental triggers, which can be exacerbated after a natural disaster, are an important component of asthma control. Evidence-based interventions, such as guidelines-based medical management, smoking cessation, asthma self-management education, home visits, and asthma-friendly policies, support asthma control. A new CDC initiative, CCARE (Controlling Childhood Asthma Reducing Emergencies), aims to prevent a half-million pediatric asthma-related emergency department visits and hospitalizations in 5 years. To achieve this goal, CCARE will promote evidence-based interventions across sectors and linkages between programs and clinics.

Chairing: J. Malilay, PhD, MPH, Atlanta, GA

- 12:15 Current Asthma Burden in the United States Speaker To Be Announced
- 12:30 Environmental Triggers of Asthma After Disasters K. Cowan, MPH, Atlanta, GA
- 12:45 Multisector Involvement in Reducing the Burden of Asthma J. Malilay, PhD, MPH, Atlanta, GA
- 1:00 Implementing CCARE Through State Partnerships K.D. Sircar, PhD, MPH, Atlanta, GA

### FDA/CENTER FOR DRUG EVALUATION AND RESEARCH

# L14 GENERIC DRUG DEVELOPMENT FOR RESPIRATORY PRODUCTS: U.S. FOOD AND DRUG ADMINISTRATION UPDATE

### 12:15 p.m. - 1:15 p.m.

#### **Target Audience**

Clinicians in practice, researchers, pharmaceutical industry representatives, international drug regulators.

### Objectives

At the conclusion of this session, the participant will be able to:

 recognize key aspects of the generic drug regulatory approval process, and how the Office of Generic Drugs (OGD) evaluates comparative clinical information to support bioequivalence for complex inhaled generic drug products;

- describe product specific recommendations and guidances for generic drug products recently posted by the Office of Generic Drugs (OGD), with a focus on how these can inform complex orally inhaled and nasal generic drug development;
- articulate how emerging technologies and innovative approaches are being utilized for FDA-funded research, FDA guidance development, and regulatory decision-making.

This session will describe respiratory product development of generic drugs within the U.S., focusing on paths forward to bring safe and effective generic respiratory products to the American public. A general overview will summarize the generic drug approval process, including demonstration of bioequivalence and therapeutic equivalence utilizing comparative clinical information. Discussion of recent generic product approvals and posted regulatory guidance will provide an understanding of the generic approval process, and how the use of emerging technologies and outcomes of research projects contribute to scientific understanding for these complex orally inhaled and nasal drug products to inform regulatory actions.

Chairing: K.A. Witzmann, MD, Silver Spring, MD

- 12:15 Introduction K.A. Witzmann, MD, Silver Spring, MD
- 12:18 Update for Generic Orally Inhaled and Nasal Products K.A. Witzmann, MD, Silver Spring, MD
- 12:35 Emerging Concepts and New Technologies for Bioequivalence of Orally Inhaled and Nasal Drug Products D. Santos Conti, PhD, Silver Spring, MD
- 12:52 Comparative Clinical Considerations in the Determination of Bioequivalence M. Spagnola, MD, Silver Spring, MD
- 1:09 Questions and Answers K.A. Witzmann, MD, Silver Spring, MD

NIAID SYSTEMS BIOLOGY OF ANTIMICROBIAL RESISTANCE

## L15 SYSTEMS BIOLOGY FOR ACUTE RESPIRATORY INFECTIONS

#### 12:15 p.m. - 1:15 p.m.

#### Target Audience

Basic and translational researchers interested in a systems biology approach to antimicrobial-resistant pathogens and the host response to them.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn how to apply a systems biology approach to studying infectious diseases outcomes;
- define new strategies to combat antimicrobial resistant pathogens causing pneumonia.

The NIH/NIAID uses a variety of mechanisms to support research on antimicrobial-resistance (AMR). A systems biology approach to AMR pathogens and diseases relevant to the pulmonary and critical care community will be illustrated.

Chairing: L.L. Brown, PhD, Rockville, MD

- 12:15 NIAID's Systems Biology Program in Infectious Diseases L.L. Brown, PhD, Rockville, MD
- 12:25 Influenza Virus-Host Interactions A. Garcia-Sastre, PhD, New York, NY
- 12:40 From Detection to Predicting Short- and Long-Term Infectious Disease Outcomes: Are Personalized Strategies Possible for Infectious Diseases? T. van Opijnen, PhD, Boston, MA
- 12:55 Successful Clinical Response in Pneumonia Treatment R.G. Wunderink, MD, Chicago, IL
- 1:10 Questions/Comments

DIVISION OF LUNG DISEASES/NHLBI

## L16 THE LUNGAGING PROJECT: A SINGLE CELL MULTI-OMICS NORMAL LUNG AGING REFERENCE ATLAS

#### <u>12:15 p.m. - 1:15 p.m.</u>

#### **Target Audience**

Researchers, physicians, and vendors that are interested in molecular and cellular changes during aging process in the human lung and age-related lung diseases like COPD and IPF.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings in single-cell omics study of lung aging;
- understand and learn the types of cells identified in lung by single-cell omics analysis;
- learn how will the single-cell omics based lung aging program will enpower the discovery of cells causing lung diseases.

Four speakers in this session are funded by NHLBI to investigate single-cell omics changes that cause lung function decline during the aging process in a healthy lung. They will present their current results and describe how to construct a lung aging map representing these dynamic changes at molecular and cellular levels in aging. Their results will shed light on normal lung aging, as well as the role of lung aging in the development of age-related lung diseases, such as COPD and IPF.

- Chairing: W. Gan, PhD, Bethesda, MD N. Kaminski, MD, New Haven, CT
- 12:15 Introduction of LungAging W. Gan, PhD, Bethesda, MD
- 12:23 Immunobiology and Alveolar Physiology of the Aging Lung D.L. Farber, PhD, New York, NY

- 12:30 Insights About Immunobiology and Alveolar Physiology of the Aged Lung J. Bhattacharya, MD, New York, NY
- 12:36 NALCA: The Normal Aging Lung Cell Atlas N. Kaminski, MD, New Haven, CT
- 12:49 Age-Related Changes in Genome and Epigenome in Human Lung in Relation to Smoking S.D. Spivack, MD, MPH, Bronx, NY
- 1:02 The Human Distal Airway Aging Project R. Shaykhiev, MD, PhD, New York, NY

## DIVISION OF LUNG DISEASES/NHLBI

## L17 NEW FINDINGS FROM THE SUBPOPULATIONS AND INTERMEDIATE OUTCOME MEASURES IN COPD (SPIROMICS) STUDY

### <u>12:15 p.m. - 1:15 p.m.</u>

### **Target Audience**

Researchers, medical trainees, and those with an interest in COPD pathogenesis,

### Objectives

At the conclusion of this session, the participant will be able to:

- learn about imaging phenotyping of COPD;
- understand and learn about molecular phenotyping of COPD;
- learn about clinical phenotyping of COPD.

SPIROMICS is an NHLBI-sponsored study that supports the prospective collection and analysis of phenotypic, biomarker, genetic, genomic, and clinical data from subjects with COPD for the purpose of identifying subpopulations and the biological underpinnings of clinical phenotypes in COPD. Participants in this session will learn about the progress in SPIROMICS including results and analyses of SPIROMICS data and plans for the SPIROMICS II follow-up study.

- Chairing: P. Woodruff, MD, MPH, San Francisco, CA L. Postow, PhD, Bethesda, MD
- 12:15 Introduction to SPIROMICS II P. Woodruff, MD, MPH, San Francisco, CA
- 12:19 A Cytokine Response Signature in Airway Epithelial Cells Identifies a COPD Patient Subgroup S. Christenson, MD, MS, San Francisco, CA
- 12:33 The Association of Allergic Disease with Clinical Outcomes in COPD N. Putcha, MD, Baltimore, MD
- 12:47 The SPIROMICS Heart Failure Study: Rediscovering Cardiopulmonary Interactions R.G. Barr, MD, DrPH, New York, NY
- 1:01 The Early COPD Cohort Study M.K. Han, MD, MS, Ann Arbor, MI

## DIVISION OF LUNG DISEASES/NHLBI

# L18 LESSONS LEARNED IN NHLBI ASTHMA EMPOWERMENT CLINICAL TRIALS: COMMUNITY AND SCHOOL ENGAGEMENT

## <u>12:15 p.m. - 1:15 p.m.</u>

### **Target Audience**

Researchers or asthma care providers interested in community based asthma interventions including schools.

### Objectives

At the conclusion of this session, the participant will be able to:

- understand the options for providing asthma care for children in schools;
- improve the quality of asthma care for children by engaging school based resources;
- recognize the interventions that can be performed by community health workers in asthma care.

The session will provide a discussion of the lessons learned from the investigators conducting 4 ongoing clinical trials in the NHLBI funded Asthma Empowerment Collaborations to Reduce Childhood Asthma Disparities program. The clinical trials involve multi-level interventions targeted to address the needs of the communities where they are conducted. The presenters will discuss their experience in 4 different communities to date, including their observations regarding the barriers and facilitators to their efforts to engage communities and schools as well as considerations for integrating asthma interventions within schools and working with community health workers (CHW).

Chairing: M.M. Freemer, MD, MPH, Bethesda, MD

- 12:15 Steps Toward Initiating Community Engagement and Sustaining It: Lessons Learned B.G. Bender, PhD, Denver, CO
- 12:23 Steps Toward Initiating Community Engagement and Sustaining It: Lessons Learned L.B. Gerald, PhD, MSPH, Tucson, AZ
- 12:30 School Engagement in Community Asthma Programs R.S. Everhart, PhD, Richmond, VA
- 12:45 Implementing Asthma Interventions in Schools- Public and Charter: Lessons Learned T. Bryant-Stephens, MD, Philadelphia, PA
- 1:00 Integrating and Engaging Community Health Workers into Asthma Implementation Research: Lessons Learned E. McQuaid, PhD, Providence, RI
- 1:08 Integrating and Engaging Community Health Workers into Asthma Implementation Research: Lessons Learned D. Koinis-Mitchell, PhD, Providence, RI

#### DIVISION OF LUNG DISEASES/NHLBI

## L19 NHLBI PREVENTION AND EARLY TREATMENT OF ACUTE LUNG INJURY (PETAL) NETWORK

#### <u>12:15 p.m. - 1:15 p.m.</u>

#### Target Audience

Practicing critical care and emergency medicine clinicians and clinical researchers would benefit from this session. This includes fellows, students, nurses, and other medical professionals.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the goals and structure of the PETAL network;
- understand the questions being addressed in PETAL and the design/conducts of the trials;
- learn new findings and results of PETAL studies.

This session will provide an update on the NHLBI Prevention and Early Treatment of Acute Lung Injury (PETAL) clinical trials network. The session will describe the structure and goals of the PETAL network, an overview of progress in ongoing trials, opportunities for additional studies using PETAL data and biospecimens, and results of studies to date.

- Chairing: L. Reineck, MD, Bethesda, MD R.G. Brower, MD, Baltimore, MD
- 12:15 PETAL Overview R.G. Brower, MD, Baltimore, MD
- 12:20 Vitamin D (VIOLET) Trial Results A. Ginde, MD, MPH, Aurora, CO
- 12:30 Update on the CLOVERS Trial I.S. Douglas, MD, Denver, CO
- 12:40 Introducing the ASTER Trial M.A. Matthay, MD, San Francisco, CA
- 12:50 Extending PETAL Science Through Ancillary Studies R. Baron, MD, Boston, MA

- 1:00 Ventilator Dyssynchrony Results of the Reevaluation of Systemic Early Neuromuscular Blockade (ROSE) Trial J.R. Beitler, MD, MPH, New York, NY
- 1:10 Questions and Answers L. Reineck, MD, Bethesda, MD

## AMERICAN LUNG ASSOCIATION

## L20 AMERICAN LUNG ASSOCIATION AIRWAYS CLINICAL RESEARCH CENTERS LUNG HEALTH COHORT STUDY

12:15 p.m. - 1:15 p.m.

Target Audience

Physicians, clinical scientists, nurses, paraprofessionals, educators, health care providers

### Objectives

At the conclusion of this session, the participant will be able to:

- apply emerging concepts of respiratory health to both clinical and research settings;
- learn new findings about the participation of millennials in research studies and how to recruit this unique generation in longitudinal research studies;
- improve the understanding of the current environmental influences on respiratory health in the 21st century and how early lung injury becomes clinically apparent on lung imaging studies.

Pulmonary physicians and respiratory researchers define respiratory health as the absence of lung disease. Intermediate phenotypes of impaired lung health are not well-defined because of the absence of adult life-course studies focused primarily on lung health. There is a critical need to identify modifiable risk factors and biomarkers for impaired lung health to allow clinicians to recognize impaired lung health and intervene before chronic lung disease develops. The ALA ACRC Lung Health Cohort will form the first national cohort of adults focused on respiratory health. This session highlights the Lung Health Cohort, its rationale, recruitment strategy, key measurements and outcomes.

- Chairing: W.C. Bailey, MD, Birmingham, AL R.A. Wise, MD, Baltimore, MD
- 12:15 Defining Respiratory Health R. Kalhan, MD, MS, Chicago, IL
- 12:27 Recruitment and Retention of the ALA Lung Health Cohort: A New Focus on Millenials M. Carnethon, PhD, Chicago, IL
- 12:39 Lung Imaging in Epidemiologic Studies: Applications to Lung Health G.R. Washko, MD, Boston, MA
- 12:51 Environmental Exposures and Lung Health: The 21st Century Exposome M.B. Rice, MD, MPH, Boston, MA
- 1:03 Discussion

## MEET THE PROFESSOR SEMINARS

Registration Fee: \$70.00 (includes box lunch.) Attendance is limited. Pre-registration is required.

12:15 p.m. - 1:15 p.m.

- MP501 MECHANISMS OF ASPIRIN DESENSITIZATION W. Stevens, MD, PhD, Chicago, IL K. Cahill, MD, Nashville, TN
- MP502 MOTIVATIONAL INTERVIEWING TO IMPROVE ADHERENCE TO ASTHMA THERAPY A. Weinstein, MD, Rockland, DE H. Tapp, PhD, Charlotte, NC
- MP503 CYSTIC LUNG DISEASE: UNCOMMON DISORDERS COMMONLY MISDIAGNOSED R.M. Kotloff, MD, Cleveland, OH
- MP504 TOLERATING UNCERTAINTY: CHANGING THE MINDSET OF DOCTORS AND PATIENTS R.M. Schwartzstein, MD, Boston, MA
- MP505 DEADSPACE, AIRSPACE, HEADSPACE OR OTHER: A CPET TOUR OF DYSPNEA J.S. Fritz, MD, Philadelphia, PA
- MP506 LUNG TRANSPLANT IN IPF: WHY, WHEN AND HOW? N. Patel, MD, Philadelphia, PA

- MP507 PLEURAL DISEASE CASE DISCUSSIONS: BREAD AND BUTTER AND COMPLEX CASES D.J. Feller-Kopman, MD, Baltimore, MD
- MP508 THE CUTTING EDGE IN THE RESUSCITATION OF SEPSIS J. Bakker, MD, PhD, New York, NY

G. Hernandez, MD, PhD, Santiago, Chile

- MP509 WHAT'S THE FUSS OVER BURN PITS, IEDS AND IRAQ AFGHANISTAN WAR LUNG INJURY? A.M. Szema, MD, South Setauket, NY
- MP510 PULMONARY COMPLICATIONS OF HEMATOPOIETIC STEM CELL TRANSPLANTATION S. Srinivasan, MS, MD, Memphis, TN
- MP511 WHO GROUP 3 PULMONARY HYPERTENSION: TO TREAT OR NOT TO TREAT J.I. Stewart, MD, Philadelphia, PA S.D. Nathan, MD, Falls Church, VA
- MP512 THE PATHOLOGY OF LUNG INFECTIONS: MORPHOLOGIC FEATURES AND DIAGNOSTIC TOOLS C.F. Farver, MD, Ann Arbor, MI A.V. Arrossi, MD, Cleveland, OH
- MP513 I CAN BE AN INTERSTITIAL LUNG DISEASE RADIOLOGIST AND PATHOLOGIST TOO! S. Dua, MD,ATSF, New York, NY
- MP514 MASK SELECTION FOR CPAP AND NON-INVASIVE VENTILATION P. Genta, MD, ATSF, Sao Paulo, Brazil G. Lorenzi-Filho, MD, Sao Paolo, Brazil
- MP515 LUNG-SEEKING METASTASES G. Stella, MD, PhD, Pavia, Italy

#### MEDICAL EDUCATION SEMINAR

## ME2 COACHING RESILIENCY AND GRIT IN PULMONARY AND CRITICAL CARE MEDICINE

Registration Fee: \$70 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Behavioral and Health Services Research

<u>12:15 p.m. - 1:15 p.m.</u>

#### Target Audience

The target audience for this session includes medical educators in Pulmonary and Critical Care, clinical and research fellows, residents, and students.

#### Objectives

At the conclusion of this session, the participant will be able to:

- identify behaviors in medical learners in PCCM that demonstrate the presence or absence of resiliency and grit;
- apply specific strategies to teach and promote curiosity, resiliency, and grit in medical learners in PCCM;
- promote curiosity, resiliency, and grit in medical learners to develop life-long learning skills and optimized patient care.

While burnout is a threat to learning and optimal clinical practice, life-long learning skills can increase engagement in and enjoyment of clinical and academic medical practice. In this session, we will review the concepts of resiliency and grit and their applicability to learners in Pulmonary and Critical Care Medicine (PCCM). Strategies for teaching, encouraging, and supporting these attributes will be discussed, with the goal of promoting effective life-long learning skills for students, residents, and fellows in PCCM. Specific examples of how to teach these skills will be reviewed, and participants will develop focused action plans for teaching these skills to their learners.

Speakers: J.B. Richards, MD, MA, ATSF, Boston, MA D. Kelm, MD, Rochester, MN A. Cooper, MD, Columbus, OH P.A. Kritek, MD, EdM, Seattle, WA



# 1:15 p.m. - 2:15 p.m.

# VISIT THE EXHIBIT HALL

Take this opportunity between sessions to visit the Exhibit Hall to gain practical knowledge to advance care and research. Exhibitors will be on hand to provide information on pharmaceutical products, medical equipment, publications and research services.

# 2:15 p.m. - 4:15 p.m.

## PRESENTATION OF THE RECOGNITION AWARDS FOR SCIENTIFIC ACCOMPLISHMENTS

As part of the ATS Respiratory Health Awards, the Recognition Awards for Scientific Accomplishments is given to individuals for outstanding scientific contributions in basic or clinical research to the understanding, prevention and treatment of lung disease. Those considered for the award are recognized for either scientific contributions throughout their careers or for major contributions at a particular point in their careers. Chairing: Zea Borok, MD, ATSF, Los Angeles, CA Polly E. Parsons, MD, ATSF, Burlington, VT

Awardees: Janet S. Lee, MD, Pittsburgh, PA Patty J. Lee, MD, Durham, NC Julian Solway, MD, Chicago, IL Jason X.J. Yuan, MD, PhD, ATSF, San Diego, CA

# CLINICAL

## ADULT CLINICAL CORE CURRICULUM

# CC3 CRITICAL CARE CLINICAL CORE CURRICULUM II

#### 2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

### Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: B. Coruh, MD, Seattle, WA S.Ahmed, MBBS, Albuquerque, NM
- 2:15 Novel Oral Anticoagulants in the ICU S. Maximous, MD, Pittsburgh, PA
- 2:45 Complications of Chemotherapy R.S. Stephens, MD, Baltimore, MD
- 3:15 Mechanical Circulatory Support B. Zakhary, MD, Portland, OR
- 3:45 Vasopressor Selection K.S. Wolfe, MD, Chicago, IL

# CLINICAL • TRANSLATIONAL

### YEAR IN REVIEW

## B81 PEDIATRIC YEAR IN REVIEW

Assembly on Pediatrics

<u>2:15 p.m. - 4:15 p.m.</u>

### **Target Audience**

Providers of lung health for children, clinical researchers who study pediatric lung health problems

### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about scientific developments in the field of bronchopulmonary disease that have clinical relevance;
- learn new clinical practices being to minimize lung injury and that optimize long-term outcome in children with bronchopulmonary dysplasia;
- learn new imaging modalities and biomarkers being use to help predict outcomes in children with bronchopulmonary dysplasia.

This session will provide up to date and state of the art information on the treatment of childhood asthma, pediatric neuromuscular diseases that effect lung health, chronic lung disease that effects preterm infants and the impact of e-cigarettes on respiratory health of children.

- Chairing: S.A. McGrath-Morrow, MD, Baltimore, MD P.D. Robinson, MD, PhD, Sydney, Australia
- 2:15 Update on the Management of Bronchopulmonary Dysplasia P.E. Moore, MD, ATSF, Nashville, TN
- 2:45 Childhood Health Consequences of Electronic Cigarettes E.R. Neptune, MD, Baltimore, MD
- 3:15 What's New in Therapies for Neuromuscular Lung Diseases O.H. Mayer, MD, Philadelphia, PA

3:45 Update on New Treatments for Asthma L. Fleming, MD, MBChB, London, United Kingdom

# CLINICAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# B82 ROLE OF SURGERY FOR PLEURAL DISEASES IN 2020: WHAT PULMONOLOGISTS NEED TO KNOW

Assemblies on Clinical Problems; Thoracic Oncology

2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Clinicians, nurses, allied health staff and researchers in respiratory diseases: chest physicians, interventional pulmonologists, thoracic/general surgeons, oncologists, general/emergency physicians, junior staff and scientists.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn about advances in thoracic surgical techniques in the diagnosis and treatment of pleural effusions and pneumothorax;
- understand latest clinical trial evidence on best management of malignant effusions;
- gain knowledge on the latest research finding on imaging guided pleural biopsy and new molecular markers for mesothelioma.

Thoracic surgery is conventionally used in the work-up and treatment of pleural diseases. Recent research advances in malignant effusion, empyema and pneumothorax offer less invasive options to surgery and transform care via high-profile trials eg on malignant effusions (IPC-PLUS [NEJM2018]; AMPLE-1 [JAMA2017] and AMPLE-2 [Lancet Respir Med2018]; on mesothelioma, (SMART [Lancet Oncol2017]; MAPPs and Meso-VATS [Lancet]) and on pleural infection. Advances in imaging-guided biopsy and molecular diagnosis further reduce the need of diagnostic surgical investigations. The session will inform pulmonologists on practical application of these exciting advances to replace surgical interventions with minimally-invasive therapies.

- Chairing: C. Broaddus, MD, San Francisco, CA C.R. Lamb, MD, Burlington, MA N. Rahman, BM BCH, MSc, Oxford, United Kingdom
- 2:15 Surgical Role in Diagnosis and Management of Pleural Diseases K. Yasufuku, MD, Toronto, Canada
- 2:35 Advances in Pleural Cytology Reducing Need of Surgical Biopsies S.M. Chai, MBBS, Perth, Australia
- 2:50 Advances in Interventional Radiology Reducing Need of Surgical Biopsies N. Maskell, DM, Bristol, United Kingdom
- 3:05 Advances Non-Surgical Management of Spontaneous Pneumothorax E. Ball, MD, Hobart, Australia
- 3:20 Advances in Non-Surgical Management of Pleural Infection Y.C.G. Lee, MBChB, PhD, Perth, Australia
- 3:40 Advances in Non-Surgical Management of Malignant Pleural Effusion D.J. Feller-Kopman, MD, Baltimore, MD
- 4:00 Radical Surgery for Mesothelioma: A Foregone Conclusion? J. Edwards, MB ChB, PhD, Sheffield, United Kingdom

# CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# B83 EARLY DETECTION AND DIAGNOSIS OF IDIOPATHIC PULMONARY FIBROSIS

Assembly on Clinical Problems

## <u>2:15 p.m. - 4:15 p.m.</u>

## Target Audience

Clinical and translational researchers interested in methods of early detection and diagnosis of IPF; clinicians who care for patients with interstitial lung disease (ILD).

## Objectives

At the conclusion of this session, the participant will be able to:

- improve understanding of the potential clinical impacts of early diagnosis of IPF on patient management, therapy, and outcomes;
- learn new findings about interstitial lung abnormalities (ILAs), their relationship to patient mortality, and ongoing research on the relationship between ILAs and IPF and identifying ILAs in high-risk patient populations;
- learn new findings about methods with potential for early diagnosis of usual interstitial pneumonitis (UIP)/IPF, including recent studies on genomic classifiers and ongoing research on novel in vivo endobronchial optical microscopy imaging methods.

In this symposium, we will discuss the clinical significance of early detection and diagnosis of idiopathic pulmonary fibrosis (IPF), including the recent data on anti-fibrotic therapy in IPF patients with less severe disease resulting in lung function preservation. We will discuss methods for early IPF diagnosis, including detection of interstitial lung abnormalities (ILA) on HRCT in high-risk patient populations. We will also discuss the use of genomic classifiers and novel in vivo endobronchial optical microscopy imaging for early diagnosis of usual interstitial pneumonitis (UIP)/IPF.

- Chairing: L.P. Hariri, BS, MD, PhD, Boston, MA G.M. Hunninghake, MD, MPH, Boston, MA A. Podolanczuk, MD, New York, NY
- 2:15 Early Diagnosis of IPF and Impacts on Clinical Management, Therapy and Patient Outcomes L. Richeldi, PhD, MD, Rome, Italy
- 2:35 Moving the Field of Early Pulmonary Fibrosis Detection to Clinical Practice G.M. Hunninghake, MD, MPH, Boston, MA
- 3:00 Subclinical Interstitial Lung Disease: Experience from the Multi-Ethnic Study of Atherosclerosis A. Podolanczuk, MD, New York, NY
- 3:25 When and Why Interstitial Lung Abnormalities are Clinically Important? R.K. Putman, MD, MPH, Boston, MA

3:50 Novel Methods for Early Diagnosis of Usual Interstitial Pneumonitis (UIP)/IPF L.P. Hariri, BS, MD, PhD, Boston, MA

## BEHAVIORAL · CLINICAL

#### CRITICAL CARE TRACK

## B84 EARLY SEPSIS CARE AND THE HOUR ONE BUNDLE: WHY? WHEN? WHO? HOW?

Assemblies on Critical Care; Behavioral and Health Services Research; Clinical Problems; Nursing; Pediatrics

#### 2:15 p.m. - 4:15 p.m.

#### Target Audience

Clinicians and trainees from multiple disciplines and settings who care for sepsis patients; individuals involved in sepsis research, quality improvement, advocacy, policy, or antibiotic stewardship

#### Objectives

At the conclusion of this session, the participant will be able to:

- apply data supporting early antibiotic and fluid treatment in sepsis, associated controversies, and potential adverse effects of efforts to speed treatment initiation. This objective will provide an evidence base for improved clinical practice.
- identify barriers to prompt treatment for sepsis patients. This objective will help attendees improve care delivery for sepsis for patients at their institutions.
- apply and adapt novel strategies to deliver high-quality sepsis care. This objective will help attendees find innovative methods to ensure high-quality care for sepsis patients.

International guidelines and government mandates emphasize early treatment and especially early antibiotics for septic patients. In particular, observational studies show sepsis outcomes worsen for every hour effective antibiotics are delayed. Despite increasing evidence and biological plausibility, however, controversy persists regarding this central premise, measurement of treatment timing, and implementation of a one-hour target for antibiotic initiation specifically and sepsis treatment generally. This session will review the current evidence and controversies around early antibiotic and fluid treatment for sepsis, discuss potential adverse effects of prioritizing early treatment, and evaluate the barriers to rapid treatment initiation and potential methods to overcome them.

- Chairing: I.D. Peltan, MD, MSc, Murray, UT H.C. Prescott, MD, MSc, Ann Arbor, MI V.X. Liu, MD, MS, Oakland, CA
- 2:15 A Patient's Perspective Speaker To Be Announced
- 2:20 Rapid Antibiotics Saves Lives: Truth, Hype and Consequences H.C. Prescott, MD, MSc, Ann Arbor, MI
- 2:34 Early IV Fluids in Adult and Pediatric Sepsis: Too Much of a Good Thing? A.B. Maddux, MD, MSCR, Aurora, CO
- 2:48 Treatment Timing by Sepsis Subgroups: One Size Fits None? V.X. Liu, MD, MS, Oakland, CA
- 3:02 Sepsis Mandates: The View From Ground Zero T.M. Osborn, MD, MPH, Saint Louis, MO
- 3:16 Why Do We Struggle to Implement Rapid Treatment? I.D. Peltan, MD, MSc, Murray, UT
- 3:30 High-Quality Sepsis Care in Lower Resource Settings L.A. Gorordo Delsol, MD, Mexico City, Mexico
- 3:45 Can We Help Clinicians Make Better Decisions Faster? B.E. Jones, MD, MSc, Salt Lake City, UT
- 4:00 Interprofessional Teams, Sepsis, and the Science of Implementation D.K. Costa, PhD, RN, Ann Arbor, MI

# BASIC

# BASIC SCIENCE CORE

# B85 THE RARE AND THE FEW: NEWLY IDENTIFIED CELL TYPES IN THE LUNG AND IMPLICATIONS FOR DISEASE AND REGENERATION

Assemblies on Respiratory Cell and Molecular Biology; Respiratory Structure and Function; Section on Genetics and Genomics

<u>2:15 p.m. - 4:15 p.m.</u>

# Target Audience

Providers of lung health, and basic researchers.

# Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about the role of rare lung cells such as PNEC, ionocytes, tuft cells and interstitial macrophages in the pathophysiology of respiratory disease;
- understand how genes associated with complex respiratory disease can be linked to specific cell types;
- understand how different methods of single-cell sequencing can be applied to study pulmonary disease with development.

With development of single-cell technologies our understanding of lung cellular heterogeneity is rapidly expanding. Several new lung cell types and previously poorly described states of know cells have been identified. The growing atlas of lung cells and their genetic fingerprints serves as an invaluable resource to understand changes of individual cells during development and their unique contributions to homeostasis. It also serves as baseline to study the spectrum of respiratory disease. Deciphering the cell states that emerge or expand following injury and tracking the cell-type specific responses during regeneration will greatly expand scientific and clinical understanding of lung biology.

- Chairing: E. Sajti, MD, PhD, San Diego, CA X. Sun, PhD, San Diego, CA
- 2:15 Pulmonary Neuroendocrine Cells and Asthma X. Sun, PhD, San Diego, CA
- 2:35 Ionocytes and Their Importance in the Pathogenesis of Cystic Fibrosis L. Wingert Plasschaert, PhD, Cambridge, MA
- 2:55 Anatomical and Functional Diversity of Lung Mesenchymal Cells, Implications for Homeostasis and Injury Repair After Exposure to Environmental Toxicant C. Kim, PhD, Boston, MA
- 3:15 Interstitial Macrophage Subsets and Their Role in Lung Fibrosis F. Ginhoux, PhD, Singapore, Singapore
- 3:35 Tuft Cells, the "Taste Bud" Cells of the Lung and Their Role in Reshaping Lung Tissue Structure in the Wake of Severe Influenza Pneumonia A. Vaughan, PhD, Philadelphia, PA
- 3:55 Pulse-Seq (Combining scRNA-seq and Lineage Tracing) and Other Emerging Single Cell Sequencing Methods to Understand Pulmonary Disease Y. Xu, PhD, Cincinnati, OH

# CLINICAL

# SCIENTIFIC SYMPOSIUM

# B86 DELIVERY OF PULMONARY REHABILITATION IN THE FACE OF SOCIAL AND HEALTH INEQUALITY: CAN WE BRIDGE THE GAP?

Assemblies on Pulmonary Rehabilitation; Behavioral and Health Services Research; Environmental, Occupational and Population Health; Nursing

## <u>2:15 p.m. - 4:15 p.m.</u>

# Target Audience

Clinicians and rehabilitation practitioners managing patients with chronic respiratory disease, allied health care professions, health economists and sociologists.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand how health inequalities influences access to PR services across a range of health care settings and appreciate the reasons that explain these associations;
- define new strategies to enhance referral and access to effective PR in under-served populations;
- understand the opportunities and challenges in relation to the provision of PR in low resource healthcare settings.

Pulmonary Rehabilitation (PR) is a key intervention in the management of chronic respiratory disease but provision of PR is highly variable within and between nations. In this symposium, speakers will explore the scale and causes of variation in PR provision in relation to economic, ethnic and gender inequality. Challenges in developing and delivering PR to these populations in the developed and developing world will be articulated.

- Chairing: S.J. Singh, PhD, Leicester, United Kingdom S. Roark, MD, Denver, CO
- 2:15 Introduction S.J. Singh, PhD, Leicester, United Kingdom
- 2:27 Reaching Out with Rehabilitation: How the System Disadvantages Patients in Lower Socioeconomic Groups K. Johnston, PhD, Adelaide, Australia
- 2:54 Participation in Pulmonary Rehabilitation: Who's Missing? P. Camp, PT, MS, PhD, Vancouver, Canada
- 3:21 Gender Questions: What We Know and What We Need to Know about Pulmonary Rehabilitation for Men and Women F. Early, PhD, Cambridge, United Kingdom
- 3:48 Pulmonary Rehabilitation in Developing Countries: How Can it Be Implemented? S.S. Salvi, MD, PhD, Pune, India

# BEHAVIORAL • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# B87 SLEEP CLINIC 2030: BIG DATA, WEARABLES AND DEEP LEARNING CHANGE SLEEP MEDICINE

Assembly on Sleep and Respiratory Neurobiology

2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Pulmonary and critical care physicians, sleep physicians, fellows in training, health data scientists.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about the current state of novel technology, big data and analytics in sleep characterization, wearables, treatment monitoring, and engaging patients in sleep disorder management;
- improve understanding of the opportunities, benefits and limitations of big data and deep learning in sleep characterization, wearables, treatment monitoring, and engaging patients in sleep research;
- apply technology-based tools to partner patients with sleep care providers, and to empower patients to improve self-care for their sleep disorders, including obstructive sleep apnea and insomnia.

Advances in technology and analytics have the potential to transform how we measure sleep and deliver therapy both in the home and the clinic, and to engage and empower patients in ways that personalize sleep health care. The goal of this symposium is to summarize the current state of novel technology, Big Data and analytics in 1) sleep characterization, 2) wearables, 3) treatment monitoring and 4) engaging patients to manage sleep disorders. Presented by young investigators, leaders in the field and patients, this session will synthesize above knowledge to paint a bold vision for the sleep clinic in the near future (2030).

- Chairing: A. Zinchuk, MD, BS, New Haven, CT A.V. Vakulin, PhD, Adelaide, Australia S. Shafazand, MD, MS, ATSF, Miami, FL S.S. Redline, MD, MPH, Boston, MA
- 2:15 Redefining Sleep Characterization E. Mignot, MD, PhD, Stanford, CA
- 2:35 Consumer Wearables to Advance Sleep Disorder Science and Management C.M. Depner, PhD, Boulder, CO
- 2:55 Predictive Analytics, OSA Screening, Diagnosis and Management D. Hwang, MD, Fontana, CA
- 3:10 Improving OSA Treatment Using Big Data A. Malhotra, MD, ATSF, La Jolla, CA
- 3:30 Improving OSA Treatment Using Big Data: A Patient's Perspective Speaker To Be Announced
- 3:35 Patient Engagement Using Advanced Analytics and Cloud Computing J. Kanady, PhD, San Francisco, CA
- 3:55 Patient Engagement Using Advanced Analytics and Cloud Computing: A Patient's Perspective Speaker To Be Announced
- 4:00 A Vision for the Future: Sleep Clinic 2030 D.C. Lim, MD, Philadelphia, PA

# BEHAVIORAL · CLINICAL

# SCIENTIFIC SYMPOSIUM

# B88 MIND THE GAP: ENDING GENDER DISCRIMINATION AND SEXUAL HARASSMENT IN CRITICAL CARE

Assemblies on Critical Care; Behavioral and Health Services Research; Clinical Problems; Nursing

## 2:15 p.m. - 4:15 p.m.

Target Audience This scientific symposium is designed for everyone-trainees at all levels, medical educators, all practicing health care providers and researchers.

### Objectives

At the conclusion of this session, the participant will be able to:

- understand the pervasiveness of sexual harassment in academic medicine and the unique challenges health care providers encounter;
- apply tools for combating sexual harassment at the individual level;
- identify system changes that can be easily modified for promoting culture change now.

A 2018 National Academy of Science, Engineering and Medicine report highlighted the pervasiveness of sexual harassment in academic medicine-experienced by an estimated 50% of women. Efforts to address sexual harassment are needed now that women represent greater than 50% of medical trainees in the U.S., Canada, and the U.K., and greater than 90% of nursing trainees. This session will examine the impact of sexual harassment in academic medicine, discuss the unique challenges faced by providers, the intersectionality of sexual harassment with race and gender identity, and propose practical solutions to retain women in academic medicine.

- Chairing: E.M. Viglianti, MD, MPH, Ann Arbor, MI H.B. Gershengorn, MD, ATSF, Miami, FL N. Kaminski, MD, ATSF, New Haven, CT
- 2:15 Sexual Harassment in Medicine: Highlights of the National Academies of Medicine R. Jagsi, MD, DPhil, Ann Arbor, MI
- 2:30 "Its Just a Part of the Job": Patient-Perpetrated Harassment E.M. Viglianti, MD, MPH, MSc, Ann Arbor, MI
- 2:45 #WeForAll: All in This Together K.O. Lindell, PhD, RN, ATSF, Pittsburgh, PA
- 3:00 Under the Radar: Microaggressions in Medicine M.P. Kerlin, MD, MS, Philadelphia, PA
- 3:15 One Size Doesn't Fit All: Sexual Harassment's Complex Interaction with Race, Gender Identity and Sexual Orientation A.A. Hope, MD, Bronx, NY

- 3:30 System Solutions: Athena Swan in the U.K. C. Summers, MBBS, PhD, Cambridge, United Kingdom
- 3:45 Beyond Apologies: What Men Can Do Now to Stop Sexual Harassment T.J. Iwashyna, MD, PhD, Ann Arbor, MI
- 4:00 Women in Critical Care: We Are Too Small a Minority H.B. Gershengorn, MD, ATSF, Miami, FL

## BASIC

#### SCIENTIFIC SYMPOSIUM

## B89 UNLOCKING THE POTENTIAL OF TRAINED IMMUNITY TO TREAT RESPIRATORY INFECTION AND INFLAMMATION

Assemblies on Allergy, Immunology and Inflammation; Critical Care; Pulmonary Infections and Tuberculosis; Respiratory Cell and Molecular Biology

#### 2:15 p.m. - 4:15 p.m.

#### Target Audience

Pulmonary scientists seeking to gain novel insights into how trained immunity, a durable process of functional reprogramming of innate immune cells, may be modulated to promote lung or systemic homeostasis or reduce disease progression.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about innate immune memory and its role in the host response to a secondary inflammatory or infectious stimulus.
- apply knowledge on trained immunity to the design of future BASIC or translational investigations such as vaccine development and/or modulation of host responses to respiratory infection or sepsis.
- define new strategies that have the potential to engage and integrate both the innate and adaptive immune systems for enhanced protection against infectious and inflammatory diseases.

This symposium will provide the learner with a comprehensive introduction and overview of trained immunity in the context of respiratory and systemic inflammatory diseases. The aim is to explore how functional reprogramming of innate myeloid and lymphoid cell subsets could be used to modulate protective or pathological immune responses in the lung. The influence of trained immunity on systemic inflammatory diseases such as sepsis will also be discussed. Individual speakers will review the basic concepts and principles of innate immune memory, the crucial role of metabolic pathways in the functional reprogramming of myeloid and lymphoid cell types, and novel therapeutic approaches to modulate trained immunity.

- Chairing: S.T. Qureshi, MD, Montreal, Canada C. Dela Cruz, MD, PhD, ATSF, New Haven, CT A.E. Samarasinghe, PhD, Memphis, TN
- 2:15 Trained Immunity Mediates Adaptation of Hematopoietic Progenitor Cells to Inflammation G. Hajishengallis, DDS, PhD, Philadelphia, PA
- 2:35 Protection or Subversion of Hematopoietic Stem Cells During Mycobacterial Infection M. Divangahi, PhD, Montreal, Canada
- 2:55 Gamma Delta T Cells Play a Critical Role in Lung Recovery After Infant Infections P.G. Thomas, PhD, Memphis, TN
- 3:15 Trained Immunity of Alveolar Macrophages Enhances Resistance to Bacterial Pneumonia J.P. Mizgerd, ScD, ATSF, Boston, MA
- 3:35 Trained Immunity as a Defense Mechanism Against Sepsis in Neonates J.W. Wynne, MD, Gainesville, FL
- 3:55 Trained Innate Immune Protection Against Lethal Fungal-Bacterial Intra-Abdominal Infections M. Noverr, PhD, New Orleans, LA

# BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# B90 SMOKE SIGNALS: WILDFIRE EXPOSURE AND PULMONARY HEALTH OUTCOMES

Assemblies on Environmental, Occupational and Population Health; Allergy, Immunology and Inflammation; Clinical Problems; Respiratory Cell and Molecular Biology

### <u>2:15 p.m. - 4:15 p.m.</u>

### **Target Audience**

Basic and clinical researchers and clinicians interested in learning about emerging literature that describe the unique challenges of diagnosing, treating, and preventing the adverse health effects caused by wildfire exposure.

### Objectives

At the conclusion of this session, the participant will be able to:

- understand the impacts of wildfires on pulmonary health in individuals, communities, and heavily exposed occupational groups.
- understand the potential mechanisms of how wildfire emissions alter pulmonary responses in healthy and susceptible populations
- provide clinicians and the public health community with effective tools to protect patient/community's pulmonary health before, during, and after wildfire exposure.

Wildfires are increasing in size and severity with severe impacts on air quality and respiratory health. Wildfire smoke is associated with increased mortality and respiratory morbidity, including increased medication usage, emergency department visits, and hospitalizations. However, the clinical impacts and molecular mechanisms are not well characterized. Therefore, defining the respiratory effects of wildfire exposure and identifying interventions to protect patients, communities, and high-risk occupational groups is critical. This session will introduce what communities are exposed to during wildfires, define the mechanisms by which exposure can impact pulmonary health, and lastly compare current and emerging interventions to mitigate wildfire-related health effects.

- Chairing: K.M. Gowdy, BS, MS, PhD, Greenville, NC J.G. Wagner, MBA, PhD, East Lansing, MI M.B. Rice, MD, MPH, Boston, MA
- 2:15 Breathing Smoke: Wildfire Smoke Exposure for Wildland Firefighter and the Public K. Navarro, MPH, PhD, Berkeley, CA
- 2:39 Chemistry and Toxicity of Biomass Combustion Emissions Y.H. Kim, PhD, Durham, NC
- 3:03 Health Consequences of Wildfires and Prescribed Burns M. Prunicki, PhD, MD, Stanford, CA
- 3:27 Smoke Sense: Using Citizen Science to Protect Health from Wildfire Smoke A. Rappold, PhD, Research Triangle Park, NC
- 3:51 Communicating the Health Effects of Wildfire Smoke to Patients: Health Risks and Recommendations B. Marsh, MD, PhD, Portland, OR

# **BASIC • TRANSLATIONAL**

SCIENTIFIC SYMPOSIUM

# B91 ORIGINS OF COPD: SUSCEPTIBILITY OF DIFFERENT CELL TYPES

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems

#### <u>2:15 p.m. - 4:15 p.m.</u>

#### Target Audience

Physicians and scientists who are interested in understanding the underlying mechanisms that drive the development of COPD

### Objectives

At the conclusion of this session, the participant will be able to:

• Describe the processes that take place during early stages of COPD development.

- Describe various cell types that are involved in the development of COPD.
- Describe possible endotypes of COPD.

Chronic obstructive pulmonary disease (COPD) is a syndrome that comprises several lung pathologies, but sub-phenotyping the various disease subtypes has not been successful. Functional studies of these polymorphisms suggest that susceptible airway, endothelial, hematopoietic, or smooth muscle cells initially may generate COPD endotypes that are characterized by distinct pathobiological mechanisms. These endotypes may ultimately manifest themselves as emphysematous destruction of the lung. Polymorphisms in cells other than those listed may remain to be identified and could represent yet other endotypes of COPD.

- Chairing: I. Petrache, MD, ATSF, Denver, CO Y. Tesfaigzi, PhD, Boston, MA P. Woodruff, MD, MPH, San Francisco, CA
- 2:15 A Patient's Perspective Speaker To Be Announced
- 2:20 Macrophage Susceptibility and COPD P. Woodruff, MD, MPH, San Francisco, CA
- 2:39 Susceptibility of Endothelial Cells in COPD I. Petrache, MD, ATSF, Denver, CO
- 2:58 Susceptibility of Airway Epithelia Drives Chronic Bronchitis and COPD Y. Tesfaigzi, PhD, Boston, MA
- 3:17 Deficiency in B Cells in COPD F. Kheradmand, MD, Houston, TX
- 3:36 Dendritic Cells as Origins of COPD Development J.L. Curtis, MD, ATSF, Ann Arbor, MI
- 3:55 How Understanding Susceptible Cell Types Can Help Improve Clinical Intervention S.I. Rennard, MD, Omaha, NE

# BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

## B92 ATS JOURNALS 2020 AND BEYOND: TRANSFORMATIONS IN MEDICAL PUBLISHING FOR AUTHORS AND READERS

ATS Journals/Publications Policy Committee

#### <u>2:15 p.m. - 4:15 p.m.</u>

#### **Target Audience**

This session is for researchers just starting their careers and those directing research groups. It will be of interest to those delegates wishing to submit papers, understand the rigorous peer review process, or become future editors.

#### Objectives

At the conclusion of this session, the participant will be able to:

- improve skills in writing and preparing manuscripts and statistical analysis;
- learn about issues with data sharing and preprint servers, and understand publication ethics and how they can impact a submission;
- understand how a journal processes, checks, and reviews submitted manuscripts, including trial registration, plagiarism, and image forensics.

This session will offer information on submitting papers to the ATS journals, including writing and statistical tips; insight into how the journals work, including peer review, plagiarism, and image forensics; and recent issues that affect the journals, such as data sharing, publication ethics, and preprint servers. Editors will explain how to peer review a paper and how editors review and assess papers for publication. Additionally, this session will provide an opportunity to hear from the editor of ATS Scholar on the objectives of this new, modern journal.

Chairing: B.D. Levy, MD, ATSF, Boston, MA J.A. Wedzicha, MD, ATSF, London, United Kingdom K.M. Ridge, PhD, Chicago, IL

- 2:15 Writing Compelling Manuscripts for Journals C.R. Cooke, MD, Ann Arbor, MI
- 2:35 Peer Review and Editorial Assessment F.J. Martinez, MD, MS, New York, NY
- 2:55 What Is the Purpose of a Statistical Review? G.C. Donaldson, PhD, BSc(Hons), ATSF, London, United Kingdom
- 3:10 Issues in Publication Ethics J.A. Wedzicha, MD, ATSF, London, United Kingdom
- 3:25 Recent Events in the Editorial Community: Data Sharing and Preprint Servers P.T. Schumacker, PhD, ATSF, Chicago, IL
- 3:45 ATS Scholar: Publishing a Transformative ATS Journal N. Seam, MD, ATSF, Bethesda, MD
- 4:00 Fraud and Misconduct Issues: Checks Performed on Manuscripts E. Gumpert, BA, New York, NY

# 2:15 p.m. - 4:15 p.m.

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.

#### <u>4:30 p.m. - 7:00 p.m</u>

#### ASSEMBLY MEMBERSHIP MEETINGS

The fourteen Assemblies are the primary groups of the American Thoracic Society. Each Assembly holds an annual Membership Meeting at the International Conference. All Assembly members and other interested individuals are invited to attend.

The Assembly Membership Meetings provide an update on the Assembly's activities via the Assembly's Leadership and provide Assembly members the chance to have input on future directions, information on how to get involved and networking opportunities. Voting results for the Assembly's future leaders will also be announced.

The Assemblies on Behavioral Science and Health Services Research, Pediatrics and Thoracic Oncology meetings are held on Sunday, May 17th.

ALLERGY, IMMUNOLOGY AND INFLAMMATION Chairing: Jay K. Kolls, MD, New Orleans, LA

BEHAVIORAL SCIENCE AND HEALTH SERVICES RESEARCH Chairing: J. Daryl Thomton, MD, MPH, ATSF, Cleveland, OH *This meeting will be held on Sunday, May 17th.* 

CLINICAL PROBLEMS Chairing: Mei Lan K. Han, MD, MS, Ann Arbor, MI

CRITICAL CARE Chairing: Renee D. Stapleton, MD, PhD, ATSF, Burlington, VT

> ENVIRONMENTAL OCCUPATIONAL AND POPULATION HEALTH Chairing: Stephanie London, MD, DrPH, Research Triangle Park, NC

NURSING Chairing: Linda Chlan, PhD, RN, ATSF, Lakeville, MN PEDIATRICS Chairing: Paul E. Moore, MD, ATSF, Nashville, TN This meeting will be held on Sunday, May 17th.

PULMONARY CIRCULATION Chairing: Anna Hemnes, MD, ATSF, Nashville, TN

PULMONARY INFECTIONS AND TUBERCULOSIS Chairing: Kristina A. Crothers, MD, Seattle, WA

PULMONARY REHABILITATION Chairing: Anne E. Holland, PT, PhD, Melbourne, Australia

RESPIRATORY CELL AND MOLECULAR BIOLOGY Chairing: Melanie Koenigshoff, MD, PhD, ATSF, Aurora, CO

RESPIRATORY STRUCTURE AND FUNCTION Chairing: Gwen S. Skloot, MD, ATSF, New York, NY

SLEEP AND RESPIRATORY NEUROBIOLOGY Chairing: Mihaela Teodorescu, MD, MS, Madison, WI

THORACIC ONCOLOGY Chairing: Lynn T. Tanoue, MD, New Haven, CT *This meeting will be held on Sunday, May 17th.* 

#### <u>7:00 p.m. - 10:**00** p.m.</u>

#### ASSEMBLY DINNER/RECEPTION

Assembly members and non-members, students and fellows are invited to join us for an evening of networking, great company, and camaraderie. This is a wonderful opportunity to introduce young members and trainees to Assembly leaders, to connect with old friends and to set up new interactions and collaborations.

Pre-registration and an additional fee are required. Seating is limited. Please register through online general registration by clicking the Register Now button above.

> The following Assemblies will hold a dinner or reception immediately following their Assembly Membership Meetings.

Assembly on Pediatrics Founders Dinner **Sunday, May 17** 7:30 p.m.-10:30 p.m. Member - \$115 Non-Member - \$125 Fellow -\$95 Assembly on Sleep and Respiratory Neurobiology Reception Monday, May 18 7:00 p.m.-10:00 p.m. Member - \$70 Non-Member - \$80 Fellow \$50



## SUNRISE SEMINARS

Registration Fee: \$50.00 (includes continental breakfast.) Attendance is limited. Pre-registration is required.

<u>6:45 a.m. - 7:45 a.m.</u>

- SS201 THE INS AND OUTS OF ACQUIRING AND INTERPRETING BAL RESULTS: CLINICAL AND RESEARCH CONSIDERATIONS E.D. Morrell, MD, MA, Seattle, WA
- SS202 BRONCHOSCOPIC LUNG VOLUME REDUCTION: PEARLS AND PITFALLS M. Shafiq, MD, MPH, Baltimore, MD
- SS203 THE CHANGING LANDSCAPE OF CYSTIC FIBROSIS CARE: CFTR MODULATORS AND BEYOND S. Jia, MD, Ann Arbor, MI
- SS204 CAREER IN TRANSITION: ACADEMIC TO INDUSTRY J.P. Kirkness, PhD, ATSF, Irvine, CA
- SS205 ILD AND THE ANTI-SYNTHETASE SYNDROME: FROM DIAGNOSIS TO TREATMENT R. Hallowell, MD, Boston, MA
- SS206 NASAL HIGH FLOW: USES BEYOND THE ICU N.N. Goel, MD, New York, NY
- SS207 ROLE OF PLEURAL MANOMETRY IN EVALUATING PLEURAL DISEASE A. Chopra, MD, Albany, NY

- SS208 CHRONIC TRACHEOSTOMY MANAGEMENT R. Krochmal, MD, Washington, DC K. Van Nostrand, MD, Atlanta, GA
- SS209 HOW TO START AN ILD PROGRAM C. He, MD, Sherbrooke, Canada
- SS210 CHALLENGING CASES IN CRITICAL CARE ULTRASOUND E. Bondarsky, MD, New York, NY
- SS211 REAL-WORLD SPIROMETRY: AVOIDING TECHNICAL PITFALLS AND CHOOSING AN INTERPRETATION ALGORITHM M.C. Townsend, PhD, Pittsburgh, PA
- SS212 TEACHING TRANSITIONAL CARE TO PULMONARY TRAINEES S.E. Kirkby, MD, Columbus, OH
- SS213 ACUTE PULMONARY EMBOLISM IN 2020 P. Rali, MD, Philadelphia, PA
- SS214 PATHOGENESIS OF INFLUENZA VIRUS IN HOSTS WITH ALLERGIC ASTHMA A.E. Samarasinghe, PhD, Memphis, TN
- SS215 INSPIRE TO EXERCISE: USING TECHNOLOGY TO GUIDE AND TRACK HOME EXERCISE PROGRAMS A.M. Layton, PhD, New York, NY
- SS216 STATE OF THE ART LUNG MRI TECHNOLOGY AND THE FUTURE OF FUNCTIONAL LUNG IMAGING A.E. Campbell-Washburn, PhD, Bethesda, MD
- SS217 IT TAKES A TEAM: MANAGEMENT OF OSA IN CHILDREN WITH CRANIOFACIAL CONDITIONS C.M. Cielo, DO, Philadelphia, PA J. Swanson, MD, MSc, Philadelphia, PA
- SS218 TARGETING THE CYTOKINE NETWORK AS AN ALTERNATIVE PATH FOR PREVENTION AND TREATMENT OF LUNG CANCER S.J. Moghaddam, MD, Houston, TX E. Ostrin, MD, PhD, Houston, TX

# BASIC • CLINICAL • TRANSLATIONAL

## KEYNOTE SERIES

## 8:00 a.m.-8:45 a.m.

# K3 VACCINES ON THE HORIZON: IMPLICATIONS FOR PRACTICE AND POLICY

The Keynote Series focuses on topics thought to be timely and of high relevance to the pulmonary, critical care, and sleep medicine community.

Sessions are presented on Sunday, Monday and Tuesday during the Conference.

Speaker: Kristen A. Feemster, MD, MPH, MSHPR, Philadelphia, PA

# CLINICAL

## YEAR IN REVIEW

# C1 CLINICAL YEAR IN REVIEW 3

### 9:15 a.m. - 11:15 a.m.

### **Target Audience**

Providers including physicians, nurses, respiratory therapists, nurse practitioners, physician assistants; trainees including residents and fellows; clinical researchers

## Objectives

At the conclusion of this session, the participant will be able to:

- apply new clinical research knowledge to clinical practice;
- learn new findings about key conditions in pulmonary, critical care and sleep;
- have new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia provides concise summaries of the most impactful clinical research publications related to specific clinical topics. Speakers are asked to conduct a literature review of the prior year's scientific publications and develop a written summary of the top 20 articles and highlight 5 of the most important and influential publications on their topic in written format and during their talks at the International Conference Clinical Year in Review sessions.

- Chairing: J.S. Lee, MD, Aurora, CO P.A. Kritek, MD, EdM, Seattle, WA J.L. Gomez, MS, MD, ATSF, New Haven, CT
- 9:15 Lung Cancer K.A. Steiling, MSc, MD, Boston, MA
- 9:45 Rare Lung Disease C. McCarthy, MD, PhD, Cincinnati, OH
- 10:15 General Critical Care K.C. Vranas, MD, Portland, OR
- 10:45 Lung Transplantation J.P. Singer, MS, MD, San Francisco, CA

# CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# C2 LUNG COMPLICATIONS AFTER HEMATOPOIETIC CELL TRANSPLANT

Assemblies on Clinical Problems; Pulmonary Infections and Tuberculosis; Respiratory Structure and Function

<u>9:15 a.m. - 11:15 a.m.</u>

### Target Audience

Clinicians who care for hematopoeitic cell transplant recipients with lung complications; investigators who wish to screen for early lung disease using imaging or home spirometry; scientists studying the impact of occult infections on lung disease.

## Objectives

At the conclusion of this session, the participant will be able to:

 better recognize and diagnose early lung complications after hematopoietic cell transplant, including bronchiolitis obliterans syndrome;

- define new strategies to identify patients at high risk for developing lung complications after hematopoeitic cell transplant;
- integrate new options for the treatment of steroid-refractory lung disease after hematopoietic cell transplant.

Lung complications after hematopoeitic cell transplant are common and often occur insidiously, leading to morbidity and mortality despite curing high-risk hematologic malignancies. This session will refresh attendees on the natural history of lung complications, update viewers on the safety of azithromycin after transplant, and highlight state-of-the-art advances in the detection of occult infections, novel thoracic imaging modalities, and cloud-based home spirometry platforms to detect and halt the progression of pulmonary diseases such as bronchiolitis obliterans. The session will conclude with cutting-edge treatments for steroid-refractory graft-versus-host disease of the lung, offering new options for those who care for patients with lung disease after hematopoeitic transplant.

- Chairing: A. Sheshadri, MD, BA, MSCR, Houston, TX G.-S. Cheng, MD, Seattle, WA
- 9:15 Lung Complications After HCT: Where Do We Stand in 2020? G.-S. Cheng, MD, Seattle, WA
- 9:35 Dysbiosis and Occult Viral Infections: Silent Instigators of Lung Disease D.N. O'Dwyer, BM BCH, BMedSci, PhD, Ann Arbor, MI
- 9:55 Imaging the Lung with 20/20 Vision: Early Indicators of Lung Impairment J.C. Woods, PhD, Cincinnati, OH
- 10:15 Bringing It Back Home: Early Detection with Home Spirometry Telemonitoring A. Sheshadri, MD, BA, MSCR, Houston, TX
- 10:35 ALLOZITHRO and Beyond: Reassessing the Safety of Azithromycin After Allogeneic HCT A. Bergeron, MD, PhD, Paris, France
- 10:55 Beyond Steroids: New Targets to Treat BOS and Other Late Lung Complications J.L. Hsu, MD, MPH, Redwood City, CA

# CLINICAL

#### CLINICAL TOPICS IN PULMONARY MEDICINE

## C3 PEDIATRIC CLINICAL CHEST ROUNDS

Assembly on Pediatrics

<u>9:15 a.m. - 11:15 a.m.</u>

#### **Target Audience**

Pediatric pulmonary clinicians, including physicians, NPs, nurses, and other health professionals interested in the diagnosis and management of challenging pediatric cases.

#### Objectives

At the conclusion of this session, the participant will be able to:

- generate a broad differential diagnosis for challenging cases in pediatric pulmonary medicine;
- apply current diagnostic testing to the management of challenging cases in pediatric pulmonary medicine;
- discuss state of the art management of challenging pediatric pulmonary cases.

Pediatric Clinical Chest Rounds focuses on the diagnosis and management of 4 challenging clinical cases selected from the case reports submitted to the Pediatric Assembly. Each case is presented by a trainee (usually a pediatric pulmonary fellow) and discussion is led by an expert in the field.

- Chairing: A.G. Filbrun, MD, MS, Ann Arbor, MI T.J. Moraes, MD, Toronto, Canada A.R. O'Hagan, MD, Louisville, KY
- 9:15 Case Presentation 1 A.G. Filbrun, MD, MS, Ann Arbor, MI
- 9:45 Case Presentation 2 A.R. O'Hagan, MD, Louisville, KY
- 10:15 Case Presentation 3 T.J. Moraes, MD, Toronto, Canada
- 10:45 Case Presentation 4 A.G. Filbrun, MD, MS, Ann Arbor, MI

# CLINICAL

## CRITICAL CARE TRACK

# C4 EVERYTHING YOU WANTED TO KNOW ABOUT CARING FOR CRITICALLY ILL GERIATRIC PATIENTS

Assemblies on Critical Care; Clinical Problems; Nursing

### 9:15 a.m. - 11:15 a.m.

### **Target Audience**

Multidisciplinary groups of clinicians who work in or outside of the ICU caring for critically ill older adults or older adult survivors of critical illness. This includes nurses, physical and occupational therapists, pharmacists, and physicians.

### Objectives

At the conclusion of this session, the participant will be able to:

- appreciate several key principles of geriatric medicine that may be applied to the clinical care of the critically ill older adult;
- integrate and apply geriatrics principles into treatment strategies for the critically ill older adult;
- understand successful interprofessional models that optimize long-term functional recovery for seriously ill older adults after the ICU.

Older adults comprise over half the patient population in the intensive care unit. Despite this, barriers to caring for critically ill older adults have received insufficient attention. This session will draw on multidisciplinary, multi-institutional perspectives from geriatrics, nursing, pharmacy, physical therapy, and pulmonary-critical care medicine to provide evidence-based and practical recommendations to optimize the clinical care of the older adult during and after the ICU.

- Chairing: A.S. Iyer, MD, Birmingham, AL L.E. Ferrante, MD, MHS, New Haven, CT M. Hua, MD, MSci, New York, NY
- 9:15 Through the Geriatrician's Lens: A Case-Based Approach to the Older ICU Patient L.A. Walke, MD, MSHA, Philadelphia, PA

- 9:27 Implementing Early Palliative Care for Older Adults with Serious Illness K.R. Courtright, BA, MS, MD, Ardmore, PA
- 9:39 Geriatric Care is Multidisciplinary Care: Improving the ICU Practice Environment M.B. Happ, PhD, Columbus, OH
- 9:51 Strategies to Reduce Medication Overload When Optimizing Comfort in the ICU J. Devlin, PharmD, Boston, MA
- 10:03 Mobilizing Older Adults in the ICU M. Kho, PT, PhD, Hamilton, Canada
- 10:15 "ACE in the Hole": How Mobile ACE Units Can Improve ICU Geriatric Care K.L. Flood, MD, Birmingham, AL
- 10:27 Post-ICU Clinics: Meeting the Needs of Older Adults After the ICU C.M. Sevin, MD, Nashville, TN
- 10:39 Promoting Long-Term Functional Recovery in Older Adults After Critical Illness B.A. Khan, MD, MS, Indianapolis, IN
- 10:51 Case-Based Panel Discussion on Geriatric Critical Care L.E. Ferrante, MD, MHS, New Haven, CT

# CLINICAL • TRANSLATIONAL

### SCIENTIFIC SYMPOSIUM

# C5 CLINICAL CONTROVERSIES IN PULMONARY HYPERTENSION: A PRO/CON DEBATE

Assembly on Pulmonary Circulation

#### 9:15 a.m. - 11:15 a.m.

### **Target Audience**

Primary professional audience will be those interested in Pulmonary Hypertension Secondary Professional Audience will be all basic, translational, and clinical scientists.

### Objectives

At the conclusion of this session, the participant will be able to:
- familiarize current clinical controversies in the diagnosis and management of PAH;
- better diagnose PAH and differentiate it from pulmonary venous hypertension;
- familiarize the indications for testing RV reserve in patients with PAH.

The goal of this session is to discuss and highlight controversies in the diagnosis and management of PAH patients. While the knowledge about PAH has greatly improved over the last decades, numerous clinical questions remain about how patients should be diagnosed and treated.

Chairing: S. Provencher, MD, Quebec city, Canada C.E. Ventetuolo, MD, MSCR, Providence, RI

P.A. Thistlethwaite, MD, PhD, La Jolla, CA T. Thenappan, MD, Minneapolis, MN

- 9:15 Patients with Mild Pulmonary Hypertension (mPAP 21-24) SHOULD Be Treated with Pulmonary Vasodilators D.M. Systrom, MD, Boston, MA
- 9:30 Patients with Mild Pulmonary Hypertension (mPAP 21-24) SHOULD NOT Be Treated with Pulmonary Vasodilators H.W. Farber, MD, Boston, MA
- 9:45 Right Heart Catheterization Is Fundamental in the Follow-Up Management of Patients with Pulmonary Hypertension M. Gomberg-Maitland, MD, MSc, Washington, DC
- 10:00 Non-Invasive Imaging Including Echo and Cardiac MRI Is Adequate for Follow-Up Testing in Patients with Pulmonary Hypertension D. Kiely, MD, Sheffield, United Kingdom
- 10:15 Initial Triple Therapy Should Be Considered for All Newly Diagnosed PAH Patients O. Sitbon, MD, ScD, Le Kremlin - Bicetre, France
- 10:30 Sequential Therapy with Rapid Treatment Escalation Based on Risk Scores Remains the Treatment of Choice for Non-High Risk Patients I.R. Preston, MD, Boston, MA

- 10:45 Riociguat Should Be Given to All CTEPH Patients, Regardless of Timing of PEA K.M. Kerr, MD, La Jolla, CA
- 11:00 Riociguat Should Be Given Only to Patients with Inoperable or Residual CTEPH After Surgical Pulmonary Thromboendarterectomy I.M. Lang, MD PhD, Vienna, Austria

## TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# C6 AN INTEGRATED SYSTEM: IMPACTS OF SKELETAL MUSCLE AND CARDIAC PHYSIOLOGY IN COPD

Assemblies on Pulmonary Rehabilitation; Respiratory Structure and Function

9:15 a.m. - 11:15 a.m.

#### Target Audience

Physicians managing chronic respiratory disease; pulmonary rehabilitation practitioners, pulmonary and exercise physiologists.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the causes and consequences of abnormal lung, cardiac and skeletal muscle physiology in COPD;
- offer the molecular and cellular basis leading to the design of novel therapeutic strategies to better treat the systemic manifestations and/or comorbities in chronic respiratory and cardiac disease;
- provide knowledge on the most recent technical advances in therapeutic strategies: nutritional support and other technological achievements in pulmonary rehabilitation and physical activity promotion.

This session will provide a broad and expert overview of the clinical impact of cardiac, lung and skeletal muscle dysfunction in COPD. Speakers will draw on recent advances in understanding of basic science to discuss the outstanding issues in these fields, specifically the aetiology of skeletal muscle pathophysiology in the stable and setting of acute exacerbation of COPD, the impact of disordered pulmonary physiology on the exercise training response and the physiological significance of lung-heart interactions in COPD. The impact of lung/heart/muscle pathophysiology on exercise training and pulmonary rehabilitation will be explored throughout the symposium.

- Chairing: E. Barreiro, MD, PhD, Barcelona, Spain R. Evans, MBChB, PhD, Leicester, United Kingdom
- 9:15 A Patient's Perspective Speaker To Be Announced
- 9:23 Metabolic Physiology of Skeletal Muscle in COPD: What Does It Tell Us About Pathophysiology?
  P. Greenhaff, PhD, Nottingham, United Kingdom
- 9:51 Acute Muscle Loss During Exacerbation of COPD: Why Does It Happen and How Do We Measure It? N.J. Greening, MBBS, PhD, Leicester, United Kingdom
- 10:19 Physiology of Exercise Training in COPD: Do We Need a Different Approach?T. Dolmage, MSc, Toronto, Canada
- 10:47 The Pressure Is On: Impact of Pulmonary Mechanics on Cardiac Function in COPD I. Vivodtzev, PhD, Boston, MA

# **BASIC** • TRANSLATIONAL

## SCIENTIFIC SYMPOSIUM

# C7 DECIPHERING THE ALVEOLAR PUZZLE: CELLS IN THE DISTAL LUNG DURING INJURY AND AGING

Assemblies on Respiratory Cell and Molecular Biology; Critical Care; RCMB Aging Interest Group

9:15 a.m. - 11:15 a.m.

Target Audience Basic and clinical researchers, clinicians, fellows, residents, and graduate students who are interested in the mechanisms of homeostatic and post-injury distal lung repair, and the implication of injury in lung aging.

# Objectives

At the conclusion of this session, the participant will be able to:

- understand the temporal and spatial molecular networks which have gone awry during sterile and non-sterile lung injury and aging;
- understand the complex supportive cell network for the regeneration of the distal lung niche;
- unify expertise in various biomedical fields: developmental biology, aging, pediatric and adult pulmonologists, geneticist, cell biologist, physiologists and -omics experts.

The commonality between aging and lung diseases of unresolvable injuries (IPF and COPD) have been well-conceptualized. The study of various distal cell responses to homeostasis and aging could help us decipher the pathology beyond their response to injury. This session overviews the diverse responses of distal lung niche cells (e.g., epithelial, endothelial, mesoderm, and lymphoid cells) during development, injury repair, regeneration, and aging. The goal is to cross-examine newly obtained experimental data with an emphasis on distal lung progenitor cells (e.g. ATII cells) and the cross-talk with the supportive cells in the distal lung niche. This session aims to provide integrated perspectives for future research.

- Chairing: I. Rahman, PhD, ATSF, Rochester, NY K.A. Serban, MD, Denver, CO X. Zhao, MB, PhD, Norfolk, VA J.P. Bridges, PhD, Denver, CO
- 9:15 A Patient's Perspective Speaker To Be Announced
- 9:23 Temporal and Spatial Molecular Networks Orchestrate Alveolar Homeostasis and Response to Injury J.A. Whitsett, MD, Cincinnati, OH
- 9:51 Comparative Single-Cell RNAseq Insights on Distal Lung Cell Aging and Injury H. Schiller, PhD, Munich, Germany

- 10:19 An Integrated Role of Distal Epithelial Cell Membrane Repair in Lung Health X. Zhao, MB, PhD, Norfolk, VA
- 10:47 Effects of Aging and Injury on ATTI to ATI Transition Y. Liu, PhD, Chicago, IL
- 10:21 Asymmetric Activation of Mesenchyme Transcription Factors Disrupts Distal Alveoli Maintenance and Injury Responses T. Peng, MD, San Francisco, CA
- 10:39 Harnessing Hematopoietic-Vascular Niche to Promote Alveoli Repair After Sterile Injury B.-S. Ding, PhD, New York, NY
- 10:57 The Role of Myeloid and Lymphoid Cells in the Alveolar Niche Regeneration J.R. Rock, PhD, Boston, MA

# **BEHAVIORAL** • CLINICAL

SCIENTIFIC SYMPOSIUM

# C8 IMPLEMENTATION SCIENCE IN THE ICU 2.0: BEYOND BARRIERS AND FACILITATORS

Assemblies on Behavioral and Health Services Research; Clinical Problems; Critical Care; Nursing

## <u>9:15 a.m. - 11:15 a.m.</u>

## **Target Audience**

Multi-disciplinary researchers and inter-professional clinicians who seek to learn about the challenges and solutions to implementation of evidence-based practices in the ICU.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn how to select and apply conceptual frameworks for different phases of implementation research;
- understand and learn the importance of stakeholder engagement and be able to apply principles from behavioral economics and bioinformatics in a variety of ICU settings to close the evidence-to-practice gap;

• learn about challenges of and solutions to funding implementation science research and implementation of complex interventions in the ICU.

Implementation science involves the study of strategies to overcome evidence-to-practice gaps. Prior well-attended ATS sessions have discussed identification of barriers and facilitators to the adoption of ICU best practices, an important first step in bridging that gap. In this session, experts will build upon these concepts. Discussions will cover the selection and application of conceptual frameworks that enable the systematic development, management, and evaluation of interventions; innovative approaches to implementation and de-implementation strategies, including stakeholder engagement and the application of behavioral economics and bioinformatics; and challenges and solutions to the funding and execution of pragmatic clinical trials.

Chairing: K.C. Vranas, MD, Portland, OR C.H. Weiss, MD, MS, Evanston, IL A.E. Sales, PhD, RN, Ann Arbor, MI

- 9:15 Closing the Evidence-to-Practice Gap: Selecting and Applying Implementation Science Frameworks in the ICU A.E. Sales, PhD, RN, Ann Arbor, MI
- 9:30 Innovative Methods to Identify Barriers and Facilitators to Evidence-Based Practices in the ICU C.H. Weiss, MD, MS, Evanston, IL
- 9:45 Connecting the Dots between Stakeholder Identification and Evidence Implementation: A Practical Guide D.K. Costa, PhD, RN, Ann Arbor, MI
- 10:00 Leveraging Bioinformatics Tools to Integrate ICU Clinical Practice Guidelines into Daily Practice V. Liu, MD, MS, Oakland, CA
- 10:15 Implementation of Complex Interventions to Improve Patient Safety in the ICU M. Lane-Fall, MD, MS, Philadelphia, PA
- 10:30 "Nudging" Toward Adherence to Evidence-Based Practices in the ICU M.P. Kerlin, MD, MS, Philadelphia, PA

- 10:45 Improving the Value of ICU Care through the De-Implementation of Unnecessary Practices L. Spece, MD, MS, Seattle, WA
- 11:00 Building the Next Generation of Implementation Scientists to Advance Health Equity C. Boyce, PhD, Bethesda, MD

## BASIC · CLINICAL · TRANSLATIONAL

## SCIENTIFIC SYMPOSIUM

# C9 POST-INFECTION LUNG REGENERATION AND REPAIR

Assemblies on Pulmonary Infections and Tuberculosis; Allergy, Immunology and Inflammation; Critical Care; Respiratory Cell and Molecular Biology; Respiratory Structure and Function

#### 9:15 a.m. - 11:15 a.m.

#### **Target Audience**

Basic, translational and clinical faculty as well as fellows and students will benefit from this session.

## Objectives

At the conclusion of this session, the participant will be able to:

- garner new knowledge on the latest developments in the field and learn how to harness new information with technology that is state of the art in the field;
- understand newly described mechanisms that promote wound repair processes after lung injury;

This session will provide the learner with a comprehensive overview of mechanisms that involve regeneration and repair processes in the respiratory system during and after infection/injury. The focus of this symposium will be to link the fields of structural cell biology and the immune system, to enhance our critical understanding of lung repair. The combined functions of each of these systems is crucial to lung repair and homeostasis after infection especially in patients with underlying chronic lung disease or transplant recipients. Speakers will review the concept of lung regeneration/repair and how cells of the structural/immune systems pertain to this process. It is

anticipated that the symposium will be of great and broad interest to the ATS scientific community.

- Chairing: A.E. Samarasinghe, PhD, Memphis, TN J.P. Metcalf, MD, Oklahoma City, OK K.M. Gowdy, BS, MS, PhD, Greenville, NC
- 9:15 Epithelial Stem and Progenitor Cells in Repair and Regeneration S.H. Randell, PhD, Chapel Hill, NC
- 9:35 Lung Repair Mechanisms following Influenza Virus Infection S. Schultz-Cherry, PhD, Memphis, TN
- 9:55 Epigenetics in Lung Repair Post-Influenza J.F. Alcorn, PhD, Pittsburgh, PA
- 10:15 Lung Tissue Repair Mechanisms after Parasite Infections D. Herbert, PhD, Philadelphia, PA
- 10:35 Innate Lymphoid Cells as Regulators of Lung Repair after Injury H. Kita, MD, Scottsdale, AZ
- 10:55 Myeloid Cells Regulate Repair after Acute Lung Injury A.M. Manicone, MD, Seattle, WA

## CLINICAL

PUBLIC ADVISORY ROUNDTABLE SYMPOSIUM

# C10 BUILDING GLOBAL ADVOCACY TO ADVANCE GLOBAL LUNG HEALTH

Public Advisory Roundtable

<u>9:15 a.m. - 11:15 a.m.</u>

## **Target Audience**

Physicians, basic and translational scientists, clinician investigators, registered nurses, advanced practice nurses, nurse practitioners, patients, caregivers and parents.

## Objectives

At the conclusion of this session, the participant will be able to:

 apply new knowledge to improve structure and integrity of coordinated international patient registries;

- how to adapt clinical practice guidelines in countries with diverse capabilities;
- understand the impact of climate change on lung disease and steps to take to advocate for improved lung health.

This session will look at lung diseases as a whole and the challenges faced by patients and providers globally. We will address the importance of advocacy, patient, and clinician involvement on a worldwide scale, examining case studies where advocates and clinicians played a direct role in improving the standard of care internationally. With this goal comes significant challenges, such as technological discrepancies and understanding the impact of climate change on global lung health. We hope to get these important discussions started.

- Chairing: K.L. Rosbeck, BA, Silver Spring, MD D. Gozal, MD, MBA, ATSF, Columbia, MO
- 9:15 PAR Awards Presentation K.L. Rosbeck, BA, Silver Spring, MD
- 9:20 Global Patient Advocacy and Lessons from the Global Respiratory Summit T. Winders, MBA, Vienna, VA
- 9:27 Lung Function Trajectories in Health and Disease: The Patient Advocate's Role in Improving Respiratory Health A. Agusti, MD, Barcelona, Spain
- 9:45 International Patient Registries and the Importance of Coordinating Globally: Pulmonary Fibrosis as a Case Study G.P. Cosgrove, MD, Denver, CO
- 10:03 International Clinical Collaborations to Advance New Treatments: LAM and Approval of Sirolimus as a Case Study N. Gupta, MD, Cincinnati, OH
- 10:21 Global Clinical Practice Guidelines for Standards of Care with Diverse Capabilities K.C. Wilson, MD, ATSF, New York, NY
- 10:39 Case Study: Global Clinical Practice Guidelines for Sleep Apnea in Children and Adults D. Gozal, MD, MBA, ATSF, Columbia, MO

10:57 Climate Change and Impact on Global Lung Health: What You Can Do to Make a Difference M.B. Rice, MD, MPH, Boston, MA

## **BASIC • CLINICAL • TRANSLATIONAL**

#### SCIENTIFIC SYMPOSIUM

# C11 EVOLVING KNOWLEDGE OF THE EFFECT OF CANNABIS AND CANNABINOIDS ON THE LUNG

Assemblies on Environmental, Occupational and Population Health; Pediatrics; Respiratory Structure and Function; Tobacco Action Committee; Drug/Device Discovery and Development Committee

#### <u>9:15 a.m. - 11:15 a.m.</u>

#### **Target Audience**

Clinical providers, basic scientists, clinical researchers, translational researchers, nurses, respiratory therapists.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about the emerging data regarding the effect of different routes of cannabis use on lung health;
- improve knowledge of the mechanisms of cannabis effects in human, animal and in vitro models;

Cannabis and cannabidiol (CBD) are now legally available in Canada, and in an increasing number of U.S. states for medical use or recreational use. Despite increasing availability, there is little scientific information about how cannabis affects lung health in the short or long term. This session will feature basic scientists using cellular and animal models as well as clinical and translational researchers shedding light on how cannabis use affects the lung.

- Chairing: K.L. Bailey, MD, ATSF, Omaha, NE L.E. Crotty Alexander, MD, ATSF, San Diego, CA
- 9:15 Patterns of Cannabis and Cannabinoid Use K. Wilson, MD, MPH, New York, NY

- 9:32 Cannabis and the Human Alveolar Macrophage S. Sharma, MD, MPH, Aurora, CO
- 9:49 Animal Models of Cannabis Use: Viral Infections N. Kaminski, PhD, East Lansing, MI
- 10:06 Cannabidiol (CBD) and the Airway Epithelium K.L. Bailey, MD, ATSF, Omaha, NE
- 10:24 Asthma and Cannabis Use A.P. Nayak, PhD, Philadelphia, PA
- 10:41 Airway Epithelial Cell Transcriptional Responses to Cannabis Smoke Exposure J.A. Hirota, PhD, BSc, Hamilton, Canada
- 10:58 Regulatory Issues Associated With Cannabis Research T.J. Witek, DrPH, ATSF, Toronto, Canada

# **BEHAVIORAL • CLINICAL**

SCIENTIFIC SYMPOSIUM

# C12 INITIATING PHARMACOLOGIC TREATMENT OF TOBACCO DEPENDENCE ACROSS THE SPECTRUM

Assemblies on Behavioral and Health Services Research; Clinical Problems; Environmental, Occupational and Population Health; Nursing; Pediatrics; Thoracic Oncology; Tobacco Action Committee

## <u>9:15 a.m. - 11:15 a.m.</u>

Target Audience

Physicians; nurses; allied health professionals; junior physicians.

## Objectives

At the conclusion of this session, the participant will be able to:

- review the research on the treatment of tobacco dependence;
- understand how certain therapies and interventions can be tailored for tobacco dependence in the specific patient populations;

• acquire insight for translating the recommendations into clinical practice.

Tobacco dependence continues to be the greatest preventable risk factor for many morbidities, contributing to both the etiology of and worsening of many illnesses. While the management of tobacco dependence has gained considerable scientific attention and research over the last several decades, an updated review of pharmacological management for tobacco dependence is warranted. We will discuss the newest recommendations as set forth by the American Thoracic Society. These recommendations represent the most up to date evidence around pharmacological tactics to achieve smoking cessation. This session will touch on each important recommendations, discuss research gaps, and provide insight into the research data used to move from evidence to clinical decision.

- Chairing: P. Galiatsatos, DrMed, Baltimore, MD H. Kathuria, MD, ATSF, Boston, MA
- 9:15 What Comes After the 5A's? Genesis and Structure of the ATS Tobacco Treatment Guideline F.T. Leone, MD, MS, ATSF, Philadelphia, PA
- 9:30 What Is the Grade Methodology? Y.M. Zhang, PhD, Hamilton, Canada
- 9:45 In Search of the Best Initial Controller: Varenicline or Nicotine Patch? Varenicline or Bupropion? J.T. Fathi, DNP, ARNP, CTTS, Seattle, WA
- 10:00 How Do We Enhance the Chance of Success? Best Controller Alone, or Combined With a Reliever? H. Gogineni, MS, PharmD, TTS, Pomona, CA
- 10:15 "But Doc, I'm Not Ready to Quit or It Is Not Working Yet." When to Initiate and How Long Should You Treat S.P. Kantrow, MD, New Orleans, LA
- 10:30 Where Does the Electronic Cigarette Fit In? D.J. Upson, MD, MA, ATSF, Albuquerque, NM
- 10:45 But How Do I Make This Work in My Clinical Practice? P. Galiatsatos, DrMed, Baltimore, MD

 11:00 But What About E-Cigarette Dependence? The Need for Interventions to Help Teens Quit E-Cigarettes
M. Eakin, PhD, Baltimore, MD

#### <u>9:15 a.m. - 11:15 a.m</u>

Oral And Poster Presentations Of Scientific Research And Case Reports Abstract Sessions Will Be Published In The Final Program.



#### <u>11:45 a.m. – 1:15 p.m</u>

#### ATS PLENARY SESSION

The Plenary Session will feature a keynote address by Robert D. Hicks, PhD, Senior Consulting Scholar and William Maul Measey Chair for the History of Medicine of The College of Physicians of Philadelphia and Director Emeritus of the Mütter Museum and Historical Medical Library of The College. Dr. Hicks will discuss the Influenza Pandemic of 1918-19 in Philadelphia as a social catastrophe and consider its memorialization today.

The Plenary Session will also feature the introduction of the ATS slate of officers for 2020-2021, remarks from ATS President James Beck MD, ATSF, and ATS President-Elect Juan Celedon, DrPH, MD, ATSF, and the presentation of several Respiratory Health Awards.

The following awards will be presented: Outstanding Educator: Patricia A. Kritek, MD, EdM, Seattle, WA

Research Innovation and Translation Achievement Award: Preston W. Campbell, MD, Bethesda, MD

Outstanding Clinician: Richard H. Simon, MD, Ann Arbor, MI

## PEDIATRIC CLINICAL CORE CURRICULUM

# PCC3 PEDIATRIC CLINICAL CORE CURRICULUM

#### 11:45 a.m. - 12:45 p.m.

### Target Audience

Pediatric pulmonary and critical care physicians who work in a clinical setting and are currently engaged in maintenance of certification

## Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pediatric pulmonology;
- evaluate their knowledge and skills in content areas in pediatric pulmonology.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The Pediatric Core Curriculum symposia promote lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatrician.

Chairing: C. Okorie, MD, MPH, Redwood City, CA

- 11:45 Home Fires, Wildfires, and More: An Update on Smoke Inhalation Lung Injury J.R. Balmes, MD, ATSF, San Francisco, CA
- 12:15 Vaporizers, E-Cigarettes, and Other Electronic Delivery Systems: Tobacco and Beyond A.M.H. Casey, MD, Boston, MA

# **BEHAVIORAL • CLINICAL**

## WORKSHOP

# WS5 USING SOCIODRAMA METHODS TO IMPROVE FAMILY COMMUNICATION AND VALUES FACILITATION IN ICU

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required. Assemblies on Critical Care; Behavioral and Health Services Research; Clinical Problems; Nursing

11:45 a.m. - 1:15 p.m.

## **Target Audience**

ICU clinicians including: nurse leaders, social workers, physician assistants and even pharmacists. Educators interested in innovative ways to teach communication skills and shared decision making in the ICU will also find it helpful.

## Objectives

At the conclusion of this session, the participant will be able to:

- apply sociodrama techniques to improving communication with patients/families in the ICU setting;
- define at least three strategies to respond to negative emotions from families/patient during an ICU family meeting;
- practice several approaches to integrate the facilitation of the patients' values, goals and preferences into the weekly workflow of an ICU.

After brief introductions, this workshop will use mini-lectures, demonstration and "action" methods to teach communication skills for the ICU setting. The workshop will leverage three well-developed case-scenarios, each with unique communication challenges for the ICU clinician. Participants will be guided by an expert interdisciplinary group of facilitators (that includes two physicians and one nurse leader) using such sociodrama methods as: role-taking (where the participants play the role of an ICU clinician leader); role-reversal (where the participants speak for the patient/family or other ICU stakeholder); role-training (where participants practice specific skills that can help improve their communication skills practice or teaching).

Chairing: A.A. Hope, MD, Bronx, NY S. Bartos, PhD, Fairfield, CT L.P. Scheunemann, MD, MPH, Pittsburgh, PA

11:45 Going from Good to Great: Using Sociodrama to Improve Communication and Shared Decision Making in the ICU A.A. Hope, MD, Bronx, NY

- 11:55 Setting the Scene: Using Role Play to Practice Basic Communicaton SkillsA.A. Hope, MD, Bronx, NYS. Bartos, PhD, Fairfield, CT
- 12:15 Expecting and Explicitly Attending to Emotions: Some Pearls and Pitfalls S. Bartos, PhD, Fairfield, CT
- 12:25 Tell me More: Using Role Play to Improve Skills in Empathic Response S. Bartos, PhD, Fairfield, CT A.A. Hope, MD, Bronx, NY
- 12:45 A Framework for Effective Values Facilitation in the Intensive Care Unit L.P. Scheunemann, MD, MPH, Pittsburgh, PA
- 12:55 Mapping Values in the ICU L.P. Scheunemann, MD, MPH, Pittsburgh, PA A.A. Hope, MD, Bronx, NY

## CLINICAL • TRANSLATIONAL

WORKSHOP

## WS6 REACHING (AND SUCCESSFULLY SAMPLING!) A PERIPHERAL PULMONARY LESION: WHEN IS A TECHNOLOGY READY FOR CLINICAL USE?

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Thoracic Oncology

#### 11:45 a.m. - 1:15 p.m.

#### Target Audience

Providers of thoracic malignancies, pulmonologists, thoracic surgeons, physicians in training.

#### Objectives

At the conclusion of this session, the participant will be able to:

- review the existing literature of different bronchoscopic navigation methods for peripheral pulmonary lesion management;
- review the existing literature on robotic bronchoscopy and its potential in the future of lung

cancer/pulmonary nodule diagnosis and management;

 critically assess the available literature, including study design and measures of diagnostic accuracy used, and understand the process of approval for novel technology.

With ongoing advances in technology, reaching and sampling peripheral pulmonary nodules has become possible using multiple different modalities. Pulmonologists find themselves at the forefront of an ever-innovative market of tools that promise to successfully reach these elusive lesions. Within a short time span, numerous novel technologies have entered the market while rigorous studies and the evidence behind their ultimate utility and yield is lagging behind. In this session we will learn about the pros and cons of currently available and/or emerging technologies and discuss the right time and reason(s) to invest in a new technology.

- Chairing: S. Shojaee, MD, MPH, Richmond, VA A.V. Gonzalez, MD, MSc, Montreal, Canada
- 11:45 Introduction: Sampling the Peripheral Pulmonary Nodule - Are We There Yet? S. Shojaee, MD, MPH, Richmond, VA
- 11:55 Best Measures of Diagnostic Accuracy to Evaluate the Usefulness of a Novel Diagnostic Procedure
  A.V. Gonzalez, MD, MSc, Montreal, Canada
- 12:15 Navigation Bronchoscopy in Peripheral Nodules: Pros and Cons F. Maldonado, MD, Nashville, TN
- 12:35 Robotic Bronchoscopy in Peripheral Nodules: Pros and Cons - What Do We Know so Far? A.C. Chen, MD, Saint Louis, MO
- 12:55 Navigation, Robotics: Now You've Heard the Data, What Should You Invest In, and on What Basis? L.B. Yarmus, DO, ATSF, Baltimore, MD

## MEET THE PROFESSOR SEMINARS

Registration Fee: \$70.00 (includes box lunch.) Attendance is limited. Pre-registration is required.

12:15 p.m. - 1:15 p.m.

- MP601 GOOD BYE SHORT ACTING BETA AGONISTS FOR ASTHMA? H.K. Reddel, MBBS, PhD, Glebe, NS P. O'Byrne, MD, Hamilton, Canada N. Lugogo, MD, Ann Arbor, MI R.W. Beasley, MD, Wellington, New Zealand
- MP602 BRONCHOSCOPY AND INTERSTITIAL LUNG DISEASE: WHAT'S NEW? S.S. Oh, DO, Santa Monica, CA S. Weigt, MD, Los Angeles, CA
- MP603 A PRIMER ON SURVIVAL ANALYSIS: WITH APPLICATIONS TO PULMONARY DATA FROM THE DUKE CLINICAL RESEARCH INSTITUTE M. Neely, PhD, Durham, NC
- MP604 LUNG TRANSPLANTATION IN SARCOIDOSIS R. Gupta, MD, MBBS, Philadelphia, PA A.J. Mamary, MD, Wynnewood, PA
- MP605 GLUCOSE CONTROL IN THE CRITICALLY ILL, 2020: IT'S TIME TO GET PERSONALIZED! J.S. Krinsley, MD, Stamford, CT
- MP606 NON-INVASIVE ACCESS TO THE LUNG: GOOD SURROGATES FOR THE REAL THING S.D. Spivack, MD, MPH, Bronx, NY
- MP607 ENTREPRENEURSHIP AND INNOVATION M.B. Happ, PhD, Columbus, OH
- MP608 ARTIFICIAL INTELLIGENCE IN THE APPLICATION OF GENETICS TO CLINICAL PRACTICE T.B. Kinane, MBChB, MD, Boston, MA
- MP609 MANAGING PREGNANT PATIENTS WITH PULMONARY HYPERTENSION Z. Safdar, MD, MS, ATSF, Houston, TX

- MP610 UPDATE IN PNEUMONIA AND PLEURAL DISEASES G.W. Waterer, MBBS, MBA, PhD, Perth, Australia Y.C.G. Lee, MBChB, PhD, Perth, Australia
- MP611 GETTING THE RESEARCH RIGHT: STRATEGIES ON DESIGNING HIGH QUALITY PULMONARY REHABILITATION RESEARCH D. Brooks, PhD, Hamilton, Canada
- MP612 THE ROLE OF POST-TRANSCRIPTIONAL REGULATION IN LUNG HEALTH AND DISEASE R.F. Foronjy, MD, Brooklyn, NY
- MP613 ANATOMICAL AND PHYSIOLOGIC PERSPECTIVES OF VENTILATOR-INDUCED LUNG INJURY: A UNIFYING HYPOTHESIS G. Nieman, BA, Syracuse, NY
- MP614 HOSPITAL SLEEP MEDICINE: UNDERSTANDING PRACTICE MODEL AND IMPACT S. Sharma, MD, Morgantown, WV

#### MEDICAL EDUCATION SEMINAR

## ME3 TEACHING CRITICAL APPRAISAL OF THE MEDICAL LITERATURE: FROM BOOKMARKS TO BEDSIDE

Registration Fee: \$70 (includes box lunch) Attendance is limited. Pre-registration is required.

Assembly on Behavioral and Health Services Research

12:15 p.m. - 1:15 p.m.

#### Target Audience

Trainees, medical educators, and clinicians who want to improve delivery & teaching of evidence-based practice. This includes pediatric and adult clinicians (physician and non-physician), medical students, residents, fellows, and medical educators.

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- identify information sources to address bedside clinical questions in real time;
- describe assumptions made when extrapolating research to the bedside;
- characterize high yield teaching points regarding literature appraisal for trainees in bedside literature appraisal.

The content of this Section of Medical Education Workshop will advance attendees' abilities to efficiently appraise medical literature as it applies to a specific clinical question and to teach others to do the same. The workshop will provide knowledge and define common language related to patient-centered evidence-based practice. The workshop will also instruct participants in approaches to search, identify, and vet literature to answer specific clinical questions as they arise at the bedside. Finally, the workshop will guide attendees through potential strategies to incorporate critical appraisal skills into their own practice and teaching.

Speakers: N. Hajizadeh, MD, MPH, Manhasset, NY P. Lyons, MD, St. Louis, MO T.C. Steinbach, MD, Seattle, WA



#### <u>1:15 p.m. - 2:15 p.m.</u>

## VISIT THE EXHIBIT HALL

Take this opportunity between sessions to visit the Exhibit Hall to gain practical knowledge to advance care and research. Exhibitors will be on hand to provide information on pharmaceutical products, medical equipment, publications and research services.

## CLINICAL

ADULT CLINICAL CORE CURRICULUM

## CC4 PULMONARY CLINICAL CORE CURRICULUM II

#### 2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

#### Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: C.E. Caplan-Shaw, MD, New York, NY J.L. Cho, MD, Iowa City, IA
- 2:15 Community Acquired Pneumonia: Updates in Diagnosis and Management K.L. Bailey, MD, ATSF, Omaha, NE
- 2:45 Influenza and Respiratory Viruses in 2020 R. Alalawi, MD, Phoenix, AZ
- 3:15 Approach to the Diagnosis of Opportunistic Infections in Immunocompromised Patients E.M. Carmona Porquera, MD, PhD, Rochester, MN
- 3:45 Nontuberculous Mycobacterial Infection: MAC and Beyond C. Swenson, MD, Atlanta, GA

# CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# C82 PHENOTYPING ACUTE EXACERBATIONS OF COPD

Assemblies on Clinical Problems; Pulmonary Infections and Tuberculosis; Respiratory Structure and Function

2:15 p.m. - 4:15 p.m.

# Target Audience

Pulmonologists, primary care physicians, nurse practitioners, nurses and respiratory therapists with clinical and research interests in the diagnosis and treatment of exacerbations of COPD.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn current and alternate definitions of acute exacerbations, and estimate exacerbation severity and its importance in patient care;
- appreciate etiology and clinical course based endotyping and phenotyping of exacerbations;
- gain new knowledge of biomarkers and therapies of exacerbations.

The majority of COPD-related morbidity, mortality and health care costs are due to acute exacerbations, particularly those that require hospitalization. Although significant advances have been made in phenotyping and treating stable COPD, the management of acute exacerbation has not changed significantly in several decades. Recent data indicates there is considerable heterogeneity in exacerbations also, and that there is a need to identify separate endo-phenotypes. Speakers will discuss current and alternative definitions of acute exacerbations, the clinical relevance of exacerbation severity, phenotypes and endotypes of exacerbations, underappreciated causes of exacerbations, biomarkers and the therapy of exacerbations.

- Chairing: S.P. Bhatt, MD, MSPH, Birmingham, AL J.A. Wedzicha, MD, PhD, ATSF, London, United Kingdom J.M. Bon, MD, MS, ATSF, Pittsburgh, PA
- 2:15 A Patient's Perspective Speaker To Be Announced
- 2:20 Definition of Acute Exacerbations: Are We There Yet? A. Agusti, MD, Barcelona, Spain
- 2:35 "Mild" Exacerbations: Do They Matter? G.C. Donaldson, PhD, BSc(Hons), ATSF, London, United Kingdom
- 2:50 Clinical Phenotypes of Exacerbations J.A. Wedzicha, MD, PhD, ATSF, London, United Kingdom
- 3:05 Molecular Phenotyping of Exacerbations Using Genomic Approaches S. Christenson, MD, MS, San Francisco, CA

- 3:20 Under Recognized Etiologies of Exacerbations S.P. Bhatt, MD, MSPH, Birmingham, AL
- 3:35 Biomarkers for Acute Exacerbations: Challenges and Promise D.D. Sin, MD, Vancouver, Canada
- 3:50 Treatment of Exacerbations: Do They Need More Nuance? F.J. Martinez, MD, MS, New York, NY
- 4:05 Panel Discussion

## **BASIC • CLINICAL • TRANSLATIONAL**

CLINICAL TOPICS IN PULMONARY MEDICINE

# C83 THE ROLE OF LUNG MICROBIOME IN INTERSTITIAL LUNG DISEASES: STATE OF THE ART AND FUTURE DIRECTIONS

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation; Environmental, Occupational and Population Health; Pulmonary Infections and Tuberculosis

#### 2:15 p.m. - 4:15 p.m.

#### **Target Audience**

Medical practitioners, basic scientists, trainees, students, postdoc fellows, junior faculty involved in chronic lung injury research and treatment, including ILDs, interested in hearing advances in rare lung disease research like IPF.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about the interactions of innate immunity and the microbiome in interstitial lung disease;
- Improve understanding of how lung microbiome influences ILDs pathogenesis;
- begin to understand how host-microbiome interaction can be used as therapeutic target in ILDs.

This symposium is going to explore in depth the role of lung microbiome studies in the field of Interstitial Lung Diseases. It will provide insights about the state of the art, analyzing also the actual limitations of these studies, and it will give a glimpse into the future directions that we will be able to travel in the next future. Particular importance is given to the crosstalk between lung and GI tract microbiome, the pathogenic processes leading to pulmonary fibrosis and the impact of lung microbiome studies on future therapeutic approaches for these rare diseases.

- Chairing: J.J. Swigris, MS, DO, Denver, CO L. Richeldi, PhD, MD, Rome, Italy B.B. Moore, PhD, ATSF, Ann Arbor, MI P.M. Leone, MD, Rome, Italy
- 2:15 Host-Microbiome Interaction in Chronic Lung Diseases: A Historic Insight M.L. Salisbury, MD, Nashville, TN
- 2:35 Crosstalk Between Gastro-Intestinal Tract and Lung Microbiome: Does It Impact on Lung Fibrosis? D.N. O'Dwyer, BM BCH, BMedSci, PhD, Ann Arbor, MI
- 2:55 Focus on GERD and Lung Fibrosis: Is the Lung Microbiome the Missing Chain Link? J.J. Swigris, MS, DO, Denver, CO
- 3:15 Lung Microbiome in IPF and its Acute Exacerbations P.L. Molyneaux, MBBS, BS(Hons), London, United Kingdom
- 3:35 Lung Microbiome in Interstitial Lung Diseases Other Than IPF L.N. Segal, MD, New York, NY
- 3:55 How Lung Microbiome Studies May Impact on Future ILDs Therapies? L. Richeldi, PhD, MD, Rome, Italy

# CLINICAL

## CRITICAL CARE TRACK

# C84 HAS THE PENDULUM SWUNG TOO FAR? EVALUATING CURRENT PRACTICES IN CRITICAL CARE

Assemblies on Critical Care; Behavioral and Health Services Research

## <u>2:15 p.m. - 4:15 p.m.</u>

## **Target Audience**

Critical care clinicians (fellows, attending physicians, NPs/PAs/CRNAs, nurses, allied health professionals), critical care researchers, ICU administrators.

## Objectives

At the conclusion of this session, the participant will be able to:

- identify practices within critical care where our current practice is at risk of being unbalanced;
- understand consequences of continuing particular;
- understand the data (for and against) our current practices, and the data that suggests that we may need to change.

Critical care has long been a bastion of innovation in medicine, incorporating new technologies and evidence into patient care. However, do new advances always represent a step in the correct direction? When we adopt new practices, what are the consequences of moving too far away from prior ones? Speakers will explore the upsides/downsides of our current approach to a heterogeneous array of ICU topics - long-term outcomes, ethics, big data, empiric antibiotic therapy, ultrasound, telemedicine, and personalized medicine to understand if today's practice is where it should be or if, perhaps, the pendulum has swung too far.

- Chairing: H.B. Gershengorn, MD, ATSF, Miami, FL K. Hibbert, MD, Boston, MA M. Hua, MD, MSci, New York, NY
- 2:15 Telemedicine: At Every Hospital? J.M. Kahn, MD, MSc, Pittsburgh, PA
- 2:28 Empiric Antibiotics: Do They Need to Cover Everything? B.E. Jones, MD, MSc, Salt Lake City, UT
- 2:41 Ultrasound: The Answer to All Diagnostic Questions?M.J. Lanspa, MD, MSCR, ATSF, Salt Lake City, UT
- 2:54 90-day Mortality: The Best Outcome for Critical Care Trials?B. Rochwerg, MD, MSCE, Hamilton, Canada

- 3:07 Patient Autonomy: Is Its Preeminence Appropriate? A.E. Turnbull, DVM, MPH, PhD, Baltimore, MD
- 3:20 Personalized Medicine: Can Anything be One-Size Fits All? C.S. Calfee, MD, San Francisco, CA
- 3:33 Big Data and the Electronic Health Record: Will it Cure What Ails Us? G.E. Weissman, MD, MS, Philadelphia, PA
- 3:46 Technology: Have the Humans Become Too Robotic? J.B. Hall, MD, Chicago, IL
- 3:59 Panel Discussion K. Hibbert, MD, Boston, MA

# BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# C85 SCIENTIFIC BREAKTHROUGHS: NEW VIEWS OF TISSUE REGENERATION

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Pediatrics; Respiratory Structure and Function

<u>2:15 p.m. - 4:15 p.m.</u>

## Target Audience

Basic and translational scientists, physicians and trainees.

## Objectives

At the conclusion of this session, the participant will be able to:

- describe the latest scientific advances in basic and Translational;
- utilize novel techniques and approaches to the study of lung development and disease;
- apply knowledge from basic and translational research towards development of novel therapeutic strategies.

This session will focus on recent high impact discoveries and novel approaches to study of lung development and diseases. Speakers will cover areas ranging from discovery biology to cutting edge therapeutics. Presentations from experts in the field will be complemented by abstract presentations related to the topic being discussed.

- Chairing: E.R. Neptune, MD, Baltimore, MD J.M. D'Armiento, MD, PhD, New York, NY
- 2:15 Introduction to Scientific Breakthroughs Session E.R. Neptune, MD, Baltimore, MD
- 2:17 Self-Renewing Alveolar Epithelial Cells Derived from Patient-Specific iPSCs D.N. Kotton, MD, Boston, MA
- 2:38 Lung Neuroendocrine Networks Revisited X. Sun, PhD, San Diego, CA
- 2:59 Lung Progenitors in Epithelial Renewal Following Injury H.A. Chapman, MD, San Francisco, CA
- 3:20 Tissue Scaffolds Reveal Instructive Macrophage Subsets J. Elisseeff, PhD, Baltimore, MD
- 3:41 Introduction of Keynote Speaker C. Kim, PhD, Boston, MA
- 3:45 Modeling Airway Diseases in Human Organoids H. Clevers, MD, PhD, Utrecht, Netherlands

#### **BASIC** • TRANSLATIONAL

#### SCIENTIFIC SYMPOSIUM

## C86 ATS MYTHBUSTERS: NOVEL SINGLE CELL PROFILING TECHNOLOGIES WILL HAVE A SIGNIFICANT IMPACT ON THE UNDERSTANDING AND MANAGEMENT OF PULMONARY FIBROSIS

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Environmental, Occupational and Population Health; Respiratory Structure and Function; Section on Genetics and Genomics

2:15 p.m. - 4:15 p.m.

#### Target Audience

This unique format fits every person interested in new research about pulmonary fibrosis, biomarkers, drug discovery and Precision Medicine. All trainees at all levels, clinicians, basic and translational researchers, and patient advocacy group members wi

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand what are single cell technologies and how they can be used to better understand idiopathic pulmonary fibrosis and other lung diseases;
- know how insights derived from single cell technologies allow discovery of disease endotypes and development of precision medicine approaches in IPF and other interstitial lung disease;
- grasp the extent of cellular aberrations in epithelial, mesenchymal, immune and vascular cells that characterize the lungs of patients with IPF and other ILD.

In this provocative and interactive session we will explore using the "mythbusters" format the hypothesis that new insights derived from single cell profiling technologies will transform the understanding, diagnosis and management of pulmonary fibrosis. Followed by talks by leading researchers, the mythbusters will discuss the validity of the hypothesis. The session will end with a vote by the audience. Active audience participation will be encouraged throughout a live tweeting stream.

- Chairing: X. Yan, PhD, New Haven, CT N. Banovich, PhD, Phoenix, AZ R. Zemans, MD, Ann Arbor, MI
- 2:15 A Patient's Perspective Speaker To Be Announced
- 2:20 Rules of the MythBuster Session R. Zemans, MD, Ann Arbor, MI
- 2:23 Introduction of the Myth N. Banovich, PhD, Phoenix, AZ
- 2:26 What Do We Mean When We Say "Single Cell Analysis" of Pulmonary Fibrosis? A. Misharin, MD, PhD, Chicago, IL

- 2:49 Understanding the Genetics of Individuals With Pulmonary Fibrosis More Important Than Profiling Their Individual Cells L.V. Wain, PhD, Leicester, United Kingdom
- 3:12 Insights From the IPF Cell Atlas N. Kaminski, MD, ATSF, New Haven, CT
- 3:34 We Don't Need to Describe Every Tree to Understand the Forest: Telomere Attrition Is the Common Mechanism Driving Pulmonary Fibrosis M. Armanios, MD, Baltimore, MD
- 3:57 Mythbuster Summary 1 M.R.J. Kolb, PhD, MD, Hamilton, Canada
- 4:02 Mythbuster Summary 2 J.S. Lee, MD, Aurora, CO
- 4:07 Mythbuster Summary 3 Z. Borok, MD, ATSF, Los Angeles, CA
- 4:12 Vote to Uphold or Bust the Myth X. Yan, PhD, New Haven, CT

# **BASIC • TRANSLATIONAL**

SCIENTIFIC SYMPOSIUM

# C87 PARTNERS IN CRIME: INTERACTION OF SEX DISPARITY, OBESITY, INFECTION AND SMOKING IN PULMONARY VASCULAR DISEASE

Assemblies on Pulmonary Circulation; Allergy, Immunology and Inflammation; Environmental, Occupational and Population Health; Pulmonary Infections and Tuberculosis; Respiratory Cell and Molecular Biology; Respiratory Structure and Function

2:15 p.m. - 4:15 p.m.

## Target Audience

Physicians, researchers and nurses from any field interested in learning about novel, state of the art research identifying the contributions of sex and environmental factors on the development of pulmonary vascular injury and Pulmonary Hypertension.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand the interplay of sex, environment, and infection on pulmonary vascular disease;
- learn new mechanisms implicated in pulmonary hypertension;
- identify new potential avenues for personalized therapeutic interventions targeting multiple groups of pulmonary hypertension.

Pulmonary Hypertension (PH) is a multifactorial pulmonary vascular disease that can arise spontaneously or as a complication of chronic pulmonary disease, left heart disease, or HIV infection. PH commonly leads to profound and refractory RV failure and death. Although sex, infection, and lifestyle risk factors (obesity, smoking) are associated with pulmonary vascular injury, the direct effects and interplay of these factors to the development of PH are complex and largely unknown. This session will discuss current and state of the art research identifying the contribution and interplay of lifestyle, infection, and sex to PH and pulmonary vascular disease.

- Chairing: A.L. Frump, MS, PhD, Indianapolis, IN S. Umar, MD, PhD, Los Angeles, CA Q. Lu, DVM, PhD, Providence, RI R. Paulin, PhD, Quebec, Canada
- 2:15 The Contribution of Sex Hormones and Sex Chromosomes in Pulmonary Hypertension M. Eghbali, PhD, Los Angeles, CA
- 2:35 Subcutaneous Adipose Tissue Is Associated with Presence of Pulmonary Hypertension N. Al-Naamani, MD, MS, Philadelphia, PA
- 2:55 Obesity-Induced Changes to Estrogen Metabolism in Pulmonary Arterial Hypertension M.R. MacLean, PhD, Glasgow, United Kingdom
- 3:15 HIV and Pulmonary Vascular Disease N.K. Dhillon, PhD, Kansas City, KS
- 3:35 Schistosomiasis and Pulmonary Vascular Disease G.S. Butrous, PhD, Canterbury, United Kingdom

3:55 Cigarette Smoking and Pulmonary Vascular Injury

N. Weissmann, PhD, Giessen, Germany

# BASIC • BEHAVIORAL CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

## C88 ADVANCES IN RESPIRATORY DISEASES IN DOWN SYNDROME: BRIDGING BENCH AND BEDSIDE

Assemblies on Pediatrics; Behavioral and Health Services Research; Clinical Problems; Respiratory Cell and Molecular Biology; Sleep and Respiratory Neurobiology

#### 2:15 p.m. - 4:15 p.m.

Target Audience

Basic scientists, clinicians, student and postdoctoral trainees with an interest in the understanding of respiratory and pulmonary vascular disorders in Down Syndrome patients.

#### Objectives

At the conclusion of this session, the participant will be able to:

- review the current understanding and provide latest updates in the respiratory challenges in DS patients;
- improve knowledge of the various manifestations of lung disorders in DS patients;
- improve understanding of the latest advances in basic and translational avenues into the pathophysiology underlying lung disease in DS.

Infants and children with Down Syndrome have significant Pulmonary morbidity, yet very little is known about the underlying mechanisms that result in the pathophysiological changes. Recent insights hold the promise of new approaches to the management of children with Down Syndrome. Moreover, a recent multi-institutional funding initiative from the NIH Office of the Director seeks to facilitate fundamental, clinical and translational DS research. The ultimate goal of this initiative is to enable development of candidate therapeutics or diagnostics for comorbidities of DS, including respiratory disease. This session will evaluate recent progress made in understanding the pathophysiology, the genetic landscapes, diagnoses and therapeutic tools for respiratory diseases in Down Syndrome patients.

Chairing: D. Al Alam, PhD, MS, Los Angeles, CA P.E. Moore, MD, ATSF, Nashville, TN T.J. Mariani, PhD, Rochester, NY

- 2:15 Overview of Respiratory Challenges in Down Syndrome Patients P.E. Moore, MD, ATSF, Nashville, TN
- 2:35 Pulmonary Vascular Disease in Children with DS E.D. Austin, MD, MSc, Nashville, TN
- 2:55 Cellular and Molecular Defects in Fetal Down Syndrome Lung D. Al Alam, PhD, MS, Los Angeles, CA
- 3:15 In Vivo Modeling Down Syndrome-Related Lung Developmental Disease and Pulmonary Hypertension C. Galambos, MD, PhD, Aurora, CO
- 3:35 Predictors and Trajectory of Sleep Disordered Breathing in Children with Down Syndrome S. Katz, MD, Ottawa, Canada
- 3:55 Patients and Politics K. Summar, MD, Washington, DC

## CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

## C89 QUANTITATIVE PHYSIOLOGY: MODERN IMAGING TOOLS FOR TACKLING TIMELESS QUESTIONS

Assemblies on Respiratory Structure and Function; Clinical Problems; Pulmonary Circulation

2:15 p.m. - 4:15 p.m.

#### Target Audience

Clinicians, basic scientists, translational researchers, fellows, residents and graduate trainees seeking to learn about novel imaging tools that provide new insights into cardiopulmonary physiology.

## Objectives

At the conclusion of this session, the participant will be able to:

- explore the role of novel imaging techniques in assessing ventilation and air flow;
- understand the emerging utility of multimodal imaging to delineate perfusion abnormalities in pulmonary disease;
- understand which methods are emerging versus ready for clinical use.

Quantitative methods using imaging to gain insight into pulmonary physiology are increasingly becoming available to clinicians and researchers. In this symposium, we review a range of novel imaging methods that enhance our understanding of pulmonary physiology in health and disease, including quantification of ventilation, detailed perfusion and cardiopulmonary blood flow. Attendees will learn about the latest clinically available techniques as well as emerging methods that show promise.

- Chairing: G.K. Prisk, PhD, DSc, La Jolla, CA P. Kohli, MD, Boston, MA F.N. Rahaghi, MD, PhD, Boston, MA
- 2:15 The Power of PET Imaging: Physiologic Insight into Regional Ventilation T. Winkler, PhD, Boston, MA
- 2:35 Functional Respiratory Imaging and Aerosols Deposition J. De Backer, MSc, PhD, Kontich, Belgium
- 2:55 Quantifying Perfusion Using DECT: Where Do We Stand? E.A. Hoffman, PhD, ATSF, Iowa City, IA
- 3:15 Out of the Gate: What Can Intracardiac Flow Visualizations Tell us About Cardiopulmonary Interactions? M. Schafer, MS, Denver, CO
- 3:35 Matching Blood and Air: Where Do We Stand? S.R. Hopkins, MD, PhD, La Jolla, CA
- 3:55 Putting It All Together: Integrating Imaging Data into Quantitative Models M.H. Tawhai, PhD, Auckland, New Zealand

# TRANSLATIONAL

## SCIENTIFIC SYMPOSIUM

# C90 MODULATING TYPE 2 AIRWAY INFLAMMATION: THINKING OUTSIDE OF IL-4, IL-5, AND IL-13

Assemblies on Allergy, Immunology and Inflammation; Respiratory Cell and Molecular Biology

2:15 p.m. - 4:15 p.m.

## **Target Audience**

Health care providers and basic scientists interested in learning more about novel immunological targets for asthma that are still in early development/clinical trials.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand the importance of type 2 inflammation in a particular subset of severe persistent asthma;
- identify mediators that contribute to type-2 inflammation apart from IL-4, IL-5, and IL-13;
- learn the results of recent clinical trials in severe asthma focusing on novel targets of type-2 inflammation.

The session will discuss new targets of type 2 airway inflammation currently being studied for the treatment of asthma- thinking outside of IL-4, IL-5, and IL-13.

- Chairing: W. Stevens, MD, PhD, Chicago, IL G.M. Gauvreau, PhD, ATSF, Hamilton, Canada
- 2:15 Targeting TSLP P. O'Byrne, MD, Hamilton, Canada
- 2:35 Targeting IL-33 I.D. Pavord, MD, Oxford, United Kingdom
- 2:55 Targeting the Prostaglandin D2 Receptor C.E. Brightling, BSc(Hons), MBBS, PhD, Leicester, United Kingdom
- 3:15 Targeting JAK/STAT Pathways M. Gadina, PhD, Bethesda, MD
- 3:35 Targeting Tyrosine Kinases E. Israel, MD, Boston, MA

3:55 Targeting Glucagon-Like Peptide 1 Receptor K. Cahill, MD, Nashville, TN

## **BASIC** • TRANSLATIONAL

## SCIENTIFIC SYMPOSIUM

## C91 INTEGRATIVE GENOMICS STRATEGIES FOR COMPLEX RESPIRATORY DISEASES

Assemblies on Allergy, Immunology and Inflammation; Pediatrics; Pulmonary Circulation; Respiratory Cell and Molecular Biology; Respiratory Structure and Function; Sleep and Respiratory Neurobiology; Thoracic Oncology

#### 2:15 p.m. - 4:15 p.m.

#### **Target Audience**

This symposium is relevant to all ATS assemblies, as well as all basic and clinical scientists, translational researchers, informatics researchers and clinicians interpreting genomic results.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn fundamental concepts and analytic strategies related to different omics data types;
- understand and learn about systems biology methods that have been used to integrate omics data;
- learn of specific examples in which integrative analyses have been used to study lung diseases.

Across all respiratory, critical care and sleep medicine, a deluge of omics data (including genomics, transcriptomics, proteomics) is being generated to identify novel biologic disease mechanisms. This symposium will present state of the art methods and applications in integrative genomics, which is based on the principle that biologic mechanisms involve multiple molecular data types and that understanding the interplay between omics data types will accelerate the identification of functional mechanisms that underlie observed genetic association signals. Speakers will provide examples across disparate respiratory and sleep conditions in which integration of omics data has improved our

- Chairing: B.E. Himes, PhD, Philadelphia, PA M.H. Cho, MPH, MD, Boston, MA S. Sharma, MD, MPH, Aurora, CO
- 2:15 Insights into the Complexity and Diversity of Cell Populations in IPF and COPD Using Single Cell RNA-Seq I.O. Rosas, MD, Houston, TX
- 2:35 Network Approaches to Understanding the Omics of Pulmonary Vascular Disease W.M. Oldham, MD, PhD, Boston, MA
- 2:55 Graph-Based Methods for Systems Discovery in the Lung P.T. Benos, PhD, Pittsburgh, PA
- 3:15 Integrative Analyses of Omics Data to Understand Asthma Drug Response B.E. Himes, PhD, Philadelphia, PA
- 3:35 Leveraging Pleiotropy to Discover and Interpret Genetic Associations With Sleep-Disordered Breathing B.E. Cade, PhD, Boston, MA
- 3:55 Multi-Omic Assessments of Tumor and the Microenvironment in Non-Small Cell Lung Cancer S.M. Dubinett, MD, Los Angeles, CA

## **BEHAVIORAL**

#### SCIENTIFIC SYMPOSIUM

# C92 UNCOVERING THE HIDDEN CURRICULUM: ADDRESSING IMPLICIT BIAS IN MEDICINE

Assembly on Behavioral and Health Services Research; Education Committee

2:15 p.m. - 4:15 p.m.

#### **Target Audience**

All physicians, nurses, medical students, respiratory therapists, physical therapists, and social workers, and administrators involved in patient care, education, or recruitment.

# Objectives

At the conclusion of this session, the participant will be able to:

- define implicit bias and describe its impact throughout medicine;
- identify resources and tools available to assess for implicit bias;
- describe interventions to mitigate implicit bias on an individual and institutional level.

There has been increasing attention on the role of implicit bias in observed disparities in medicine. In contrast to explicit bias, implicit biases lurk in the subconscious and affect the decisions we make every day in clinical and other professional endeavors. To address disparities in the clinical and academic arena, we must first recognize our own personal and institutional biases. Speakers will provide participants an understanding of implicit bias and its impact on disparities in medicine, validated tools to identify it, and interventions available to confront and mitigate its influence.

- Chairing: D. Khateeb, DO, New York, NY M. Johnson, MD, San Francisco, CA A. Luks, MD, Seattle, WA S. Gause, MD, Cleveland, OH
- 2:15 Biasology 101: Defining and Understanding Implicit Bias D. Khateeb, DO, New York, NY
- 2:30 The Impact of Implicit Bias on Clinical Practice and Medical Decisions B. Lopez, MD, MS, CPE, Philadelphia, PA
- 2:55 Recruitment and Advancement in Academic Medicine: The Problem of Unconscious Bias J.C. Fowler, MD, MPH, Philadelphia, PA
- 3:20 Tools to Identify Implicit Bias in Health Care Workers J. Aysola, MD, DTMH, MPH, Philadelphia, PA
- 3:40 Tackling the Problem Head On: Interventions to Confront Implicit Bias at Your Institution M. Johnson, MD, San Francisco, CA
- 4:05 Questions and Wrap up S. Gause, MD, Cleveland, OH

## <u>2:15 p.m. - 4:15 p.m.</u>

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.

# 4:30 p.m.-6:30 p.m.

# SECTION MEMBERSHIP MEETINGS

The Section meetings are open to all ATS members and other interested individuals. Items to be discussed include the Sections' current projects and future directions.

# MEDICAL EDUCATION

Chairing: Henry Fessler, MD, Baltimore, MD W. Graham Carlos, MD, MSCR, ATSF, Indianapolis, IN

# TERRORISM AND INHALATION DISASTERS

Chairing: Sven Jordt, PhD, Chapel Hill, NC Erik Svendsen, PhD, Atlanta, GA



## SUNRISE SEMINARS

- Registration Fee: \$50.00 (includes continental breakfast.) Attendance is limited. Pre-registration is required.
- 7:15 a.m.-8:15 a.m.
- SS301 INNATE IMMUNITY IN LUNG TRANSPLANTATION D. Calabrese, MD, San Francisco, CA
- SS302 RELATIONSHIP ADVICE: OPTIMIZING THE MENTOR-MENTEE RELATIONSHIP T.M. Dempsey, MD, MPH, Rochester, MN J.B. Richards, MD, MA, ATSF, Boston, MA K. Pennington, MD, Rochester, MN S.F. Cocciardi, MD, Camden, NJ
- SS303 DIAGNOSIS AND MANAGEMENT OF ALVEOLAR HEMORRHAGE L. Fussner, MD, Columbus, OH
- SS304 MANAGEMENT OF SCLERODERMA ASSOCIATED ILD S. Sehgal, MBBS, Philadelphia, PA K.B. Highland, MD, Cleveland, OH
- SS305 UPDATES IN INTERSTITIAL PNEUMONIA WITH AUTOIMMUNE FEATURES T. Paul, MD, Charlottesville, VA
- SS306 CLINICIAN'S APPROACH TO DIAGNOSIS AND MANAGEMENT OF ACUTE PULMONARY EMBOLISM R. EI-Yafawi, MD, Chicago, IL

- SS307 EMPHYSEMA AND BULLAE IN NONSMOKERS A. Ataya, MD, Gainesville, FL
- SS308 GENETICS IN ILD FOR THE CLINICIAN R.E.M. Gripaldo, MD, Atlanta, GA
- SS309 CARE OF IPF PATIENTS: BEYOND ANTIFIBROTIC THERAPY S. Gulati, MD, MS, Birmingham, AL T. Kulkarni, MD, MPH, Birmingham, AL
- SS310 TELEMEDICINE: EXTENDING THE REACH OF CRITICAL CARE INTO RURAL COMMUNITIES S. Gandotra, MD, Birmingham, AL
- SS311 NAVIGATING NASA GRANT SOLICITATIONS: APPLYING EARTH OBSERVATION DATA TO ENVIRONMENTAL HEALTH APPLICATIONS H. Chapman, MD, PhD, MPH, Washington, DC J. Haynes, MS, BS, Washington, DC S. Estes, MS, Huntsville, AL
- SS312 MONITORING FOR RESPIRATORY INSUFFICIENCY AND PATIENT DETERIORATION C.R. Jungquist, ANP, PhD, Buffalo, NY
- SS313 MULTIDISCIPLINARY MANAGEMENT OF COMPLICATED CYSTIC FIBROSIS INFECTIONS L. Caverly, BA, MD, Ann Arbor, MI
- SS314 POST-PE SYNDROME, CTED AND CTEPH B.N. Rivera-Lebron, MD, MS, Pittsburgh, PA
- SS315 LUNG AGING AND REGENERATION: NEW MODELS AND MECHANISMS OF CELLULAR SENESCENCE M. Lehmann, PhD, Munchen, Germany
- SS316 FLOW CYTOMETRIC ANALYSIS OF LUNG STRUCTURAL CELL POPULATIONS J. Johnson, PhD, Birmingham, United Kingdom
- SS317 WHAT IS NORMAL SLEEP? T. Kendzerska, MD, PhD, Ottawa, Canada

# CLINICAL

YEAR IN REVIEW

# D1 CLINICAL YEAR IN REVIEW 4

## 8:45 a.m. - 10:45 a.m.

## Target Audience

Providers including physicians, nurses, respiratory therapists, nurse practitioners, physician assistants; trainees including residents and fellows; clinical researchers

## Objectives

At the conclusion of this session, the participant will be able to:

- apply new clinical research knowledge to clinical practice;
- learn new findings about key conditions in pulmonary, critical care and sleep;
- have new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia provides concise summaries of the most impactful clinical research publications related to specific clinical topics. Speakers are asked to conduct a literature review of the prior year's scientific publications and develop a written summary of the top 20 articles and highlight 5 of the most important and influential publications on their topic in written format and during their talks at the International Conference Clinical Year in Review sessions.

- Chairing: J.S. Lee, MD, Aurora, CO P.A. Kritek, MD, EdM, Seattle, WA J.L. Gomez, MS, MD, ATSF, New Haven, CT
- 8:45 COPD G.R. Washko, MD, Boston, MA
- 9:15 Respiratory Infections B.E. Jones, MD, MSc, Salt Lake City, UT
- 9:45 Pulmonary Hypertension A. Smith, MD, Philadelphia, PA
- 10:15 Mechanical Ventilation B.K. Patel, MD, Chicago, IL

# CLINICAL

## CLINICAL TOPICS IN PULMONARY MEDICINE

# D2 ETHICAL CHALLENGES IN CARING FOR PATIENTS WITH ADVANCED CARDIOPULMONARY DISEASE

Assemblies on Clinical Problems; Critical Care

<u>8:45 a.m. - 10:45 a.m.</u>

## Target Audience

Cardiologists, cardio-thoracic surgeons, critical care physicians, trainees, general medicine physicians, physician assistants, pulmonary physicians, registered nurses, respiratory therapists, and ancillary health care workers.

## Objectives

At the conclusion of this session, the participant will be able to:

- identify two ethical challenges with the rationing of medications and health care services;
- describe two ethical challenges in caring for the patient on extracorporeal life support;
- discuss two ethical dilemmas for patients when care is considered to be medically futile.

Significant gains have been achieved in the care of patients with advanced heart and lung diseases; however, newer ethical dilemmas have emerged that present unique challenges for providers. This session will review the ethics surrounding several key topics in current clinical practice: health care rationing, with a focus on contemporary issues like medication shortages, ICU resources, and donor organs for transplant; the ethical considerations of extracorporeal life support technology; medical futility in end-of-life care; and the experience and ethics of physician-assisted suicide. It will also examine the effects of managing complex ethical dilemmas on the health care worker, and describe methods for incorporating ethics consultation services into the care of these patients.

- Chairing: K.M. Wille, MD, MSPH, Birmingham, AL C. Quill, MD, Rochester, NY A.L. Gray, MD, Aurora, CO
- 8:45 Defining and Managing Medical Futility in Advanced Heart and Lung Disease F. Rincon, MD, MSc, Philadelphia, PA
- 9:05 The Ethics of Health Care Rationing: From Medication Shortages to ICU Resources G.L. Anesi, MD, MSCE, MBE, Philadelphia, PA
- 9:25 Emerging Ethical Challenges with the Use of Extracorporeal Life Support C. Agerstrand, MD, New York, NY
- 9:45 The Ethics of Physician-Assisted Suicide and Euthanasia in the ICU E.C. Goligher, MD, PhD, Toronto, Canada
- 10:05 Incorporating Ethics Consultation into the Care of the Advanced Heart or Lung Disease Patient J. McCannon, MD, Cambridge, MA
- 10:25 Recognizing and Managing Provider Distress Arising From Complex Ethical Dilemmas Speaker To Be Announced

# CLINICAL

## CLINICAL TOPICS IN PULMONARY MEDICINE

# D3 STATE OF THE ART IN RESPIRATORY CARE OF NEUROMUSCULAR DISEASE FROM PEDIATRICS TO ADULT: LIVING LONGER AND LIVING BETTER

Assemblies on Clinical Problems; Pediatrics; Sleep and Respiratory Neurobiology

8:45 a.m. - 10:45 a.m.

## Target Audience

Adult and pediatric pulmonary and sleep physicians and mid-level providers working with patients with neuromuscular respiratory failure, nurses and respiratory therapists.

## Objectives

At the conclusion of this session, the participant will be able to:

- recognize hypoventilatory respiratory insufficiency associated with neuromuscular disease, with a goal of early diagnosis and implementation of assistive devices before overt respiratory failure, by disease stage;
- anticipate perioperative changes, and adapt the assistive device usage to prevent respiratory complications while allowing appropriate surgical interventions;
- understand the importance of transitions; from Pediatric to Adult Pulmonologists, and at end of life. Key concepts include communication, disease understanding, expectations and recognition of crisis points distinct from dying.

Patients with pediatric neuromuscular disorders (muscular dystrophies, spinal muscular atrophy,metabolic myopathies) are surviving longer, and are requiring adult pulmonary providers to effectively transition care. The adult onset neuromuscular disorders are also increasing in prevalence (amyotrophic lateral sclerosis) and survival with advancing technologies in airway clearance and non-invasive ventilation (NIV). The session will address recognition of hypoventilatory respiratory insufficiency, implementation of stage specific respiratory assistive devices to maximize patient independence, quality of life and survival, and safely managing operative needs (routine and disease specific) after onset of respiratory insufficiency, bridging pediatric providers to adult pulmonary care and end of life issues.

- Chairing: K.A. Provost, DO, PhD, Buffalo, NY M. Cao, DO, Redwood City, CA J.O. Benditt, MD, Seattle, WA
- 8:45 Avoiding the Cliff Fall: Recognizing and Understanding the Mechanics and Progression of Hypoventilation in Neuromuscular Respiratory Insufficiency M. Cao, DO, Redwood City, CA
- 9:01 Panel Discussion
- 9:03 School, Camping, Sport and Travel: Maintaining Quality of Life by Implementation of Non-Invasive Ventilation by Disease Stage K.A. Provost, DO, PhD, Buffalo, NY
- 9:19 Panel Discussion

- 9:21 Mucus Is Not Our Friend: Secretion Management in Neuromuscular Respiratory Failure D. Zielinski, MD, Montreal, Canada
- 9:37 Panel Discussion
- 9:39 The Big Leap of Faith: Smoothing the Transition From Pediatric to Adult Respiratory Care H.B. Panitch, MD, Philadelphia, PA
- 9:55 Panel Discussion
- 9:57 Safely Navigating the Perioperative Management of Neuromuscular Patients, Without Panicking Your Anesthesia Colleague H. Sawnani, MD, Cincinnati, OH
- 10:13 Panel Discussion
- 10:15 Ethical and End of Life Considerations in Chronic Respiratory Failure: Facing the Inevitable (For Now) With Quality and Autonomy J.O. Benditt, MD, Seattle, WA
- 10:31 Questions for the Panel

# BEHAVIORAL · CLINICAL

# CRITICAL CARE TRACK

# D4 REDEFINING TIME ZERO: CRITICAL CARE DELIVERY IN THE FIELD, ED, AND WARD

Assemblies on Critical Care; Behavioral and Health Services Research; Clinical Problems; Nursing

## <u>8:45 a.m. - 10:45 a.m.</u>

Target Audience

Clinicians providing care to critically ill, as well as patients, nurses/social work/ICU ancillary staff, ICU leadership, trainees in critical care medicine ICU researchers and administrators.

# Objectives

At the conclusion of this session, the participant will be able to:

 learn the latest evidence regarding care of critically ill patients prior to ICU arrival, both in the field and in the ED/wards;

- improve the quality of care transitions of patients throughout the pre-ICU course;
- define new strategies to manage critically ill patients in times of ICU capacity strain.

Treatment of community-acquired critical illness usually begins before patients' arrival to the ICU. Critical care clinicians, meanwhile, confront growing bed shortages and admission delays associated with worse outcomes. In this session, we will discuss barriers to the delivery of timely, high quality critical care services in the pre-hospital and pre-ICU care setting, and explore potential solutions using case examples of sepsis and shock. Discussions will highlight models for critical care delivery in the pre-hospital setting, emergency department, and inpatient wards, leveraging interdisciplinary experiences within academic, community, military, and international/LMIC settings.

- Chairing: K.S. Mathews, MD, MPH, New York, NY I. Peltan, MD, MSc, Murray, UT H. Wunsch, MSc, MD, Toronto, Canada
- 8:45 Right Care, Right Time: Why We Need to Talk About Pre-Hospital and Pre-ICU Critical Care K.S. Mathews, MD, MPH, New York, NY
- 8:57 Rapid Treatment, Rapid Transport: Pre-Hospital Critical Care by Paramedics C. Polito, MD, Atlanta, GA
- 9:09 Mobile Physician-Led Critical Care Units: Bringing ECMO to the Streets of Paris L. Lamhaut, MD, PhD, Paris, France
- 9:21 Critical Care in the Field: Lessons Learned From Military Field Care Teams T. Rasmussen, MD; Colonel, USAF MC, Bethesda, MD
- 9:33 ICU Boarders in the ED: Innovative Models of High Quality Care With ED Intensivists R.C. Hyzy, MD, ATSF, Ann Arbor, MI
- 9:45 Ward-Based Response Teams: Multidisciplinary Approaches to Optimize Effectiveness M. Shifrin, ACNP-BC, DNP, Nashville, TN

- 9:57 Limited Resources, High Quality: Treating Respiratory Failure and Shock in Ethiopian EDs and Wards H.Y. Ahmed, MD, MPH, Addis Ababa, Ethiopia
- 10:09 Ordering Chaos: Critical Care Delivery During Disasters and Epidemics E.L. Daugherty, MD, MPH, Baltimore, MD
- 10:21 Panel Discussion: Scoop and Run or Stay and Play? Debating Critical Care Delivery Models I. Peltan, MD, MSc, Murray, UT

## TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# D5 MICROBIOME-IMMUNE INTERACTIONS IN ASTHMA

Assemblies on Allergy, Immunology and Inflammation; Pediatrics

8:45 a.m. - 10:45 a.m.

**Target Audience** 

Trainees, clinicians, researchers, allied health personnel

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about the interaction between the microbiome, immune development, and asthma exacerbations;
- describe methods to alter the microbiome to prevent asthma;
- obtain new skills to interpret literature on the microbiome and asthma.

While numerous studies have described bacteria detected in the airway of patients with asthma, it remains unclear if these microbes contribute to asthma development and asthma exacerbations. This session will highlight recent research focused on the interaction between the microbiome, immune development, and asthma exacerbations, and will address ways to alter the microbiome to prevent asthma.

- Chairing: K.M. Kloepfer, MD, MS, Indianapolis, IN Y.J. Huang, MD, Ann Arbor, MI
- 8:45 Environment, Genetics and Microbial-Immune Interactions in Pediatric Asthma E. von Mutius, MD, MSc, Muenchen, Germany
- 9:10 The Role of the Nasal Microbiome in Asthma Risk and Exacerbations J.E. Gern, MD, Madison, WI
- 9:35 Gut Microbiota-Immune Interactions in Pediatric Asthma Development N.W. Lukacs, PhD, Ann Arbor, MI
- 10:00 Relationships Between the Respiratory Microbiome and Asthma Phenotype Y.J. Huang, MD, Ann Arbor, MI
- 10:25 Opportunities for Microbial Intervention in Asthma F.D. Martinez, MD, Tucson, AZ

#### **BASIC • CLINICAL • TRANSLATIONAL**

SCIENTIFIC SYMPOSIUM

# D6 GENETIC AND MOLECULAR MECHANISMS OF ABNORMAL LUNG DEVELOPMENT

Assemblies on Pediatrics; Critical Care; Pulmonary Circulation; Respiratory Cell and Molecular Biology

8:45 a.m. - 10:45 a.m.

#### **Target Audience**

Neonatologists, pediatric pulmonologists, geneticists, pathologists, respiratory therapists, and basic science researcher with interests in mechanisms of lung development

#### Objectives

At the conclusion of this session, the participant will be able to:

- name the stages of lung development impacted by disorders such as acinar dysplasia and congenital alveolar dysplasia;
- recognize the clinical phenotypes of infants with diffuse disorders of lung development and be able to better diagnose using molecular diagnostics;

• understand when to submit earlier referral of infants with lethal lung disorders for lung transplant evaluation.

Congenital disorders of lung development encompass early diffuse interruptions of lung development (acinar dysplasia), to more focal abnormalities (CPAMs) and space occupying lesions (congenital diaphragmatic hernia) that can result in pulmonary hypoplasia. While rare, they are associated with substantial morbidity and mortality. Genetic and other molecular mechanisms underlying these disorders have been identified in recent years, ranging from single gene disorders, to more complex inheritance mechanisms and de novo and somatic mutations. This session will present current information concerning molecular mechanisms for developmental lung disorders, with an emphasis on molecular diagnostics and potential directions for novel therapeutic approaches.

- Chairing: J.A. Wambach, MD, MS, St. Louis, MO L.M. Nogee, MD, Baltimore, MD
- 8:45 Introduction L.M. Nogee, MD, Baltimore, MD
- 8:48 The Pathology of Normal and Abnormal Lung Development G. Deutsch, MD, Seattle, WA
- 9:05 Molecular Mechanisms of Acinar Dysplasia P. Stankiewicz, PhD, Houston, TX
- 9:25 The Evolving Spectrum of Alveolar Capillary Dysplasia J.A. Wambach, MD, MS, St. Louis, MO
- 9:45 Molecular Mechanisms of Congenital Lung Malformations E.E. Morrisey, PhD, Philadelphia, PA
- 10:05 The Genetics of Congenital Diaphragmatic Hernia W.K. Chung, MD, PhD, New York, NY
- 10:25 Lung Transplantation for Disorders of Lung Developmet C. Towe, MD, Cincinnati, OH

# **BASIC • TRANSLATIONAL**

## SCIENTIFIC SYMPOSIUM

# D7 SEEING IS BELIEVING: NOVEL IMAGING APPROACHES TO THE PULMONARY VASCULATURE AND RV

Assembly on Pulmonary Circulation

8:45 a.m. - 10:45 a.m.

## **Target Audience**

Basic scientists as well as clinicians working with pulmonary hypertension/pulmonary vascular disease.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn about promising molecular imaging approaches in human disease and methodologies for characterizing pulmonary vascular remodeling and the RV, with a particular emphasis on the detection of early changes;
- identify potential collaborators and resources to facilitate the incorporation of novel imaging approaches into their own research;
- learn to apply new techniques in clinical practice.

Tremendous progress has been made in the development of new imaging approaches to the pulmonary vasculature and right ventricle for research and clinical use. This session will explore how novel imaging techniques can enhance our understanding of the pathophysiology of pulmonary hypertension and provide useful biomarkers of disease diagnosis and prognosis. High-resolution and molecular imaging studies are very powerful tools for identifying the spatial distribution of molecular targets, making them an important complement to all types of OMICS. Speakers will present new ways to image pulmonary vascular remodeling and RV adaptation and failure in humans and in animal models.

Chairing: W.M. Oldham, MD, PhD, Boston, MA R. Berger, MD, PhD, Groningen, Netherlands R.N. Channick, MD, Los Angeles, CA

- 8:45 Introduction to Translational Imaging in Pulmonary Hypertension N.C. Chesler, PhD, Madison, WI
- 9:05 Novel Approaches for Lungs and Right Heart Imaging in Pre-Clinical Pulmonary Hypertension B. Kojonazarov, MD, PhD, Giessen, Germany
- 9:25 Improved Understanding of Pulmonary Vascular Disease With Synchrotron-Based Phase Contrast Micro-CT K. Tran-Lundmark, MD, PhD, Lund, Sweden
- 9:45 Exploiting Positron Emission Tomography: A Potential Molecular Imaging Biomarker in Pulmonary Hypertension L. Zhao, MD, PhD, London, United Kingdom
- 10:05 Molecular Imaging of Pulmonary Vascular Disease Using Microvascular Endothelial Cell Ligands
  - J. Dupuis, MD, PhD, Montreal, Canada
- 10:25 Imaging in Group 2 Pulmonary Hypertension M. Simon, MD, MS, Pittsburgh, PA

# BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# D8 THE MATRIX REVEALED: UNDERSTANDING EXTRACELLULAR MATRIX INFLUENCES ON LUNG DISEASES

Assemblies on Respiratory Structure and Function; Allergy, Immunology and Inflammation; Pulmonary Circulation; Pulmonary Infections and Tuberculosis; Respiratory Cell and Molecular Biology; Sleep and Respiratory Neurobiology

#### 8:45 a.m. - 10:45 a.m.

#### **Target Audience**

Scientists and physician scientists who are interested in understanding how the extracellular matrix (ECM) guides cellular function in the lung, thereby influencing homeostasis and diseases.

### Objectives

At the conclusion of this session, the participant will be able to:

- identify opportunities for novel investigation into understudied aspects of lung matrix biology and cell-ECM interactions;
- contrast the strengths and weaknesses of model systems and approaches recently developed to study lung ECM and cell-ECM interactions;
- learn how advances in lung matrix biology are revealing new mechanisms of lung homeostasis and therapeutic targets to reduce/ reverse pathological remodeling.

The extracellular matrix provides important cues that guide cellular function in the lung. Understanding how these cues emerge, change, and influence lung cell biomechanics will provide valuable insight into this fundamental but still under-studied aspect of lung biology. Talks from leading experts in this field will reveal how investigations using new technologies in cellular, tissue and animal model systems are delineating important roles for the matrix in lung repair and regeneration, during both health and diseases.

- Chairing: R. Krishnan, PhD, MS, Boston, MA J.K. Burgess, PhD, Groningen, Netherlands
- 8:45 Substrate Stiffness Is a Potent Epigenetic Cue of Fibroblast Biology D.J. Tschumperlin, PhD, Rochester, MN
- 9:05 ECM as a Driver of Progressive Fibrosis P.B. Bitterman, MD, Minneapolis, MN
- 9:25 Reconstructing the Lung Extracellular Matrix: Dream or Reality? R. Farre, PhD, Barcelona, Spain
- 9:45 Fungal Allergens Promote AHR by Disrupting ASM-ECM Interactions K. Druey, MD, Bethesda, MD
- 10:05 Does the ECM Stiffness or Organization Dictate Disrupted Repair in Chronic Lung Disease? J.K. Burgess, PhD, Groningen, Netherlands
- 10:25 Vascular Wall Stiffening Is a Major Contributor to Pulmonary Hypertension L.E. Fredenburgh, MD, Boston, MA

# CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# D9 LUNG CANCER RISK ASSESSMENT: CLINICAL MODELS X MOLECULAR BIOMARKERS

Assemblies on Thoracic Oncology; Clinical Problems; Environmental, Occupational and Population Health

## 8:45 a.m. - 10:45 a.m.

## Target Audience

Pulmonary clinicians, thoracic surgeons, radiologists, and public health workers including those involved in organizing/running CT screening programs, or those referring to CT screening programs, as well as those interested in chemoprevention.

## Objectives

At the conclusion of this session, the participant will be able to:

- more appropriately refer individuals for CT/lung cancer screening;
- improve the patient outcomes of CT screening;
- apply risk assessment knowledge from the lung cancer screening realm to effect risk reduction beyond the screening realm. Targeted smoking cessation, and chemo-phyto-prevention uptake could be measured.

That risk assessment is central to clinical medicine and public health practice is undisputed. For early detection and prevention of lung cancer, focusing on those at highest risk is imperative. The evolution of trans-platform 'omics plus prior knowledge, has been coupled to vastly augmented instrumentation sensitivity. The combination now allows for detection of trace signatures of early lung carcinogenesis in humans non-invasively. This session will review clinical models, and several biomarkers in the genomics, transcriptomics, and metabolomics realms that are now, and/or will soon become, part of the clinicians armamentarium in earlier detection and pre-emption of this still lethal cancer.

Chairing: S.D. Spivack, MD, MPH, Bronx, NY V.S. Nair, MSCR, MD, Seattle, WA P.P. Massion, MD, Nashville, TN

- 8:45 What Model Performance Standards Should We Shoot For, and Where Are We Now? P.J. Mazzone, MPH, MD, Cleveland, OH
- 9:00 How Do Clinical Models Perform in Risk Assessment? M.K. Gould, MD, MS, Pasadena, CA
- 9:15 Evolution of the Bronchial Genome Classifier J. Beane, PhD, Boston, MA
- 9:35 Circulating Extracellular Vesicles as Lung Cancer Biomarkers P. Nana-Sinkam, MD, Richmond, VA
- 9:55 Exhaled Breath-Based Risk Assessment Using MicroRNAs and Metabolomics S.D. Spivack, MD, MPH, Bronx, NY
- 10:15 Lung Cancer Genomics Leveraged for Risk Assessment V.S. Nair, MSCR, MD, Seattle, WA
- 10:30 Distillation P.P. Massion, MD, Nashville, TN

# BASIC • BEHAVIORAL • CLINICAL

## SCIENTIFIC SYMPOSIUM

# D10 THE EVOLUTION OF INHALATION: THE BIOLOGIC, PHYSICAL, AND POLICY IMPLICATIONS OF VAPING AND OTHER NOVEL DEVICES

Assembly on Behavioral and Health Services Research

8:45 a.m. - 10:45 a.m.

## Target Audience

All providers caring for patients who vape or smoke; policy makers and clinical and basic science researchers.

## Objectives

At the conclusion of this session, the participant will be able to:

- understand and describe the biologic pathways through which ENDS and heat-not-burn devices may cause harm to the user;
- more appropriately counsel patients and the public about the potential health effects of ENDS and the

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specific harms associated with dual use of ENDS and combustible tobacco;

 describe current epidemiology of e-cigarette use and understand current national and international policy and future directions.

Combustible tobacco is rapidly being replaced by novel delivery systems including electronic nicotine delivery systems (ENDS) and heat-not-burn devices, which carry their own risks and potential benefits. This session will examine the rapidly evolving landscape of ENDS from a micro to macro level, examining basic, translational, and epidemiologic evidence for harm and placing this in the context of regulatory science and policy in the U.S. and abroad. It will address relevant information for clinicians, researchers, and policy-makers.

- Chairing: A.C. Melzer, MD, MS, Minneapolis, MN L.E. Crotty Alexander, MD, ATSF, San Diego, CA D.J. Upson, MD, MA, ATSF, Albuquerque, NM M. Ween, PhD, Adelaide, Australia
- 8:45 Adult Use of E-Cigarettes: Epidemiology and Risks of Dual Use, THC, and the Black Market A.C. Melzer, MD, MS, Minneapolis, MN
- 9:05 Health Effects of ENDS: Assessing Pulmonary and Cardiovascular Harms, Including VAPI L.E. Crotty Alexander, MD, ATSF, San Diego, CA
- 9:25 Cotton Candy, Smurf Cake and Menthol: The Cellular and Behavioral Effects of E-Cigarette Flavors

M. Ween, PhD, Adelaide, Australia

- 9:45 Do E-Cigarettes Help Smokers Quit? The Effectiveness of E-Cigarettes for Treatment of Combustible Tobacco Dependence J. Tsai, MD, Columbus, OH
- 10:05 Current Policy and Regulation of Ends and Heat-Not-Burn: Implications for Clinicians and Researchers D.J. Upson, MD, MA, ATSF, Albuquerque, NM
- 10:25 Lessons from Abroad: The International Landscape of ENDS M.F. Perez, MD, MPH, Farmington, CT

## BEHAVIORAL

#### SCIENTIFIC SYMPOSIUM

# D11 HEALTH REFORM AND THE 2020 PRESIDENTIAL ELECTION: MEDICARE FOR ALL, SOME OR NONE?

Assembly on Behavioral and Health Services Research; Health Policy Committee

8:45 a.m. - 10:45 a.m.

#### **Target Audience**

This session would benefit any clinician, scientist, or academician by providing an evidence-based, values-driven assessment of important federal legislation designed to improve access, cost, and quality of care.

#### Objectives

At the conclusion of this session, the participant will be able to:

- describe evidence-based principles to effect meaningful and equitable reform of the U.S. health care system;
- differentiate between the major Medicare-for-All proposals and summarize the major features of each;
- predict the impact of various Medicare-for-All proposals and rank the proposals on dimensions most important to them and their patients.

In advance of the 2020 presidential election, numerous federal legislative proposals characterized as Medicare-for-All have been introduced in the House of Representatives or Senate. The major health reforms intend to improve the equity, efficiency, and quality of the U.S. health care system by modifying or expanding existing government programs such as Medicare, Medicaid, and the Affordable Care Act. This session will review the rationale underlying the need for continuing health reform, will compare and contrast the most prominent proposals, and will critique their likely impact on the desired outcomes.

Chairing: S.M. Lyon, MD, Philadelphia, PA J.K. Gerald, MD, PhD, Tucson, AZ J.A. Krishnan, MD, PhD, ATSF, Chicago, IL D.H. Au, MS, MD, ATSF, Seattle, WA

- 8:45 Welcome and Introduction S.M. Lyon, MD, Philadelphia, PA
- 8:50 The \*&@! Health Care System: A Patient's Call for Reform Speaker To Be Announced
- 9:05 An Idiot's Guide to Health Reform J.K. Gerald, MD, PhD, Tucson, AZ
- 9:25 The Reform Menu: Medicare for All, Medicare for More, or Pot Luck S.M. Lyon, MD, Philadelphia, PA
- 9:45 Health Equity not Corporate Profit: How Medicare-for-All Can Expand Access and Improve Affordability A.W. Gaffney, MD, Cambridge, MA
- 10:05 Don't Throw Out the ACA with the Bath Water: Incremental Reform is Attainable Reform B. McAneny, MD, Albuquerque, NM
- 10:25 Moderated Panel Discussion with Audience Q&A

# 8:45 a.m. - 10:45 a.m

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.



PEDIATRIC CLINICAL CORE CURRICULUM

# PCC4 PEDIATRIC CLINICAL CORE CURRICULUM

<u>11:15 a.m. - 12:15 p.m.</u>

# Target Audience

Pediatric pulmonary and critical care physicians who work in a clinical setting and are currently engaged in maintenance of certification

# Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pediatric pulmonology;
- evaluate their knowledge and skills in content areas in pediatric pulmonology.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The Pediatric Core Curriculum symposia promote lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatrician.

Chairing: M. McCown, DO, Bethesda, MD

- 11:15 Pulmonary Complications of Sarcoidosis T.J. Vece, MD, Chapel Hill, NC
- 11:45 Pulmonary Complications of Congenital Heart Disease G.S. Montgomery, MD, Indianapolis, IN

# CLINICAL • TRANSLATIONAL

### WORKSHOP

# WS7 NOVEL MOLECULAR-BASED DIAGNOSTICS FOR LUNG INFECTIONS: CLINICAL IMPLEMENTATION AND RESEARCH QUESTIONS

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assemblies on Pulmonary Infections and Tuberculosis; Allergy, Immunology and Inflammation; Behavioral and Health Services Research; Clinical Problems; Critical Care; Nursing; Pediatrics

#### <u>11:15 a.m. - 12:45 p.m.</u>

#### **Target Audience**

Those interested in current and cutting edge diagnostics to identify and characterize various lung infections that affects clinical practice. Clinicians, researchers, educators and trainees of all levels.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about the different new molecular diagnostic platforms for various pulmonary infections;
- integrate the use of molecular diagnostics in clinical practice;
- improve current approaches for lung infections by identifying key limitations of molecular diagnostics.

This workshop is a cutting edge review of currently available and novel molecular diagnostics that are used for identifying and characterizing various microbes that cause lung infections and pneumonia. More and more of these rapid molecular diagnostic tests are used to detect respiratory infections which can improve patient care, minimize unnecessary antibiotics and guide appropriate treatment of pulmonary infections. Speakers are experts in their respective field of infection (virus/bacteria, fungal, non-tuberculous mycobacteria, and TB). They will describe the latest tests in their field to identify the pathogens, provide perspective on their role in clinical practice, implementation strategies, and highlight areas for new development.

Chairing: C. Dela Cruz, MD, PhD, ATSF, New Haven, CT K.A. Crothers, MD, Seattle, WA S.E. Evans, MD, ATSF, Houston, TX

- 11:15 Viral and Bacterial Diagnostics R.G. Wunderink, MD, Chicago, IL
- 11:35 Fungal Diagnostics C.A. Hage, MD, ATSF, Indianapolis, IN
- 12:15 Non-Tuberculous Mycobacterial Diagnostics R. Thomson, MBBS, PhD, Greenslopes, Australia
- 11:55 Tuberculosis Diagnostics D.M. Lewinsohn, MD, PhD, Portland, OR
- 12:35 Panel Discussion

#### BEHAVIORAL · CLINICAL

#### WORKSHOP

# WS8 BREATHLESSNESS: NEW INSIGHTS INTO ASSESSMENT, MECHANISMS AND THERAPY

Registration Fee: \$75 (includes box lunch) Attendance is limited. Pre-registration is required.

Assemblies on Pulmonary Rehabilitation; Nursing

11:15 a.m. - 12:45 p.m.

#### Target Audience

Clinicians including nurses and allied health care professionals, researchers, trainees, and anyone involved in the care of patients with chronic respiratory diseases

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- improve the assessment and management of a breathlessness person including the psychological effects;
- learn new findings about the mechanisms of sensory perception of breathlessness using neuroimaging;

• integrate evidence-based treatment options for managing breathlessness into clinical practice and improve patient quality of life.

This workshop will provide an update of how to assess and measure breathlessness in clinical and research practice. Particular focus will be given to the interaction between breathlessness and psychological well-being. An overview of a conceptual framework for breathlessness, the 'Thinking, Breathing, Functioning' model, will be provided. Participants will learn about new advances into mechanisms behind sensory perception of breathlessness using neuroimaging and the potential implications for how we manage breathlessness. Lastly, an overview of the latest pharmacological and non-pharmacological treatments will be discussed.

- Chairing: C.M. Garvey, FNP, MSN, MPH, San Francisco, CA R.A. Evans, MBChB, PhD, Leicester, United Kingdom
- 11:15 Introduction R.A. Evans, MBChB, PhD, Leicester, United Kingdom
- 11:20 How to Provide an Holistic Assessment of Breathlessness P.M. Meek, PhD, RN,BC, ATSF, Aurora, CO
- 11:47 New Insights into How to 'Treat Breathlessness via the Brain'K. Pattinson, BM, DPhil, Oxford, United Kingdom
- 12:14 An Update of Pharmacological and Non-Pharmacological Management of Breathlessness D. Currow, Bmed, MPH, PhD, Sydney, Australia
- 12:41 Summary and Close Speaker To Be Announced

# CLINICAL

## ADULT CLINICAL CORE CURRICULUM

# CC5 SLEEP MEDICINE CLINICAL CORE CURRICULUM I

## <u>11:15 a.m. - 12:45 p.m.</u>

## **Target Audience**

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

## Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: S.M. Jamil, MD, ATSF, La Jolla, CA M. Lipford, MD, Rochester, MN
- 11:15 Cardiometabolic and Neurocognitive Consequences of Untreated OSA M.E. Vega Sanchez, MD, Philadelphia, PA
- 11:45 OSA: New Advances in PAP Therapy to Improve Management and Adherence B. Sunwoo, MBBS, San Diego, CA
- 12:15 OSA: Update on Current Non-PAP Therapies J.E. Orr, MD, La Jolla, CA

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# L21 APPLICATIONS OF NASA'S EARTH OBSERVATION DATA IN RESPIRATORY HEALTH

#### 11:45 a.m. - 12:45 p.m.

#### Target Audience

Physicians; nurses; allied health professionals; public health practitioners; researchers who are interested in using Earth observation data for environmental and occupational health research applications.

#### Objectives

At the conclusion of this session, the participant will be able to:

- provide an overview of the NASA Health and Air Quality Program relating to public health applications that are of interest to pulmonary clinicians and researchers;
- inform clinicians and researchers about ongoing NASA projects related to performance lung and cardiac disease;
- understand and provide updated information at local, state, national and international levels on air pollution.

Earth-observing satellites collect environmental data of increased importance in public health, to help us better understand the health of the aquatic, atmospheric, and terrestrial ecosystems. By interpreting these geospatial and ecological relationships, researchers can subsequently advance coordinated response efforts to environmental health risks such as air pollution. This session will present an overview of the importance of satellite data incorporated in public health applications to examine respiratory health risks. We will highlight current NASA projects that incorporate satellite data to examine the health effects of urban ambient pollution and dust storms for community health assessments and public health surveillance. Chairing: H. Chapman, MD, PhD, MPH, Washington, DC

S. Estes, MS, Huntsville, AL

- 11:45 Earth Observations Applied to the Dynamic Ecosystem: NASA Health and Air Quality Applications J. Haynes, MS, Washington, DC
- 12:00 Health Impacts of California Wildfires: Use of NASA Data to Inform PM2.5 Exposure Estimates P.L. Kinney, ScD, Boston, MA
- 12:15 Using Satellite Remote Sensing to Estimate the Health Impacts of Air Pollution in Cities Worldwide S. Anenberg, PhD, Washington, DC
- 12:30 Rising Dust Storms and Valley Fever Infection in the Southwestern United States D. Tong, PhD, Fairfax, VA

## NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

# L22 ADVANCING PEDIATRIC PULMONARY AND CRITICAL CARE RESEARCH AT NICHD/NIH

#### 11:45 a.m. - 12:45 p.m.

#### **Target Audience**

Pediatricians/pediatric pulmonologists, critical care and infectious disease specialists.

#### **Objectives**

At the conclusion of this session, the participant will be able to:

- learn new findings about the multiple organ dysfunction syndrome in children;
- improve understanding of pediatric acute respiratory distress syndrome and the differences from the condition in adults;
- improve understanding of the causes of lung disease in children and adolescents living with HIV.

The session will highlight NICHD's research programs and priorities that address major illnesses and comorbidities in pediatric infectious diseases, trauma and critical illness of relevance to ATS member clinicians who care for children.

- Chairing: B.G. Kapogiannis, MD, Bethesda, MD R.F. Tamburro, MD, MSc, Bethesda, MD
- 11:45 NICHD Research Priorities for Pediatric Pulmonary and Critical Illness Research R.F. Tamburro, MD, MSc, Bethesda, MD
- 12:15 NICHD Research Priorities in Pediatric Infectious Diseases B.G. Kapogiannis, MD, Bethesda, MD

## NATIONAL INSTITUTE ON DRUG ABUSE/NIH

## L23 THE OPIOID PUBLIC HEALTH CRISIS: SCIENCE = SOLUTIONS

## 11:45 a.m. - 12:45 p.m.

#### Target Audience

Researcher and clinician members of the American Thoracic Society, particularly those engaged in pulmonary, critical care, sleep medicine and other areas of research and clinical care with relevance to opioid misuse, addiction, and overdose.

## Objectives

At the conclusion of this session, the participant will be able to:

- improve understanding of how opioid analgesics effect respiratory systems and processes and contribute to opioid-related toxicity;
- develop a better understanding of the role of fentanyl and other opioids in the development of wooden chest syndrome and its implications for treating opioid overdose patients who present with that syndrome;
- develop a better understanding of how respiratory scientists can contribute to solutions to addressing the opioid public health crisis.

The U.S. opioid crisis has resulted in almost 400,000 deaths between 1999-2017 from opioid overdoses. This session will address the evolution of the opioid crisis and the public health response mobilized to address it, as well as mechanisms of opioid-induced mortality with a focus on respiratory depression. The speakers will address the current understanding of respiratory control, how opioids affect respiration, and recent developments and gaps in research on mechanisms of central and peripheral respiratory control. Particular attention will be paid to mechanisms underlying opioid-induced "wooden chest" syndrome, a phenomenon coming under scrutiny as a potential contributor to opioid-induced mortality.

Chairing: W.M. Compton, MD, MPE, Rockville, MD

- 11:45 Mobilizing a Public Health Response to the U.S. Opioid Crisis W.M. Compton, MD, MPE, Rockville, MD
- 12:00 Sites and Mechanisms of Action of Opioids on Breathing S.J. Lewis, PhD, Cleveland, OH
- 12:15 The Role of Opioids in "Wooden Chest" Syndrome P. Torralva, MD, Portland, OR
- 12:30 Moderated Questions and Answers A. Hampson, PhD, Rockville, MD

## U.S. FOOD AND DRUG ADMINISTRATION

# L24 PULMONARY UPDATE FROM THE U.S. FOOD AND DRUG ADMINISTRATION

#### 11:45 a.m. - 12:45 p.m.

#### **Target Audience**

Clinicians in practice, academic researchers, pharmaceutical industry representatives, and international regulators.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the regulatory considerations and framework for recent approvals/reviews in the past year;
- receive an update on other hot topics of review within pulmonary drug review division at FDA, including important safety issues.

The most recent regulatory FDA actions, including recent drug approvals for pulmonary diseases will be discussed. Safety issues, recent research endeavors, and other hot topics will be presented by the Division of Pulmonary, Allergy, and Rheumatology Products at FDA.

Chairing: B. Karimi-Shah, MD, Silver Spring, MD

- 11:45 Introduction and Session Overview B. Karimi-Shah, MD, Silver Spring, MD
- 11:50 Pulmonary Update from the FDA S. Seymour, MD, Silver Spring, MD
- 12:05 Regualtory Consideration in Interstitial Lung Disease K. Puthawala, MD, Silver Spring, MD
- 12:25 Regulatory Considerations in Cystic Fibrosis: An Update R. Lim, MD, Silver Spring, MD
- 12:40 Question and Answer Period B. Karimi-Shah, MD, Silver Spring, MD

## NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES/ASTHMA

## L25 IMMUNOMODULATORY THERAPIES IN ASTHMA

## 11:45 a.m. - 12:45 p.m.

#### Target Audience

Providers of lung health such as physicians, nurse practitioners, nurses, clinical researchers and those needing instructions in areas of medicine outside of their specialty will benefit.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new findings about immunologic targets in asthma ranging from innate to adaptive immunity;
- define new strategies to manage the care of asthma based on knowledge gained after the review of ongoing and recently completed trials of biologic therapy for asthma;
- appropriately use immunotherapy in the prevention and treatment of asthma.

This session will provide the attendee an overview of an immunomodulary approach to asthma. The first talk will provided an overview of the current and emerging immunologic targets ranging from innate to adaptive immunity. Next ongoing and recently completed human clinical trials using biologics directed will be described. Finally allergen immunotherapy will be reviewed focusing both on treatment and prevention of asthma.

Chairing: P.J. Gergen, MD, MPH, Rockville, MD

- 12:45 Immunologic Targets in Asthma L. Borish, MD, Charlottesville, VA
- 12:05 Biologics in Asthma: Ongoing Research W. Phipatanakul, MD, Boston, MA
- 12:25 Allergen Immunotherapy for Asthma Treatment and Prevention S. Durham, MD, London, United Kingdom

#### DIVISION OF LUNG DISEASES/NHLBI

# L26 THE MOLECULAR ATLAS OF LUNG DEVELOPMENT (LUNGMAP), PHASE 2

#### <u>11:45 a.m. - 12:45 p.m.</u>

#### Target Audience

Providers of lung health, medical fellows in training, and basic and clinical researchers interested in lung biology, developmental biology, chronic lung disease pathogenesis, pediatrics, bioinformatics, and systems biology.

## Objectives

At the conclusion of this session, the participant will be able to:

- learn the newest datasets of LungMAP that could inform lung research;
- gain understanding of the innovative technologies for molecular profiling, imaging, and data analysis of the developing lung;
- learn how to access and use the LungMAP resources.

Molecular Atlas of Lung Development (LungMAP) is an NHLBI-sponsored program. The overall goal of this program is to build an open-access reference resource by creating a comprehensive molecular atlas of the late-stage developing human lung with data and reagents available to the research community. Speakers will demonstrate how systems biology and bioinformatic approaches can be used to inform processes in development that are recapitulated in disease and repair. The session will also illustrate the LungMAP data pipeline which integrates high resolution multi-omics and imaging data.

- Chairing: S. Lin, PhD, Bethesda, MD J.A. Whitsett, MD, Cincinnati, OH
- 11:45 Building a Multidimensional Map of Developing Human Lung J.A. Whitsett, MD, Cincinnati, OH
- 11:55 Multi-Modal Characterization of Three Human Lung Niches at the Single Cell Level E.E. Morrisey, PhD, Philadelphia, PA
- 12:05 Spatiotemporal Lung Imaging and Omics C. Ansong, PhD, Richland, WA
- 12:15 Decoding the Cellular Niches Critical for Lung Maturation and Pathogenesis X. Sun, PhD, San Diego, CA
- 12:25 LungMAP 2 DCC P. White, PhD, Cincinnati, OH
- 12:35 Biorepository for Investigation of Diseases of the Lung (BRINDL): Phase II G.S. Pryhuber, MD, Rochester, NY

## DIVISION OF LUNG DISEASES/NHLBI

# L27 CAPTURE: A NEW APPROACH FOR IDENTIFYING PATIENTS WITH UNDIAGNOSED COPD

## 11:45 a.m. - 12:45 p.m.

## **Target Audience**

All levels of health care providers, patients and their caregivers, payors, pharma industry operating in the space of COPD,

## Objectives

At the conclusion of this session, the participant will be able to:

- learn new strategies to identify those with undiagnosed COPD by understanding what CAPTURE;
- understand the issues related to COPD underdiagnosis;
- evaluate the possible implications of the study for public health benefit.

The session will explain what an innovative approach to COPD Case Finding, CAPTURE. The discussion will describe the development of the tool and how it is envisioned to be used and why the development of this tool has relevance for the COPD community at large. The speakers will illustrate in detail the aims of an ongoing validation cluster randomized trial, the methodology used, and the progress made at the time of the conference. A dedicate time for Q&A at the end of the session will address the audience's question.

- Chairing: A. Punturieri, MD, PhD, Bethesda, MD B.J. Make, MD, Denver, CO
- 11:45 Introduction to the CAPTURE study F.J. Martinez, MD, MS, New York, NY
- 11:57 PBRNs and CAPTURE B.P. Yawn, MD, MSc, MPH, Miami, FL
- 12:09 Aim 1 and 3 of the CAPTURE Study M.K. Han, MD, MS, Ann Arbor, MI
- 12:21 Aim 2 of the CAPTURE Study R.W. Brown, MD, MPH, AE-C, Ann Arbor, MI
- 12:33 Questions and Answers A. Punturieri, MD, PhD, Bethesda, MD
#### DIVISION OF LUNG DISEASES/NHLBI

## L28 NHLBI INPATIENT IMPLEMENTATION PROGRAM

#### <u>11:45 a.m. - 12:45 p.m.</u>

#### **Target Audience**

Practicing pulmonary, critical care, and emergency medicine clinicians; clinical researchers; implementation researchers.

#### Objectives

At the conclusion of this session, the participant will be able to:

- better understand the goals of the NHLBI inpatient implementation program;
- better understand the need for implementation research to increase adoption of evidence-based practice;
- learn new findings and results from the funded studies.

This session will provide an overview of the NHLBI Inpatient Implementation program. Investigators focusing on lung-related projects will present an overview of their studies and progress to date.

Chairing: L. Reineck, MD, Bethesda, MD

- 11:45 NHLBI's Inpatient Implementation Program Introduction L. Reineck, MD, Bethesda, MD
- 11:51 Implementation of Computerized Clinical Support For Mechanical Ventilation of Patients with Acute Respiratory Distress Syndrome C.K. Grissom, MD, Murray, UT
- 12:03 Education Strategies to Promote Post-Extubation Non-Invasive Ventilation in Patients with Acute Respiratory Failure T.D. Girard, MD, MSci, Pittsburgh, PA
- 12:15 Digital Implementation Intervention Trials in Acute Lung Care (DIGITAL-C) Network Planning M.N. Gong, MS, MD, Bronx, NY
- 12:27 Preparing for a Hybrid Trial of Pulse Oximetry De-Implementation in Stable Infants with Bronchiolitis C. Bonafide, MD, MSCE, Pittsburgh, PA

12:39 Q&A

L. Reineck, MD, Bethesda, MD

#### DIVISION OF LUNG DISEASES/NHLBI

# L29 NHLBI-FUNDED EPIDEMIOLOGICAL COHORT STUDIES IN LUNG HEALTH AND DISEASE

#### 11:45 a.m. - 12:45 p.m.

#### **Target Audience**

Those with clinical and research interests involving the epidemiology of lung health and disease.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn new epidemiology-based findings regarding the causes of chronic lung disease;
- more effectively design and organize collaborative, interdisciplinary, epidemiology-based research efforts to understand lung health and disease;
- gain understanding about the existence of recently funded lung cohorts that could be leveraged by researchers to conduct ancillary studies.

This session highlights scientific advances and collaborative research opportunities brought about by three recent NHLBI-sponsored epidemiology cohort studies that aim to improve our understanding of lung health and disease.

- Chairing: M. Craig, PhD, Bethesda, MD L. Postow, PhD, Bethesda, MD
- 11:45 Long-Term Follow-Up of the Lung Transplant Outcomes Group (LTOG) Cohort J.D. Christie, MD, MS, ATSF, Philadelphia, PA
- 12:05 The American Lung Association (ALA) Lung Health Cohort R. Kalhan, MD, MS, Chicago, IL
- 12:25 Risk Underlying Rural Areas Longitudinal (RURAL) Cohort Study V. Ramachandran, MD, Boston, MA



# CLINICAL

# ADULT CLINICAL CORE CURRICULUM

# CC6 SLEEP MEDICINE CLINICAL CORE CURRICULUM II

#### 1:00 p.m. - 3:00 p.m.

#### **Target Audience**

Practicing internists, subspecialists, registered nurses and advanced practice providers in pulmonary, critical care, and sleep medicine who work in a clinical setting and are currently engaged in maintenance of certification.

## Objectives

At the conclusion of this session, the participant will be able to:

- review medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their knowledge and skills in core content areas in pulmonary, critical care and sleep medicine.

The goal of the core is to support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements. The ATS Clinical Core Curriculum Symposia focus on a 3-year content cycle of key topics in the areas of Pulmonary, Critical Care, and Sleep Medicine. The topics are aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to help clinicians stay up to date with important information relevant to their medical practices, and to provide an opportunity for clinicians to evaluate their individual knowledge and skills while earning MOC Medical Knowledge points.

- Chairing: S.M. Jamil, MD, ATSF, La Jolla, CA R.L. Owens, MD, La Jolla, CA
- 1:00 Controversies and Consensus: Strategies in the Management of Central Sleep Apnea A. Sankari, PhD, MD, Detroit, MI
- 1:30 Practical Approaches to Cognitive Behavioral Therapy for Insomnia (CBT-I) for the Practitioner S. Bertisch, MD, MPH, Boston, MA
- 2:00 Risks and Management of Long-Term Use of Sleep-Inducing Medications B.B. Kolla, MD, Scottsdale, AZ
- 2:30 THC, CBD, Edible, Oils and All That: Cannabis and Sleep B. Prasad, MD, ATSF, Chicago, IL

# CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# D82 CONTROVERSIAL TREATMENT STRATEGIES IN COPD: PRO/CON

Assemblies on Clinical Problems; Nursing; Pulmonary Rehabilitation; Respiratory Structure and Function

1:00 p.m. - 3:00 p.m.

#### **Target Audience**

Clinicians, academic clinical and translational researchers, nurses, and fellows.

# Objectives

At the conclusion of this session, the participant will be able to:

- improve understanding of the benefits and potential limitations of new evidence based treatments for patients with COPD including endobronchial valves and home based pulmonary rehabilitation and more appropriately incorporate them into practice;
- improve understanding of the limitations in evidence base and the future potential of available but

controversial treatments for COPD including stem cell therapy and medical marijuana;

 learn new concepts from large cohort studies that could be applied to the re-classification of COPD and understand the potential benefits and limitations of proceeding with disease reclassification.

Available guideline based therapy for COPD is limited in ability to restore quality of life, prevent exacerbations, slow decline in lung function or prolong life. Given these limitations, clinicians are attempting new approaches to treatment and patients are willing to attempt therapies with limited evidence base. Further, recent cohort studies have exposed limitations in our current classification scheme for COPD, and there is speculation that reclassification of the disease will fuel the field to move forward. The session will have experts involved with development of several emerging and controversial therapies in COPD to assess the evidence base for existing and future use to treat our patients with COPD.

Chairing: F.C. Sciurba, MD, Pittsburgh, PA J.M. Bon, MD, MS, ATSF, Pittsburgh, PA B.J. Make, MD, Denver, CO

Speakers and Talks to be Announced

## CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

# D83 TELOMERES IN INTERSTITIAL LUNG DISEASE AND LUNG TRANSPLANTATION

Assemblies on Clinical Problems; Respiratory Cell and Molecular Biology

1:00 p.m. - 3:00 p.m.

#### **Target Audience**

Pulmonologists who diagnosis and treat patients with interstitial lung disease; transplant pulmonologists, surgeons, and associated health care professionals.

#### Objectives

At the conclusion of this session, the participant will be able to:

- identify patients with ILD who should be screened for short telomeres and pathogenic variants in telomere biology genes, including understanding research and commercially available telomere length testing;
- refer patients with telomere biology-related ILD for transplant evaluation earlier and to define new strategies to manage the care of this population, including novel therapies;
- improve post-transplant management of individuals with telomere biology-related ILD, including the identification of specific protocols for this population.

Common single nucleotide polymorphisms and rare pathogenic germline variants in telomere biology genes are associated with very short telomeres resulting in organ dysfunction, including interstitial lung disease (ILD). This symposium will focus on the diagnosis and management of patients with telomere biology-related ILD, including lung transplantation. Topics will cover translational research on the detection and pathophysiology of telomere biology disorders including pulmonary and extra-pulmonary disease manifestations; screening and management of individuals with telomere-related ILD; patient/family perspectives on living with short telomeres with or without ILD; novel approches in this population; and management of lung transplant candidates and recipients with telomere biology-related ILD.

- Chairing: S.Y. El-Chemaly, MD, MPH, Boston, MA M. Armanios, MD, Baltimore, MD
- 1:00 Detection and Clinical Manifestations of Short Telomeres S. Savage, MD, Rockville, MD
- 1:20 Short Telomeres and Interstitial Lung Disease: Screening and Trajectories C. Newton, MD, Dallas, TX
- 1:40 Living With Short Telomeres L. Stevens, BA, Philadelphia, PA
- 2:00 Therapies in Pre-Clinical Models of Telomere-Related Disease M. Blasco, PhD, Madrid, Spain

- 2:20 Transplant Evaluation and Post-Transplant Management A. Courtwright, MD, PhD, Philadelphia, PA
- 2:40 Panel Discussion

### CLINICAL • TRANSLATIONAL

#### CRITICAL CARE TRACK

# D84 TWENTY YEARS INTO THE LOW TIDAL VOLUME ERA FOR ARDS: WHAT ELSE SHOULD WE BE DOING?

Assemblies on Critical Care; Clinical Problems

<u>1:00 p.m. - 3:00 p.m.</u>

**Target Audience** 

All practicing clinicians and trainees in critical care, clinical and translational researchers interested in acute respiratory distress syndrome (ARDS) and ventilator-induced lung injury (VILI).

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand the latest evidence regarding mechanical ventilation management for patients with ARDS beyond low tidal volume ventilation;
- increased knowledge of the identification of patients who could benefit from personalized strategies beyond low tidal volume ventilation in ARDS and prevent further VILI;
- recognize the limits of bedside VILI detection, including that the absence of tools for routine detection currently does not exclude the possibility of ongoing VILI risk.

Low tidal volume ventilation is the standard of care for the management of ARDS to minimize ventilator-induced lung injury (VILI). The optimal approach to managing patients at highest risk for VILI remains uncertain. Numerous strategies have been proposed, including high PEEP, reduced respiratory drive, and apneic ventilation, despite conflicting scientific evidence. This dynamic session will explore, in a pro/con format, ongoing controversies in the management of ARDS, including open- versus closed-lung strategies, determining optimal respiratory effort, and the potential for translational biology to help identify patients at greatest risk of VILI for whom escalating lung-protective interventions may be most appropriate.

Chairing: P. Madahar, MD, MS, New York, NY B.K. Patel, MD, Chicago, IL S. Sahetya, MD, MHS, Baltimore, MD E. Goligher, MD, Toronto, Canada

- 1:00 A Patient's Perspective Speaker To Be Announced
- 1:05 Breathe "Normally": Targeting Normal Respiratory Effort to Protect the Diaphragm E. Goligher, MD, Toronto, Canada
- 1:14 Breathe "Easy": Eliminating Respiratory Effort to Protect the Lungs D. Abrams, MD, New York, NY
- 1:23 Mind Over Body: Targeting Consciousness to Protect Against Over-Sedation B.K. Patel, MD, Chicago, IL
- 1:32 Audience Questions With Panel Discussion
- 1:41 Open or Closed? Open-Lung Strategies to Protect Against Atelectrauma M.B.P. Amato, MD, Sao Paulo, Brazil
- 1:50 Open or Closed? Closed-Lung Strategies to Protect Against Volutrauma S. Sahetya, MD, MHS, Baltimore, MD
- 2:00 Aiming for Apnea: Eliminating Breathing Altogether to Protect Against Atelectrauma and Volutrauma D. Brodie, MD, New York, NY
- 2:10 Audience Questions With Panel Discussion
- 2:20 Beyond the Bedside: Developing Markers of Biophysical Lung Injury to Protect Against Guessing N. Meyer, MD, MS, Philadelphia, PA
- 2:30 Abandoning ARDS: Admitting What We Don't Know, so We Can Learn What We Should Do C.S. Calfee, MD, MAS, San Francisco, CA
- 2:40 Audience Questions With Panel Discussion

# BASIC • BEHAVIORAL CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# D85 ENVIRONMENTAL EXPOSURES AND THE AIRWAY MICROBIOME

Assemblies on Environmental, Occupational and Population Health; Allergy, Immunology and Inflammation; Behavioral and Health Services Research; Clinical Problems; Nursing; Pediatrics; Pulmonary Infections and Tuberculosis; Respiratory Cell and Molecular Biology

#### 1:00 p.m. - 3:00 p.m.

#### **Target Audience**

Those interested in what modulates the microbiome, temporal dynamics versus stability of microbiome, how exposures disrupt microbiome homeostasis and cause disease, clinicians, researchers, educators, trainees interested in above will benefit.

#### Objectives

At the conclusion of this session, the participant will be able to:

- understand how inhalation of a range of inhaled exposures can change the airway microbiome and/or change the airways microbiome's influence on clinically relevant phenotypes;
- appreciate how the airway microbiome determines the response to inhaled toxicants and/or may be manipulated for therapeutic purposes by inhaled interventions;
- understand how diet can modify the microbiome's response to inhaled exposures.

Increasing evidence suggests that environmental and occupational inhalant exposures (indoor and outdoor air pollution, smoking, allergens, etc) can alter the airway microbiome. This may occur through several non-mutually-exclusive mechanisms: the inhalant acts directly as a vector for new organisms, changes airway microbiome through altered immunity, alters the airway's structural defenses against the microbiome, changes how baseline (pre-existing) airway microbiome responds to inhaled stimuli, and/or acts via the lung-gut axis. This talk will dissect this evidence for these proposed mechanisms, consider modifying factors (sex, age, etc), and elucidate opportunities for preventive and therapeutic interventions. Doing so will identify key research gaps to fill in order to improve lung health.

Chairing: C. Carlsten, MD, MPH, Vancouver, Canada I. Jaspers, PhD, Chapel Hill, NC C. Dela Cruz, MD, PhD, ATSF, New Haven, CT

- 1:00 A Patient's Perspective Speaker To Be Announced
- 1:05 Traffic-Related Air Pollution, Host Defense, and Effects on the Airway Microbiome C. Carlsten, MD, MPH, Vancouver, Canada
- 1:24 E-Cigarettes' Influence on the Upper Airway Microbiome I. Jaspers, PhD, Chapel Hill, NC
- 1:43 The Hygiene Hypothesis and the Microbiome of Airway Disorders E. von Mutius, MD, MSc, Muenchen, Germany
- 2:02 Airway-Relevant Cross-Talk Between the Exposome and the Microbiome H. Sbihi, PhD, Vancouver, Canada
- 2:21 Dietary Exposure and Host-Microbe Interactions: Impact on Respiratory Disease N. Ubags, PhD, Epalinges, Switzerland
- 2:40 The Microbial Gut-Lung Axis as a Key Mediator of Host Response to Environment P. Hansbro, PhD, Sydney, Australia

#### BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

# D86 CUTTING-EDGE DIAGNOSTICS: INTEGRATING MULTI-OMIC PLATFORMS IN THE DIAGNOSIS OF LUNG INFECTIONS

Assemblies on Pulmonary Infections and Tuberculosis; Allergy, Immunology and Inflammation; Critical Care; Section on Genetics and Genomics

## 1:00 p.m. - 3:00 p.m.

#### **Target Audience**

Research scientists interested in how technological advances are being used to improve our diagnosis of respiratory infections; clinicians who want to understand how cutting-edge sequencing technologies will soon join our diagnostic arsenal.

# Objectives

At the conclusion of this session, the participant will be able to:

- better understand the promise and limitations of existing sequencing platforms in characterizing respiratory microbiota;
- articulate the ecologic and transcriptomic signatures of infection compared to health and colonization;
- develop a working familiarity with the concepts of machine learning and understand why conventional regression-based analytic techniques are insufficient to meet the informatic challenges of modern sequencing-based diagnostics.

The revolution in culture-independent microbiology has transformed our understanding of microbiota within the respiratory tract, but has not yet translated into our diagnosis and management of respiratory infections. Recent advances have brought sequencing-based diagnostics within reach of the bedside. Attendees will learn from world experts how recent discoveries are bridging the divide between discovery science and our diagnostic arsenal. Attendees will learn about novel technologies (e.g. nanopore sequencing), analytic approaches (e.g. integration of metagenomics and metatranscriptomics), and data science techniques (e.g. machine learning) being summoned to advance our understanding and diagnosis of acute respiratory infections.

- Chairing: G. Kitsios, MD, PhD, Pittsburgh, PA J. Leung, MD, Vancouver, Canada R.P. Dickson, MD, Ann Arbor, MI
- 1:00 Integrating Host Response and Unbiased Microbe Detection for Diagnosis of Respiratory Infections C. Langelier, MD, PhD, San Francisco, CA

- 1:20 How Nanopore Sequencing Puts Genomics in Clinicians' Hands R.P. Dickson, MD, Ann Arbor, MI
- 1:40 Studying Gut and Lung Microbiota to Understand Pneumonia in Critically III Patients G. Kitsios, MD, PhD, Pittsburgh, PA How Machine Learning Can Change the Way We Diagnose Infections R. Das, PhD, Ann Arbor, MI
- 2:20 Predicting Ventilator-Associated Pneumonia Using Dynamic Changes in Respiratory Microbiota B. Kelly, MD, MSCE, Philadelphia, PA
- 2:40 What the Respiratory Microbiome Can Teach Us About Respiratory Tract Infections in Children D. Bogaert, MD, PhD, Edinburgh, United Kingdom

# BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

# D87 REPAIR AND REGENERATION OF THE LUNG: TARGETING STEM CELLS IN CYSTIC FIBROSIS

Assemblies on Respiratory Cell and Molecular Biology; Pediatrics; Pulmonary Infections and Tuberculosis; Respiratory Structure and Function

1:00 p.m. - 3:00 p.m.

# Target Audience

Basic scientists, clinicians, students, postdoctoral trainees and providers of lung health working in a pediatric and adult pulmonary disease.

## Objectives

At the conclusion of this session, the participant will be able to:

- review the current understanding and provide latest updates on the understanding of cell types and stem cell identities in the human airways;
- improve knowledge on the recent progress in towards regenerating airway epithelium including gene-editing and stem-cell based approaches;

• improve understanding of the potential Breakthrough therapeutic approaches for Cystic Fibrosis and other chronic lung diseases.

This session will summarize the current status of translational research progressing toward restoration of a functional mucociliary epithelium by cell, gene or gene targeting therapeutic approaches with a particular focus on Cystic Fibrosis.

Chairing: A.L. Ryan (Firth), PhD, Los Angeles, CA F.J. Hawkins, ChB, MB, Boston, MA

- 1:00 Session Introduction: Lung Regeneration A.L. Ryan (Firth), PhD, Los Angeles, CA
- 1:06 A Patient's Perspective Speaker To Be Announced
- 1:11 Where and How to Target CF Airway Disease? S.H. Randell, PhD, Chapel Hill, NC
- 1:29 Ex Vivo Expansion of Basal Stem Cells S.D. Reynolds, PhD, Columbus, OH
- 1:47 Derivation of Lung Stem Cells From iPSC F.J. Hawkins, ChB, MB, Boston, MA
- 2:05 Cell Engraftment Into the Lung: Developing a Better Animal Model? K.R. Parekh, MBBS, Iowa City, IA
- 2:23 Targeting Lung Stem Cells for Precise Gene-Editing B.R. Davis, PhD, Houston, TX
- 2:41 In Utero Gene-Correction of Genetic Lung Disease E.E. Morrisey, PhD, Philadelphia, PA

# **BASIC • CLINICAL • TRANSLATIONAL**

#### SCIENTIFIC SYMPOSIUM

# D88 SLEEP DISORDERS: THE NEW RISK FACTOR FOR AGE-RELATED NEURODEGENERATIVE DISEASES?

Assembly on Sleep and Respiratory Neurobiology

<u>1:00 p.m. - 3:00 p.m.</u>

#### **Target Audience**

Researchers, clinicians, early career researchers, training fellows, nurses, caretakers.

#### Objectives

At the conclusion of this session, the participant will be able to:

- learn about the bi-directional relationship between sleep, sleep apnea and neurodegeneration;
- learn about emerging evidence that sleep apnea may play a role in neurodegeneration including understanding the mechanistic pathways that underpin this relationship;
- provide new strategies to manage the care of sleep disordered breathing in patients with neurodegenerative disease.

Sleep disturbances and sleep apnea, are common in patients with cognitive impairment and neurodegenerative conditions; however there is a growing recognition that the relationship between sleep and neurodegeneration is bi-directional. This symposium will address essential gaps by discussing, mechanistic evidence that sleep disturbances and sleep apnea promote neurodegeneration; novel clinical evidence that sleep apnea is a risk factor for future cognitive decline and Alzheimer's disease and understanding whether CPAP treatment may reduce risk; barriers to treating sleep apnea in dementia patients; and the role of sleep apnea in the development and treatment of Parkinson's disease.

- Chairing: C.M. Hoyos, BSc(Hons), MPH, PhD, Glebe, Australia S. Chowdhuri, MD, MS, Detroit, MI R. Osorio, MD, New York, NY
- 1:00 Chair Introduction C.M. Hoyos, BSc(Hons), MPH, PhD, Glebe, Australia
- 1:02 Sleep in Dementia: A Carer's Perspective Speaker To Be Announced
- 1:07 Sleep, Sleep Disorders and Neurodegeneration: A BI-Directional Relationship? S.L. Naismith, MAPS, CCN, Sydney, Australia

- 1:27 Could OSA Cause Neurodegeneration and Dementia? What Are the Underlying Mechanisms? C.L. Phillips, PhD, Camperdown, Australia
- 1:47 Is OSA a Risk Factor for Cognitive Decline and Alzheimer's Disease? Clinical Evidence A.W. Varga, MD, PhD, New York, NY
- 2:07 Sleep and Sleep Apnea in Parkinson Disease M. Kaminska, MD, Montreal, Canada
- 2:27 Should We Treat Sleep Apnea in Dementia Patients? N.C. Netzer, MD, PhD, Bad Aibling, Germany
- 2:47 Where to From Here? R. Osorio, MD, New York, NY

# **BASIC • CLINICAL**

# SCIENTIFIC SYMPOSIUM

# D89 NOVEL THERAPEUTIC MANAGEMENT IN NON-TUBERCULOUS MYCOBACTERIA

Assembly on Pulmonary Infections and Tuberculosis

## 1:00 p.m. - 3:00 p.m.

# Target Audience

Pulmonary physicians, primary care physicians, medical residents and students, pulmonary fellows, nurses, and nurse practitioners.

## Objectives

At the conclusion of this session, the participant will be able to:

- increase awareness of NTM, and novel prognostic indicators including phentopying and endotyping;
- improve understand of the microbiome in NTM, its scientific and clinical relevance, and clinical implications;
- increase awareness of new and exciting treatment modalities for NTM, and what may be in the pipeline.

This session will cover new and exciting topics involving the care of patients with non-tuberculous mycobacteria. There is a new ways to categorize patients (phenotypes and endotypes) which can have important prognostic and management implications. The microbiome of NTM, which gives us understanding at the molecular nature of the disease process, is also a hot topic with new research findings. New and exciting treatments in NTM have emerged, including dual beta lactam therapy for rapidly growing mycobacterium, that will be covered. Other therapies, including inhaled nitric oxide, and GM-CSF will be presented. Finally, one of the most exciting topics in NTM, phage therapy, will be presented.

- Chairing: A. Basavaraj, MD, ATSF, New York, NY T.R. Aksamit, MD, Rochester, MN R. Thomson, MBBS, PhD, Greenslopes, Australia
- 1:00 State of the Art NTM Treatment in 2020 K.L. Winthrop, MD, MPH, Portland, OR
- 1:15 Phenotyping in Bronchiectasis and NTM J.D. Chalmers, MD, PhD, Dundee, United Kingdom
- 1:35 Microbiome in Bronchiectasis and NTM L.N. Segal, MD, New York, NY
- 1:55 Phage Treatment for NTM P. Turner, PhD, New Haven, CT
- 2:15 Dual Beta Lactam Therapy for Rapidly Growing Mycobacteria S.H. Kasperbauer, MD, Denver, CO
- 2:35 Nitric Oxide and Other Emerging Therapies K.N. Olivier, MD, MPH, ATSF, Bethesda, MD
- 2:55 Questions and Answers

# CLINICAL

# SCIENTIFIC SYMPOSIUM

# D90 HORIZONS IN EXTRACORPOREAL SUPPORT: EVIDENCE, ENIGMAS, AND WHAT'S COMING NEXT

#### 1:00 p.m. - 3:00 p.m.

## Target Audience

All those involved in critically ill adults and children with respiratory and/or cardiac failure who might benefit from

extracorporeal life support. Patient care, result trial results and future uses of ECMO with management pearls will be presented.

#### Objectives

At the conclusion of this session, the participant will be able to:

- interpret recent clinical trials related to ECMO and how they may affect future care;
- understand what patient populations may best benefit from ECMO and when is optimal for initiation;
- have improved understanding of how future extracorporeal techniques may be used in new populations of patients.

The presentations will review results of recent ECMO trials and how they apply to clinical practice from international experts, future plans for ECMO and how they may benefit patient care, expansion of ECMO techniques to the home environment, in conditions of resuscitation or suspended animation will be provided. A panel discussion of difficult patient management scenarios will also be provided. Audience participation is also sought to ask questions. A rapid fire review of past and future ECMO highlights will be provided. Data provided will be applicable to adults and pediatric patients (although little neonatal content is included).

- Chairing: H.J. Dalton, MD, Falls Church, VA J.H. Badulak, MD, Seattle, WA
- 1:00 Late-Breaking New ECMO Study Results A. Combes, MD, PhD, Paris, France
- 1:20 The Science Behind Anticoagulation and ECMO: What's New and Why it Matters M.E. Steiner, MD, Minneapolis, MN
- 1:40 The Next Ten Years I.M. Cheifetz, MD, Durham, NC
- 2:00 How to Ventilate Before and During ECMO Speaker To Be Announced
- 2:20 Panel Discussion
- 2:40 My Top 10 Things to Know in 10 Minutes! J.H. Badulak, MD, Seattle, WA
- 2:50 My Top 10 Things to Know in 10 Minutes! H.J. Dalton, MD, Falls Church, VA

#### 1:00 p.m. - 3:00 p.m.

Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.

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