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ATS 2016 INTERNATIONAL CONFERENCE
MAY 13-18
SAN FRANCISCO, CALIFORNIA

This is the virtual Advance Program for the ATS 2016 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.

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

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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.

**Postgraduate Courses**

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

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

**Target Audience**

Pulmonologist, thoracic surgeons, critical care specialists, nurses and healthcare professionals involved with the management of patients with pleural diseases.

**Objectives**

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

- manage pleural space infections using the best evidence;
- learn and apply evidence-based approaches to management of patients with malignant pleural effusions;
- learn minimally invasive techniques for the diagnosis and treatment of pleural diseases and refer patients appropriately when needed.

Pleural diseases represent a considerable burden for patients, providers, and the healthcare system as a whole. Traditionally, management of pleural diseases has been based on empiric approaches largely relying on expert opinion and anecdotal evidence. The last decade has witnessed unprecedented research efforts from the pleural community, which have resulted in the development of evidence-based recommendations. In this session, we will review this evidence in a practical case-based format and provide hands-on experience highlighting the techniques now considered standard of care.
Chairing: F. Maldonado, MD, Nashville, TN
N.M. Rahman, MSc, PhD, Oxford, United Kingdom

8:00 Ultrasound in the Management of Pleural Disease
J.M. Wrightson, DPhil, MBBChir, MA, Oxford, United Kingdom

8:30 Evidence-Based Approach to Malignant Pleural Effusions
N.A. Maskell, MD, Bristol, United Kingdom

9:00 Modern Approach to Pneumothorax
R. Hallifax, MD, Oxford, United Kingdom

9:30 Manometry Should Be Routinely Used During Thoracentesis: A Pro/Con Debate
D.J. Feller-Kopman, MD, Baltimore, MD
F. Maldonado, MD, Nashville, TN

10:00 Break

10:15 The Landscape of Pleural Space Infections: A Practical Review
N.M. Rahman, MSc, PhD, Oxford, United Kingdom

10:45 Pleuroscopy Should Be Performed When the Thoracentesis Is Non-Diagnostic: A Pro/Con Debate
P. Lee, MBBS, MD, Singapore,
Y.C.G. Lee, MBChB, PhD, Perth, Australia

11:15 Defining the Specialty: Building a Pleural Service Line
Y.C.G. Lee, MBChB, PhD, Perth, Australia

11:35 Panel Discussion
F. Maldonado, MD, Nashville, TN

12:00 Lunch

1:00 Practical Skills Sessions

Pleural Manometry
D.R. Nelson, MD, Rochester, MN
H. Lee, MD, Baltimore, MD

Pleural Ultrasound
J. Cardenas-Garcia, MD, Boston, MA
J.M. Wrightson, DPhil, MBBChir, BChir MA, Oxford, United Kingdom
S. Shojaee, MD, Richmond, VA

Pleuroscopy
N.M. Rahman, MSc, PhD, Oxford, United Kingdom
R.M. Kern, MD, Rochester, MN

Indwelling Pleural Catheters
N.A. Ninan, MD, New Orleans, LA
G.C. Michaud, MD, New Haven, CT

Small-Bore Chest Tubes
Z.S. DePew, MD, Rochester, MN
R.J. Lentz, MD, Nashville, TN

Intrabronchial Valves for Persistent Air-Leak
C. Gilbert, DO, MS, Hershey, PA
A.C. Argento, MD, Chicago, IL

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**PG2A CRITICAL CARE ULTRASOUND AND ECHOCARDIOGRAPHY: PART I**

This is part 1 of a two-part course which includes PG2B on Saturday, May 14. Those registering for PG2A will be registered for PG2A and PG2B.

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

Member: $900  
In-Training Member: $675  
Non-Member: $1,200  
In-Training Non-Member: $775

Registrants must bring a laptop to the course to view the course material.

Assembly on Critical Care
8:00 a.m. - 4:00 p.m.

Target Audience
Providers of adult and pediatric critical care or emergency medicine.

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

- apply hands-on ultrasound techniques at bedside to assess critically ill patients and recognize alternative etiologies of shock;
- understand and administer hands-on ultrasound techniques to guide fluid administration in the critically ill patient;
• apply hands-on ultrasound techniques to guide common ICU procedures.

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 simulators that can demonstrate abnormal pathology. A track will be offered for pediatric intensivists as well, with pediatric intensivists teaching hands-on skills.

Chairing: M.J. Lanspa, MD, MS, Salt Lake City, UT
X. Monnet, MD, PhD, Paris, France

8:00 Welcome and Introduction to Critical Care Ultrasound: Training and Competency
M.J. Lanspa, MD, MS, Salt Lake City, UT

8:20 Basic Physics, Artifacts, Knobology
Z. Shaman, MD, Cleveland, OH

8:45 Transthoracic Windows and Views, FATE Exam
S. Nikravan-Weber, MD, Stanford, CA

9:15 Basic Evaluation of RV Size and Function, the RV in Pulmonary Disease
S. Price, MBBS, PhD, EDICM, London, United Kingdom

9:45 Basic Evaluation of RV Size and Function
A. Leibowitz, MD, Boston, MA

10:15 Break

10:30 Practical Skills Sessions: Hands-On Stations I

Apical Window
X. Monnet, MD, PhD, Paris, France
T. Brakke, MD, Omaha, NE
Z. Shaman, MD, Cleveland, OH
A. Leibowitz, MD, Boston, MA
L. Grecu, MD, Stony Brook, NY

Parasternal Window
P. Mohabir, MD, Stanford, CA
M. Hamlin, MD, Burlington, VT
J. Kasal, MD, St. Louis, MO
S. Price, MBBS, PhD, EDICM, London, United Kingdom
S. Nikravan-Weber, MD, Stanford, CA

Subcostal Window
C.K. Grissom, MD, Murray, UT
L. Rapoport, MD, Santa Clara, CA
V.A. Dinh, MD, Loma Linda, CA
E. Teo, MD, Atlanta, GA
J.E. Pittman, MD, Salt Lake City, UT

12:00 Lunch and Clinical Cases
L. Grecu, MD, Stony Brook, NY

12:45 Chest Ultrasound: Pneumothorax, Edema, Effusion, and Thoracentesis
P. Mohabir, MD, Stanford, CA

1:15 Basic Valvulopathy
T. Brakke, MD, Omaha, NE

1:45 Basic Assessment of Diastolic Function
S.M. Brown, MD, MS, Murray, UT

2:15 Break

2:30 Practical Skills Sessions: Hands-On Station II

Lung Ultrasound
P. Mohabir, MD, Stanford, CA
L. Rapoport, MD, Santa Clara, CA
V.A. Dinh, MD, Loma Linda, CA
Z. Shaman, MD, Cleveland, OH
E. Hirshberg, MD, MS, Salt Lake City, UT

Diastolic Measurements
J.E. Pittman, MD, Salt Lake City, UT
M. Hamlin, MD, Burlington, VT
S. Price, MBBS, PhD, EDICM, London, United Kingdom
X. Monnet, MD, PhD, Paris, France
A. Leibowitz, MD, Boston, MA

Cardiac Output
L. Grecu, MD, Stony Brook, NY
S. Nikravan-Weber, MD, Stanford, CA
J. Kasal, MD, St. Louis, MO
E. Teo, MD, Atlanta, GA
T. Brakke, MD, Omaha, NE
Clinical Translational Postgraduate Course

PG3 Genetic 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

Registrants must bring a laptop to the course to view the course material.

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

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

Target Audience
All pulmonary physicians, pulmonary physician assistants, pulmonary fellows who care for patients with respiratory disease.

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

- recognize and diagnose genetic lung diseases including short telomere syndrome, primary ciliary dyskinesia, surfactant deficiency, LAM and BHD;
- better integrate new treatment options in discussing HHT, CF, or LAM with patients;
- apply basic principles of genetics and genotype-phenotype correlation, together with current classification of genetic variants to better interpret genetic test results.

This course will provide attendees with a comprehensive overview of the ever increasing role of genetics in the practice of pulmonary medicine. Regardless of background, attendees will come away from this course with a solid understanding of the basic principles of clinical genetics. Attendees will understand when to suspect genetic disease in patients with lung disease and will be able to determine if testing in these patients is warranted. Attendees will learn how to interpret genetic test results, and determine when further investigations are required. The course will conclude with an interactive case-based session of four clinical scenarios.

Chairing: B.A. Raby, MD, MPH, Boston, MA
M. Leigh, MD, Chapel Hill, NC

8:00 Introductions and Outline
B.A. Raby, MD, MPH, Boston, MA

8:15 Molecular Genetics 101: Mutations vs SNPs and How They Cause Disease
L. Yonker, MD, Boston, MA

8:40 Interpreting Genetic Reports: Is My Mutation Pathogenic?
S. Amr, PhD, Cambridge, MA

9:20 Genetic Counseling: Why It Matters
N. Carmichael, CGC, Boston, MA

9:45 Break

10:00 Neonatal Respiratory Distress: How Rapid Genetic Screening is Changing Clinical Practice
A. Hamvas, MD, Chicago, IL

10:25 Interstitial Lung Disease: Telomeres, Surfactant, and All that MUC
C.K. Garcia, MD, PhD, Dallas, TX

10:50 Bronchiectasis 1: The Dawn of a New Age in the Treatment of CF
J.M. Collaco, MD, Baltimore, MD

11:20 Bronchiectasis 2: Primary Ciliary Dyskinesia - Time for a New Diagnostic Algorithm
M. Knowles, MD, Chapel Hill, NC

11:45 LUNCH

12:45 Emphysema: Alpha-1-Antitrypsin Deficiency and Beyond
M. Brantly, MD, Gainesville, FL

1:10 Cystic Lung Disease: From LAM to Birt-Hogg-Dube
E. Henske, MD, Boston, MA

1:35 Pulmonary Vasculopathies: From PPH to HHT
C.G. Elliott, MD, Murray, UT

2:00 Break

2:15 The Increasingly Blurring of the Lines Between Clinical Practice and Genetic Research
L.M. Nogee, MD, Baltimore, MD
2:40 Case-Based Workshop  
B.A. Raby, MD, MPH, Boston, MA  
L. Yonker, MD, Boston, MA  
N. Carmichael, CGC, Boston, MA  
M. Leigh, MD, Chapel Hill, NC

3:50 Concluding Remarks  
M. Leigh, MD, Chapel Hill, NC

PG4 PALLIATIVE CARE IN THE ICU: CLINICAL, ETHICAL, AND RESEARCH CHALLENGES

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Behavioral Science and Health Services Research; Critical Care; Nursing

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

Target Audience
Providers in the ICU (physicians, nurses, social workers and therapists) who wish to learn more about the importance of providing effective palliative care (PC) and end of life (EOL) care in the ICU. Additionally, anyone conducting research on dying patients in the ICU will benefit from this course.

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

- have new strategies to manage the care of the dying patient in the ICU;
- understand the ethical issues related to palliative and end of life care in the ICU and apply the recent ATS guidelines;
- improve communication with dying patients and their families in the ICU.

This novel postgraduate course will focus on providing the learner with the current evidence and best practices for palliative care in the ICU. This course is unique in that it will cover this topic from clinical, ethical and research perspectives, and will be appealing to multiple learners.

Chairing:  
M.M. Hayes, MD, Boston, MA  
J.R. Curtis, MD, MPH, Seattle, WA  
D.B. White, MD, MAS, Pittsburgh, PA

8:00 Welcome and Conference Goals  
J.R. Curtis, MD, MPH, Seattle, WA  
M.M. Hayes, MD, Boston, MA  
D.B. White, MD, MAS, Pittsburgh, PA

Ethical Challenges

8:10 The Ethics of End of Life  
D.B. White, MD, MAS, Pittsburgh, PA

8:55 Small Group Discussions of Ethical Cases  
G.L. Anesi, MD, MBE, Philadelphia, PA  
D.B. White, MD, MAS, Pittsburgh, PA  
A.C. Long, MD, MS, Seattle, WA  
M.M. Hayes, MD, Boston, MA  
J.R. Curtis, MD, MPH, Seattle, WA  
S.P. Keller, MD, PhD, Pittsburgh, PA  
E.K. Kross, MD, Seattle, WA  
A.E. Turnbull, DVN, MPH, PhD, Baltimore, MD  
R.S. Stephens, MD, Baltimore, MD

Clinical Challenges

10:00 Palliative Care (PC) in the ICU  
J.R. Curtis, MD, MPH, Seattle, WA

10:45 Break

Case Studies in Specific Difficult EOL Issues

11:00 Treating Dyspnea in the Dying  
M.L. Campbell, PhD, RN, Detroit, MI

11:20 EOL in the Oncology ICU: Managing Chemotherapy and Chemotherapists  
R.S. Stephens, MD, Baltimore, MD

11:40 Practical Considerations for the Withdrawal of ECMO  
D. Brodie, MD, New York, NY

12:00 What Do We Do with the LVAD? EOL in the Cardiac ICU  
S.P. Keller, MD, PhD, Pittsburgh, PA
12:20  Panel Discussion
M.L. Campbell, PhD, RN, Detroit, MI
R.S. Stephens, MD, Baltimore, MD
D. Brodie, MD, New York, NY
S.P. Keller, MD, PhD, Pittsburgh, PA

12:30  LUNCH

1:15  Effective Communication in the ICU
M.M. Hayes, MD, Boston, MA

1:30  Simulated Family Meetings
M.M. Hayes, MD, Boston, MA
D. Lamas, MD, Boston, MA
E.K. Kross, MD, Seattle, WA
J.R. Curtis, MD, MPH, Seattle, WA
G.L. Anesi, MD, MBE, Philadelphia, PA
R.S. Stephens, MD, Baltimore, MD
A.C. Long, MD, MS, Seattle, WA
D.B. White, MD, MAS, Pittsburgh, PA
S.P. Keller, MD, PhD, Pittsburgh, PA
A.E. Turnbull, DVM, MPH, PhD, Baltimore, MD

2:30  Break

2:40  Conducting Research on the Dying
A.E. Turnbull, DVM, MPH, PhD, Baltimore, MD

3:15  Top 10 PC/EOL in the ICU Studies
E.K. Kross, MD, Seattle, WA

3:45  Wrap Up, Q&A Panel
D.B. White, MD, MAS, Pittsburgh, PA
M.M. Hayes, MD, Boston, MA
J.R. Curtis, MD, MPH, Seattle, WA

Registrants must bring a laptop to the course to view the course material.

Assemblies on Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections; Pulmonary Circulation; Thoracic Oncology
8:00 a.m. - 4:00 p.m.

Target Audience
Pulmonologists, critical care physicians, thoracic surgeons, mid level providers, residents, fellows, 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 staging lung cancer;
• state the value of a multidisciplinary approach to diagnosis and management of patients with diffuse lung disease.

This course will review major aspects of thoracic imaging with presentations targeted toward the pulmonologist and critical care physician. Subspecialized thoracic radiologists will give lectures focusing on the practical aspects of chest imaging. Lectures 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.C. Wu, MD, Houston, TX

8:00  Imaging of Small Airways Diseases
T.S. Henry, MD, San Francisco, CA

8:30  Imaging of Large Airways Diseases
S. Rossi, MD, Buenos Aires, Argentina

9:00  Imaging of Pulmonary Vascular Diseases
J.P. Kanne, MD, Madison, WI

9:30  Pulmonary Thromboembolism
C. Schaefer-Prokop, MD, Nijmegen, Netherlands
10:00  Break
10:15  Imaging of Pleural Diseases  
      C.C. Wu, MD, Houston, TX
10:45  Solitary Pulmonary Nodule  
      J.H. Chung, MD, Chicago, IL
11:15  Lung Cancer Imaging  
      A. Leung, MD, Stanford, CA
11:45  LUNCH
12:45  Pulmonary Infection  
      L. Ketai, MD, Albuquerque, NM
1:15   HRCT of Diffuse Lung Disease  
      D.A. Lynch, MD, Denver, CO
1:45   Break
2:00   Multidisciplinary Approach to Diffuse Lung Diseases  
      K.K. Brown, MD, Denver, CO  
      D.A. Lynch, MD, Denver, CO  
      S. Groshong, MD, Denver, CO

Target Audience
Clinicians, nurses, other allied health staff, researchers, investigators in basic and clinical science pertinent to interstitial lung disease, sponsors for research.

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

• accurately diagnosis patients with specific forms of ILD;
• understand the current concepts in the pathogenesis and genetic aspects of pulmonary fibrosis and new therapeutic strategies to treat patients with ILD/pulmonary fibrosis;
• provide better care to the patients with ILD through comprehensive management strategies.

This course provides an introduction and update on the diagnosis and management of interstitial lung disease (ILD), with particular attention to the chronic fibrotic ILDs and sarcoidosis. Discussion of the clinical, radiological, and pathological approaches to the diagnosis of ILD will be supplemented by case presentations that illustrate the multidisciplinary nature of diagnosis in action. Additional talks will focus on the comprehensive management of ILD including novel therapies, symptoms management, and lung transplantation.

Chairs:
G. Raghu, MD, Seattle, WA  
L. Richeldi, MD, PhD, Southampton, United Kingdom

8:00  Introduction  
      G. Raghu, MD, Seattle, WA
8:05  Interstitial Lung Disease: An Overview and Approach to Diagnosis  
      G. Raghu, MD, Seattle, WA
8:30  Imaging in ILD: Clues to Diagnosis  
      D.A. Lynch, MD, Denver, CO
9:00  Histopathology Features of ILD  
      J.L. Myers, MD, Ann Arbor, MI
9:25  Connective Tissue Disease for the Pulmonologist in Evaluating Interstitial Lung Disease: A Rheumatologist’s View  
      V. Steen, MD, Washington, DC

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  
Registrants must bring a laptop to the course to view the course material.

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

8:00 a.m. - 4:00 p.m.
9:50 Genetic Predisposition Factors of Pulmonary Fibrosis: Time for Genetic Screening and Intervention?  
I. Noth, MD, Chicago, IL

10:15 Break

10:25 Hypersensitivity Pneumonitis  
M. Vasakova, MD, PhD, Prague, Czech Republic

10:50 Pulmonary Fibrosis: Concepts in Pathogenesis and Targets for Treatment  
A.M. Tager, MD, Charlestown, MA

11:15 Case Discussion with Panel of Experts (Multidisciplinary Discussion)  
B. Collins, MD, Seattle, WA  
L. Ho, MD, Seattle, WA

12:15 LUNCH

12:45 Interstitial Lung Disease, Other than IPF Associated with Cigarette Smoking  
K.R. Flaherty, MD, MS, Ann Arbor, MI

1:10 Lymphangioleiomyomatosis (LAM)  
M. Glassberg, MD, Miami, FL

1:35 Sarcoidosis: New Treatment Beyond Prednisone and Methotrexate  
D.A. Culver, DO, Cleveland, OH

1:55 Co-Morbidities in Patients with IPF  
J. Behr, MD, Munich, Germany

2:20 Break

2:30 Idiopathic Pulmonary Fibrosis: Current Treatment, Assessment of Treatment Response and Monitoring Clinical Course  
F.J. Martinez, MD, New York, NY

2:55 Reducing Symptoms and Cough and Improving Quality of Life for Patients with IPF: Therapeutic Needs Versus Palliative Care  
M. Wijsenbeek, MD, PhD, Rotterdam, Netherlands

3:15 Lung Transplantation for Patients with ILD  
E. Lease, MD, Seattle, WA

3:35 New Treatment Directions for IPF: Current Status of Ongoing and Upcoming Clinical Trials  
L. Richeldi, MD, PhD, Southampton, United Kingdom

### BASIC • CLINICAL • TRANSLATIONAL POSTGRADUATE COURSE

#### PG7 PEDIATRIC ACUTE RESPIRATORY DISTRESS SYNDROME: AN EVIDENCE-BASED APPROACH TO 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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Critical Care; Pediatrics

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

**Target Audience**

Pediatric intensivists; pediatric pulmonologists; adult intensivists who manage children; respiratory therapists; perfusionists; critical care nurse practitioners.

**Objectives**

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

- discuss the optimal conventional ventilatory approach to the child with ARDS;
- explore the recent advances based on published data in the management of the pediatric ARDS patient;
- consider the possibilities for future strategies to further improve clinical outcomes for pediatric ARDS.

The management approach for pediatric acute respiratory distress syndrome has traditionally been based on extrapolated data from adult patients and anecdotal experience in pediatrics. The recent Pediatric Acute Lung Injury Consensus Conference has provided the first pediatric based approach to the management of the child with ARDS. This course will review the available data, explore possible therapeutic options, and discuss recommend approaches to the pulmonary management of the pediatric ARDS patient. Time will be allocated to audience participation via two panel discussions and an interactive case discussion.
Chairing: I.M. Cheifetz, MD, Durham, NC  
J. Arnold, MD, Boston, MA

8:00 Welcome and Introduction  
I.M. Cheifetz, MD, Durham, NC  
J. Arnold, MD, Boston, MA

8:10 Optimizing Conventional Mechanical Ventilation  
I.M. Cheifetz, MD, Durham, NC

8:40 PEEP Titration/Lung Recruitment  
G. Wolf, MD, Boston, MA

9:10 High Frequency Oscillatory Ventilation  
J. Arnold, MD, Boston, MA

9:40 Break

10:00 Modes to Augment Patient-Ventilator Synchrony  
G. Emeriaud, MD, PhD, Montreal, Canada

10:30 Prone Positioning  
M.A.Q. Curley, PhD, RN, Philadelphia, PA

11:00 Neuromuscular Blockade  
M.C.J. Kneyber, MD, PhD, Groningen, Netherlands

11:30 Exogenous Surfactant  
D.F. Willson, MD, Richmond, VA

12:00 Panel Discussion

12:30 LUNCH

1:30 Inhaled Nitric Oxide  
A. Rotta, MD, Cleveland, OH

2:00 Venovenous ECMO  
H. Dalton, MD, Anchorage, AK

2:30 Break

2:50 Case Discussion  
I.M. Cheifetz, MD, Durham, NC  
M.A.Q. Curley, PhD, RN, Philadelphia, PA

3:25 Panel Discussion

3:50 Course Summary  
I.M. Cheifetz, MD, Durham, NC  
J. Arnold, MD, Boston, MA

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PG8  CRITICAL CARE MEDICINE FOR ADVANCED PRACTICE PROVIDERS (NP/PA)

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

Member: $200  
In-Training Member: $125  
Non-Member: $238  
In-Training Non-Member: $275

Registrants must bring a laptop to the course to view the course material.

Assemblies on Nursing; Critical Care

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

Target Audience  
Advanced practice providers including nurse practitioners (NP) and physician assistants (PA) who work in critical care, NP and PA students, and critical care nurses.

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

- evaluate and manage patients with critical illness, including acute respiratory failure, acute respiratory distress syndrome, shock, sepsis, and nosocomial infections;

- develop a systematic approach to chest radiograph interpretation, arterial blood gas interpretation, and mechanical ventilation troubleshooting;

- describe a basic approach to the use of sedation and analgesia in the intensive care unit, including methods of assessment for sedation and delirium.

This postgraduate course is designed for advanced practice providers and is comprised of nine 45-minute sessions on core critical care topics. The talks will have a focus on evidence-based management of commonly encountered conditions such as acute respiratory failure, shock, sepsis, and nosocomial infections. Skill based sessions on chest radiograph interpretation, arterial blood gas interpretation, and mechanical ventilation troubleshooting will be included. Sessions will be designed...
to be interactive and case-based, with opportunities for breakout sessions and team-based problem solving.

**Chairing:** B. Coruh, MD, Seattle, WA
L.D. Rosenthal, ACNP, DNP, Aurora, CO

8:00 **Acute Respiratory Failure**
G.A. Schmidt, MD, Iowa City, IA

8:45 **Mechanical Ventilation**
B. Coruh, MD, Seattle, WA

9:30 *Break*

9:45 **Acute Respiratory Distress Syndrome**
P. Senecal, ACNP, CCNS, Aurora, CO

10:30 **Sedation, Analgesia, and Delirium**
L.D. Rosenthal, ACNP, DNP, Aurora, CO

11:15 **Shock and Vasopressors**
D. Holloway, ACNP, MSN, Cleveland, OH

**LUNCH**

12:45 **Sepsis**
C. Parkinson, ACNPC-AG, CCRN, MSN, Denver, CO

1:30 **Nosocomial Infections in the ICU**
A.S. Clay, MD, Durham, NC

2:15 *Break*

2:30 **Acid-Base**
J.T. Poston, MD, Chicago, IL

3:15 **Chest Radiograph Interpretation**
A.M. Luks, MD, Seattle, WA

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**BASIC • CLINICAL • TRANSLATIONAL POSTGRADUATE COURSE**

**PG9 THE PHYSIOLOGY OF PEDIATRIC RESPIRATORY FAILURE**

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  
Registrants must bring a laptop to the course to view the course material.

8:00 **Lung Development and Neonatal Predisposition to Respiratory Failure**
M.J. Wallace, PhD, Melbourne, Australia

8:35 **Acute and Chronic Neonatal Respiratory Failure**
L.D. Nelin, MD, Columbus, OH

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**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 children with respiratory failure;
- learn how physiologic measurements can be used to change interventions and enhance outcomes;
- identify the rationale for several measurement techniques and determine when these should be used.

The course will consist of a series of grouped lectures covering several topics in pediatric respiratory physiology, using respiratory failure as the unifying theme. The talks will review both normal physiological principles of a clinically important topic and the pathophysiology that leads to the particular problem being discussed. In addition, the physiology of several different forms of mechanical ventilation will be reviewed, and important distinctions in the underlying normal and abnormal physiological processes leading to respiratory failure between neonates, children and adults will be highlighted. An interactive format, using questions from the speakers and audience touch pads to give answers will be used to enhance audience participation, and to allow the participant to understand key concepts or to identify areas requiring additional study.

**Chairing:** H.B. Panitch, MD, Philadelphia, PA
J.L. Allen, MD, Philadelphia, PA

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ATS 2016 • San Francisco  
Proof as of January 22, 2016
9:10  The Physiology of Pediatric Ventilator-Induced Lung Injury  
M.C.J. Kneyber, MD, PhD, Groningen, Netherlands

9:45  Break

9:55  High Frequency Oscillatory Ventilation  
J.L. Allen, MD, Philadelphia, PA

10:30  Lung Mechanics and Respiratory Failure  
J.P. Needleman, MD, Brooklyn, NY

11:05  Ventilator Graphics  
H.B. Panitch, MD, Philadelphia, PA

11:40  LUNCH

12:20  Cardiopulmonary Interactions  
S. Lakshminrusimha, MD, Buffalo, NY

12:55  Positive and Negative Pressure Ventilation  
G. Kurland, MD, Pittsburgh, PA

1:30  Respiratory Muscles, Failure and Ventilator-Induced Diaphragm Injury  
G.J. Redding, MD, Seattle, WA

2:05  Break

2:15  Weaning in Pediatric Acute Respiratory Failure  
S. Venkataraman, MD, Pittsburgh, PA

2:50  Weaning and Chronic Respiratory Failure  
T.G. Keens, MD, Los Angeles, CA

3:25  Respiratory Muscle Weakness, Posture and Pulmonary Rehabilitation  
M. Massery, PT, DPT, DSc, Glenview, IL

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BASIC • CLINICAL • TRANSLATIONAL POSTGRADUATE COURSE

PG10  AIRWAY REMODELING IN HUMAN LUNG DISEASE: A BIG LAB MEETING 2016

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Pediatrics; Pulmonary Circulation; Pulmonary Rehabilitation; Respiratory Structure and Function; Sleep and Respiratory Neurobiology; Thoracic Oncology

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

Target Audience
Lung health care providers, clinical and research fellow, investigators interested or involved in basic, translational and clinical research related to airway biology and pathogenesis of chronic lung diseases, research and care providers engaged in pulmonary and critical care medicine.

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

- understand fundamental principles, heterogeneous phenotypes and specific mechanisms of airway remodeling in chronic human lung diseases; and how different cell types in the human airways interact with each other during the development of disease-associated remodeling phenotypes.

- learn about advanced state of art methods and technologies to model and study human airway remodeling using patient derived samples.

- implement current knowledge about airway remodeling in everyday research and understand how to translate the novel knowledge about complex mechanisms and phenotypes of airway remodeling into clinically relevant precision medicine approaches to better prevent, diagnose and treat human lung disease in a personalized manner.

This course will have an innovative, “lab meeting” format, first successfully introduced at the ATS International Conference in 2015 by Dr. Shaykhiev and colleagues. As compared to the prior “big lab meeting” postgraduate course (PG25), which was focused on airway epithelium, the specific theme of the current session - airway remodeling - is broader and more multidisciplinary and translational in nature. The course will provide discussion of recent advancements in understanding of the contributions of and interactions among various tissue components (epithelium,
fibroblasts, extracellular matrix, smooth muscle cells, vasculature, and innate immune cells) to airway remodeling in human chronic lung diseases. Special emphasis will be made on personalized approaches to study human airway remodeling and novel precision medicine approaches to prevent and treat lung diseases characterized by airway remodeling.

Chairing: R. Shaykhiev, MD, PhD, New York, NY  
M. Konigshoff, MD, PhD, Munich, Germany  
R. Freishtat, MD, MPH, Washington, DC

8:00 Airway Remodeling: Introduction to a Big Lab Meeting 2016  
M. Konigshoff, MD, PhD, Munich, Germany

8:10 Keynote Lecture: The Many Faces of Airway Remodeling in Lung Disease  
J.C. Hogg, MD, PhD, Vancouver, Canada

8:40 Basal Stem Cells and Airway Remodeling in COPD  
R. Shaykhiev, MD, PhD, New York, NY

9:00 Cellular Origins of Airway Remodeling in Asthma  
T. Hackett, PhD, Vancouver, Canada

9:20 Airway Regeneration and Remodeling in Cystic Fibrosis  
C. Coraux, PhD, Reims, France

9:40 Patient-Derived Models of Airway Remodeling  
S.H. Randell, PhD, Chapel Hill, NC

10:00 Break

10:10 Extracellular Matrix, Mechanotransduction and Airway Remodeling  
D. Tschumperlin, PhD, Rochester, MN

10:30 Epithelial-Matrix Interactions in Preclinical Models of Asthma  
R. Freishtat, MD, MPH, Washington, DC

10:50 Airway Fibroblasts and Subepithelial Fibrosis in Asthma  
M. Kraft, MD, Tucson, AZ

11:10 Angiogenesis and Vascular Remodeling in Chronic Lung Diseases  
E.H. Walters, DM, DSc, Hobart Tasmania, Australia

11:30 Break

11:45 Luncheon Sessions: Airway Inflammation, Remodeling, and Disease

Keynote Lecture: Inflammatory Mechanisms and Structural Changes in Airway Disease  
P.J. Barnes, MD, DSc, London, United Kingdom

How Innate Immunity Contributes to Airway Remodeling in Lung Disease  
M.J. Holtzman, MD, St. Louis, MO

Mechanisms Linking Inflammation and Airway Fibrosis in COPD  
S. Nishimura, MD, San Francisco, CA

Mast Cells and Airway Smooth Muscle Remodeling in Asthma and COPD  
C.E. Brightling, BSc, MBBS, PhD, Leicester, United Kingdom

Molecular Signatures of Airway Remodeling: Towards Precision Medicine  
M. van den Berge, MD, Groningen, Netherlands

1:45 Break

2:00 “A Big Lab Meeting”  
R. Shaykhiev, MD, PhD, New York, NY  
M. Konigshoff, MD, PhD, Munich, Germany  
R. Freishtat, MD, MPH, Washington, DC  
J.C. Hogg, MD, PhD, Vancouver, Canada  
T. Hackett, PhD, Vancouver, Canada  
C. Coraux, PhD, Reims, France  
S.H. Randell, PhD, Chapel Hill, NC  
D. Tschumperlin, PhD, Rochester, MN  
M. Kraft, MD, Tucson, AZ  
E.H. Walters, DM, DSc, Hobart Tasmania, Australia  
P.J. Barnes, MD, DSc, London, United Kingdom  
M.J. Holtzman, MD, St. Louis, MO  
S. Nishimura, MD, San Francisco, CA  
C.E. Brightling, BSc, MBBS, PhD, Leicester, United Kingdom  
M. van den Berge, MD, Groningen, Netherlands
PG11 TESTING IN THE PULMONARY FUNCTION LAB: FROM PHYSIOLOGY TO CLINICAL PRACTICE

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

Registrants must bring a laptop to the course to view the course material.

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:
• interpret with confidence basic and advanced PFT results;
• expand their interpretation repertoire to more involved and complicated spirometry, lung volumes, DLCO and pediatric test results;
• gain insight into the use and helpfulness of more advanced PFT testing modalities.

This course will review the physiologic underpinnings and basic concepts behind routine pulmonary function testing. Speakers will then address more advanced material and emerging testing modalities. Using an audience response system with a case-based approach, we will address which test to order, interpretation of basic and complex testing results, and troubleshooting equipment or technical issues. An expert in each topic will explain the evidence or rationale for right and wrong answers. The audience will have the opportunity to bring cases and questions for an interactive discussion.

Chairing: M.C. McCormack, MD, MHS, Baltimore, MD
D.A. Kaminsky, MD, Burlington, VT
C.E. Berry, MD, Tucson, AZ

8:00 Introduction to Pulmonary Function Testing from Simple to Complex
M.C. McCormack, MD, MHS, Baltimore, MD

8:10 Lung Function Across the Ages
M. Rosenfeld, MD, MPH, Seattle, WA

8:40 As You Predicted...Interpretation of Spirometry and Updates In Reference Equations
B.H. Culver, MD, Olga, WA

9:10 When Size Matters- Measurement of Lung Volumes
B. Borg, BAppSc, CRFS, Prahran, Australia

9:40 Break

9:55 Clearing Up the Confusion Between DLCO and KCO (DLCO/VA)
C.E. Berry, MD, Tucson, AZ

10:25 Advanced Troubleshooting for Pulmonary Function Equipment
G.L. Ruppel, MEd, RRT, RPFT, St. Louis, MO

10:55 Make Your Case
G. Hall, PhD, Subiaco, Australia

11:25 LUNCH

12:15 The Forced Oscillation Technique: What’s Forced? What’s Oscillating? And How Can We Use It?
D.A. Kaminsky, MD, Burlington, VT

12:45 Measuring Airways Inflammation in the PFT Lab (Use of Fractional Exhaled Nitric Oxide)
M.C. McCormack, MD, MHS, Baltimore, MD

1:15 Going the Distance with High Altitude Simulation Testing
C.D. Mottram, RRT, RPFT, Rochester, MN

1:45 Break

2:00 Do We Have Clearance? The Use of Multiple Breath Nitrogen Washout
P. Latzin, MD, PhD, Basel, Switzerland
BEHAVIORAL • CLINICAL • TRANSLATIONAL
POSTGRADUATE COURSE

PG12 SLEEP AND CRITICAL ILLNESS:
BRIDGING THE TWO PILLARS!

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
Registrants must bring a laptop to the course to view the course material.

Assemblies on Sleep and Respiratory Neurobiology; Clinical Problems; Critical Care; Nursing; Pediatrics
8:00 a.m. - 4:00 p.m.

Target Audience
Critical care and sleep physicians, nurses, researchers, trainees, and pharmacists.

Objectives
At the conclusion of this session, the participant will be able to:
• learn new findings about the mechanistic underpinnings of the interactions between sleep, circadian rhythms and critical illness;
• gain new strategies to manage the care of critically ill patients with sleep disturbances;
• improve the quality of life/health status of their critically ill patients by improving their sleep and circadian rhythms.

Sleep and critical illness are individually complex processes with significant implications to health and well being. The interaction between these two complex spheres can cause morbidity and mortality during critical illness and furthermore leave sequelae upon recovery. Sleep and circadian derangements and disorders are common in patients suffering from critical illness. Identifying the pathophysiology of sleep and circadian derangements in critically ill patients and instituting appropriate management improves sleep disturbances and may provide long term benefit. This postgraduate course will discuss the mechanistic underpinnings of the interactions between sleep, circadian rhythms and critical illness; the clinical implications of such complex interactions; and raise awareness and insights of clinicians and scientists.

Chairing:
B.K. Gehlbach, MD, Iowa City, IA
R.L. Owens, MD, La Jolla, CA
M. Knauert, MD, PhD, New Haven, CT

8:00 Introduction: Sleep and Critical Illness: The Two Pillars Shall Meet!
S. Parthasarathy, MD, Tucson, AZ

8:10 Neurobiology of Sleep and Sedation: Sleep = Sedation?
M. Maze, MBChB, San Francisco, CA

8:40 Circadian “Dys-Rhythms” of Critical Illness
B.K. Gehlbach, MD, Iowa City, IA

9:10 Measuring Sleep During Critical Illness: A Challenge?
R.L. Owens, MD, La Jolla, CA

9:40 Sleep and Mechanical Ventilation: Modes and Mechanics
K. Bosma, MD, Ontario, Canada

10:10 Break

10:25 Surviving Critical Illness but Suffering Sleep Problems and Sleep Deprivation
S. McKinley, RN, PhD, Sydney, Australia

10:55 Perceived Sleep Quality and Cognition
B. Kamdar, MD, MBA, MHS, Los Angeles, CA

11:25 Sedation Interventions During Critical Illness: More or Less?
M. Pisani, MD, New Haven, CT

11:55 Sleep, Critical Illness and the Developing Brain: The Pediatric ICU
S.R. Kudchadkar, MD, Baltimore, MD
12:25 LUNCH
1:20 Sleep and Death: Poor Sleep Leads to Eternal Sleep?
   P. Watson, MD, Nashville, TN
1:50 Environmental Interventions to Promote Sleep: More than Just Noise?
   M. Knautert, MD, PhD, New Haven, CT
2:20 Break
2:30 Sleep-Disordered Breathing During Critical Illness: Don’t Stop Breathing!
   V. Malik, MD, Denver, CO
3:00 Non-Invasive Ventilation During Critical Illness: Sleep Mask?
   X. Drouot, MD, PhD, Poitiers, France
3:30 Sleep Promotion as a Patient-Centered Outcome: Sleep, Nourish, and Heal
   S. Parthasarathy, MD, Tucson, AZ

BEHAVIORAL • CLINICAL
POSTGRADUATE COURSE

PG13 IMPLEMENTATION OF CORE COMPONENTS OF A LUNG CANCER SCREENING PROGRAM

Objective
At the conclusion of this session, the participant will be able to:
- demonstrate an in depth understanding of the critical components of a lung cancer screening program;
- summarize the national screening recommendations and requirements in the provision of lung cancer screening;
- describe how to implement a safe and responsible lung cancer screening program.

This postgraduate course is organized to give participants the critical components of a responsible lung cancer screening program. Each critical component will be discussed in a panel format with 2 discussants followed by question and answer period. Evidence-based presentations will provide both knowledge and tangible tools for direct application to their respective programs. As an example the importance of shared decision making will be discussed and supported by the ATS tool for achieving effective shared decision making, this approach will be replicated for each component giving participants both the knowledge and the tools for effective lung cancer screening.

Chearing: J.A. Gorden, MD, Seattle, WA
   C.G. Slatore, MD, Portland, OR
   J.T. Fathi, ARNP, DNP, ARNP, Seattle, WA

8:00 Introduction
   J.A. Gorden, MD, Seattle, WA
8:10 Patient and Provider Education. Shared Decision Making. What Do Patients Hear?
   C.G. Slatore, MD, Portland, OR
8:50 CT Scan Performance, Nodule Identification and Structured Reporting (Standardization of Imaging and Reporting, LungRads and ACR/CMS Registry Data Base)
   E. Kazerooni, MD, Ann Arbor, MI
9:30 Break
9:40 Screening Eligibility and the Referral. Who Is Offered Screening and for How Long (Avoiding Emotional Screening)
   N.T. Tanner, MD, MSCR, Charleston, SC
10:20 Smoking Cessation (Effective Approaches to Counseling and Treatment in the Setting of Lung Cancer Screening)
   J.T. Fathi, ARNP, DNP, Seattle, WA
11:00 Practical Implementation of a Lung Cancer Screening Program: Example 1 - Yale University
P. Sather, APRN, New Haven, CT

11:30 Questions and Answers

12:00 LUNCH

12:45 Nodule Management 1-7 mm. The Case for Watchful Waiting (Surveillance Intervals Understanding Nodule Change)
M.K. Gould, MD, MS, Pasadena, CA

1:15 Lung Nodule Management >8mm (Utilization of National Guidelines Counseling in the Face of the Anxious Patient)
G.A. Silvestri, MD, Charleston, SC

1:45 Break

1:55 Thoracic Surgery and the Multidisciplinary Lung Cancer Screening Program
F.C. Detterbeck, MD, New Haven, CT

2:35 Multidisciplinary Approaches to Nodule Sampling
J.A. Gorden, MD, Seattle, WA

2:55 Practical Implementation and Financial Model of an Innovative Lung Cancer Screening Program: Example 2 - Swedish Cancer Institute
J.T. Fathi, ARNP, DNP, Seattle, WA

3:20 Panel Discussion

**Target Audience**
Clinicians practicing pulmonary and/or critical care medicine; clinicians seeking ABIM MOC credit.

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

- critically review and interpret recent literature in pulmonary and critical care medicine;
- apply recent literature in pulmonary and critical care medicine to clinical practice;
- complete the 2015 ABIM Pulmonary and Critical Care SEP module.

Led by expert faculty, this active learning course is a clinical practice and literature review designed around the most recent ABIM Self Evaluation Process modules in pulmonary and critical care medicine. In addition to a valuable review of high impact medical knowledge and critical thinking, this session will provide a convenient opportunity to fulfill ABIM maintenance of certification requirements while at the ATS international conference.

**Chairing:** J.T. Poston, MD, Chicago, IL

8:00 Introduction
J.T. Poston, MD, Chicago, IL

8:10 Critical Care Review
J.B. Hall, MD, Chicago, IL

9:50 Break

10:00 Critical Care Review
J.T. Poston, MD, Chicago, IL

11:40 LUNCH

12:30 Pulmonary Review
J. Mandel, MD, La Jolla, CA

2:10 Break

2:20 Pulmonary Review
K.A. Smith, MD, Philadelphia, PA

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**PG14 PULMONARY AND CRITICAL CARE REVIEWS: BUILT AROUND THE 2015 ABIM-SEP MODULES**

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

Education Committee
8:00 a.m. - 4:00 p.m.
PG2B CRITICAL CARE ULTRASOUND AND ECHOCARDIOGRAPHY: PART II

This is part 2 of a two-part course which includes PG2A on Friday, May 13.

Pre-registration and additional fees required. Continental breakfast and box lunch included. Attendance is limited.
See PG2A for course fees.

Registrants must bring a laptop to the course to view the course material.

Assembly on Critical Care
8:00 a.m. - 4:00 p.m.

Target Audience
Providers of adult and pediatric critical care or emergency medicine.

Objectives
At the conclusion of this session, the participant will be able to:
• apply hands-on ultrasound techniques at bedside to assess critically ill patients and recognize alternative etiologies of shock;
• understand and administer hands-on ultrasound techniques to guide fluid administration in the critically ill patient;

• apply hands-on ultrasound techniques to guide common ICU procedures.

This is a 2-day post-graduate 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 simulators that can demonstrate abnormal pathology. A track will be offered for pediatric intensivists as well, with pediatric intensivists teaching hands-on skills.

Chairing: M.J. Lanspa, MD, MS, Salt Lake City, UT
X. Monnet, MD, PhD, Paris, France

8:00 Vascular Ultrasound: DVT Evaluation
L. Rapoport, MD, Santa Clara, CA

8:20 Vascular Access
M.J. Lanspa, MD, MS, Salt Lake City, UT

8:45 Tamponade: Diagnosis and Physiology
C.K. Grissom, MD, Murray, UT

9:15 Using Ultrasound to Assess Intravascular Volume and Fluid Responsiveness
X. Monnet, MD, PhD, Paris, France

9:45 Ultrasound for Diuresis and Dialysis
E. Hirshberg, MD, MS, Salt Lake City, UT

10:15 Break
10:30 Practical Skills Sessions: Hands-On Station III

Volume Status
X. Monnet, MD, PhD, Paris, France
P. Mohabir, MD, Stanford, CA
J. Kasal, MD, St. Louis, MO
E. Teo, MD, Atlanta, GA
A. Leibowitz, MD, Boston, MA

Tamponade Evaluation
M. Hamlin, MD, Burlington, VT
C.K. Grissom, MD, Murray, UT
S. Price, MBBS, PhD, EDICM, London, United Kingdom
S. Nikravan-Weber, MD, Stanford, CA
T. Brakke, MD, Omaha, NE
Vascular Ultrasound
L. Rapoport, MD, Santa Clara, CA
V.A. Dinh, MD, Loma Linda, CA
Z. Shaman, MD, Cleveland, OH
L. Grecu, MD, Stony Brook, NY
J.E. Pittman, MD, Salt Lake City, UT

12:00 Lunch and Clinical Cases
E. Teo, MD, Atlanta, GA

12:45 Abdominal Ultrasonography: Hydronephrosis, Ascites, Paracentesis, FAST Exam
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 Shock and CPR
M. Hamlin, MD, Burlington, VT

2:15 Break

2:30 Practical Skills Sessions: Hands-On Session IV
Echo in Shock and CPR
P. Mohabir, MD, Stanford, CA
S. Nikravan-Weber, MD, Stanford, CA
T. Brakke, MD, Omaha, NE
S. Price, MBBS, PhD, EDICM, London, United Kingdom
L. Grecu, MD, Stony Brook, NY

Abdominal Ultrasound
L. Rapoport, MD, Santa Clara, CA
V.A. Dinh, MD, Loma Linda, CA
Z. Shaman, MD, Cleveland, OH
A. Leibowitz, MD, Boston, MA
J.E. Pittman, MD, Salt Lake City, UT

Ask the Expert
E. Hirshberg, MD, MS, Salt Lake City, UT
J. Kasal, MD, St. Louis, MO
X. Monnet, MD, PhD, Paris, France
M. Hamlin, MD, Burlington, VT
E. Teo, MD, Atlanta, GA

CLINICAL POSTGRADUATE COURSE

PG15 BRONCHOSCOPY COURSE AND WORKSHOP

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

Registrants must bring a laptop to the course to view the course material.

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

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

Target Audience
Pulmonary and thoracic surgery fellows in training, allied health professionals, anesthesiologists and those interested in quality improvement and implementation of clinical programs. Clinicians interested in skills in basic bronchoscopy.

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

- understand how to apply the techniques and principles of bronchoscopy, using both didactic teaching methods as well as hands-on training;
- support the standardization and the practice of bronchoscopy.

The bronchoscopy course and workshop addresses evidence-based bronchoscopy topics pertinent to core skills in an accredited pulmonary fellowship program. Techniques covered include various diagnostic skills with airway examination, biopsy of lung parenchyma and lymph nodes, as well as incorporating new technologies to apply to management of patients with chest and/or airway diseases.

Chairing: J.A. Gorden, MD, Seattle, WA
A.W. Sung, MD, Stanford, CA
K.L. Kovitz, MD, MBA, Elk Grove Village, IL
8:00 Airway Anatomy  
C.R. Lamb, MD, Burlington, MA

8:20 Indications and Contraindications of Bronchoscopy  
J.A. Gorden, MD, Seattle, WA

8:40 Management Pneumothorax and Hemoptysis: Risk Factors and Management  
M.G. Slade, MBBS, Cheltenham, United Kingdom

9:00 Coding and Documentation  
K.L. Kovitz, MD, MBA, Elk Grove Village, IL

9:15 Lung Cancer Staging  
K. Yasufuku, MD, Toronto, Canada

9:35 Lung Cancer: EBUS/Radial EBUS  
F.J.F Herth, MD, Heidelberg, Germany

9:55 Break

10:05 Bronchoscopy in OB Patients and Patients with Trauma  
J.A. Akulian, MD, MPH, Chapel Hill, NC

10:20 Quality Improvement Tools  
A.W. Sung, MD, Stanford, CA  
S. Shojaee, MD, Richmond, VA

10:35 Bronchoscopy of the Child  
A.G. Vicencio, MD, New York, NY

10:50 Surgical Management of Airways Disease  
S.K. Ashiku, MD, Oakland, CA

11:05 Conscious Sedation  
C. Gilbert, DO, MS, Hershey, PA

11:20 LUNCH

12:05 Practical Skills Sessions  
J.A. Gorden, MD, Seattle, WA  
A.W. Sung, MD, Stanford, CA  
K.L. Kovitz, MD, MBA, Elk Grove Village, IL  
C.R. Lamb, MD, Burlington, MA  
M.G. Slade, MBBS, Cheltenham, United Kingdom  
J.A. Akulian, MD, MPH, Chapel Hill, NC  
K. Yasufuku, MD, Toronto, Ca

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**BASIC • CLINICAL • TRANSLATIONAL POSTGRADUATE COURSE**

**PG16 HETEROGENEITY AND PLASTICITY OF LUNG MACROPHAGES: TOWARDS PRECISION 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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Pediatrics; Pulmonary Circulation; Respiratory Cell and Molecular Biology; Respiratory Structure and Function; Thoracic Oncology

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

**Target Audience**

Lung health care providers, scientists and investigators interested or involved in basic and/or translational research related to lung biology, immunology, pathology, physiology, mechanisms and biologic phenotypes of human lung disease; research and care providers engaged in pulmonary and critical care medicine.

**Objectives**

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

- understand fundamental principles of macrophage origins, nomenclature, markers/phenotypes, functions in lung immunity and tissue homeostasis;

- learn about novel state of art technologies that can be utilized to study human lung macrophages at the molecular (genome, transcriptome, epigenetics, bioinformatics, single cell analysis), and cellular (advanced imaging and molecular phenotyping methods, single cell analysis) levels and how information obtained using these methods can be
used to better understand the role of macrophages in the pathogenesis of human lung diseases;

- understand how to translate the novel knowledge about lung macrophage heterogeneity, plasticity, and polarization into clinically relevant precision medicine approaches to better prevent, diagnose and treat human lung diseases in a personalized manner.

This postgraduate course is focused on:
(1) recent advances in understanding of the origin, phenotypic and functional diversity, plasticity, polarization programs, and local homeostasis of lung macrophages;
(2) pathologic programming of macrophages in human lung disease;
(3) the role of macrophages in lung host defense, inflammation, and regeneration;
(4) state-of-art personalized analysis of human lung macrophage biology; and
(5) macrophage-based precision medicines for human lung disease.

**Chairing:**
R. Shaykhiev, MD, PhD, New York, NY
A. Haczku, MD, PhD, Davis, CA
D. Singh, MD, Manchester, United Kingdom

**Schedule:**

8:00 **Introduction**
A. Haczku, MD, PhD, Davis, CA

8:10 **Keynote Lecture. Macrophage Plasticity and Heterogeneity**
S. Gordon, PhD, Oxford, United Kingdom

8:40 **Unique Origins and Differentiation Pathways of Lung Macrophages**
M. Kopf, PhD, Zurich, Switzerland

9:10 **Macrophage Heterogeneity in the Human Lung**
C. Jakubzick, PhD, Denver, CO

9:35 **Live Imaging of Macrophage - Epithelium Interactions in the Lung**
J. Bhattacharya, MD, DPhil, New York, NY

10:00 **Break**

10:15 **Transcriptional Programming of Human Macrophages**
J. Schultze, MD, Bonn, Germany

10:40 **Human Alveolar Macrophage Polarization: M1, M2 and Beyond**
R. Shaykhiev, MD, PhD, New York, NY

11:00 **Personalized Macrophage Responses to Disease-Modifying Therapies in Asthma and COPD**
D. Singh, MD, Manchester, United Kingdom

11:20 **Defective Macrophage Phagocytosis of Bacteria in Chronic Lung Disease**
L. Donnelly, PhD, London, United Kingdom

11:45 **Luncheon Sessions: Alveolar Macrophages in Host-Microbe Interactions and Lung Homeostasis**

Alveolar Macrophage as a Niche for Mycobacteria and HIV
D. Russell, PhD, Ithaca, NY

How Respiratory Viruses Drive Alternative Macrophage Polarization in Lung Disease
M.J. Holtzman, MD, St. Louis, MO

Lung Macrophages, Th2 Inflammation and Pulmonary Fibrosis
T. Wynn, PhD, Bethesda, MD

The Role of Polarized Macrophages in Lung Regeneration
J.R. Rock, PhD, San Francisco, CA

Alveolar Macrophage-Based Precision Therapy for Human Lung Disease
B.C. Trapnell, MD, Cincinnati, OH

2:00 **Break**

2:15 **“Lab Meeting”**
R. Shaykhiev, MD, PhD, New York, NY
A. Haczku, MD, PhD, Davis, CA
D. Singh, MD, Manchester, United Kingdom
S. Gordon, PhD, Oxford, United Kingdom
M. Kopf, PhD, Zurich, Switzerland
C. Jakubzick, PhD, Denver, CO
J. Bhattacharya, MD, DPhil, New York, NY
J. Schultze, MD, Bonn Germany
L. Donnelly, PhD, London, United Kingdom
D. Russell, PhD, Ithaca, NY
M.J. Holtzman, St. Louis, MO
T. Wynn, PhD, Bethesda, MD
J.R. Rock, PhD, San Francisco, CA
B.C. Trapnell, MD, Cincinnati, OH
PG17  SCIENTIFIC WRITING: PUBLISHING FOR ACADEMIC SUCCESS

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Behavioral Science and Health Services Research; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Pediatrics; Sleep and Respiratory Neurobiology

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

Target Audience
Postdoctoral fellows, junior faculty, pulmonary and critical care physicians, allergists, nurses, clinical, translational, and basic science researchers, behavioral scientists, and research scientists.

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

• identify strategies for becoming a successful scientific writer and describe the essential elements of a scientific manuscript;

• define authorship and identify the ethical responsibilities of authors;

• describe the peer review process, avoid common mistakes authors make during preparation and submission of manuscripts, and select appropriate journals based on the content of the article and the target audience.

Fellows, junior faculty, researchers, and clinicians need practical information about scientific writing and publishing. This course is designed to provide investigators from various disciplines the tools necessary to prepare scientific manuscripts that are likely to be published. Course faculty will give an overview of strategies for becoming a successful writer as well as teach participants about the elements of a manuscript, the responsibilities of authorship, the importance of journal selection, and the peer review process. The afternoon will include interactive discussions with the faculty in small group breakout sessions.

Chairing:  B.J. Sheares, MD, MS, New York, NY
J. Bruzzese, PhD, New York, NY
G. Diette, MD, MHS, Baltimore, MD

8:00  Introduction and Announcements
B.J. Sheares, MD, MS, New York, NY

8:05  Strategies for Becoming a Successful Writer
H.J. Zar, MD, PhD, Cape Town, South Africa

8:35  Start with the Easy Part: Describing Methods and Reporting Results
C.R. Cooke, MD, MSc, Ann Arbor, MI

9:05  Promises, Promises: Writing Informative and Succinct Introductions
J.D. Thornton, MD, MPH, Cleveland, OH

9:35  So What? Placing Your Results in Context: The Discussion
G. Diette, MD, MHS, Baltimore, MD

10:05  Break

10:15  The Responsibilities of Authorship
J. Bruzzese, PhD, New York, NY

10:45  Publishing for Promotion: The Tenure Review Committee’s Perspective
N.W. Schluger, MD, New York, NY

11:15  Panel Discussion
A.J. Apter, MD, MSc, MA, Philadelphia, PA
R.S. Irwin, MD, Worcester, MA
J.M. Drazen, MD, Boston, MA

12:05  General Discussion

12:30  LUNCH

1:30  Breakout Session I: Revise and Resubmit: Responding to Reviewers’ Comments
B.J. Sheares, MD, MS, New York, NY
PG18 NTM LUNG DISEASE: IMPROVE YOUR PRACTICE/DEBUNK THE MYTHS

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections
8:00 a.m. - 4:00 p.m.

Target Audience
Providers of lung health including pulmonologists, infectious disease clinicians and trainees.

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

• to diagnose active NTM infection;

• understand the pathophysiology and impact of exposure to the water supply with regards to NTM infection;

• appropriately refer more complex NTM patients to centers worldwide with special competence in NTM infections.

This postgraduate course includes a state of the art update on non tuberculous mycobacterial lung disease with an emphasis on case based learning to understand the prevalence, pathophysiology, treatment strategies and controversies about the disease.

Chairing: A. O'Donnell, MD, Washington, DC
R. Thomson, MBBS, PhD, Brisbane, Australia

8:00 Why Are We Seeing an Increase in NTM Lung Disease?
K.N. Olivier, MD, MPH, Bethesda, MD

8:50 Does Exposure to Potable Water Cause NTM Infection?
R. Thomson, MBBS, PhD, Brisbane, Australia

9:30 NTM Identification: What Your Clinical Lab Needs to Tell You
A. O'Donnell, MD, Washington, DC

10:00 Break

10:15 NTM Has Been Isolated: Does the Patient Need Antibiotics?
T.R. Aksamit, MD, Rochester, MN

10:55 Antibiotic Treatment for MAC Lung Infection
K. Winthrop, MD, MPH, Portland, OR

11:45 LUNCH

12:45 M. Abscessus Lung Infection Antibiotic Treatment
T.K. Marras, MD, Toronto, Canada

1:35 Old Drugs for Old Bugs
J. Philley, MD, Tyler, TX

2:15 Break

2:30 Case Reviews
A. O'Donnell, MD, Washington, DC
A. Basavaraj, MD, New York, NY

3:30 ATS/ERS Updated NTM Guidelines/Panel Wrap Up
D.E. Griffith, MD, Tyler, TX
PG19 COPD: A DYNAMIC AND EVOLVING 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 Non-Member: $300

Registrants must bring a laptop to the course to view the course material.

Target Audience
Clinicians, nurses and respiratory therapists; clinical and basic science researchers; physicians in training and anybody who designs or implements clinical trials in COPD.

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

• understand the many systemic comorbidities associated with COPD and how to treat them;

• describe interventions to use for the management of COPD and COPD exacerbations;

• describe how to use different medications in the treatment of COPD patients.

This course will provide an update on key advances in the pathophysiology, genetics and management of COPD patients. There have been extensive publications on topics related to phenotype classification, use of imaging, biomarker and early interventions in COPD. Furthermore, over the last year, there have been numerous publications of novel bronchodilators that were approved by different regulatory organizations including the FDA. COPD exacerbations continue to impact the morbidity and mortality of this disease. There is a need to address how this condition can be prevented and to discuss its treatment.

Chairing: G.J. Criner, MD, Philadelphia, PA
R. Casaburi, MD, PhD, Torrance, CA

8:00 What is the Status of COPD Today?
K.F. Rabe, MD, PhD, Grosshansdorf, Germany

8:15 How Can We Predict Disease Progression?
J. Soriano, MD, PhD, Madrid, Spain

8:45 What Are the COPD Phenotypes Relevant for Clinical Practice?
M. Miravitlles, MD, PhD, Barcelona, Spain

9:15 Accelerated Aging in COPD and Its Comorbidities: Pathways to New Therapies
P.J. Barnes, MD, DSc, London, United Kingdom

9:45 Break

9:55 Integrating Disease Severity and Co-Morbid Conditions
C. Vogelmeier, MD, Marburg, Germany

10:25 How Can Radiological Imaging is Changes Our Concepts and COPD Phenotypes?
G. Washko, MD, Boston, MA

10:55 The Association Between COPD and Cardiovascular Disease: Mechanistic Links and Clinical Implications
D. Chandra, MD, MSc, Pittsburgh, PA

11:25 How is the COPD Biomarker Qualification Consortium Helping Develop Treatments Targeted for COPD Subsets?
R. Tal-Singer, PhD, King of Prussia, PA
J.W. Walsh, Washington, DC

11:55 LUNCH

12:35 In What Patients Should I Use Fixed LABA-LAMA Combination?
A. Anzueto, MD, San Antonio, TX

1:05 In What Patients Should I Use Inhaled Corticosteroids?
P. Calverley, MD, Liverpool, United Kingdom

1:35 Emerging Anti-Inflammatory Therapies
W. MacNee, MD, MBChB, Edinburgh, United Kingdom

2:05 Update on Endobronchial Interventions
C.B. Strange, MD, Charleston, SC
2:35 How Should I Treat a Patient Who Has an Acute Worsening in Symptoms?
S. Sethi, MD, Buffalo, NY

3:05 How Do We Apply Personalized Medicine for COPD Management? A Global View and Conclusions
A. Agusti, MD, Barcelona, Spain

3:50 Putting It All Together
B.R. Celli, MD, Boston, MA

CLINICAL POSTGRADUATE COURSE

PG20 PHYSIOLOGY OF MECHANICAL VENTILATION IN ARDS

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
Registrants must bring a laptop to the course to view the course material.

Assemblies on Critical Care; Pulmonary Circulation; Respiratory Structure and Function
8:00 a.m. - 4:00 p.m.

Target Audience
Intensivists, fellows and respiratory therapists who wish to improve their ability to manage complex cases of respiratory failure.

Objectives
At the conclusion of this session, the participant will be able to:
• titrate PEEP in severe ARDS;
• assess patients for possible prone ventilation;
• interpret PV curves in severe ARDS.

This course is focused on the bedside management of mechanical ventilation in severe respiratory failure. Participants will learn a physiologic approach to managing the ventilator and interpreting the effects of interventions. We will cover the uses and physiologic effects of PEEP, heart and lung interaction as it relates to mechanical ventilation, and the physiology behind improved oxygenation in prone ventilation and improved V/Q matching with the use of pulmonary vasodilators. We will explore controversies in the physiologic literature concerning these techniques and critically examine common clinical rationales for their use. The course will include hands-on, case based simulations in which participants will apply the principles covered in the didactic sessions.

Chairing: C. Hardin, MD, PhD, Boston, MA
K.A. Hibbert, MD, Boston, MA
S. Loring, MD, Boston, MA
8:00 Introduction - Overview of Physiologic Principles
K.A. Hibbert, MD, Boston, MA
8:40 The Pressure-Volume Curve in ARDS
C. Hardin, MD, PhD, Boston, MA
J. Butler, PhD, Boston, MA
9:20 Chest Wall and Mechanical Ventilation
S. Loring, MD, Boston, MA
10:00 Break
10:20 Heart-Lung Interaction
S. Magder, MD, Montreal, Canada
11:00 V/Q and Distribution of Perfusion in Health and in Lung Injury
S.R. Hopkins, MD, PhD, La Jolla, CA
11:40 LUNCH
12:40 Physiologic Effects of PEEP
A. Malhotra, MD, La Jolla, CA
1:20 Driving Pressure
Speaker To Be Announced
2:00 Prone Ventilation
I.S. Douglas, MD, Denver, CO
2:40 Break
2:55 Vent Management and PEEP Titration
K.A. Hibbert, MD, Boston, MA
C. Hardin, MD, PhD, Boston, MA
PG21 EPIGENETICS OF 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 Non-Member: $300

Registrants must bring a laptop to the course to view the course material.

Assemblies on Environmental, Occupational and Population Health; Allergy, Immunology and Inflammation; Behavioral Science and Health Services Research; Clinical Problems; Critical Care; Pediatrics; Respiratory Cell and Molecular Biology; Thoracic Oncology

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

Target Audience
Researchers and public health practitioners in respiratory and environmental health.

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

• understand and apply key concepts in the design and analysis of studies of DNA methylation and lung disease;

• comprehend the impact of epigenetic studies on prevention (e.g., biomarker development), diagnosis, and treatment of lung disease;

• learn new and alternative approaches to epigenetic studies.

Lung diseases are multi-factorial, resulting from interactions between genetic and environmental factors. Heritable and/or de novo changes in gene expression that occur without alterations in DNA sequence (epigenetic) mediate some environmental effects on lung disease. We will review state of the art approaches to designing and implementing studies of epigenetics in general and in pulmonary/critical care/sleep medicine in particular.

Chairing: J.C. Celedon, MD, DrPH, Pittsburgh, PA
C. Breton, ScD, Los Angeles, CA

8:00 Designing Studies of DNA Methylation
J.C. Celedon, MD, DrPH, Pittsburgh, PA

8:40 Laboratory Assays for Epigenetic Studies
S. Belinsky, PhD, Albuquerque, NM

9:25 Data Analysis for Studies of DNA Methylation
C. Breton, ScD, Los Angeles, CA

10:10 Break

10:20 Murine Studies of Epigenetics
L. Kobzik, MD, Boston, MA

11:05 Birth Cohort Studies of Epigenetics
J. Herbstman, PhD, New York, NY

11:50 MicroRNA Studies
P.G. Woodruff, MD, MPH, San Francisco, CA

12:35 LUNCH

1:35 Twin Studies of Epigenetics
J.C. Celedon, MD, DrPH, Pittsburgh, PA

2:20 Break

2:30 Histone Modification
K.H. Albertine, PhD, Salt Lake City, UT

3:15 Where Do We Go from Here?
B.A. Raby, MD, MPH, Boston, MA

PG22 DIFFICULT CLINICAL PROBLEMS IN PULMONARY AND CRITICAL CARE INFECTIONS

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

Registrants must bring a laptop to the course to view the course material.

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

8:00 a.m. - 4:00 p.m.
Target Audience
Clinicians managing patients with pulmonary and critical care acquired infections.

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

- have a much greater understanding of the range of pulmonary infections that can occur in immunocompetent and immunocompromised hosts;
- gain a much better appreciation of the evidence supporting different treatment strategies in pulmonary infections;
- have a much better knowledge of new diagnostic tests, treatments and outcome measures that can be applied in their local setting.

This course will provide clinicians with a broad overview and an update of the current challenging issues in the management of pulmonary and critical care infections including typical bacterial pneumonia, mycobacterial, fungal, and viral infections as well as general approaches to infections in the immunocompromised host.

Chairing: C.A. Hage, MD, Indianapolis, IN
K.A. Crothers, MD, Seattle, WA
K.S. Knox, MD, Tucson, AZ

8:00 ICU Acquired CLABSI: Prevention and Management in the Accountable Care Era
I.I. Raad, MD, Houston, TX

8:30 Emerging Viral Respiratory Tract Infections
T.E. West, MD, MPH, Seattle, WA

9:00 What Are the Big Changes in the New and Upcoming VAP/HAP Treatment Guidelines?
M.L. Metersky, MD, Farmington, CT

9:30 Panel Discussion
M.L. Metersky, MD, Farmington, CT
I.I. Raad, MD, Houston, TX
T.E. West, MD, MPH, Seattle, WA

9:45 Break

10:00 Empyema and Other Pleural Infections
Y.C.G. Lee, MBChB, PhD, Perth, Australia

10:30 Practical Guide for the Management of Bronchiectasis
J.D. Chalmers, MBChB, PhD, Dundee, United Kingdom

11:00 What Is New in CAP: Outcomes and Emerging Pathogens
G.W. Waterer, MBBS, PhD, MBA, Perth, Australia

11:30 Panel Discussion
J.D. Chalmers, MBChB, PhD, Dundee, United Kingdom
G.W. Waterer, MBBS, PhD, MBA, Perth, Australia
Y.C.G. Lee, MBChB, PhD, Perth, Australia

11:45 LUNCH

12:45 Pulmonary Infections and Respiratory Microbiome Alterations in HIV/AIDS
K.A. Crothers, MD, Seattle, WA

1:15 IGRA Versus TST for the Management of LTBI Including While on Anti-TNF Therapy
C. Daley, MD, Denver, CO

1:45 Panel Discussion
K.A. Crothers, MD, Seattle, WA
C. Daley, MD, Denver, CO

2:00 Break

2:15 Pneumonia in Patients with Hematologic Malignancies and HSCT Recipients
S.E. Evans, MD, Houston, TX

2:45 Pneumonia in the Solid Organ Transplant Recipient: Aspergillosis and Beyond
C.A. Hage, MD, Indianapolis, IN

3:15 Pneumonia in Patients Treated with Anti-TNF Therapy and Other Novel Biologics
K. Winthrop, MD, MPH, Portland, OR

3:45 Panel Discussion
K. Winthrop, MD, MPH, Portland, OR
S.E. Evans, MD, Houston, TX
C.A. Hage, MD, Indianapolis, IN
PG23 DIAGNOSTIC TESTS IN PEDIATRIC PULMONOLOGY: INDICATIONS AND INTERPRETATIONS

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Pediatrics; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Nursing; Pulmonary Rehabilitation; Sleep and Respiratory Neurobiology

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

Target Audience
Pediatric pulmonologists and allergists, adult pulmonologists and allergists who take care of children; pediatric intensivists, nurses and respiratory therapists.

Objectives
At the conclusion of this session, the participant will be able to:
• choose the appropriate tests for a variety of conditions encountered in clinical practice;
• recognize and avoid pitfalls in the interpretation of various diagnostic tests;
• learn how new diagnostic modalities may help in reaching a more accurate diagnosis in various clinical problems.

This course will provide a comprehensive overview of diagnostic tests that are available in clinical practice for the evaluation of pediatric patients with airway and lung parenchymal disorders. The presenters will discuss the advantages and limitations of each test in making a diagnosis, as well as the pitfalls in the performance of the tests that may result into erroneous results. Finally, when applicable, there will be a discussion on safety issues (e.g. when sedation may be necessary for the performance of the test) as well as on the cost of the various tests.

Chairing:  A.C. Koumbourlis, MD, MPH, Washington, DC  
S. Davis, MD, Indianapolis, IN  
E. Eber, MD, Graz, Austria

8:00 Genetic Testing for Pulmonary Disorders  
L.M. Nogee, MD, Baltimore, MD

8:40 Evaluation of the Patient with Lung Disease Suspected to Be Secondary to Immune Dysfunction or Auto-Immunity  
A.M.H. Casey, MD, Boston, MA

9:20 Testing for Disorders of Mucociliary Clearance  
A.J. Shapiro, MD, Montreal, Canada

9:55 Break

10:10 When to Order and What to Do with the Results of a Sleep Study  
G. Nino, MD, Washington, DC

10:45 Choosing and Interpreting an Exercise Test  
P. Pianosi, MD, Rochester, MN

11:20 Chest Imaging  
B. Newman, MD, Palo Alto, CA

12:00 LUNCH

12:40 Interpreting the Results of a Bronchoscopy  
E. Eber, MD, Graz, Austria

1:15 Pulmonary Function Testing in Children  
S. Ranganathan, MBChB, MRCP, PhD, Parkville, Australia

1:50 How to Define “Normal” in PFTs  
S. Stanojevic, PhD, Toronto, Canada

2:25 Break

2:40 The Newer Tests: IOS  
N. Eid, MD, Louisville, KY

3:15 Infant and Preschool Pulmonary Function Testing  
S. Davis, MD, Indianapolis, IN
PG24 CRITICAL CARE OF THE PATIENT WITH PULMONARY VASCULAR 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 Non-Member: $300

Registrants must bring a laptop to the course to view the course material.

Assemblies on Pulmonary Circulation; Clinical Problems; Critical Care

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

Target Audience
Pulmonary and cardiology faculty, intensivists of all backgrounds, trainees, and allied health professionals.

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

• understand etiology and pathophysiology of RV failure in critically patients;
• integrate strategies for the diagnosis and treatment of pulmonary vascular disease in critically ill patients;
• interpret common pulmonary artery catheter waveform patterns and learn about the basics of RV echocardiography in critically ill patients with pulmonary vascular disease.

This comprehensive course will provide the learner with a strategy to care for critically ill patients with pulmonary hypertension of various etiologies. Presenters will provide a framework for understanding pathophysiology, etiology, hemodynamics, and specific high-risk scenarios using state-of-the-art evidence and clinical expertise. Common pitfalls and knowledge gaps in caring for patients with pulmonary vascular and right heart failure will be addressed. By the conclusion, learners should have a refined approach for the management of these challenging patients.

Chairing:  C.E. Ventetuolo, MD, MS, Providence, RI
T.M. Bull, MD, Aurora, CO
T. Lahm, MD, Indianapolis, IN

8:00  Mechanisms of RV Failure in Critical Illness
R. Naeije, MD, PhD, Brussels, Belgium

8:30  Epidemiology of Pulmonary Vascular Disease and RV Failure in the ICU
R.T. Zamanian, MD, Stanford, CA

9:00  The PA Catheter in Critically Ill Patients with Pulmonary Vascular Disease: The Nuts and Bolts of PAC Waveform Analysis
J.B. Hall, MD, Chicago, IL

10:00  Break

10:15  Management of PAH in ICU: Supportive Care: Volume, Arrhythmias, Mechanical Ventilation
T. Lahm, MD, Indianapolis, IN

10:45  Management of PAH in ICU: Pulmonary Vasodilators and Management of Hemodynamics (Pressors and Inotropes)
J.R. Klinger, MD, Providence, RI

11:15  Pregnancy in PAH
A.R. Hemnes, MD, Nashville, TN

11:45  Perioperative Management of PAH
J.L. Diaz-Gomez, MD, Jacksonville, FL

12:15  LUNCH

Controversies in the Management of High and Intermediate Risk (Massive and Sub-Massive) PE

1:15  Pro/Con on the Treatment of High and Intermediate-Risk PE: To Lyse or Not to Lyse and How
J.A. Kline, MD, Indianapolis, IN

1:30  Rebuttal
T.M. Bull, MD, Aurora, CO

1:45  Pro/Con on IVC Filters
T.M. Bull, MD, Aurora, CO

2:00  Rebuttal
J.A. Kline, MD, Indianapolis, IN

2:15  RV Ischemia in PAH and RV Infarct
S. Archer, MD, Kingston, Canada

2:45  Break
3:00  Echo in the ICU: What Can It Help Us with in the Critically Ill Pulmonary Vascular Disease Patient?  
A. Vieillard-Baron, MD, Boulogne-Billancourt, France

3:30  ECMO as a Bridge or Salvage Therapy in PH  
C.E. Ventetuolo, MD, MS, Providence, RI

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**BASIC • CLINICAL**  
**POSTGRADUATE COURSE**

PG25 MASTER PHYSIOLOGY CLASS: CORE PRINCIPLES OF RESPIRATORY PHYSIOLOGY  
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  
Registrants must bring a laptop to the course to view the course material.

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

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

**Target Audience**
Practicing clinicians including physicians and advanced practice practitioners; resident and fellow level trainees whose clinical focus is pulmonary and/or critical care medicine.

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

- describe the basic principles of respiratory physiology that affect the transport of oxygen and carbon dioxide to and from the environment and tissues;

- explain how the core principles of respiratory physiology are altered in special patient populations including pregnant women, the obese and children;

- understand and explain how the respiratory system responds to stresses such as sustained high level exercise, hypobaric hypoxia and hyperbaria.

This postgraduate course will use a combination of didactic lectures and small group breakout sessions to review the core principles of respiratory physiology including advanced instruction in respiratory system mechanics, gas exchange, blood gas transport, control of breathing and the pulmonary circulation and how these principles apply in both special patient populations (pregnancy, obesity, pediatrics) and special circumstances (diving, exercise, high altitude). Emphasis will be placed throughout the course on the bedside application of the principles covered in each course component.

**Chaising:**  
A.M. Luks, MD, Seattle, WA  
R.W. Glenny, MD, Seattle, WA

**8:00**  
**Introduction**  
A.M. Luks, MD, Seattle, WA

**8:10**  
**Core Principles: Mechanics**  
R. Schwartzstein, MD, Boston, MA

**8:50**  
**Core Principles: The Pulmonary Circulation**  
R.W. Glenny, MD, Seattle, WA

**9:30**  
**Core Principles: Gas Exchange**  
J. Petersson, MD, Stockholm, Sweden

**10:10**  
**Break**

**10:25**  
**Small Group Case Review**  
A.M. Luks, MD, Seattle, WA  
B. Coruh, MD, Seattle, WA  
H.L. Manning, MD, Lebanon, NH  
R. Schwartzstein, MD, Boston, MA  
P.G. Carvalho, MD, Boise, ID  
A.S. Clay, MD, Durham, NC  
R.W. Glenny, MD, Seattle, WA  
J.T. Poston, MD, Chicago, IL  
M.M. Hayes, Boston, MA  
B.A. Cockrill, MD, Boston, MA  
F. Laghi, MD, Hines, IL

**11:40**  
**LUNCH**

**12:30**  
**Core Principles: Blood Gas Transport**  
H.L. Manning, MD, Lebanon, NH

**1:10**  
**Core Principles: Respiratory Muscle and Chest Wall Physiology**  
F. Laghi, MD, Hines, IL

**1:50**  
**Break**
2:05  Core Principles: Control of Breathing
     J. Leiter, MD, Lebanon, NH

2:45  Small Group Case Review
     A.M. Luks, MD, Seattle, WA
     B. Coruh, MD, Seattle, WA
     R. Schwartzstein, MD, Boston, MA
     H.L. Manning, MD, Lebanon, NH
     R.W. Glenney, MD, Seattle, WA
     B.A. Cockrill, MD, Boston, MA
     J.T. Poston, MD, Chicago, IL
     M.M. Hayes, MD, Boston, MA
     P.G. Carvalho, MD, Boise, ID
     A.S. Clay, MD, Durham, NC
     F. Laghi, MD, Hines, IL

BASIC • CLINICAL • TRANSLATIONAL

POSTGRADUATE COURSE

PG26  CENTRAL APNEAS, CHEYNE-STOKES
      AND PERIODIC BREATHING: NEW
      INSIGHTS AND THEIR IMPACT ON
      DAILY PRACTICE

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

Registrants must bring a laptop to the
course to view the course material.

Assemblies on Sleep and Respiratory Neurobiology;
Clinical Problems; Critical Care; Pediatrics

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

Target Audience
Pulmonologists, sleep physicians, fellows, nurses, fellows
in training, clinical researchers, everybody involved in
critical care and ventilation, pediatricians, geriatric
physicians and nurses, cardiologists.

Objectives
At the conclusion of this session, the participant will be able to:
• put the new results from basic and clinical research
  regarding the causality of central apneas and periodic
  breathing into clinical perspective and to understand
treatment alternatives to improve patient outcome;
• understand the differences in the results between the
two recent, Serve HF and ADVENT-HF trials, and their
impact on treatment for patients with central apneas in
heart failure;
• develop skills for the daily work with geriatric patients,
  who show signs of complex and difficult to treat forms of
  sleep apnea.

This postgraduate course is designed to give the learner the
most updated information on knowledge about all forms of
central apneas, and to build confidence in individualizing
decisions concerning the importance of central apneas and
periodic breathing for each patient. The course is also an
opportunity to put the disturbing results of the Serve HF
studies from previous year into the right perspective for each
clinical practice. The opportunity to discuss controversial
results of clinical studies with experts in the field after each
talk and at the round table will reduce uncertainties in
younger clinicians and nurses, when it comes to central
apneas in younger and older patients.

Chaising:  N.C. Netzer, MD, PhD, Bad Aibling, Germany
          C. Marcus, MBBCh, Philadelphia, PA

8:00  Introduction
     N.C. Netzer, MD, PhD, Bad Aibling, Germany

Part One: Central Apnea Physiology

8:05  Rhythmogenesis and Loop Gain as Unifying
      Mechanisms of Periodic Central Apneas
     S.A. Sands, PhD, Boston, MA

8:35  Upper Airway Physiology and Central Apneas:
      The Neuromechanical Interface
     D.J. Eckert, PhD, Sydney, Australia

9:05  Brain and Carotid Body Sensors Involved in
      Generating Central Apneas
     J. Neubauer, PhD, New Brunswick, NJ

9:35  Hypoxia Provoked Periodic Breathing During
      Sleep: A Model for CSR?
     N.C. Netzer, MD, PhD, Bad Aibling, Germany
10:05  Panel Discussion  
K.P. Strohl, MD, Cleveland, OH  
D.J. Eckert, PhD, Sydney, Australia

10:30  Break

Part Two: Clinical Aspects and Treatment of Central Breathing Disorders

10:45  The ERS Task Force Consensus on Central Apneas  
W. Randerath, MD, Solingen, Germany

11:20  Central Apneas in Infants and Children. When to Worry and How to Treat  
C. Marcus, MBBCh, Philadelphia, PA

11:55  Central Apneas in the Geriatric Patient: A Buddy of Aging  
M. Morrell, MD, PhD, London, United Kingdom

12:30  LUNCH

1:15  Role of Phrenic Nerve Stimulation and Cardiac Pacing in the Treatment of CA in Heart Failure  
M. Arzt, MD, Regensburg, Germany

1:45  In Patients with Heart Failure, Should We Concentrate on Treating the Obstructive Events? What the SERVE HF Study Taught Us  
H. Woehrle, MD, Blaubeuren, Germany

2:15  SERVE HF Is Not the Only Truth. What We Learned from the ADVENT-HF Study  
D. Bradley, MD, Toronto, Canada

2:45  Break

3:00  Devil or Saint? Supplemental Oxygen Treatment in Central Breathing Disorders Including CSA in Stroke  
C. Roffe, PhD, Stoke on Trent, United Kingdom

3:30  Panel Discussion  
C. Marcus, MBBCh, Philadelphia, PA  
D. Bradley, MD, Toronto, Canada

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PG27  LUNG CANCER: STATE OF THE ART IN 2016

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  
Registrants must bring a laptop to the course to view the course material.

Assemblies on Thoracic Oncology; Behavioral Science and Health Services Research; Clinical Problems; Respiratory Cell and Molecular Biology

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

Target Audience  
All providers caring for patients with lung nodules, lung cancer. This includes pulmonologists, thoracic surgeons, radiation oncologists, nurse practitioners and physician assistants.

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

• describe the benefits and risks of lung cancer screening;

• explain the roles that surgery and stereotactic body radiation therapy have for patients with early NSCLC;

• describe the recent advances in molecular medicine as it relates to lung cancer.

This course will provide a comprehensive review of topics in the evaluation and management of patients with lung cancer including risk assessment and screening, the approach to pulmonary nodules, and the importance of molecular characterization of lung cancer. In addition, we will discuss treatment options for early stage and locally advanced NSCLC, the role in interventional pulmonology and palliative care in the management of patients with lung cancer and disparities in lung cancer burden, evaluation and
treatment. Novel diagnostic tools and treatment modalities including biomarkers/genomic classifiers and immunomodulating therapies. The importance of tobacco cessation programs and tobacco control will also be discussed. Interactive tumor boards will be held to highlight main teaching points.

Chairing: D. J. Feller-Kopman, MD, Baltimore, MD  
M. P. Rivera, MD, Chapel Hill, NC

8:00 Introduction  
D. J. Feller-Kopman, MD, Baltimore, MD

8:05 Tobacco and E-Cigarettes: Control or Out of Control?  
A. Vachani, MD, MS, Philadelphia, PA

8:30 Lung Cancer Screening: Who, Why and How  
N. T. Tanner, MD, MSCR, Charleston, SC

8:55 The Role of Advanced Diagnostic Bronchoscopy in the Diagnosis and Staging of Lung Cancer  
J. A. Akulian, MD, MPH, Chapel Hill, NC

9:20 Tumor Board  
D. J. Feller-Kopman, MD, Baltimore, MD

9:55 Break

10:10 Is My Patient Fit for Surgery?  
K. I. Berger, MD, New York, NY

10:35 Surgery Is Better for Stage 1 NSCLC  
J. Shrager, MD, Stanford, CA

11:00 SBRT Is Better for Stage 1 NSCLC  
B. Loo, MD, PhD, Palo Alto, CA

11:25 Rebuttal

11:35 Tumor Board  
M. P. Rivera, MD, Chapel Hill, NC

12:10 Lunch

12:50 Disparities in Lung Cancer  
M. P. Rivera, MD, Chapel Hill, NC

1:15 “Systems Genetics” in Lung Cancer  
D. Jablons, MD, San Francisco, CA

1:40 Treating YOU: Targeted Therapy and Immunotherapy in the Treatment of Lung Cancer  
C. Pecot, MD, Chapel Hill, NC

2:05 Tumor Board  
D. J. Feller-Kopman, MD, Baltimore, MD

2:30 Break

2:45 How Not to Die Short of Breath: Treatment of Malignant Pleural Effusions  
D. J. Feller-Kopman, MD, Baltimore, MD

3:10 Journal Club: Last Year’s Top 5 Papers in Lung Cancer  
G. A. Silvestri, MD, MS, Charleston, SC

PG28 CONFLICT RESOLUTION IN CRITICAL CARE: A SKILLS COURSE

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

Registrants must bring a laptop to the course to view the course material.

Assemblies on Ethics and Conflict of Interest Committee; Behavioral Science and Health Services Research; Critical Care; Nursing

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

Target Audience
Any clinician directly involved in providing healthcare, whether or not specifically in critical care, can benefit from enhancing his/her skills in resolving conflict.

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

• describe and explain at least ten specific skills and strategies for communicating in a setting of significant conflict;

• explain how and when each such skill or strategy is best used;

• gain practice in conflict resolution skills, so that they come readily into use when needed.
ATS’s ground-breaking 2015 Policy Statement on potentially inappropriate treatments in critical care observes that “conflicts typically develop and worsen over time as communication breaks down and parties become entrenched in their positions,” hence emphasizes the need for “increased efforts to teach clinicians end of life communication skills, including conflict resolution skills.” This course, a compact version of a successful intensive 3-day training, provides ATS’s first direct opportunity to meet that goal. Faculty will introduce a number of skills, beyond ordinary clinical communication skills, specifically attuned to address conflict. Participants will practice those skills in realistic scenarios followed by extensive debriefing.

Chairing:  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA

8:00  
**ATS’s Official Policy Statement Regarding Requests for Potentially Inappropriate Treatments in ICUs**  
J.R. Curtis, MD, MPH, Seattle, WA

8:30  
**ATS’s Official Policy Statement Regarding Requests for Potentially Inappropriate Treatments in ICUs: Addressing Intractable Conflict**  
D.B. White, MD, MAS, Pittsburgh, PA

9:00  
**A Broad Look at Conflict in Health Care**  
H. Morreim, JD, PhD, Memphis, TN

9:15  
**First Set of Skills**  
H. Morreim, JD, PhD, Memphis, TN  
J.R. Curtis, MD, MPH, Seattle, WA  
D.B. White, MD, MAS, Pittsburgh, PA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

9:45  
**Break**

10:00  
**Practice Scenario #1 and Debrief**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

10:30  
**Second Set of Skills and Brief Exercise**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

11:00  
**Practice Scenario #2 and Debrief**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

11:30  
**LUNCH**

12:30  
**Conflict Resolution Strategies**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

1:15  
**Practice Scenario #3 and Debrief**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

2:00  
**Break**

2:15  
**Practice Scenario #4 and Debrief**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN

3:15  
**Final Exercise**  
H. Morreim, JD, PhD, Memphis, TN  
D.B. White, MD, MAS, Pittsburgh, PA  
J.R. Curtis, MD, MPH, Seattle, WA  
R.D. Stapleton, MD, PhD, Burlington, VT  
L.F. Reinke, ARNP, PhD, Edmonds, WA  
M. Bugnitz, MD, Memphis, TN
4:30 p.m. - 5:30 pm

OPENING CEREMONY

The American Thoracic Society invites you to attend the Opening Ceremony for the 2016 International Conference. The keynote speaker is pioneering scientific researcher, J. Craig Venter, PhD. Contributions in sequencing a draft human genome, the first complete diploid human genome and construction of the first synthetic bacterial cell are among his many accomplishments. He is the founder, chairman and CEO of the J. Craig Venter Institute (JCVI), founder and CEO of the company, Synthetic Genomics Inc. (SGI) and a co-founder and CEO of Human Longevity Inc. (HLI).

Sonia Buist, MD, ATS past president and founder of the ATS Methods in Epidemiologic, Clinical, and Operations Research (MECOR) program, will be the first recipient of the ATS Foundation Vision Award. This award honors innovative individuals who have had a transformative impact on the delivery of health care.

The Ceremony will be followed by a social gathering with light refreshments, where attendees can meet up with friends and colleagues.

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

S1 THE NETWORKING EXCHANGE FOR EARLY CAREER PROFESSIONALS

The Networking Exchange for Early Career Professionals is an annual networking event for medical students, residents, fellows, post docs, junior faculty and new 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 leaders. The Training Committee, Membership Committee, Education Committee, and Members in Transition and Training Committee (MITT) jointly host the Networking Exchange for Early Career Professionals. Cocktails and appetizers will be provided.

Attendance is free, but registration is required to obtain an audience count. Tickets will not be issued; however, Conference badges are required for admission. Space is limited.
The Pediatric Core Curriculum symposia promotes lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatricians. The symposia will address topics that have been identified by an ATS pediatric working group, which is comprised of members of the ATS Education Committee and the International Conference Committee, who have identified important areas within pediatric medicine (including vasculitic pulmonary diseases, lung defense mechanism, congenital abnormalities of the airways, and respiratory failure). Attendees will increase their medical knowledge as a result of attending this symposium, and this will be measured by a comparison of pre-test vs. post-test results on the corresponding maintenance of certification module. The ATS Pediatric Core Curriculum will focus on a 3-year content cycle of key medical content in the area of pediatric medicine.

**Chairing:**
- D.M. Boyer, MD, Boston, MA
- P.E. Moore, MD, Nashville, TN

**6:45** Vasculitic Pulmonary Diseases
- S.D.M. Dell, MD, Toronto, Canada

**7:15** Sickle Cell Lung Disease
- R.T. Cohen, MD, MPH, Boston, MA
The Presidential Keynote Series provides state of the art lectures on selected topics in an unopposed format to showcase major discoveries in pulmonary, critical care and sleep medicine. The speakers have been chosen by input from the members and various ATS committees with consensus built via the ATS executive committee.

Two sessions are presented each morning during the conference. Below are the topics for the Sunday, May 15th series.

<table>
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<tr>
<th>K1</th>
<th>PERSONALIZED MANAGEMENT OF OBSTRUCTIVE SLEEP APNEA</th>
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<tr>
<td></td>
<td><strong>8:00 a.m. - 8:45 a.m.</strong></td>
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<td><strong>Speaker:</strong> John R. Stradling, MD, MPH, Oxford, United Kingdom</td>
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<td>This session will be chaired by Atul Malhotra, MD, La Jolla, CA</td>
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<tr>
<th>K2</th>
<th>IDIOPATHIC PULMONARY FIBROSIS: PAST, PRESENT, FUTURE</th>
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<td><strong>8:00 a.m. - 8:45 a.m.</strong></td>
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<tr>
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<td><strong>Speaker:</strong> Talmadge E. King, MD, San Francisco, CA</td>
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<td>This session will be chaired by Zea Borok, MD, Los Angeles, CA</td>
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A1 CLINICAL YEAR IN REVIEW 1
9:00 a.m. - 11:00 a.m.

Target Audience
Providers including physicians, nurses, respiratory therapists, nurse practitioners, and physician assistants. Trainees including residents fellows, and clinical researchers will also benefit.

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;
• gain new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia topic reviews of the key clinical research publications over the last year. Each speaker is asked to review the 5-7 most important and influential publications on their topic from the prior year.

Chairing:  J.L. Taylor-Cousar, MD, Denver, CO  
D.J. Lederer, MD, MS, New York, NY  
D.W. Ford, MD, MSCR, Charleston, SC

9:00 COPD  
C.P. Hersh, MD, MPH, Boston, MA

9:30 Pulmonary Rehabilitation  
S.J. Singh, PhD, Leicester, United Kingdom

10:00 Lung Transplantation  
J.A. Belperio, MD, Los Angeles, CA

10:30 Cystic Fibrosis  
J.L. Taylor-Cousar, MD, Denver, CO

A2 JAMA AND THE NEW ENGLAND JOURNAL OF MEDICINE. DISCUSSION ON THE EDGE: REPORTS OF RECENT PULMONARY RESEARCH
9:00 a.m. - 11:00 a.m.

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

A3 FELLOWS CASE CONFERENCE

Training Committee; Assemblies on Allergy, Immunology and Inflammation; Behavioral Science and Health Services Research; Clinical Problems
9:00 a.m. - 11:00 a.m.

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.

This session will consist of unique cases presented and discussed by fellows with a panel of clinical experts to moderate the discussion and provide commentary. The cases will provide new insights into disease pathogenesis, diagnosis, and/or treatment. Selected cases will include clear clinical teaching points with review of associated pathology and radiology as appropriate. Finally, the discussion will highlight medical decision making important for both physicians-in-training and seasoned clinicians.

Chairing: J.W. McCallister, MD, Columbus, OH

9:05 Fellows Case Presentations

10:00 Expert Clinicians
M.I. Schwarz, MD, Aurora, CO
A.H. Limper, MD, Rochester, MN
P.E. Parsons, MD, Burlington, VT

Expert Pathologist
H.D. Tazelaar, MD, Scottsdale, AZ

Expert Radiologist
B.M. Elicker, MD, San Francisco, CA

CLINICAL CRITICAL CARE TRACK

A4 NEW ERA OF EVIDENCE GENERATION: MEASURING EFFECTIVENESS IN CRITICAL CARE

Assemblies on Critical Care; Clinical Problems; Nursing
9:00 a.m. - 11:00 a.m.

Target Audience
Critical care providers; intensivists; nurse practitioners; quality improvement researchers; hospital administrators; ICU administrators.

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

• understand novel trial design aspects of comparative effectiveness research in critically ill patients and how the ICU can be a learning health care system;

• interpret and apply the results of large effectiveness trials done in critically ill patients;

• understand the ethics of comparative effectiveness research and issues of consent.

Clinical trials using pragmatic design principles aimed at truly testing effectiveness of process of care aspects or currently used treatments are becoming increasingly popular. Federal funding, including both the NIH and PCORI, have emphasized the need for these types of trials. Comparative effectiveness and pragmatic trials conducted in the ICU are an emerging field in both clinical and quality improvement research. This session will discuss the increasing use of novel trial designs to generate estimates of treatment effectiveness in the critically ill and how to interpret and apply the results of these types of ICU studies.

Chairing: T.W. Rice, MD, MSc, Nashville, TN
D. Janz, MD, MSc, New Orleans, LA

9:00 What’s Pragmatic about Pragmatic Trials?
T.W. Rice, MD, MSc, Nashville, TN

9:10 Patient Centered Outcomes and Other Endpoints in Practical ICU Studies
D. Janz, MD, MSc, New Orleans, LA

9:25 Unique Trial Designs: Recent Novel Pragmatic Trials in Critical Illness
M.W. Semler, MD, Nashville, TN

9:40 Interpreting ICU Effectiveness Trials: Are the Results Applicable to My ICU or Patients?
B.T. Thompson, MD, Boston, MA

10:00 To Ask or Not To Ask? Ethics, Informed Consent, and Stopping Rules in Comparative Effectiveness Trials in Critical Illness
B. Cuthbertson, MD, Toronto, Canada
10:20  Fusing RCTs with Big Data in Critical Illness  
D.C. Angus, MD, MPH, Pittsburgh, PA

10:40  The ICU as a Learning Healthcare Environment  
J.V. Selby, MD, MPH, Washington, DC

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BASIC SCIENCE CORE

A5  UNDERSTANDING LUNG DISEASE PHENOTYPES: NETWORKS AND SYSTEMS BIOLOGY
Assemblies on Allergy, Immunology and Inflammation; Respiratory Cell and Molecular Biology; Respiratory Structure and Function
9:00 a.m. - 11:00 a.m.

Target Audience
Basic and clinical scientists, research and clinical trainees, drug discovery and development sector workers, providers of lung health care.

Objectives
At the conclusion of this session, the participant will be able to:
• understand fundamental approaches for systems biology and their application in research of pathophysiology;
• become aware of approaches to study epigenetic, transcriptional, post translational mechanism that contribute to lung diseases;
• learn new findings about post-transcriptional gene regulation.

The session highlights the state of the art in high throughput technologies and bioinformatics relevant to a broad range of lung disorders. How advanced bioinformatics can be used to understand integration of complex responses will be discussed, focusing on how to understand complexities of cell signaling disease pathogenesis.

Chairing: A.J. Ammit, PhD, Sydney, Australia  
A. Fedulov, MD, PhD, Boston, MA

9:00  Asthma Is a Systemic Epigenetic Disease  
R.L. Miller, MD, New York, NY

9:24  Integrated Approaches to Understanding Pulmonary Fibrosis  
D.A. Schwartz, MD, Aurora, CO

9:48  What Gene Expression Networks Tell Us About the Mechanisms of Anti-Inflammatory Glucocorticoid Action  
R. Newton, PhD, Calgary, Canada

10:12  DUSP1 and TTP Co-Operate to Regulate Cytokine Expression: Knowledge Gained from Experimental Models of Arthritis  
A.R. Clark, PhD, Birmingham, United Kingdom

10:36  RNA-Protein Interactions on a Global Scale: Investigating mRNA-Binding Proteomes in Model Organisms  
A.P. Gerber, PhD, Guildford, United Kingdom

BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

A6  JOINT ATS/ERS/JRS SYMPOSIUM ON SEVERE ASTHMA: A GLOBAL PERSPECTIVE
Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Environmental, Occupational and Population Health; Nursing; Pediatrics; Respiratory Cell and Molecular Biology; Respiratory Structure and Function
9:00 a.m. - 11:00 a.m.

Target Audience
Providers of lung health and those taking care of patients with asthma.

Objectives
At the conclusion of this session, the participant will be able to:
• review recent advances in the epidemiology and molecular basis of severe asthma;
• understand the clinical and molecular heterogeneity of severe asthma;
highlight areas of needed research to reduce the impact of this disease on human health.

This symposium proposal represents an international collaborative effort between members of the Japanese Respiratory Society, The European Respiratory Society, and the American Thoracic Society to foster interactions towards a precision medicine approach to severe asthma. Globally, severe asthma represents a subset of asthma accounting for approximately 5-10% of patients with asthma. However, health care utilization for this subset has been estimated to be up to 40% of the economic burden of asthma. Recently there has been significant efforts to determine the underlying basis for this disease in terms of epidemiology, physiology, immunology, and genetics that influence this phenotype. Data are emerging that serve asthma consists of several endotypes. This phenotypic and now molecular classification may greatly aid in patient management with improved disease control, improved clinical outcomes and reduced medical costs. This symposium will highlight recent advances as well as highlight needed areas of research to advance treatment and prevention of this disease.

Chairing: G.P. Downey, MD, Denver, CO
K. Asano, MD, Kanagawa, Japan
S. Hashimoto, MD, Tokyo, Japan
B.D. Levy, MD, Boston, MA
N.N. Jarjour, MD, Madison, WI

9:00 Introduction and Overview of Severe Asthma
B.D. Levy, MD, Boston, MA

9:05 Severe Asthma: Lessons Learned from Global Studies
K. Asano, MD, Kanagawa, Japan

9:22 Severe Asthma in the Pediatric Population
S.J. Szefler, MD, Aurora, CO

9:39 Pathogenesis of Severe Asthma: A Clue from the Common Genes Underlying Asthma and COPD
N. Hizawa, MD, Tsukuba, Japan

9:56 Serum Periostin: A Key Marker to Dissect the Pathophysiology of Type 2-Predominant Asthma
H. Matsumoto, MD, PhD, Kyoto, Japan

10:14 Current Therapies for Severe Asthma in 2016
M. Kraft, MD, Tucson, AZ

10:32 Severe Asthma Phenotype/Endotype Guided Therapy
P.J. Sterk, MD, PhD, Amsterdam, Netherlands

10:50 Summary of Symposium and Panel Discussion
N.N. Jarjour, MD, Madison, WI

BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

A7 ATS MYTHBUSTER: REVERSING FIBROSIS IN THE LUNGS IS BIOLOGICAL MISSION (IM)POSSIBLE

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

9:00 a.m. - 11:00 a.m.

Target Audience
Basic, translational, clinical researchers, and clinicians interested in fibrotic lung diseases, including IPF, connective tissue disease-ILD, chronic hypersensitivity pneumonitis and sarcoidosis.

Objectives
At the conclusion of this session, the participant will be able to:
• understand both the overall potential, and the current barriers, to reverse established fibrosis in patients with fibrotic lung diseases;
• understand how effector fibroblasts and extracellular matrix could be targeted to induce the regression of established fibrosis;
• understand the lung’s capacity for compensatory re-growth of functional alveolar units after they are injured or lost.

In this provocative session we will explore the hypothesis that pulmonary fibrosis biology dictates that fibrosis cannot be reversed once it is established. We will use the very successful “mythbusters” format: leading researchers will give talks relevant to this hypothesis, after which expert
“mythbusters” will discuss its validity. The session will end with an audience vote on the validity of the hypothesis. We hope to pair this session with another mythbusters session exploring the clinical implications of this hypothesis: that the best that we can hope to achieve with new therapies for fibrotic lungs diseases is the prevention of progression.

Chairing: M.R.J. Kolb, MD, PhD, Hamilton, Canada
M. Königshoff, MD, PhD, Munich, Germany
A.M. Tager, MD, Charlestown, MA

9:00 A Patient’s Perspective
Speaker To Be Announced

9:05 Once a Myofibroblast, Always a Myofibroblast? Can Lung Myofibroblasts Revert Like They Do in the Liver?
T. Kisseleva, MD, PhD, La Jolla, CA

9:25 Targeting Matrix Cross-Linking: The Achilles Heel of Fibrosis?
P.J. Sime, MD, Rochester, NY

9:45 Turning Fibrosis Down a Notch while Turning Up Regeneration: Progenitor Cell Notch Signaling Determines Outcome of Lung Injury
H. Chapman, MD, San Francisco, CA

10:05 Busting the Myth that the Lung Cannot Regenerate
B. Ding, PhD, New York, NY

10:25 Panel Discussion
G. Laurent, PhD, Nedlands, Australia
J. Gauldie, PhD, Hamilton, Canada
Z. Borok, MD, Los Angeles, CA

There will be a 5-minute discussion after each talk.

BASIC • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

A8 EVERYTHING YOU EVER WANTED TO KNOW ABOUT SEX STEROIDS AND LUNG DISEASE

Assemblies on Respiratory Structure and Function; Allergy, Immunology and Inflammation; Pulmonary Circulation; Respiratory Cell and Molecular Biology; Thoracic Oncology

9:00 a.m. - 11:00 a.m.

Target Audience
Lung health providers, trainees, and those involved in research or clinical care related to lung disease and reproductive hormones. This topic is expected to appeal to both scientists and clinicians.

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

• learn new findings about the effects of sex steroid signaling on lung structure and function;

• apply knowledge about sex steroids to management of patients with non-neoplastic lung diseases;

• apply knowledge about sex steroids to management of patients with lung cancer.

Sex steroids (i.e., reproductive hormones) have biologic and pathophysiologic actions in the lung mediated by both genomic and non-genomic mechanisms. This session will review the biology of sex steroids and their receptors in the lung, discuss the impact of sex steroids on lung structure and function, and explore the role of sex steroid signaling in lung diseases with known gender differences in incidence and in morbidity and mortality. The learner will better understand the impact of sex steroids on disease manifestation and severity and will appreciate the potential for these hormones as biomarkers and therapeutic targets in lung disease.

Chairing: G.S. Skloot, MD, New York, NY
Y.S. Prakash, MD, PhD, Rochester, MN
M. MacLean, PhD, Glasgow, United Kingdom

9:00 Introduction to Sex Steroid Signaling and Effects on Lung Structure and Function
Y.S. Prakash, MD, PhD, Rochester, MN

9:25 The Role of Sex Steroid Signaling In Pulmonary Hypertension
M. MacLean, PhD, Glasgow, United Kingdom

9:50 The Role of Sex Steroid Signaling in Airway Disease
B.N. Melgert, PhD, Groningen, Netherlands
10:15  The Role of Sex Steroid Signaling In Lung Cancer  
C.A. Powell, MD, New York, NY

10:40  Future Directions: Sex Steroids as Potential Biomarkers and Therapeutic Targets  
S.E. Wenzel, MD, Pittsburgh, PA

There will be a 5-minute discussion after each talk.

CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

A9  CONTROVERSIES IN SLEEP MEDICINE: DAVIDS, GOLIATHS, AND SOME BLOOD ON THE FLOOR!

Assemblies on Sleep and Respiratory Neurobiology; Clinical Problems

9:00 a.m. - 11:00 a.m.

Target Audience
Sleep physicians, researchers, nurses, and trainees.

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

• learn about the mechanistic underpinnings of the interactions between sleep-disordered breathing and heart failure and consequent effects of patient outcomes;

• apply appropriate patient selection practices to identify candidates for novel emerging therapies for obstructive sleep apnea other than CPAP therapy;

• understand the relationship between sleep-disordered breathing and cancer and whether this can be translated into practice.

Sleep medicine is at the cusp of major advancements and impact on population health and well-being. However, there are thorny issues that have emerged as areas of controversies that need to be debated. While cardiovascular disease and cancer remain top killers, the role of treatment of sleep disordered breathing in patients with heart failure, and the relationship between sleep-disordered breathing and cancer are hotly debated. Moreover, emerging treatments for sleep-disordered breathing are rapidly changing the landscape as they disrupt and find their rightful place in the treatment hierarchy. This symposium features “world” heavy-weights in the respective areas of sleep medicine who will “reconcile” their differences while keeping bloodshed to a minimum. Attendees will learn about the mechanistic underpinnings of the interactions between sleep, heart failure and cancer; the clinical implications of such complex interactions; and emerging treatment approaches to sleep disordered breathing. This symposium is not for the weak hearted.

Chairing: N.A. Antic, MBBS, PhD, Adelaide, Australia  
S. Parthasarathy, MD, Tucson, AZ  
J.P. Bakker, PhD, Boston

9:00  PRO: Should We Treat Sleep Disordered Breathing in Heart Failure?  
D. Bradley, MD, Toronto, Canada

9:20  CON: Should We Treat Sleep Disordered Breathing in Heart Failure?  
M. Naughton, MBBS, MD, East Melbourne, Australia

9:40  PRO: Sleep Disordered Breathing Causes Cancer?  
R. Farre, PhD, Barcelona, Spain

10:00  CON: Sleep Disordered Breathing Causes Cancer?  
C.P. O'Donnell, PhD, Pittsburgh, PA

10:20  PRO: There Will Never Be a Superior Treatment for OSA than CPAP  
C. Sullivan, MBBS, PhD, Sydney, Australia

10:40  CON: There Will Never Be a Superior Treatment for OSA than CPAP  
D.P. White, MD, Denver, CO

There will be a 5-minute discussion after each talk.
A10 NEW INSIGHTS INTO THE PATHOGENESIS AND TREATMENT OF BRONCHOPULMONARY DYSPLASIA

Assemblies on Pediatrics; Respiratory Cell and Molecular Biology

9:00 a.m. - 11:00 a.m.

Target Audience
Neonatologists, pediatric pulmonologists, basic scientists interested in lung development, inflammation, genetic basis of disease and stem cell biology.

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

• learn new findings about molecular targets important in the pathogenesis of BPD identified through animal and human studies;

• apply stem cell based approaches to their patients in order to improve outcomes in BPD;

• describe new advances in the molecular understanding of the timing of normal birth and the importance of fetal lung maturity and inflammation in the process of initiation of labor.

Bronchopulmonary dysplasia (BPD) continues to be a major cause of morbidity and mortality for prematurely born infants. This session will highlight recent advances in our understanding of the causes of BPD from newer mouse models and large-scale human genetic studies, contributions of the lung microbiome to neonatal disease, and newer approaches to therapy using cell based therapies, as well as new links to understanding the causes of timing of parturition, as prevention of preterm birth is the ultimate therapy for the prevention of BPD.

Chairs:
L.M. Nogee, MD, Baltimore, MD
B. Thebaud, MD, PhD, Ottawa, Canada

9:00 Chronic Lung Injury Induced by Ventilation: Insights from Neonatal Mouse Models
R. Bland, MD, Stanford, CA

9:20 The Lung Microbiome and Chronic Lung Disease in the Premature Infant
A. Hamvas, MD, Chicago, IL

9:40 Genomic Approached to Understanding BPD
N. Ambalavanan, MD, Birmingham, AL

9:55 Honing in on Rare Variants Contributing to BPD
H.M. O'Brodovich, MD, Stanford, CA

10:10 Cell Based Therapies for BPD
B. Thebaud, MD, PhD, Ottawa, Canada

10:30 Lung Maturation, Inflammation and the Timing of Parturition
C. Mendelson, PhD, Dallas, TX

10:50 Discussion
B. Thebaud, MD, PhD, Ottawa, Canada
L.M. Nogee, MD, Baltimore, MD

There will be a 5-minute discussion after each talk.

A11 GLOBAL LUNG CANCER HEALTH ISSUES

Assemblies on Behavioral Science and Health Services Research; Clinical Problems; Environmental, Occupational and Population Health; Thoracic Oncology

9:00 a.m. - 11:00 a.m.

Target Audience
Clinicians, researchers and educators with an interest in lung cancer and in global lung health.

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

• learn new findings about best practices for early detection of lung cancer;

• apply recent guidelines and policy statements to be able to better diagnose and stage lung cancer;
• Integrate new treatment and prevention options in discussing lung cancer with patients.

Lung cancer is the leading cause of cancer death in the world. The challenge to decrease lung cancer mortality through prevention, early detection, rapid diagnosis, staging, and precision therapy is global; yet approaches to these efforts vary. Speakers for this session are drawn from the International Relations Working Group of the ATS Thoracic Oncology Assembly with leaders from ATS, JRS, ERS, the Chinese Respiratory Association, and the Latin American Thoracic Association. Topics will include prevention, lung cancer screening, precision therapy, updates in lung cancer classification and staging, and quality benchmarks for diagnosis and treatment.

Chairing: C.A. Powell, MD, New York, NY
M. Gaga, MD, PhD, Athens, Greece
S. Quadrelli, MD, PhD, Buenos Aires, Argentina
C. Bai, MD, PhD, Shanghai, China

9:00 The Role of Smoking Cessation in the Prevention of Lung Cancer
J.M. Samet, MD, MS, Los Angeles, CA

9:20 WHO-IARC, IASLC-ATS Updates of Lung Cancer Classification,
C.A. Powell, MD, New York, NY

9:40 Integration of Imaging and Molecular Biomarkers for Lung Cancer Detection
C. Bai, MD, PhD, Shanghai, China

10:00 Screening for Lung Cancer: Maximizing Benefits and Minimizing Harms
M.K. Gould, MD, MS, Pasadena, CA

10:20 Precision Therapy of Lung Cancer: Targets, Resistance, and Opportunities
K. Kiura, MD, PhD, Okayama, Japan

10:40 European Initiative for Quality Management in Lung Cancer Care
M. Gaga, MD, PhD, Athens, Greece

BASIC • CLINICAL • TRANSLATIONAL
SCIENTIFIC SYMPOSIUM

A12 ENTREPRENEURSHIP: EMBRACING THE INNOVATIVE ENVIRONMENT - FROM BENCH TO BOARDROOM TO BEDSIDE

Drug and Device Discovery Development Committee
9:00 a.m. - 11:00 a.m.

Target Audience
Basic, translational and clinical investigators and those responsible for translating knowledge into innovations in academia, government, nonprofits and industry.

Objectives
At the conclusion of this session, the participant will be able to:
• understand how to turn discoveries into innovations;
• find funding sources for innovations;
• grow one’s career.

The symposium will show the importance of entrepreneurship in creating an innovative environment. The session will focus on successful examples of entrepreneurship and innovation in big pharma, academia, biotech and government. Speakers will discuss different entrepreneurial mechanisms currently used to identify and fund innovation, including venture capital, philanthropy, patient support organizations and government (e.g., NIH, NSF) Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR), and their applicability to a diverse ATS membership. Regulatory insights will be provided into alternative pathways to develop and secure approval for innovative drugs and devices.

Chairing: T.F. Reiss, MD, New Hope, PA
J. Moss, MD, PhD, Bethesda, MD

9:00 The Innovative Mindset
M. Turner, PhD, Westfield, NJ
9:24 Entrepreneurship: Academic Insights into Technology Transfer
C. Wyskiel, MBA, Baltimore, MD

9:48 Early Lessons in Entrepreneurship: A Venture Capital Perspective
C. Berkland, PhD, Lawrence, KS

10:12 SBIR/STTR Grants: Funding the Path from Academia to Industry
C.G. Irvin, PhD, Burlington, VT

10:36 The Cystic Fibrosis Foundation: A Profitable Non-Profit's Guide to Therapeutic Success
R.J. Beall, PhD, Bethesda, MD

9:00 a.m. - 11:00 a.m.
Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.

11:00 a.m.-12:15 p.m.
SECTION MEMBERSHIP MEETING
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: P.A. Kritek, MD, Seattle, WA
WS1 GUIDELINES FOR THE EVALUATION OF THE WHEEZING INFANT

Target Audience
Clinicians caring for infants and young children with respiratory disease.

Objectives
At the conclusion of this session, the participant will be able to:
- use bronchoscopy to identify causes of infantile wheezing;
- know the role of food allergy testing in the evaluation of infantile wheezing;
- diagnose GERD in wheezing infants.

Infantile wheezing is a common clinical problem encountered by pediatric respiratory specialists. In 2011, an ATS project to develop evidence based guidelines for diagnostic evaluation of infantile wheezing was initiated. The recommendations have been completed and will be submitted for peer review this summer. This workshop will review the key recommendations that the working group developed.

Chairing: C.L. Ren, MD, Indianapolis, IN

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

S2 ATS DIVERSITY FORUM

The annual ATS Diversity Forum focuses on diversity within the fields of pulmonary, critical care, and sleep medicine and research. The forum will feature a guest speaker who will address career and diversity issues and answer questions from the audience.

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. The abstracts will be presented during the International Conference.

Mentors, past MTDS (formerly MTTA) recipients, and other conference attendees are encouraged to attend this forum which provides an opportunity for discussion and networking among attendees. Attendees will find inspiration and valuable career insights.

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

Registration is required. There is no fee to attend this event and tickets will not be issued; however, conference badges are required for admission. A plated lunch will be served.

CLINICAL WORKSHOP

WS1 GUIDELINES FOR THE EVALUATION OF THE WHEEZING INFANT

Registration Fee: $75.00 (includes box lunch)

Attendance is limited. Pre-registration is required.

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

11:45 a.m. - 1:15 p.m.
WS2  OBSTRUCTIVE SLEEP APNEA IN THE ELDERLY: A DISCUSSION OF KEY CLINICAL QUESTIONS

Registration Fee: $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

Assembly on Sleep and Respiratory Neurobiology
11:45 a.m. - 1:15 p.m.

Target Audience
Pulmonologists, sleep physicians, fellows, nurses, fellows in training, clinical researchers, everybody involved in sleep units, pediatricians, geriatric physicians and nurses.

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

• understand the preconditioning hypoxia phenomenon and its relationship with intermittent hypoxia;

• distinguish between physiology and pathology related to the number and severity of sleep disorder-breathing in elderly;

• know the effect of CPAP treatment on cardiovascular, quality of life and neurocognitive domains in elderly with OSA compared with the effect in younger people and decide what to do in very old patients (more than 80 years) with clinical suspicion of obstructive sleep apnea, regarding treatment with CPAP.

This workshop has been designed to discuss some important clinical questions that all clinicians who follow elderly patients with obstructive sleep apnoea have. The course is also an opportunity to discuss with some of the most important researchers in the area of sleep apnoea in the elderly, what is the impact of OSA and treatment of CPAP in older patients compared with younger ones, to understand the pathophysiological pathways which govern this impact and decide, from a clinical point of view, the limits of OSA studies and treatment in very old patients.

Chairing:  M. Martinez-Garcia, MD, Valencia, Spain
N.C. Netzer, MD, PhD, Bad Aibling, Germany

11:45  Introduction
M. Martinez-Garcia, MD, Valencia, Spain

11:50  Sleep-Disordered Breathing in the Elderly: Where Is the Limit Between the Physiology and Pathology?
N.C. Netzer, MD, PhD, Bad Aibling, Germany

12:10  Preconditioning by Intermittent Hypoxia in the Elderly: Clinical Implications
M. Morrell, MD, PhD, London, United Kingdom

12:30  From Cardiovascular to Neurocognitive Effects of CPAP in the Elderly
M. Martinez-Garcia, MD, Valencia, Spain

12:50  Is CPAP Forever? How Should We Manage Patients Over 80 Years?
S. Ancoli-Israel, PhD, La Jolla, CA

CC1  PULMONARY CLINICAL CORE CURRICULUM I

Adult Core Curriculum Working Group
11:45 a.m. - 1:15 p.m.

Target Audience
Internists and subspecialists 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:

• remain current with medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;

• evaluate their understanding of key skills and content areas in pulmonary, critical care and sleep medicine, as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
• 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 medical content in the areas of pulmonary, critical care, and sleep medicine. The topics are also aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to assist clinicians with staying current with the growth of information relevant to their medical practice, as well as provide an opportunity to evaluate individual knowledge and skills while earning MOC Medical Knowledge points.

Chairing: G.C. Michaud, MD, New York, NY
C.L. Channick, MD, Boston, MA

11:45 COPD: Pathophysiology/Diagnosis/PFT
J.B. McCannon, MD, Boston, MA

12:05 COPD Management: Pharmacological and Non-Pharmacological
G. Garrison, MD, Burlington, VT

12:45 Rare Lung Diseases: Rare Vascular Abnormalities and Rare Complications of Asthma
P. Akuthota, MD, Boston, MA

U.S. FOOD AND DRUG ADMINISTRATION CENTER FOR DRUG EVALUATION AND RESEARCH

L1 GENERIC DRUG DEVELOPMENT FOR RESPIRATORY PRODUCTS: U.S. FOOD AND DRUG ADMINISTRATION UPDATE

12:15 Introduction
K.A. Witzmann, MD, Silver Spring, MD

12:18 Overview of FDA Generic Inhaled Drug Approval Process
L. Lapteva, MD, MHS, Silver Spring, MD

12:35 Discussion of the Generic Approval Process, Specific to Inhaled Drug Products
K.A. Witzmann, MD, Silver Spring, MD

12:52 Bioequivalence for Complex Inhaled Generic Drug Products: Formulation Similarity, In Citro Studies and Pharmacokinetics (PK)
B. Saluja, PhD, Silver Spring, MD

1:09 Questions and Answers
K.A. Witzmann, MD, Silver Spring, MD

• describe how the Office of Generic Drugs (OGD) evaluates bioequivalence for complex inhaled generic drug products, using a weight-of-evidence approach, and how pharmacodynamic (PD) studies are used to establish equivalent local delivery;

• articulate how device and formulation similarity, in vitro performance studies, and pharmacokinetic (PK) studies are utilized within the weight-of-evidence approach to establish bioequivalence for generic inhaled drug products.

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. History of the generic drug approval process will be explored, distinguishing generic approval from new drug approvals, and identifying key regulations by which approvals are governed. Generic drug program requirements including bioequivalence, pharmaceutical equivalence, and product performance will be discussed, including the role of clinical endpoint studies, recommendations for combination drug products, and drug-device issues specific for metered dose inhaler (MDI) and dry powder inhaler (DPI) products.

Chairing: K.A. Witzmann, MD, Silver Spring, MD

12:15 Introduction
K.A. Witzmann, MD, Silver Spring, MD

12:18 Overview of FDA Generic Inhaled Drug Approval Process
L. Lapteva, MD, MHS, Silver Spring, MD

12:35 Discussion of the Generic Approval Process, Specific to Inhaled Drug Products
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12:52 Bioequivalence for Complex Inhaled Generic Drug Products: Formulation Similarity, In Citro Studies and Pharmacokinetics (PK)
B. Saluja, PhD, Silver Spring, MD

1:09 Questions and Answers
K.A. Witzmann, MD, Silver Spring, MD
L2 INSIGHTS INTO ASTHMA SEVERITY FROM THE INNER-CITY ASTHMA CONSORTIUM

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

**Target Audience**
Clinicians, researchers, health care administrators, public health specialists, asthma educators.

**Objectives**
At the conclusion of this session, the participant will be able to:
- understand how host and environmental factors work in concert to determine asthma severity;
- learn how IgE levels influence viral infection and illness;
- learn how lowering IgE levels restores anti-viral immunity focusing on the dendritic cell.

The Inner City Asthma Consortium (ICAC) has over 20 years experience studying asthma morbidity among inner city children and adolescents. This session will present data from two recently completed ICAC studies demonstrating the complex interaction of host and environmental factors on asthma severity and the impact of IgE level on viral respiratory infections and subsequent exacerbations.

**Chairing:** P.J. Gergen, MD, MPH, Rockville, MD

**12:15 Risk Pathways Determining Asthma Severity**
A. Liu, MD, Denver, CO

**12:35 How Does Omalizumab Affect Viral Respiratory Infections and Illnesses in Asthma?**
J.E. Gern, MD, Madison, WI

**12:55 Understanding the Role of Dendritic Cells in Anti-Viral Immunity**
M. Gill, MD, Dallas, TX

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L3 INDOOR EXPOSURE TO BIOMASS/WOODSMOKE EXPOSURE AND PULMONARY HEALTH

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

**Target Audience**
Basic and clinical researchers, physicians, pulmonologists and community and public health specialists.

**Objectives**
At the conclusion of this session, the participant will be able to:
- understand the levels and potential effects of indoor air pollution on pulmonary health;
- gain knowledge on biochemical and molecular pathways involved in exposure to particulates from biomass combustion;
- understand current efforts on developing potential interventions strategies.

Globally half of the population relies on solid fuels for their everyday energy requirements. The rural households in developing and underdeveloped countries mainly use biomass fuels (wood, dung, crop wastes) that are typically burned in inefficient, poorly ventilated homes (often open fires). Women and infants in these homes have very high exposures to smoke, typically levels that are considered harmful to health by the U.S. Environmental Protection Agency (EPA) and the World Health Organization (WHO). The presentations at this session will highlight our current efforts in addressing these issues from monitoring exposure to developing preventive and intervention measures.

**Chairing:** S.S. Nadadur, PhD, Durham, NC

**12:15 Introduction**
S.S. Nadadur, PhD, Durham, NC
12:20 Use of the MicroPEM to Support Biomass Cookstove Exposure and Health Outcome Studies
J. Thornburg, PhD, Durham, NC

12:37 Household Air Pollution: A Major Preventable Cause of COPD
J.R. Balmes, MD, San Francisco, CA

12:54 Development of Interventions for PM Induced Airway and Systemic Diseases
D. Peden, MD, Chapel Hill, NC

L4 UPDATES ON PATIENT-CENTERED OUTCOME RESEARCH INSTITUTE (PCORI): PCORNET AND EVIDENCE TO ACTION NETWORKS

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

Target Audience
Clinicians (physicians, nurses, fellows, residents), researchers, administrators and policymakers; anyone involved in delivery of care and the science of patient-centered research.

Objectives
At the conclusion of this session, the participant will be able to:
• understand the role of Patient Centered Outcomes Research Institute in funding comparative effectiveness research;
• understand how a patient stakeholder is engaged in PCORI projects;
• learn from PCORI researchers what network activities are ongoing.

A PCORI official will introduce summaries of PCORI funded projects in pulmonary, critical care and sleep disorders and the presenters will expand on this by introducing the unique network activities in asthma, COPD and transition of care. A patient stakeholder/reviewer will also discuss their involvement in PCORI funded projects and their view as a patient grant reviewer. The purpose of the session will be to raise awareness of PCORI activities relevant to patient centered care for patients with pulmonary, critical care, and sleep disorders.

Chairing:  J.V. Selby, MD, MPH, Washington, DC
K. Sumino, MD, MPH, St. Louis, MO

12:15 Patient Centered Outcome Research Institute in Thoracic Disease
J.V. Selby, MD, MPH, Washington, DC

12:25 Lay PCORI Grant Reviewer Perspective
J. Sullivan, MPH, Washington, DC

12:30 Update on COPD Patient-Powered Research Network and PCORnet
R.A. Mularski, MD, MSHS, Portland, OR

12:40 Update in Evidence to Action Network in Asthma
K. Sumino, MD, MPH, St. Louis, MO

12:50 Update on PCORI Evidence to Action Network for Transitions in Care
J.A. Krishnan, MD, PhD, Chicago, IL

1:00 Panel Discussion
J.V. Selby, MD, MPH, Washington, DC

L5 PREMATURITY AND RESPIRATORY OUTCOMES PROGRAM (PROP): RESPIRATORY OUTCOMES AT ONE YEAR

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

Target Audience
Pediatric providers of lung health, basic and clinical researchers interested in neonatal lung diseases, including pediatric, pulmonologists, neonatologists and basic pulmonary biology researchers.

Objectives
At the conclusion of this session, the participant will be able to:
• understand that respiratory outcomes of the premature can persist beyond the NICU period;
• learn and understand how to measure respiratory morbidity of extremely premature infants after the NICU;
• learn that objective measures of respiratory physiology can detect consequences of extremely premature birth.

PROP is a multicenter, observational cohort of extremely low birth weight infants at high risk of bronchopulmonary dysplasia (BPD) and long-term respiratory morbidity. Infants 29 weeks gestation were enrolled and reached a neonatal outcome at 12 months corrected age (n = 765). PROP prospectively collected standardized clinical data to test for associations between neonatal clinical parameters, respiratory physiology at 36 weeks postmenstrual age, and respiratory status at one-year corrected age. This session will focus on presentations of the 12 month corrected age outcomes of the PROP cohort including respiratory symptoms, respiratory medication use, and infant pulmonary function.

Chairing:  L.M. Taussig, MD, Denver, CO
          C.J. Blaisdell, MD, Bethesda, MD

12:15 Post-Prematurity Respiratory Disease
        R. Keller, MD, San Francisco, CA

12:45 Assessing Severity of Post-Prematurity Respiratory Disease
        P.E. Moore, MD, Nashville, TN

1:00 Infant Lung Function Outcomes at 1 Year in ELGANs
        S. Davis, MD, Indianapolis, IN

Target Audience
Providers of lung health, medical fellows in training, and basic researchers on lung biology, developmental biology, pediatrics, and informatics.

Objectives
At the conclusion of this session, the participant will be able to:
• learn the newest datasets of LungMAP;
• understand and learn the innovative technologies for molecular profiling and imaging of the developing lung;
• learn how to access 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 lung with data and reagents available to the research community. The atlas will integrate gene and protein expression profiles, transcriptome, epigenome, and other molecular characterizations with high-resolution anatomical information to provide molecular profiles of functionally or anatomically defined cell types in the developing lung. Participants in this session will learn about the newest data generated by the LungMAP, data analysis tools, and how to access the website, database and other publicly available resources of LungMAP.

Chairing:  R.F. Clark, PhD, Research Triangle Park, NC
          S. Lin, PhD, Bethesda, MD

12:15 BREATH: A Web Accessible Database of Normal Human and Mouse Lung Development
        R.F. Clark, PhD, Research Triangle Park, NC

12:27 Mass Spectrometry-Based Omics and High Throughput Imaging Characterization of Lung Development
        C. Ansong, PhD, Richland, WA

12:39 Reconstructed Regulatory Networks Provide Novel Insights into Mechanisms of Postnatal Mouse Lung Development
        N. Ambalavanan, MD, Birmingham, AL

12:51 LungMAP Postnatal Human Lung Tissue and Dissociated Cell Repository
        G.S. Pryhuber, MD, Rochester, NY
L7 NEW INSIGHTS ABOUT SEVERE ASTHMA FROM THE NHLBI SEVERE ASTHMA RESEARCH PROGRAM

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

Target Audience
Providers of lung health, especially providers who manage patients with asthma; investigators interested in mechanisms of disease in asthma.

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

• learn new findings about clinical and molecular phenotypes of severe asthma;

• review research being supported by NHLBI to improve understanding of severe asthma and accelerate progress toward new treatments;

• improve understanding of how the clinical features of severe asthma varies in children and adults.

In this session on work in progress in the NHLBI-sponsored severe asthma research program, there are four presentations planned to provide the learner with a cutting-edge, data-driven understanding of the clinical features of pediatric and adult severe asthma. Each presentation will cover the context, rationale and recent progress in addressing clinically relevant questions in severe asthma pathobiology, diagnosis and management, including baseline cross-sectional data on recruited healthy and asthmatic subjects, their response to systemic corticosteroids, risk factors for asthma exacerbations as well as advances in imaging for the detection of pathologic mucus and its association with clinical outcome.

Chairing: S.E. Wenzel, MD, Pittsburgh, PA
T. Croxton, MD, PhD, Bethesda, MD

12:15 Age and Gender Impacts
W.G. Teague, MD, Charlottesville, VA

12:30 Phenotypic Characteristics
L.C. Denlinger, MD, PhD, Madison, WI

12:45 Identification of Intraluminal Mucus by CT Imaging
E. Dunican, MD, San Francisco, CA

1:00 Characterization of Steroid Responsiveness
E. Israel, MD, Boston, MA

L8 LESSONS LEARNED FROM THE NHLBI-SPONSORED TUBERCULOSIS SYSTEM BIOLOGY PROGRAM

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

Target Audience
Providers of lung health, medical fellows in training, graduates, post-doctoral fellows and established scientists in basic research on lung biology, tuberculosis pathogenesis, infectious disease, informaticians and systems biology researchers.

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

• understand the potential impact of the implementation of systems biology;

• learn new findings about the pathobiology of tuberculosis in the human lung;

• apply new learned knowledge to their own ongoing research.

Approximately one-third of the world’s population is latently infected with Mtb with a 10% risk of developing pulmonary tuberculosis. It is the second highest cause of death from infectious diseases after HIV/AIDS, and is the biggest killer of people infected with HIV. The primary route of infection with Mtb is through the lung and interactions with the host lung defenses determine the course of the disease. This session will present the overall results from the NHLBI sponsored TB Systems Biology Program that was conceived with the objective
of applying systems biology approaches to better understand the pathobiology of TB. Results from the integration of computational modeling strategies, "omics" technologies, and advances in bioengineering will be presented and how the implementation of such methodologies can help overcome obstacles in understanding complex host-mycobacterial interactions and host immune response networks, and helped to understand the latency and reactivation cycle of TB in the human lung.

Chairing: P.C. Karakousis, MD, Baltimore, MD
E. Caler, PhD, Bethesda, MD

12:15 Novel Approaches to Understanding and Combating Latent TB Infection
P.C. Karakousis, MD, Baltimore, MD

12:30 Systems Biology of Immune Evasion by M. Tuberculosis
W.H. Boom, MD, Cleveland, OH

12:45 Tuberculosis: Learning from In Vivo and In Silico Models
J. Flynn, PhD, Pittsburgh, PA

1:00 Vitamin D Receptor Signaling in Tuberculosis: Multiple Systems
H. Salomon, PhD, Berkeley, CA

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### NATIONAL HEART, LUNG, AND BLOOD INSTITUTE, DIVISION OF LUNG DISEASES, NIH

L9 BEHAVIOR TO BIOMARKERS: RESEARCH FROM THE TOBACCO REGULATORY SCIENCE PROGRAM

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>12:15</td>
<td>The Relationship Between Use of Electronic Cigarettes and Smoking Cigarettes in California Youth</td>
<td>J.M. Samet, MD, MS, Los Angeles, CA</td>
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<tr>
<td>12:27</td>
<td>Improved Models to Inform Tobacco Product Regulation</td>
<td>S. Glantz, PhD, San Francisco, CA</td>
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<tr>
<td>12:39</td>
<td>Disordered Lung Biology Associated with Alternative Tobacco Use</td>
<td>R.G. Crystal, MD, New York, NY</td>
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<tr>
<td>12:51</td>
<td>PGP: A Possible Biomarker for COPD Exacerbations and/or Progression</td>
<td>J.M. Wells, MD, Birmingham, AL</td>
</tr>
<tr>
<td>1:03</td>
<td>Impact of Tobacco Exposure on the Lung’s Innate Defense System</td>
<td>R. Tarran, PhD, Chapel Hill, NC</td>
</tr>
</tbody>
</table>

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Target Audience
Those with clinical or research responsibilities.

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

- learn about biomarkers of tobacco related pulmonary toxicity;
- learn about the effects of tobacco products on lung health.

With the passage of the 2009 Family Smoking Prevention and Tobacco Control Act, the FDA acquired the authority to regulate the manufacture, marketing, and distribution of tobacco products in order to protect human health. Within the framework of this Act, the NIH and FDA formed an interagency partnership to foster tobacco regulatory research administered through the Tobacco Regulatory Science Program (TRSP). Projects supported through TRSP include behavioral, clinical, animal, and in vitro research. This session will focus on TRSP-supported research that touches on tobacco products — including cigarettes, cigars, waterpipe, and e-cigarettes — and their effects on pulmonary health.

Chairing: P. Callahan-Lyon, MD, Silver Spring, MD
L. Postow, PhD, Bethesda, MD

12:15 The Relationship Between Use of Electronic Cigarettes and Smoking Cigarettes in California Youth
J.M. Samet, MD, MS, Los Angeles, CA

12:27 Improved Models to Inform Tobacco Product Regulation
S. Glantz, PhD, San Francisco, CA

12:39 Disordered Lung Biology Associated with Alternative Tobacco Use
R.G. Crystal, MD, New York, NY

12:51 PGP: A Possible Biomarker for COPD Exacerbations and/or Progression
J.M. Wells, MD, Birmingham, AL

1:03 Impact of Tobacco Exposure on the Lung’s Innate Defense System
R. Tarran, PhD, Chapel Hill, NC
Registration Fee: $70.00 (includes box lunch.)
Attendance is limited. Pre-registration is required.

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

**MEET THE PROFESSOR SEMINARS**

**MP401 PROSTAGLANDIN REGULATION OF ASTHMA**
R.S. Peebles, MD, Nashville, TN

**MP402 THE ASTHMA-COPD OVERLAP SYNDROME (ACOS): INSIGHTS INTO A NEW DISEASE PHENOTYPE**
A.A. Zeki, MD, MAS, Sacramento, CA

**MP403 THE FUTURE OF IPF: WHAT WILL IT LOOK LIKE?**
H.R. Collard, MD, San Francisco, CA
L. Richeldi, MD, PhD, Southampton, United Kingdom

**MP404 ALPHA-1 ANTITRYPSIN DEFICIENCY**
C.B. Strange, MD, Charleston, SC

**MP405 LUNG AND PLEURAL INFECTIONS: CONTROVERSIES AND ADVANCES**
G.W. Waterer, MBBS, PhD, MBA, Perth, Australia
Y.C.G. Lee, MBChB, PhD, Perth, Australia

**MP406 RHEUMATOLOGIC DISORDERS FOR THE PULMONOLOGIST**
M. Kreider, MD, Philadelphia, PA

**MP407 CF UPDATE FOR THE NON-CF PROVIDER**
G. Allada, MD, Portland, OR

**MP408 SHOULD MY PATIENT WITH INTERSTITIAL LUNG DISEASE GET A SURGICAL LUNG BIOPSY?**
R. Raj, MD, Chicago, IL

**MP409 NEUROLOGIC DISASTERS IN THE ICU**
T.P. Bleck, MD, Chicago, IL

**MP410 PUBLIC HEALTH CO-BENEFITS FROM CLIMATE CHANGE ACTION**
G.D. Thurston, DSc, Tuxedo, NY

**MP412 INTERPRETATION STRATEGIES FOR PEDIATRIC SPIROMETRY**
W.D. Hardie, MD, Cincinnati, OH

**MP413 LUNG TRANSPLANTATION FOR PAH: WHEN SHOULD YOU REFER YOUR PATIENT?**
R.E. Girgis, MD, Grand Rapids, MI

**MP414 FIRESTARTER: UNDERSTANDING HOW HOUSEHOLD AIR POLLUTION CAUSES LUNG DISEASES**
T.H. Thatcher, PhD, Rochester, NY

**MP415 VENTILATOR WAVEFORMS: UNDERSTANDING WHAT THE VENTILATOR IS TELLING YOU**
H.L. Manning, MD, Lebanon, NH

**MP416 CHOMPING AT THE BIT: ORAL APPLIANCES FOR OSA**
R.J. Schwab, MD, Philadelphia, PA
J. Parker, DDS, Edina, MN
F. Almeida, DDS, MSc, PhD, Vancouver, Canada
J. Metz, DDS, Columbus, OH

**MP417 INTO THE THIRD DIMENSION: HOW 3D CULTURES PROVIDE INSIGHTS IN CANCER BIOLOGY**
V.C. Broaddus, MD, San Francisco, CA
ME1  HOW TO IMPROVE YOUR BEDSIDE TEACHING

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

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

Target Audience
This session is aimed at faculty members and trainees who perform clinical teaching at the patient’s bedside.

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

• describe the advantages and disadvantages of bedside teaching in various formats;
• identify and address barriers to successful bedside teaching;
• implement specific strategies and techniques to round effectively at the bedside.

Bedside rounding has decreased from 75% of medicine attending rounds in the 1960’s to less than 15% currently. The data show patients, learners, and attendings prefer it to conference room attending but concerns for lost efficiency and patient discomfort create barriers to doing so. The MiPLAN approach to effective bedside teaching is based on adult learning theory and structured interviews with master clinicians. Participants will review the primary literature on bedside rounding from the patient, learner, and attending perspectives. Videos will help attendees deconstruct the MiPLAN approach and adopt it to their own attending practice going forward.

Speakers: J.M. Beck, MD, Denver, CO
          M. Anderson, MD, Denver, CO

TSS1  CONTEMPORARY CONTROVERSYSIES IN THE DIAGNOSIS AND MANAGEMENT OF IDIOPATHIC PULMONARY FIBROSIS: A PRO/CON DEBATE

Registration Fee: $140.00 for full series (includes box lunch)
Attendance is limited. Pre-registration is required.

This is a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The topics and schedule for each part are listed below.

TARGET AUDIENCE
This session is aimed at faculty members and trainees who perform clinical teaching at the patient’s bedside.

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

• describe the advantages and disadvantages of bedside teaching in various formats;
• identify and address barriers to successful bedside teaching;
• implement specific strategies and techniques to round effectively at the bedside.

Bedside rounding has decreased from 75% of medicine attending rounds in the 1960’s to less than 15% currently. The data show patients, learners, and attendings prefer it to conference room attending but concerns for lost efficiency and patient discomfort create barriers to doing so. The MiPLAN approach to effective bedside teaching is based on adult learning theory and structured interviews with master clinicians. Participants will review the primary literature on bedside rounding from the patient, learner, and attending perspectives. Videos will help attendees deconstruct the MiPLAN approach and adopt it to their own attending practice going forward.

Speakers: J.M. Beck, MD, Denver, CO
          M. Anderson, MD, Denver, CO

PRO: Transbronchial Cryobiopsies Should Replace Surgical Lung Biopsy in the Diagnosis of IPF
V. Poletti, MD, Forli, Italy

CON: Transbronchial Cryobiopsies Should Replace Surgical Lung Biopsy in the Diagnosis of IPF
F.J. Martinez, MD, New York, NY

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

PRO: Bronchoalveolar Lavage Should Routinely be Performed in the Diagnostic Work-Up of IPF
A.U. Wells, MD, London, United Kingdom

CON: Bronchoalveolar Lavage Should Routinely be Performed in the Diagnostic Work-Up of IPF
H.R. Collard, MD, San Francisco, CA

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

PRO: Decline of 10% or Greater in FVC Should be Regarded as Treatment Failure in IPF
V. Cottin, MD, PhD, Lyon, France

CON: Decline of 10% or Greater in FVC Should be Regarded as Treatment Failure in IPF
P.W. Noble, MD, Los Angeles, CA
THEMATIC SEMINAR SERIES

TSS2  REDUCING HOSPITAL READMISSIONS

Registration Fee: $140.00 for full series (includes box lunch)

Attendance is limited. Pre-registration is required.

This is a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The topics and schedule for each part are listed below.

Assembly on Clinical Problems
Sunday 12:15 p.m. - 1:15 p.m.

Patients at High Risk of Hospital Readmissions

Impact of Hospital Readmissions
B.J. Make, MD, Denver, CO

Targeting Populations at High Risk for Readmission
D.H. Au, MD, MS, Seattle, WA

Why Are Patients with Pneumonia Readmitted?
S. Sethi, MD, Buffalo, NY

Why Are Patients with COPD Readmitted?
Speaker To Be Announced

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

Approaches to Reduce Hospital Readmissions

Effective Components of a Readmission Reduction Program
S.S. Braman, MD, New York, NY

Novel Interventions to Reduce Readmissions
V.G. Press, MD, MPH, Chicago, IL

Partnering with Patient Navigators and Peer Advocates
J.A. Krishnan, MD, PhD, Chicago, IL

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

PRO: Medications Are the Key to Reducing Readmissions in COPD
G.T. Ferguson, MD, Livonia, MI

CON: Medications Are the Key to Reducing Readmissions in COPD
R.A. Wise, MD, Baltimore, MD

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.

A81  PEDIATRIC YEAR IN REVIEW

Assemblies on Pediatrics; Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Sleep and Respiratory Neurobiology

Target Audience
Pediatric pulmonologists, pediatric intensivists, neonatologists, registered nurses, advanced practice nurses, respiratory therapists, clinical and translational researchers and other providers of health care to children with lung diseases.

Objectives
At the conclusion of this session, the participant will be able to:
• learn new findings from current literature related to pediatric cardiopulmonary conditions;

• apply recent advances and evidence-based care practices to pediatric cardiopulmonary care;

• have new strategies to manage the care of patients with pediatric cardiopulmonary conditions.

Important advances in the diagnosis and treatment of respiratory disorders in children occur every year. The range of new discoveries makes it difficult for the clinician and researcher to stay current. However, health care providers who deal with children must be informed of the most recent advances and evidence-based care practices. Pediatric Year in Review will present a scholarly discussion of several of the most important and influential papers in key clinical topic areas published within the past two years. Experts in their respective fields will discuss the selected papers and allow time for discussion.

Chairing: M. Rosenfeld, MD, MPH, Seattle, WA  
A.C. Koumbourlis, MD, MPH, Washington, DC

2:15 Sleep  
E.S. Katz, MD, Boston, MA

2:45 Bronchiectasis in Children  
A. Chang, MBBS, PhD, Brisbane, Australia

3:15 Pediatric Pulmonary Genetics and Genomics  
L.M. Nogee, MD, Baltimore, MD

3:45 Sickle Cell Disease  
A. Greenough, MD, London, United Kingdom

There will be a 5-minute discussion after each talk.

CLINICAL SCIENTIFIC SYMPOSIUM

A82 TREATMENT OF EARLY STAGE AND SCREEN-DETECTED LUNG CANCER: A PRO/CON DEBATE

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

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

Target Audience  
Clinicians who care for patients with lung cancer; researchers and policy makers interested in thoracic oncology; patients and family members of patients with lung cancer.

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

• determine when to refer patients for limited resection versus lobectomy for stage I NSCLCa;

• learn new findings about the role of SBRT for treatment of early stage NSCLCa;

• improve discussions around appropriateness of therapy for non-solid lung cancers.

Early stage lung cancer accounts for ~15% of cases. However, a considerable increase in the number of cases is expected based on the new USPSTF guidelines for CT screening. The optimal treatment of patients with stage I non-small cell lung cancer, and screen-detected malignancies in particular, is unclear. Using a pro-con debate approach, this session will address key questions such as: what are the indications for limited resection for lung cancer ≤ 2 cm in size, cancer ≤ 2 cm in size, what is the role of SBRT for clinically and screen detected cancers, and what is the best management of subsolid cancers identified via screening.

Chairing:  
J.P. Wisnivesky, MD, New York, NY  
G. Veronesi, MD, Milan, Italy  
R.S. Wiener, MD, MPH, Boston, MA

2:15 PRO: Limited Resection Should Be the Standard of Care for Stage I Non-Small Cell Lung Cancer ≤ 2 cm in Size  
F.C. Detterbeck, MD, New Haven, CT

2:35 CON: Limited Resection Should Be the Standard of Care for Stage I Non-Small Cell Lung Cancer ≤ 2 cm in Size  
A.A. Balekian, MD, MS, Los Angeles, CA

2:55 PRO: SBRT Should Be the Standard of Care for Early Stage NSCLCa Patients at High Risk for Resection  
P. Mazzone, MD, MPH, Cleveland, OH
3:15 CON: SBRT Should Be the Standard of Care for Early Stage NSCLCa Patients at High Risk for Resection
C.G. Slatore, MD, Portland, OR

3:35 PRO: Subsolid Screen-Detected Lung Cancers Should Not Be Treated
G.A. Silvestri, MD, MS, Charleston, SC

3:55 CON: Subsolid Screen-Detected Lung Cancers Should Not Be Treated
G. Veronesi, MD, Milan, Italy

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

Council of Chapter Representatives

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

Target Audience
Clinicians in the fields of pulmonary and critical care medicine, pediatric pulmonology, 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 for 7 challenging cases;

• understand the clinical reasoning used to determine differential diagnosis by master clinicians using a multidisciplinary approach;

• describe the associated pathology and radiology of the cases.

Learners will have the opportunity to observe master clinicians approach challenging clinical problems by working through 7 unknown cases selected from the abstract pool. Collaboration with a master radiologist reviewing the films and a master pathologist reviewing pathology slides will demonstrate the multidisciplinary approach to difficult cases. The audience will participate through interactive questions that are tallied electronically. Additional discussion by presenters and master panelists will enhance the educational experience.

Chairing: S. Kirtland, MD, Seattle, WA
R. Gross, MD, Washington, DC

2:15 Master Clinicians
S.I.S. Rounds, MD, Providence, RI
M.I. Schwarz, MD, Aurora, CO
P.C. Stillwell, MD, Aurora, CO

2:55 Master Radiologist
J.D. Newell, MD, Iowa City, IA

3:25 Master Clinician
P.C. Stillwell, MD, Aurora, CO

3:45 Master Pathologist
Speaker To Be Announced

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A84 THE NEW ENGLAND JOURNAL OF MEDICINE AND JAMA. DISCUSSION ON THE EDGE: REPORTS OF RECENT 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
A85 MOVING TOWARD PRECISION MEDICINE FOR LUNG DISEASE

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
Basic scientists, clinician scientists, research and clinical trainees, providers of lung health care, and individuals in areas of health policy and health delivery.

Objectives
At the conclusion of this session, the participant will be able to:
• understand and describe how work that has led to understanding biological processes is being used to underpin its application to medicine, as well as practical, ethical and policy issues;
• identify ongoing research in pulmonary medicine that is identifying opportunities and approaches for precision medicine;
• describe technologies and their use to generate data and understanding to enable precision medicine delivery for lung disease.

Progress in biomedical research has revealed that health and disease result from combinatorial interacting responses, determined by genetics and posttranslational control, to complex factors. This session will address how composite knowledge and capacity in biology and medicine is now seated for the delivery of “precision medicine”, and provides some current examples in pulmonary medicine of emerging and ongoing effort in this area. Talks that cover broad lung disease areas are presented, emphasizing how networks, bioinformatics, high throughput and stem cell technologies are being harnessed. The session also features discussion about emerging policies for the delivery of precision medicine care.

Chairing: M. McDonald, PhD, Boston, MA
D.J. Weiss, MD, PhD, Burlington, VT

2:15 Cystic Fibrosis Genetics: From Molecular Understanding to Clinical Application
G.R. Cutting, MD, Baltimore, MD

2:39 Induced Pluripotent Stem Cells: The Ultimate in Personalized Stem Cells for Lung Diseases
Speaker To Be Announced

3:03 Precision Medicine in Lung Cancer: Translating the Transcriptome for Early Detection and Prevention
A. Spira, MD, Boston, MA

3:27 Pharmacogenetic Discoveries and the Future of Personalized Medicine in Asthma
E. Bleecker, MD, Winston-Salem, NC

3:51 The Path to Personalized Medicine in COPD
A. Agusti, MD, Barcelona, Spain

There will be a 5-minute discussion after each talk.

A86 BRINGING ORDER TO THE CHAOS OF ACOS (ASTHMA-COPD OVERLAP SYNDROME)

Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Nursing; Respiratory Cell and Molecular Biology; Respiratory Structure and Function
2:15 p.m. - 4:15 p.m.

Target Audience
Physicians, basic scientists, physiologists, physician-scientists, clinical fellows and residents, graduate and postdoctoral research trainees, and nurses interested in asthma, COPD, and ACOS. This topic also has broader appeal for epidemiologists, nurses, and respiratory therapists, given the significant clinical and public health impact of this new syndrome/disease phenotype.
Objectives
At the conclusion of this session, the participant will be able to:

- understand the molecular, pathophysiological, and clinical features of ACOS and use these criteria to distinguish ACOS from asthma or COPD;

- offer timely and appropriate diagnosis and treatment by recognizing ACOS patients, their higher disease severity, and risk profile, while closely monitoring patient outcomes;

- discuss and appreciate the significant heterogeneity and overlap between asthma and COPD where ACOS serves as an emerging and important clinical phenotype linking both diseases.

Some patients manifest an intermediate or overlapping phenotype of asthma and COPD, i.e. the “asthma-COPD overlap syndrome” (ACOS). Yet, ACOS has largely been ignored in clinical trials. ACOS comprises 15 to 55% of patients with obstructive lung diseases, and manifests more symptoms, greater lung function decline, increased risk of severe exacerbations, and possibly a reduced life span. Such observations have spawned a recent and broad international interest in ACOS. This session presents a comprehensive overview of ACOS in relation to the controversial British and Dutch Hypotheses, and offers novel insights regarding the genetic origins, pathogenesis, diagnosis, and treatment of ACOS.

Chairing: A.A. Zeki, MD, MAS, Sacramento, CA
K. Chung, MD, PhD, London, United Kingdom
M.J. Holtzman, MD, St. Louis, MO

2:15 How to Clinically Distinguish ACOS from Asthma and COPD
P.G. Gibson, MBBS, Newcastle, Australia

2:35 Shared Immunity in Asthma and COPD
M.J. Holtzman, MD, St. Louis, MO

2:55 Genetic Origins of ACOS
M.E. Hardin, MD, Boston, MA

3:15 Genomic and Molecular Phenotyping to Distinguish ACOS from Asthma and COPD
P.G. Woodruff, MD, MPH, San Francisco, CA

3:35 Smoking in Asthma: An ACOS Phenotype?
K. Chung, MD, PhD, London, United Kingdom

3:55 Treatment of ACOS: Lessons From Clinical Studies in Asthma and COPD
S.I. Rennard, MD, Melbourne, United Kingdom
Electronic cigarettes (e-cigs) use flavored/non-flavored e-liquids/e-fluids, which contain propylene glycol/glycerol (humectants), nicotine, and flavors (e.g. candy flavors including sweeteners). These devices generate aerosol containing reactive oxygen species, aldehydes, ultrafine/nanoparticles, and heavy metal particles. E-cig products are launched without FDA approval, and an increasing number of products are being launched every day without knowing the harmful consequences. This symposium is aimed towards understanding the pulmonary studies on e-cig exposure including biomarkers, inhalation and basic preclinical/translational science, and host-innate response, as well as clinical epidemiological studies for prediction of pulmonary health effects of e-cigarette vaping and flavoring agents.

Chairing: I. Rahman, PhD, Rochester, NY
I. Jaspers, PhD, Chapel Hill, NC
S. Biswal, PhD, Baltimore, MD
B. Tomoko, MD, Tokyo, Japan

2:15 What’s in E-cigarettes and Are They Safe?: Pulmonary Biomarkers and Harmful Pulmonary Pathological Consequences
N. Benowitz, MD, San Francisco, CA

2:35 What’s Inhaled by Vaping? Dosimetry, Deposition, Distribution, and Topography: Pulmonary Physiological and Clinical Effects
R. Robinson, PhD, Rochester, NY

2:55 Basic and Translational Science of E-Cigarette with Flavoring Agents: In Vitro and In Vivo Pulmonary Effects
I. Rahman, PhD, Rochester, NY

3:15 Mucosal Immune Responses to E-Cigarette Exposures: Preclinical and Clinical Models
I. Jaspers, PhD, Chapel Hill, NC

3:35 Electronic Cigarette Use and Harm Reversal in Clinic: Users’ Perspectives
R. Polosa, MD, PhD, Catania, Italy

3:55 E-Cigarettes and Public Health: Pulmonary Clinical Data on Behavioral, Perception, Addiction Vs. Cessation Tools of E-Cigarettes and Flavorings
J.M. Samet, MD, MS, Los Angeles, CA
A89 FROM BEAUTY TO BREAKING BAD: UNCOVERING THE WORLD OF DRUG INDUCED PULMONARY HYPERTENSION

Assembly on Pulmonary Circulation

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

Target Audience
Pulmonary and critical care physicians, nurse practitioners, social workers, researchers in pulmonary vascular biology, addiction specialists and trainees who care for patients with pulmonary hypertension.

Objectives
At the conclusion of this session, the participant will be able to:
• diagnose drug related pulmonary vascular toxicity;
• learn new findings about the mechanism and pathobiology of drug induced pulmonary hypertension;
• relate recent clinical and basic findings to future scientific environment and patient exposures.

Timed to the 50th anniversary of the European Aminorex epidemic, the goal of this symposium is to highlight the impact of therapeutics and illicit drugs in causing pulmonary vascular disease and bring awareness to a disease sub-phenotype which is often less focused on. This session will start with a broad historical perspective on known and recently discovered drug induced PH entities, move quickly to pathobiology and mechanisms underlying the clinical disorder, and identify novel phenotypes associated with prescribed and illicit drugs. The session will then advance onto the discussion of aberrancies in drug metabolism and the unique role of the pulmonary vasculature in this process. The session will conclude with a perspective from regulatory agencies (US-FDA) on post-approval drug safety monitoring and the concept of pharmacovigilance.

Chairing:  M.J.C. Humbert, MD, PhD, Le Kremlin Bicetre, France
           I. Lang, MD, Vienna, Austria
           N. Voelkel, MD, Richmond, VA

2:15 A Patient’s Perspective
Speaker To Be Announced

2:20 Fifty Years of Anorexigen-Induced PAH: From Aminorex to Benfluorex
M.J.C. Humbert, MD, PhD, Le Kremlin Bicetre, France

2:40 Drug Induced Pulmonary Veno-Occlusive Disease
D. Montani, MD, PhD, Le Kremlin Bicetre, France

3:00 Pulmonary Hypertension as a Complication of Chronic Amphetamine Abuse
R.T. Zamanian, MD, Stanford, CA

3:20 Impact of Aberrant Drug Metabolism in Drug Induced PH: Lessons Learned from CES1
V. De Jesus Perez, MD, Stanford, CA

3:35 From Mechanism to Disease: A Perspective on Drug Induced PH
N. Voelkel, MD, Richmond, VA
3:55 Pharmacovigilence and Drug Safety in the Current Therapeutic Environment
N. Stockbridge, MD, PhD, Silver Spring, MD

There will be a 5-minute discussion after each talk.

BASIC • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

A90 ABNORMAL METABOLISM: EMERGING CONCEPTS IN UNDERSTANDING LUNG DISEASE
Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Pulmonary Circulation; Thoracic Oncology

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

Target Audience
Basic and clinician scientists, clinicians, public health officials, student and postdoctoral trainees with an interest in the biology of metabolism and its role in respiratory disease.

Objectives
At the conclusion of this session, the participant will be able to:
• improve the health of patients by identifying new biomarkers for disease using metabolomics approaches;
• identify metabolic modifiers in lung disease;
• understand how metabolic processes can contribute to lung disease.

This session will provide information about the impact of metabolic processes in the development and progression of lung diseases. Topics will include many pulmonary diseases, including fibrosis, hypertension, cancer, and COPD, but will all include the underlying theme of the role of altered metabolism. The goal of this session is to fill a knowledge gap in our understanding of the role that metabolic pathways and metabolites play in lung disease.

Chairing:
P.J. Sime, MD, Rochester, NY
S. Archer, MD, Kingston, Canada
J.L. Judge, MS, Rochester, NY
G. Liu, MD, PhD, Birmingham, AL

2:15 Metabolic Reprogramming and Hypoxia in Pulmonary Arterial Hypertension
K.R. Stenmark, MD, Aurora, CO

2:35 The Role of Metabolic Dysregulation in the Development of Pulmonary Fibrosis
R.M. Kottmann, MD, Rochester, NY

2:55 Metabolic Proteins as Drug Targets for Lung Cancer
I. Stratford, PhD, Manchester, United Kingdom

3:15 Metabolic Reprogramming in Aging and Lung Fibrosis
V.J. Thannickal, MD, Birmingham, AL

3:35 Beyond ATP: Mitochondria as Signaling Organelles
N. Chandel, PhD, Chicago, IL

3:55 Using Metabolomics Approaches to Identify Biomarkers in Development of Lung Diseases
C.H. Wendt, MD, Minneapolis, MN

BEHAVIORAL • CLINICAL • TRANSLATIONAL SCIENTIFIC SYMPOSIUM

A91 HOT TOPICS IN DISPARITIES IN PULMONARY, CRITICAL CARE AND SLEEP MEDICINE
Assemblies on Allergy, Immunology and Inflammation; Behavioral Science and Health Services Research; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Pediatrics; Pulmonary Circulation; Pulmonary Rehabilitation; 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
Clinicians, researchers and public health practitioners in
the fields of pediatric and adult pulmonary, critical care and sleep medicine.

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

• learn new findings about the impact of major barriers to the care of minority patients with pulmonary, critical care and sleep disorders;

• apply new strategies to care for minority patients, and advocate for health equality;

• discuss feasible and necessary policies to achieve respiratory health equality.

Health disparities are commonly encountered in pediatric and adult pulmonary, critical care and sleep medicine. Attainment of respiratory health equality requires the ending of respiratory health disparities, which can be achieved only through multidisciplinary efforts. In this symposium, we will first review and discuss state-of-the-art approaches to overcoming major barriers to health equality, namely non-adherence, lack of access to personalized medicine, healthcare for migrant populations, and inadequate communication with minorities who are critically ill. Finally, a clinical case study of obstructive sleep apnea will be used to review and highlight key points discussed in the other lectures.

Chairing:  J.C. Celedon, MD, DrPH, Pittsburgh, PA
           M.S. Badr, MD, Detroit, MI
           E.R. Neptune, MD, Baltimore, MD

2:15  Introduction and Overview
     J.C. Celedon, MD, DrPH, Pittsburgh, PA

2:20  A Patient’s Perspective
     Speaker To Be Announced

2:25  Improving Illness Self-Management in Minority Patients
     K. Riekert, PhD, Baltimore, MD

2:46  Personalized Medicine: What About Minorities and the Poor?
     E.G. Burchard, MD, MPH, San Francisco, CA

3:07  Migrant Health
     M.B. Schenker, MD, MPH, Davis, CA

3:28  Systems Approaches to Addressing Disparities in Critical Care
     C.R. Cooke, MD, MSc, Ann Arbor, MI

3:49  Obstructive Sleep Apnea: A Clinical Case Study in Health Disparities
     S.S. Redline, MD, MPH, Boston, MA

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.
4:30 p.m. - 6:30 p.m.

2016 RESPIRATORY HEALTH AWARDS
GIVEN BY THE AMERICAN THORACIC SOCIETY

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: Marlene Rabinovitch, MD, Stanford, CA

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: Joe G.N. Garcia, MD, Tucson, AZ

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: Claire M. Doerschuk, MD, Chapel Hill, NC
J. Usha Raj, MD, Chicago, IL

World Lung Health Award
The World Lung Health Award is given to an individual with recognized contributions to improving world lung health in the area of translational or implementation research, delivery of healthcare, continuing education or care of patients with lung disease, or related political advocacy with a special emphasis on efforts that have the potential to eliminate gender, racial, ethnic, or economic health disparities worldwide.

Awardee: Charles L. Daley, MD, Denver, CO

Outstanding Educator Award
The Outstanding Educator Award recognizes lifetime contributions in education and mentoring in the fields of pulmonary, critical care or sleep medicine. This award honors excellence in clinical or research education as it relates to pulmonary disease.

Awardee: Robert Kotloff, MD, Cleveland, OH

Jo Rae Wright Award for Outstanding Science
The Jo Rae Wright Award for Outstanding Science is based on demonstrated potential for significant scientific achievement and contributions. This award is aimed at the rising generation of individuals who will be tomorrow's leaders in science.

Awardee: Megan N. Ballinger, PhD, Columbus, OH

Public Service Award
The Public Service Award is presented to an individual with recognized contributions in public health related to improvement of indoor and outdoor air quality, eradication of tobacco usage, prevention of lung disease, improved management of communicable respiratory diseases, or improvement in the ethical delivery, and access to healthcare in areas related to lung diseases, sleep disorders, or critical care. There is a special emphasis on efforts that have the potential to eliminate gender, racial, ethnic or economic disparities.

Awardee: John R. Balmes, MD, San Francisco, CA

Outstanding Clinician Award
The Outstanding Clinician Award is presented to an individual who embodies excellence in the clinical practice of lung health medicine. The awardee has spent a substantial part of his/her career in the clinical care of patients with lung disease, and has made substantial contributions to the American Thoracic Society and American Lung Association on a local or national level.

Awardee: Awardee To Be Announced

The Recognition Awards for Scientific Accomplishments will be presented on Monday, May 16th at 2:15 p.m.
6:30 p.m. - 8:30 p.m.

**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 Assembly Membership Meetings will be held on Monday, May 16, 5:00 p.m. - 7:00 p.m., with the exception of the Assemblies on Behavioral Science and Health Services Research and Pediatrics (see below.)

**BEHAVIORAL SCIENCE AND HEALTH SERVICES RESEARCH**

*Chairing:* K.A. Riekert, PhD, Baltimore, MD

**PEDIATRICS**

*Chairing:* J.F. Chmiel, MD, MPH, Cleveland, OH

6:30 p.m. - 8:30 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.

**GENETICS AND GENOMICS**

*Chairing:* M.M. Wurfel, MD, Seattle, WA
C.P. Hersh, MD, MPH, Boston, MA

**TERRORISM AND INHALATION DISASTERS**

*Chairing:* E. Summerhill, MD, Pawtucket, RI
S. Matalon, PhD, Birmingham, AL
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:
• remain current with medical knowledge relevant to their practice in pediatric pulmonology;
• evaluate their understanding of key skills and content areas in pediatric pulmonology as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison
• support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements

The Pediatric Core Curriculum symposia promotes lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatricians. The symposia will address topics that have been identified by an ATS pediatric working group, which is comprised of members of the ATS Education Committee and the International Conference Committee, who have identified important areas within pediatric medicine (including vasculitic pulmonary diseases, lung defense mechanism, congenital abnormalities of the airways, and respiratory failure). Attendees will increase their medical knowledge as a result of attending this symposium, and this will be measured by a comparison of pre-test vs. post-test results on the corresponding maintenance of certification module. The ATS Pediatric Core Curriculum will focus on a 3-year content cycle of key medical content in the area of pediatric medicine.

Chairing: D.M. Boyer, MD, Boston, MA
P.E. Moore, MD, Nashville, TN

6:45 Lung Defense Mechanisms
R. Wang, MD, Boston, MA

7:15 Lung Growth and Development
J. Wambach, MD, St. Louis, MO

SUNRISE SEMINARS

Registration Fee: $65.00 (includes continental breakfast.)
Attendance is limited. Pre-registration is required.

6:45 a.m. - 7:45 a.m.

SS101 LUNG TRANSPLANTATION IMMUNOLOGY MADE EASY: SIMPLE RATIONALES FOR SOPHISTICATED DRUGS
J.R. Greenland, MD, PhD, San Francisco, CA

SS102 EFFECTIVE UTILIZATION AND INTEGRATION OF PALLIATIVE CARE IN PULMONARY AND CRITICAL CARE MEDICINE
D.R. Sullivan, MD, MA, Portland, OR

SS103 AN UPDATE IN SCLERODERMA LUNG DISEASE
F. Castelino, MD, Boston, MA

SS104 ASTHMA/COPD OVERLAP SYNDROME
M.E. Hardin, MD, Boston, MA
D.J. Maselli, MD, San Antonio, TX
SS105 IDENTIFICATION, DIAGNOSIS AND MANAGEMENT OF IMMUNODEFICIENCY IN LUNG DISEASE
K.A. Provost, DO, PhD, Buffalo, NY

SS106 PRACTICAL APPLICATION OF LUNG CANCER SCREENING USING LOW INTENSITY CT SCANS
A. Malave, MD, San Antonio, TX

SS107 MANAGEMENT OF MALIGNANT PLEURAL EFFUSION
A.H. Sardi, MD, Columbus, OH

SS108 RHEUMATOID ARTHRITIS-ASSOCIATED ILD: CURRENT KNOWLEDGE AND FUTURE DIRECTIONS
T.J. Doyle, MD, MPH, Boston, MA

SS109 BRONCHIOLITIS OBLITERANS SYNDROME AFTER HEMATOPOIETIC CELL TRANSPLANTATION: DIAGNOSIS AND MANAGEMENT
G. Cheng, MD, Seattle, WA

SS110 THORACOSCOPY: AN EVIDENCE BASED REVIEW OF RIGID AND FLEXIBLE TECHNIQUES
N.M. Rahman, MSc, PhD, Oxford, United Kingdom
F. Maldonado, MD, Nashville, TN

SS111 SHARED MEDICAL APPOINTMENTS: WHAT THEY CAN DO FOR YOUR PRACTICE AND FOR YOUR PATIENTS
F.F. Rahaghi, MD, Weston, FL

SS112 CREATING A BIOCONTAINMENT UNIT: LESSONS LEARNED FROM THE JOHNS HOPKINS HOSPITAL
B.T. Garibaldi, MD, Baltimore, MD

SS113 E-CIGARETTES: EPIDEMIOLOGY AND TOXICITY
F. Moazed, MD, San Francisco, CA

SS114 IMMUNODIAGNOSTICS IN LATENT TB INFECTION
P. Escalante, MD, Rochester, MN

SS115 IMPLICATIONS OF COGNITIVE IMPAIRMENT IN CHRONIC LUNG AND SLEEP DISEASE
M. Bors, MA, RN, Minneapolis, MN
R. Tomic, MD, Minneapolis, MN

SS116 DOWN SYNDROME RESPIRATORY COMPLICATIONS
D.I. Craven, MD, Cleveland, OH

SS117 TREATMENT DILEMMAS IN PULMONARY HYPERTENSION
K.A. Smith, MD, Philadelphia, PA

SS118 MATRIX BASICS: UNDERSTANDING COLLAGEN PROCESSING AND SECRETION
C.A. Staab-Weijnitz, PhD, Munich, Germany

SS119 (S)HE SAYS I SNORE: USING BED PARTNERS TO OPTIMIZE CPAP ADHERENCE
L. Ye, PhD, BSN, Boston, MA

FACULTY DEVELOPMENT SEMINAR

FD1 HOW TO SUCCESSFULLY COMPETE FOR AN ACADEMIC JOB: WHAT DIVISION DIRECTORS WANT AND DO NOT WANT IN CANDIDATES

Pre-registration is required. There is no additional fee. Attendance is limited.

6:45 a.m. - 7:45 a.m.

Target Audience
Early career clinical and/or research faculty, clinical and post doctoral fellows, graduate students, residents, nurses, and allied health professionals already involved in or seeking a career in academic pulmonary, allergy, critical care, and/or sleep medicine.

Objectives
At the conclusion of this session, the participant will be able to:
• identify components necessary for success in their career path;
• understand key steps needed to build a competitive portfolio;
• strategies to improve their chances in obtaining a faculty appointment.

This seminar will identify and review critical steps in finding a successful placement in an academic career.
with topics broadly applicable to fellows, post-docs and junior faculty regardless of specialty or career track. This seminar will provide guidance for fellows and post-docs who are looking for their first jobs as well as for junior faculty who are looking to relocate to new positions.

**Chairing:**  D.W. Ford, MD, MSCR, Charleston, SC

**Speakers:** I. Petrache, MD, Denver, CO  
L.M. Schnapp, MD, Charleston, SC  
J. Roman, MD, Louisville, KY  
G. Loughlin, MD, New York, NY
The Presidential Keynote Series provides state of the art lectures on selected topics in an unopposed format to showcase major discoveries in pulmonary, critical care and sleep medicine. The speakers have been chosen by input from the members and various ATS committees with consensus built via the ATS executive committee.

Two sessions are presented each morning during the conference. Below are the breakthroughs for the Monday, May 16th series.

**K3** TRANSFORMING LUNG CANCER DETECTION AND PREVENTION THROUGH GENOMICS

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

**Speaker:** Avrum Spira, MD, Boston, MA

This session will be chaired by David Gozal, MD, Chicago, IL

**K4** PULMONARY HYPERTENSION: EVOLUTION OF PAH AND CTEPH

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

**Speaker:** Nick H. Kim, MD, La Jolla, CA

This session will be chaired by Jess Mandel, MD, La Jolla, CA
B1  CLINICAL YEAR IN REVIEW 2
9:00 a.m. - 11:00 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;
• gain new strategies to manage the care of common conditions in pulmonary, critical care, and sleep.

The annual Clinical Year in Review symposia topic reviews of the key clinical research publications over the last year. Each speaker is asked to review the 5-7 most important and influential publications on their topic in the prior year.

Chairing:  J.L. Taylor-Cousar, MD, Denver, CO  
D.J. Lederer, MD, MS, New York, NY  
D.W. Ford, MD, MSCR, Charleston, SC

9:00  ARDS
C.S. Calfee, MD, San Francisco, CA

9:30  Non-Invasive and Mechanical Ventilation
B. Fauroux, MD, PhD, Paris, France

10:00  General Critical Care
E.L. Burnham, MD, Aurora, CO

10:30  Sepsis
D. Scales, MD, PhD, Toronto, Canada

B2  HOT TOPICS IN COPD: A PRO/CON DEBATE
9:00 a.m. - 11:00 a.m.

Target Audience
Providers of lung health including those with clinical and research responsibilities.

Objectives
At the conclusion of this session, the participant will be able to:
• appropriately use dual bronchodilator therapy in practice;
• target case finding approaches to COPD;
• appropriately use new imaging methodologies in COPD.

COPD is a rapidly evolving field with new research and treatments that are leading us to rethink our approach to the COPD patient. This session highlights important current controversies in COPD diagnosis and management in a pro con debate format.

Chairing:  R.A. Wise, MD, Baltimore, MD  
C. Jenkins, MD, MBBS, Concord, Australia  
R.A. Stockley, MD, DSc, Birmingham, United Kingdom

9:00  PRO: GOLD 0 Should Be Brought Back
P.G. Woodruff, MD, MPH, San Francisco, CA

9:12  CON: GOLD 0 Should Not Be Brought Back
R. Rodriguez-Roisin, MD, PhD, Barcelona, Spain

9:24  PRO: Screening for COPD Improves Outcomes
F.J. Martinez, MD, New York, NY

9:36  CON: Screening for COPD Does Not Improve Outcomes
D.M. Mannino, MD, Lexington, KY
9:48 PRO: The GOLD Strategy Results in Improved COPD Patient Care  
A. Agusti, MD, Barcelona, Spain

10:00 CON: The GOLD Strategy Does Not Result in Improved COPD Patient Care  
K.F. Rabe, MD, PhD, Grosshansdorf, Germany

10:12 PRO: CT Should Be Part of Routine Clinical Care for COPD  
G. Washko, MD, Boston, MA

10:24 CON: CT Should Not Be Part of Routine Clinical Care for COPD  
M.K. Han, MD, MS, Ann Arbor, MI

10:36 PRO: LAMA/LABA Combination Therapy Should Be Used as Initial Maintenance Treatment for COPD  
J.A. Wedzicha, MD, PhD, London, United Kingdom

10:48 CON: LAMA/LABA Combination Therapy Should Not Be Used as Initial Maintenance Treatment for COPD  
B.R. Celli, MD, Boston, MA

Distinguishing among the non-IPF interstitial lung diseases can be very challenging for the clinician. This symposium will seek to review the evidence for the best discriminating clinical, pathologic and radiologic features that can be used to differentiate among the non IPF ILDs. Following a review of these characteristics, 3 ILD clinicians will discuss real life cases that they will have been given ahead of time (without the diagnosis) to demonstrate how best to work thorough these challenging cases.

Chairing:  
M. Kreider, MD, Philadelphia, PA  
G. Tino, MD, Philadelphia, PA  
A. Olson, MD, MSPH, Denver, CO

9:00 Introduction  
G. Tino, MD, Philadelphia, PA

9:10 Top 5 Clinical Features to Differentiate Among Non-IPF ILD  
K.K. Brown, MD, Denver, CO

9:30 Top 5 Radiographic Features to Differentiate Among Non-IPF ILD  
D. Hansell, MD, London, United Kingdom

9:45 Top 5 Pathologic Features to Differentiate Among Non-IPF ILD  
W.D. Travis, MD, New York, NY

10:00 Case I  
T.M. Maher, MD, MSc, PhD, London, United Kingdom  
A. Olson, MD, MSPH, Denver, CO

10:15 Case II  
C.D. Fell, MD, MSc, Calgary, Canada  
M. Kreider, MD, Philadelphia, PA

10:30 Case III  
G. Tino, MD, Philadelphia, PA  
J.S. Lee, MD, Aurora, CO

10:45 Questions and Answers  
M. Kreider, MD, Philadelphia, PA
B4  MECHANISMS OF ORGAN FAILURE IN SEPSIS

Assemblies on Critical Care; Respiratory Cell and Molecular Biology; Respiratory Structure and Function
9:00 a.m. - 11:00 a.m.

Target Audience
Pulmonary and critical care researchers (undergraduates, graduates, post graduates and postdoctoral), clinicians (adults and peds), and trainees interested in understanding the athophysiology and pathogenesis of organ failure in sepsis.

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

• learn new paradigms about sepsis-induced organ failure;
• recognize risk and development of sepsis-induced organ failure;
• translate new advancements in basic research with current and future clinical practice.

This session will review seminal concepts in sepsis-induced organ failure as well as present novel and cutting edge research in the field. The aim is to translate cutting-edge advancements in molecular physiology and functional genomics of organ failure in the septic patient to a broad clinical and translational audience. The session will engage/stimulate and enhanced understanding of the leading concepts regarding the relative contributions of over-inflammation, immunosuppression, the microbiome, epithelium and endothelium as critical target(s) of organ failure that ultimately determine (lung, kidney, liver, heart, muscle, gut and brain) dysfunction and clinical outcomes in the critically ill. The session will have broad appeal to physicians and scientists at any level of training who work on diverse problems in the critically ill, and it will draw a diverse international audience because of the generalizability of the topics.

Chairing:  C.C. Dos Santos, MD, Toronto, Canada
I.S. Douglas, MD, Denver, CO
J. Chiche, MD, PhD, Paris, France

9:00  Mechanisms of Organ Failure in Sepsis
R. Hotchkiss, MD, St. Louis, MO

9:15  Innate Immune Training in Sepsis?
M. Netea, MD, PhD, Nijmegen, Netherlands

9:30  Liver Dysfunction in Sepsis
M. Bauer, MD, Jena, Germany

9:45  Is the Microbiome an “Organ” that Fails in Septic Patients?
J. Alverdy, MD, Chicago, IL

10:00  Is All Organ Failure Created Equal?
C.C. Dos Santos, MD, Toronto, Canada

10:15  Sepsis Induced Immunosuppression Shift in Therapeutic Paradigm
J. Chiche, MD, PhD, Paris, France

B5  HARNESSING BREAKTHROUGHS IN CRISPR GENE EDITING TECHNOLOGY FOR RESEARCH AND THERAPY

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Microbiology, Tuberculosis and Pulmonary Infections; Respiratory Structure and Function; Thoracic Oncology
9:00 a.m. - 11:00 a.m.

Target Audience
Basic and translational researchers seeking to understand the most important advance in biotechnology in the last decade and clinical investigators and clinicians interested in learning more about this technology that is poised to move into clinical application in the coming decade.

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

• learn new findings about the CRISPR system functions and how it can be adapted to edit human and other animal genomes;
• improve lung research by learning new strategies for selectively turning genes on and off, creating lung cancer models, performing genome-wide screens, and imaging the genome;

• contribute to conversations that will shape scientific and ethical approaches to the use of CRISPR technology to treat human disease.

The development of the CRISPR system for efficient and selective editing of the human genome represents the most important scientific breakthrough of the past decade. CRISPR-based systems are already being widely used for inactivating or repairing individual genes in human cells and animal models and for genome-wide studies of the functions of coding and non-coding RNAs. This session will introduce the basic CRISPR/Cas9 system, explain how this technology is being modified to allow selective inactivation, activation, and live imaging of the genome, and illustrate how the technology can be applied to study and treat lung diseases, including cancer.

**Chairing:**
D. Erle, MD, San Francisco, CA
S. Albelda, MD, Philadelphia, PA
N. Chandel, PhD, Chicago, IL

**B6 BUILDING E-BRIDGES: TOOLS AT OUR FINGERTIPS FOR ENHANCING COLLABORATIVE CARE**

**Assemblies on Behavioral Science and Health Services Research; Clinical Problems; Critical Care; Nursing; Thoracic Oncology**

**9:00 a.m. - 11:00 a.m.**

**Target Audience**
Clinicians and scientists seeking to understand developments in shared decision-making and to explore cutting edge tools aimed at advancing interdisciplinary, patient centered collaboration across pulmonary and critical care.

**Objectives**
At the conclusion of this session, the participant will be able to:
• present new findings about the complexity of shared decision-making to enhance patient-centered care;
• apply novel, innovative tools to enrich risk communication and improve the quality of life and health of patients;
• evaluate future directions in and barriers to collaborative, personalized care.

For most medical decisions, multiple options are available with each choice having its own list of benefits and harms. Decisions inconsistent with patient preferences may have unintended consequences to both patients and the health system. Shared decision-making provides a model for personalized medicine to enhance patient-centered care. This session will allow leading experts to discuss: (1) how traditional communication has failed and why shared decision-making has evolved; (2) the complexity of the decision-making process; (3) what tools are available, across pulmonary and critical care, to enhance communication; (4) what future directions and barriers may lie ahead in patient-centered risk communication.

**Chairing:**
T.S. Valley, MD, Ann Arbor, MI
R.S. Wiener, MD, MPH, Boston, MA
C.E. Cox, MD, MPH, Durham, NC
9:00 A Patient’s Perspective  
Speaker To Be Announced

9:05 Helping Me Help You: Making the Right Decision for Different Patients  
T.S. Valley, MD, Ann Arbor, MI

9:23 So You’re Telling Me There’s a Chance? Theories to Improve Risk Communication  
J.L. Hart, MD, Philadelphia, PA

9:40 Empowering Patients with Asthma: Customizing Care to Patient Beliefs  
M.R. George, AE-C, PhD, RN, New York, NY

10:00 Why Wouldn’t I Want to Know? Moving Lung Cancer Screening from Standardized to Personalized  
R.S. Wiener, MD, MPH, Boston, MA

10:20 Great Expectations: Using Digital Tools to Assist ICU Patients, Families, and Clinicians with Shared Decision Making  
D.B. White, MD, MAS, Pittsburgh, PA

10:40 Transforming the Future of Effective Patient Provider Communication Through Universal Decision Support  
C.E. Cox, MD, MPH, Durham, NC

There will be a 5-minute discussion after each talk.

**Objectives**

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

- understand the importance of physical activity in patients with COPD and the wider health implications of inactivity;
- learn about new developments with respect to measuring physical activity;
- understand new strategies to improve physical activity.

This session will provide an overview of the importance of physical activity to the population at large and of course for those with respiratory disease, specifically COPD. We will explore the development of the measurement, and the physical and psychological benefits of physical activity. The complexities of measurement for clinical trials will be addressed and finally how we might improve physical activity through rehabilitation or novel technologies.

**Chairing:** S.J. Singh, PhD, Leicester, United Kingdom  
M.L. Moy, MD, MSc, Boston, MA

9:00 The (Short) History of Physical Activity Measurement in COPD  
R. Casaburi, MD, PhD, Torrance, CA

9:10 Physical Activity: Does it Keep Us Alive?  
J. Myers, PhD, Palo Alto, CA

9:35 Physical Activity: Does it Keep Those with COPD Happy? The Patient Centered Perspective  
T. Troosters, PhD, Leuven, Belgium

10:00 Physical Activity: Should it Be an Outcome for Large Clinical Trials?  
A. Hamilton, PhD, Burlington, Canada

10:20 Enhancing Physical Activity with Rehabilitation  
R.S. Goldstein, MD, Toronto, Canada

10:40 How Can We Use Technology to Improve Physical Activity for Individuals with COPD?  
H. Demeyer, PhD, Leuven, Belgium
B8 SLEEP, SLEEP DISORDERS AND PERFORMANCE IN ATHLETES

Assemblies on Sleep and Respiratory Neurobiology, Behavioral Science and Health Services Research
9:00 a.m. - 11:00 a.m.

Target Audience
Sleep physicians, those interested in public health, those interested in human performance, those interested in real-world applications of sleep medicine

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

- learn new findings about the role of sleep and health in athletic performance;
- better understand how sleep impacts health and performance from the perspective of an elite athlete;
- better assess, diagnose, and treat sleep disorders among athletes.

Insufficient and/or misaligned sleep, sleep apnea and other sleep disorders have been shown to impact health, neurocognitive and physical performance. In addition, training at altitudes, hypoxic training, and other respiratory effects have also been studied. These are all domains that are relevant to athletes. For this reason, there has been increased attention from both the scientific community and from athletic organizations regarding the importance of sleep and respiratory health. Some of this effort has focused on the high prevalence of sleep apnea in football players. Further, the National Collegiate Athletic Association recently adopted best practices for addressing mental health in student athletes, and screening for sleep disorders (including sleep apnea) is prominently featured in those guidelines. This session will be the first of its kind at the ATS meeting and will focus on the (1) state of the science of sleep and respiratory health in athletes and then delve into the specific areas of (2) the new NCAA guidelines for student athletes related to sleep and (3) sleep apnea in athletes, football players specifically.

Finally, the session will feature the perspectives of two professional athletes who can discuss their experiences when it comes to sleep and mental health in maintaining performance.

Chairing: M. Grandner, PhD, Tucson, AZ
            P.J. Strollo, MD, Pittsburgh, PA
            S. Halson, PhD, Belconnen, Australia

9:00 Sleep, Health, and Performance: An Athlete’s Perspective
Speaker To Be Announced

9:15 Sleep and Circadian Misalignment in Athletes
S. Halson, PhD, Belconnen, Australia

9:35 Athletes Sleeping/Training in Hypoxia: Good Idea or Bad?
J. Dempsey, PhD, Madison, WI

9:55 Sleep, Health, and Performance in Student Athletes
M. Grandner, PhD, Tucson, AZ

10:15 Sleep Apnea Risk, Diagnosis and Treatment in Professional Football
I. Gurubhagavatula, MD, MPH, Philadelphia, PA

10:45 Sleep Disorders in Athletes: A Player’s Perspective
A. Taylor, San Diego, CA

B9 SICKLE CELL DISEASE AND THE LUNG ACROSS THE LIFESPAN

Assemblies on Pediatrics; Allergy, Immunology and Inflammation; Clinical Problems; Pulmonary Circulation; Sleep and Respiratory Neurobiology
9:00 a.m. - 11:00 a.m.

Target Audience
Pediatric and adult pulmonary fellows, clinicians and researchers interested in the pulmonary complications of sickle cell disease (SCD) across the lifespan.
Objectives
At the conclusion of this session, the participant will be able to:

- gain an understanding of the burden of SCD around the globe and the importance of newborn screening and early intervention in the context of early SCD mortality in resource-poor settings;

- review the state of evidence-based management of pulmonary complications of SCD with emphasis on current guidelines as well as areas where evidence is lacking;

- understand the impact of abnormalities throughout the respiratory system (airway, gas exchange, and vascular) as disease modulators in the long term pathogenesis of SCD throughout the lifespan.

Despite a high and growing global burden of SCD with an estimated 400,000 births per year by 2050, evidence-based interventions against its pulmonary complications are limited. Pulmonary complications are among the most common causes of the observed accelerated mortality in the SCD population. The goal of this session is to present the spectrum of acute and chronic pulmonary complications of SCD that impact patients across the lifespan to actively engage pediatric and adult clinicians and researchers with the goals of improved coordination of scientific efforts and implementation of state of the art clinical care for patients.

Chairing:
E.S. Klings, MD, Boston, MA
S.C. Sadreameli, MD, MHS, Baltimore, MD
M.T. Gladwin, MD, Pittsburgh, PA

9:00 A Patient’s Perspective
Speaker To Be Announced

9:05 Unanswered Questions in the Pathophysiology of Sickle Cell Lung Disease in Pediatric and Adult Care
E.S. Klings, MD, Boston, MA

9:25 Global Health Care Equality in Sickle Cell Disease
A.P. Ruhl, MD, MHS, Bethesda, MD

9:40 Night and Day: Intermittent Hypoxia in SCD
J.L. Allen, MD, Philadelphia, PA

10:00 How Should We Characterize Airway Disease in Sickle Cell Patients?
R.T. Cohen, MD, MPH, Boston, MA

10:20 State of the Art Management of the Acute Chest Syndrome
J. Howard, MD, London, United Kingdom

10:40 Thrombosis, Hypoxia, and Hemolysis as Modulators of Pulmonary Vascular Dysfunction in Sickle Cell Disease
R.F. Machado, MD, Chicago, IL

There will be a 5-minute discussion after each talk.
B11 SCIENTIFIC BREAKTHROUGHS IN SARCOIDOSIS RESEARCH AND PHENOTYPING: THE NHLBI GRADS CONSORTIUM

Assemblies on Allergy, Immunology and Inflammation; Clinical Problems; Environmental, Occupational and Population Health; Respiratory Cell and Molecular Biology

9:00 a.m. - 11:00 a.m.

Target Audience
Those with clinical and research responsibilities, clinical providers of lung health, those needing instruction in areas of medicine outside their speciality, those serving patients with sarcoidosis.

Objectives
At the conclusion of this session, the participant will be able to:
• apply our current understanding of common sarcoidosis phenotypes and the clinical data that defines them to better care for sarcoidosis patients;
• learn new findings regarding immunophenotypes, immune dysregulation and microbiome;
• understand the role of clinical, immune and microbiome phenotyping on sarcoidosis pathogenesis, prognosis and treatment paradigms.

This session will provide exciting new integrative study results that have arisen from the latest NHLBI consortium on sarcoidosis, the Genomic Research in Alpha-1 Antitrypsin Deficiency and Sarcoidosis (GRADS). The GRADS study is an observational translational study evaluating the relationship between sarcoidosis phenotypes, immune networks, and gene expression and the microbiome patterns. The data generated by the multi-center and site specific studies expands our understanding of the clinical manifestations, and cellular and molecular mechanisms of disease to help define the biological basis of the clinical heterogeneity in sarcoidosis.

Chairing:
L.A. Maier, MD, Denver, CO
E. Chen, MD, Baltimore, MD
N. Kaminski, MD, New Haven, CT

9:00 A Patient’s Perspective
Speaker To Be Announced

9:05 A New Phenotypic Paradigm and the Clinical Data Supporting the GRADS Approach
N. Hamzeh, MD, Denver, CO

9:25 Is Sarcoidosis a Th17 Disease? Revisiting T Cell Phenotyping
L. Koth, MD, San Francisco, CA

9:45 Programmed Death-1 Inhibition of Sarcoidosis T Cell Proliferation: Potential Therapeutic Option?
W. Drake, MD, Nashville, TN

10:05 Neuroimmune Molecules and Innate Immunity in Pulmonary Sarcoidosis
E. Herzog, MD, PhD, New Haven, CT

10:25 Sarcoidosis BAL and Lung Tissue Microbiome: Closely Related or Distant Relatives
R.G. Collman, MD, Philadelphia, PA

10:45 Panel Discussion
E. Chen, MD, Baltimore, MD
BEHAVIORAL • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

B12 GLOBAL HEALTH: THE WHAT, WHERE AND WHY IN THE 21ST CENTURY

Membership Committee and International Health Committee; Assemblies on Allergy, Immunology and Inflammation; Behavioral Science and Health Services Research; Clinical Problems; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Pediatrics

9:00 a.m. - 11:00 a.m.

Target Audience
Clinicians, nurses, behavioral and translational scientists seeking to practice in a global community, addressing health inequalities; those seeking to develop or participate in research in global health communities.

Objectives
At the conclusion of this session, the participant will be able to:
• define the current pathways in international respiratory health and outlining approaches to developing expertise and continuing scholarship in those areas;
• identify career goals and plan accordingly for success in international respiratory health;
• identify major obstacles broadly defined in 3 categories: financial challenges, personal mentoring and academic skills acquisition.

This symposium will present practical approaches in developing a career in global health in the 21st century as it pertains to Pulmonary, Allergy and Critical Care Medicine. The symposium will provide the perspective of leaders and future leaders within the field of international respiratory health, identify common obstacles, and provide strategies for career development for early and mid-level career scientists, physicians and other professionals within and outside the United States.

Chairing:
Y.N. Mageto, MD, MPH, Burlington, VT
G. Matute-Bello, MD, Seattle, WA

9:00 Collaborative Team Field Science: Skills and Methodology Required for Success
A.S. Buist, MD, Portland, OR

9:20 Translational Research in Low Resource Settings: Skills and Methodology Required for Success
T.E. West, MD, MPH, Seattle, WA

9:40 Education and Training Development in Low and Middle Income Countries: The Nuts and Bolts
E.J. Carter, MD, Providence, RI

10:00 Capacity Building in Developing Countries: Challenges and Opportunities on the Ground
D. Obaseki, MD, MPH, Ile-Ife, Nigeria

10:20 Epidemiology and Implementation Science: Targeting Chronic Respiratory Diseases in Developing Countries
C.M. Patino, MD, PhD, Los Angeles, CA

10:40 Challenges and Opportunities on the Ground: Ethics, Language, and Giving Back
S. Gordon, MA, MD, DTM&H, Blantyre, Malawi

There will be a 5-minute discussion after each talk.

BASIC • CLINICAL

ATS PRESIDENT'S SYMPOSIUM

B13 APPLIED PHYSIOLOGY IS ALIVE AND WELL

9:00 a.m. - 11:00 a.m.

Target Audience
Students, clinicians, scientists and educators.

Objectives
At the conclusion of this session, the participant will be able to:
• define the inflammatory reflex;
• apply the concept of driving pressure at the bedside;
• define loop gain and understand its therapeutic importance.

Although some people have suggested that physiology is dead, this session will present the case that physiology is still alive and well. Many of the advances
in patient care which have occurred in recent years have been a result of physiology. Even though molecular and cellular biology have made major advances, the importance of function remains critical. Similarly with advances in genetics and genomics in recent years, the importance of these genes is assessed by functional assessments. Terms such as deep phenotyping reflect acknowledgement that physiological function remains crucial.

Chairing:  A. Malhotra, MD, La Jolla, CA  
T.S. Simonson, PhD, La Jolla, CA

9:00  Respiration Mechanics: Saving Lives for Nearly a Century  
J.M. Drazen, MD, Boston, MA

9:10  Applied Physiology in Sleep Apnea and Control of Breathing  
M.K. Younes, MD, PhD, Winnipeg, Canada

9:35  Unjamming and Cell Shape in the Asthmatic Airway Epithelium  
J.J. Fredberg, PhD, Boston, MA

10:00  From Sepsis Mechanisms to the Origin of Bioelectronic Medicines  
K.J. Tracey, MD, Manhasset, NY

10:25  Assessing Regional Lung Strain and Perfusion at the Bedside: The Future Is Now  
M.B.P. Amato, MD, PhD, Sao Paulo, Brazil

10:50  Young Investigators Presentations  
Speaker To Be Announced

9:00 a.m. - 11:00 a.m  
Oral And Poster Presentations Of Scientific Research And Case Reports. Abstract Sessions Will Be Published In The Final Program.
WS3 PULMONARY REHABILITATION FOR INTERSTITIAL LUNG DISEASE: OPTIMIZING THE MODEL

Registration Fee: $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

Assemblies on Pulmonary Rehabilitation; Clinical Problems; Nursing
11:45 a.m. - 1:15 p.m.

Target Audience
Providers of care to people with interstitial lung disease; providers of pulmonary rehabilitation.

Objectives
At the conclusion of this session, the participant will be able to:
• learn about the state of the science underpinning ILD rehabilitation;
• prescribe effective exercise training for people with ILD;
• gain new strategies for comprehensive rehabilitation in ILD.

This workshop will define the state of the evidence for pulmonary rehabilitation in interstitial lung disease (ILD) and explore strategies to optimize rehabilitation outcomes for patients with these diverse and disabling respiratory conditions.

Chairing: A.E. Holland, PhD, Melbourne, Australia
L.P. Cahalin, PhD, Miami, FL

11:45 Rehabilitation for ILD: State of the Evidence
A.E. Holland, PhD, Melbourne, Australia

12:00 Peripheral Muscle in ILD: Does it Matter?
S. Mathur, PhD, PT, Toronto, Canada

12:15 Exercise Training Strategies for ILD: Meeting the Physiological Challenge
B. Vainshelboim, PhD, Petach Tikva, Israel

12:35 Beyond Exercise Training: What is Comprehensive Rehabilitation for ILD?
J.J. Swigris, DO, MS, Denver, CO

12:55 Capturing Important Changes: Measurement of Outcomes in Rehabilitation for ILD
L. Dowman, MA, Heidelberg, Australia

WS4 PATIENT-DERIVED MODELS OF HUMAN LUNG DISEASE: A LAB MEETING

Registration Fee: $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Pediatrics; Pulmonary Circulation; Pulmonary Rehabilitation; Respiratory Structure and Function; Sleep and Respiratory Neurobiology; Thoracic Oncology
11:45 a.m. - 1:15 p.m.

Target Audience
Lung health care providers, scientists and investigators interested or involved in basic, translational and clinical research related to the pathogenesis, pathology and clinical aspects of COPD and related human lung diseases, research and care providers engaged in pulmonary and critical care medicine.

Objectives
At the conclusion of this session, the participant will be able to:
• learn about state of the art in vivo, ex vivo and in vitro patient-derived models of human lung biology and disease;
• implement patient-derived models to study the pathogenesis, phenotype and candidate therapies for human lung diseases;
• understand how to translate information derived from patient-derived models into innovative clinically relevant approaches to study, diagnose, prevent and
treat human lung diseases in a personalized manner ("precision medicine").

This workshop will discuss state of the art methods to study chronic human lung diseases (asthma, cystic fibrosis, COPD, and pulmonary fibrosis) in a personalized manner by modeling complex interaction between different cell types and tissue components (epithelial cells, extracellular matrix, fibroblasts, blood vessels, immune cells etc) using patient-derived human samples. In addition to talks by leading experts in the field, during this session, participants will have an opportunity to discuss their own research problems, ideas and questions with the faculty in a “lab meeting format” and learn how to translate discoveries derived from studies using patient-derived models into novel personalized approaches to prevent and treat human lung diseases (targeted “precision medicine” strategies).

Chairing: R. Shaykhiev, MD, PhD, New York, NY  
S.D. Reynolds, PhD, Columbus, OH  
D.J. Weiss, MD, PhD, Burlington, VT

11:45 “Personalized” In Vitro and Ex Vivo Models of Human Airway Disease  
S.H. Randell, PhD, Chapel Hill, NC

12:00 Patient-Derived 3D-Models of COPD and Emphysema  
M. Konigshoff, MD, PhD, Munich, Germany

12:15 Preclinical Humanized Models of Airway Remodeling in Asthma  
R. Freishtat, MD, MPH, Washington, DC

12:30 Modeling Lung Disease Using iPS Cells: Towards Precision Medicine  
D.N. Kotton, MD, Boston, MA

12:45 “Lab Meeting” Discussion  
Z. Borok, MD, Los Angeles, CA  
E.S. White, MD, Ann Arbor, MI  
C. Coraux, PhD, Reims, France

CC2 SLEEP MEDICINE CLINICAL CORE CURRICULUM I

Adult Core Curriculum Working Group

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

Target Audience
Internists and subspecialists 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:
• remain current with medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
• evaluate their understanding of key skills and content areas in pulmonary, critical care and sleep medicine, as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
• 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 medical content in the areas of pulmonary, critical care, and sleep medicine. The topics are also aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to assist clinicians with staying current with the growth of information relevant to their medical practice, as well as provide an opportunity to evaluate individual knowledge and skills while earning MOC Medical Knowledge points.

Chairing: J.S. Balachandran, MD, Chicago, IL  
T.S. Wang, MD, Los Angeles, CA

11:45 Sleep Testing/Staging/Scoring: Staging and Scoring  
C. Lal, MD, Charleston, SC
12:05  Sleep Testing/Staging/Scoring: In-Lab Diagnostics  
N.A. Shah, MD, MPH, New York, NY

12:45  Sleep Testing/Staging/Scoring: Ambulatory Diagnostics  
K.F. Sarmiento, MD, MPH, La Jolla, CA

L11  FDA REGULATION OF TOBACCO PRODUCTS IN THE U.S.: 2016 UPDATE

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

Target Audience
Any attendees interested in reducing tobacco related deaths.

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

• understand the FDA’s Center for Tobacco Products’ (CTP) strategic priorities and CTP’s vision for the regulation of tobacco products to help reduce the death and disease toll caused by tobacco use;

• discuss the Deeming Proposed Rule and how it will affect the way CTP evaluates the newly regulated products;

• understand CTP’s research portfolio and how the Office of Science uses this information to inform tobacco product regulation.

The 2009 Tobacco Control Act gave FDA regulatory authority over cigarettes, cigarette tobacco, roll-your-own tobacco, and smokeless tobacco. Newly “deemed” products in a proposed rule include electronic cigarettes, cigars, pipe tobacco, certain dissolvables that are not “smokeless tobacco,” gels, and waterpipe tobacco. Once the proposed rule becomes final, FDA will be able to use regulatory tools, such as age restrictions and rigorous scientific review of new tobacco products and claims to reduce tobacco-related disease and death. Youth use of certain unregulated tobacco products, such as e-cigarettes and cigars, is on the rise. FDA oversight of tobacco products can provide important information about proposed deemed tobacco products and help limit youth exposure to these products. Once final, the rule will also enable FDA to explore whether different products pose different levels of risk, and will help the Agency develop policies to improve public health. This session will help the medical, research, and public health communities understand the authority granted to the FDA to regulate tobacco and tobacco products and how science is used to make the most effective regulatory decisions.

Chairing:  P. Callahan-Lyon, MD, Silver Spring, MD

12:15  FDA Regulation of Tobacco Products in the U.S.  
P. Callahan-Lyon, MD, Silver Spring, MD

12:55  CTP Research Portfolio  
C. Dresler, MD, Silver Spring, MD

L12  NASA’S SATELLITES AND MODELS TO STUDY THE ENVIRONMENT AND DISEASES

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

Target Audience
Pulmonary health researchers and clinicians needing environmental data to study and understand the geographic, environmental, and meteorological differences in pulmonary disease. The researcher will hear from public health researchers new research and models that can be used to study the environment and related diseases.

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

• inform clinicians and researchers about ongoing NASA projects related to lung performance and cardiac disease;

• provide a synopsis of a project using observations of earth’s environment and public health applications that are of interest to pulmonary clinicians and researchers;
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.

Satellite earth observations present a unique vantage point of the earth’s environment from space which offers a wealth of health applications for researchers. The session will show results of the remote sensing observations of earth and health applications. This session will detail on-going projects within NASA and specifically related to incorporating satellite remote sensing for studying dust, forest fires and their relationship to diseases such as asthma, and other environmentally-induced lung and cardiac diseases.

Chairing: S.M. Estes, MS, Huntsville, AL
J.A. Haynes, MS, Washington, DC

12:15 Using NASA’s Remote Sensing Data to Improve Research in Respiratory Health
J.A. Haynes, MS, Washington, DC

12:25 Downwind of the Flames: Assessing and Predicting Wildfire Smoke Related Morbidity Using Satellites, In-Situ Measurements and Models
R. Gan, PhD, Ft. Collins, CO

12:40 Utilization of Satellite Observation for Improved Air Quality Simulations
A.P. Biazar, PhD, Huntsville, AL

A. Omar, PhD, Hampton, VA

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

• understand potential roles of genetic factors in sleep disorders;
• treat central sleep apnea in heart failure patients;
• recognize and treat sleep disorders among women.

Complexity in the manifestations of sleep disorders may relate to heterogeneity in genetic and gender related factors and variable impacts of co-morbid conditions including heart failure and mental illnesses. Because sleep disorders are exceedingly common among veterans, the VA Research and Development Program supports broad-based investigation into these disorders. This session will include presentations from investigators in the VA on their research related to (1) genetic causes of sleep disorders using mouse models; (2) optimal treatments for central sleep apnea in patients with heart failure; and (3) prevalence and nature of sleep disorders, including insomnia, among women and their preferences for treatment.

Chairing: J.K. Brown, MD, San Francisco, CA
M.S. Badr, MD, Detroit, MI
L. Nici, MD, Providence, RI

12:15 Respiratory Rhythmogenesis in Mouse Models
K.P. Strohl, MD, Cleveland, OH

12:35 Heart Failure and Central Sleep Apnea: Beyond ASV
D.J. Gottlieb, MD, MPH, Boston, MA

12:55 Sleep Disorders Among Women Veterans
J.L. Martin, PhD, North Hills, CA
Objectives
At the conclusion of this session, the participant will be able to:
- recognize the role of state health departments in asthma control;
- improve quality of asthma care provided to patients;
- understand the importance of public health/clinical care partnerships for asthma control.

Asthma is an ideal model to demonstrate public health/health care collaboration. Moreover, asthma is highly associated with disparities across racial, ethnic and socioeconomic groups. Multi-component interventions are available to address asthma, including guidelines-based medical management, self-management education, indoor and outdoor trigger reduction interventions, and linkages to social services. A strong evidence base has documented the feasibility and effectiveness of asthma interventions and the ability of asthma efforts to generate a short-term return on investment. CDC works with state and federal partners to advance public health/healthcare collaboration to maximize the reach, impact, efficiency and sustainability of comprehensive asthma control services.

Chairing: P.L. Garbe, DVM, MPH, Atlanta, GA

12:15 State Asthma Control Programs
P.L. Garbe, DVM, MPH, Atlanta, GA

12:35 Quality Measures for Asthma Care
S.F. Beavers, MD, Atlanta, GA

12:55 Insurance Reimbursement for Comprehensive Asthma Care
J. Hsu, MD, Atlanta, GA

Target Audience
Those with clinical or research responsibilities.

Objectives
At the conclusion of this session, the participant will be able to:
- understand and learn about imaging phenotyping of COPD;
- 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 intermediate outcome measures. Participants in this session will learn about new results from the SPIROMICS study that define new clinical subpopulations related to COPD, clinically relevant endotypes that affect risk, and potential intermediate markers that predict disease progression. The session will also provide information for early stage investigators and the investigative community on how to get involved with the study and access data.

Chairing: R.G. Barr, MD, DrPH, New York, NY
L. Postow, PhD, Bethesda, MD

12:15 Overview of SPIROMICS Design
R.G. Barr, MD, DrPH, New York, NY
L. Postow, PhD, Bethesda, MD

12:25 Significance of Large and Small Airway Phenotypes
M.K. Han, MD, MS, Ann Arbor, MI

12:40 Identifying COPD Subpopulations Based on Symptoms and Molecular Signatures
P.G. Woodruff, MD, MPH, San Francisco, CA

12:55 SPIROMICS Imaging Phenotyping
E.A. Hoffman, PhD, Iowa City, IA

1:05 Identified Subpopulations Based on Unbiased Clustering
E. Bleecker, MD, Winston-Salem, NC
**L16 VIRUSES AND BACTERIA IN ASTHMA ACROSS THE AGES**

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

**Target Audience**
Providers of lung health, medical fellows in training, graduate, post-doctoral fellows and established scientists in basic research on lung biology, and infectious disease.

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

- understand and learn new findings about the impact of nasal bacteria and viruses on respiratory illness severity and response to azithromycin therapy in preschool children with recurrent severe episodes of lower respiratory tract symptoms;

- gain knowledge about differences in the bronchial bacterial microbiome in patients with allergies and asthma and characterize modifications in the microbiome associated with the use of inhaled corticosteroids in adults with asthma;

- describe how treatment with inhaled corticosteroids alters the bronchial virome in adults with asthma.

This session highlights findings from two AsthmaNet studies that investigated effects of inhaled corticosteroids (ICS) on bacterial microbiome and virome in adults and effects of the virome on respiratory illness severity and response to azithromycin therapy in children. Findings elucidate how two components of the microbiome - bacterial and viral - are impacted by treatment and how viruses influence severity of respiratory illness and treatment response. Management insights might emerge during the panel-audience discussion, e.g., composition of the baseline airway bacterial microbiome may shape the response to viral respiratory infection, as frequently one of the treatments prescribed is an ICS.

**Chairing:** W.W. Busse, MD, Madison, WI
J.P. Kiley, PhD, Bethesda, MD

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**L17 EDUCATION RESEARCH IN SLEEP HEALTH AND SLEEP-CIRCADIAN BIOLOGY**

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

**Target Audience**
Health care providers, researchers, educators, and public stakeholders interested in innovative education tools, programs and platforms that will transfer health information and scientific advances in sleep and circadian biology to medical education, health care, and community-based settings.

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

- describe findings from innovative educational research programs;

- understand and describe strategies for effective transfer of sleep and circadian scientific knowledge;

- describe communication goals and methods of implementation in health care and communities settings.

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**ATS 2016 • San Francisco**
Proof as of January 22, 2016
This session will present data-based findings and progress from an NHLBI initiative that aims to develop educational strategies for the dissemination of sleep and circadian biology based health information to health care providers and minority communities. The presentations will focus on improving sleep apnea health literacy through community-based engagement, improving sleep/circadian rhythms and the detection of sleep disorders in the inpatient setting, and enhanced sleep/circadian medical education via telemedicine for residents and primary care physicians.

Speakers And Talks To Be Announced

L18  HOW THE NHLBI K12 PROGRAM IS ADVANCING OUR KNOWLEDGE IN THE OMICS OF LUNG DISEASE
12:15 p.m. - 1:15 p.m.

Target Audience
Those interested in the application of omics technologies to the diagnosis and therapy of all lung diseases; those interested in training young investigators in lung research, providers of lung health; those with clinical or research responsibility.

Objectives
At the conclusion of this session, the participant will be able to:
• gain new strategies for training young investigators;
• learn new ways to apply omics to questions about lung disease;
• gain new strategies for diagnosing, treating and predicting the course of specific lung diseases.

The K12 in omics of lung diseases is an NHLBI sponsored career development program with the objective to develop an interdisciplinary program that will educate young pulmonary investigators in methods of integrative “omics” technologies including genomics, proteomics, metabolomics, bioinformatics, computational modeling and system biology.

Participants in this session will learn about the structure and organization of the different programs and how the elements of each program interconnect to create an integrated and multidisciplinary learning experience

Chairing:  C.M. Doerschuk, MD, Chapel Hill, NC
S. Colombini-Hatch, MD, Bethesda, MD

12:15  Computational Skill Building
J.A. Whitsett, MD, Cincinnati, OH

12:35  High Through Proteomics
M. Rabinovitch, MD, Stanford, CA

12:55  Discussion
S. Colombini-Hatch, MD, Bethesda, MD
C.M. Doerschuk, MD, Chapel Hill, NC

L19  GENETIC BASIS OF IDIOPATHIC PULMONARY FIBROSIS
12:15 p.m. - 1:15 p.m.

Target Audience
Health care providers, researchers and patients.

Objectives
At the conclusion of this session, the participant will be able to:
• explain our current understanding of IPF pathogenesis;
• refer patients for future studies in IPF;
• plan gene-to-function studies to fill knowledge gaps in IPF and identify novel therapeutic targets.

There have been substantial advances in our understanding of the pathogenesis of idiopathic pulmonary fibrosis (IPF) through several genome-wide association studies (GWAS) of and linkage studies of families that have two or more family members with this disease. GWAS have identified many candidate genes that may contribute to disease risk. Linkage studies of families have identified causal mutations of surfactant protein or telomerase complex genes that are also found in certain sporadic cases of IPF. Thus, rather than existing as
distinct syndromes, sporadic and familial cases of IPF probably reflect a continuum of genetic risk. The presenters will 1) present the latest research results, 2) discuss a novel hypothesis of IPF pathogenesis based on GWAS studies, 3) describe how cutting-edge bioinformatic and next-generation sequencing techniques could allow an integrated approach to defining IPF pathogenesis and 4) how to apply these advances to achieve personalized medicine in IPF.

Chairing: C.K. Garcia, MD, PhD, Dallas, TX
J. Eu, MD, Bethesda, MD

12:15 Mechanisms of Pulmonary Fibrosis
T.S. Blackwell, MD, Nashville, TN

12:30 Genetics of Pulmonary Fibrosis: New Genes, New Mutations, Same Pathway
C.K. Garcia, MD, PhD, Dallas, TX

12:45 IPF: A Mucociliary Disease of the Peripheral Airways?
D.A. Schwartz, MD, Aurora, CO

1:00 Personalized Medicine in IPF: How Genetics May Inform Us
I. Noth, MD, Chicago, IL

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 PRIMARY IMMUNE DEFICIENCY AND PULMONARY DISEASE
A. Dosanjh, MD, San Diego, CA

MP502 ELECTRONIC CIGARETTES: POTENTIAL HARMS AND BENEFITS, PERSONAL AND PUBLIC
D.J. Upson, MA, MD, Albuquerque, NM

MP503 LUNG TRANSPLANTATION FOR CONNECTIVE TISSUE DISEASE-RELATED INTERSTITIAL LUNG DISEASE
J.A. Golden, MD, San Francisco, CA

MP504 CURRENT STRATEGIES FOR MANAGING THE PATIENT WITH CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION
K.M. Wille, MD, MSPH, Birmingham, AL

MP505 NEW DRUGS AND BEYOND: PRACTICAL STRATEGIES FOR TOTAL CARE OF THE IPF PATIENT
D.E. Antin-Ozerkis, MD, New Haven, CT

MP506 TREATMENT OF BRONCHIECTASIS: WHAT SHOULD I DO?
G. Tino, MD, Philadelphia, PA

MP507 TREATMENT OF VENOUS THROMBOEMBOLISM WITH TARGET-SPECIFIC NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS
R.D. Yusen, MD, MPH, St. Louis, MO

MP508 TIMING OF REFERRAL FOR LUNG TRANSPLANT IN CYSTIC FIBROSIS
D. Hadjiliadis, MD, MHS, Philadelphia, PA
MEDICAL EDUCATION SEMINAR

ME2  DELIVERING TIMELY RELEVANT FEEDBACK IN CLINICAL SETTINGS

Registration Fee: $70.00 (includes box lunch)
Attendance is limited. Pre-registration is required.
12:15 p.m. - 1:15 p.m.

Target Audience
This session is aimed at faculty and trainees involved in clinical training.

Objectives
At the conclusion of this session, the participant will be able to:
- reiterate the importance of feedback in daily clinical teaching;
- provide clinicians with the tools to create an environment for delivery of effective and timely feedback;
- equip training clinicians with the means to plan and implement feedback sessions in a clinical setting.

Feedback is a cornerstone of medical training. In our daily role as clinician educators, feedback is a key component, facilitating opportunities to improve and encourage trainees to reach their maximum potential. Acknowledging that the provision of meaningful feedback is a skill that can be taught, we approach this session with a literature review of relevance to working clinicians, and follow with an interactive approach to a set of scenarios, illustrated by video case studies.

Speakers:
E. Kelly, MD, Dublin, Ireland
J.B. Richards, MD, MA, Charleston, SC
THEMATIC SEMINAR SERIES

TSS1 CONTEMPORARY CONTROVERSIES IN THE DIAGNOSIS AND MANAGEMENT OF IDIOPATHIC PULMONARY FIBROSIS: A PRO/CON DEBATE

Registration Fee: $140.00 for full series (includes box lunch)
Attendance is limited. Pre-registration is required.
This is part 2 of a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The program for the full series is included with the Sunday, May 15, 12:15 p.m. program.

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

PRO: Bronchoalveolar Lavage Should Routinely be Performed in the Diagnostic Work-Up of IPF
A.U. Wells, MD, London, United Kingdom

CON: Bronchoalveolar Lavage Should Routinely be Performed in the Diagnostic Work-Up of IPF
H.R. Collard, MD, San Francisco, CA

TSS2 REDUCING HOSPITAL READMISSIONS

Registration Fee: $140.00 for full series (includes box lunch)
Attendance is limited. Pre-registration is required.
This is part 2 of a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The program for the full series is included with the Sunday, May 15, 12:15 p.m. program.

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

Approaches to Reduce Hospital Readmissions
S.S. Braman, MD, New York, NY

Effective Components of a Readmission Reduction Program
V.G. Press, MD, MPH, Chicago, IL

Novel Interventions to Reduce Readmissions
J.A. Krishnan, MD, PhD, Chicago, IL

Partnering with Patient Navigators and Peer Advocates
**CC3 PULMONARY CLINICAL CORE CURRICULUM II**

Adult Core Curriculum Working Group

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

**Target Audience**
Internists and subspecialists 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:

- remain current with medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their understanding of key skills and content areas in pulmonary, critical care and sleep medicine, as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
- 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 medical content in the areas of pulmonary, critical care, and sleep medicine. The topics are also aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to assist clinicians with staying current with the growth of information relevant to their medical practice, as well as provide an opportunity to evaluate individual knowledge and skills while earning MOC Medical Knowledge points.

**Chairing:**

- G.C. Michaud, MD, New Haven, CT
- C.L. Channick, MD, Boston, MA

**Awardees:**

- Serpil Erzurum, MD, Cleveland, OH
- Anuradha Ray, PhD, Pittsburgh, PA
- Edwin K. Silverman, MD, PhD, Boston, MA
- Victor J. Thannickal, MD, Birmingham, AL

**Monday Afternoon, May 16**

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.

**2016 RECOGNITION AWARDS FOR SCIENTIFIC ACCOMPLISHMENTS**

The Recognition Award 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:**

- A.J. Halayko, PhD, Winnipeg, Canada
- T.W. Ferkol, MD, St. Louis, MO

**Awardees:**

- Serpil Erzurum, MD, Cleveland, OH
- Anuradha Ray, PhD, Pittsburgh, PA
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- Edwin K. Silverman, MD, PhD, Boston, MA
- Victor J. Thannickal, MD, Birmingham, AL

**2:15 Interstitial Lung Disease: Therapeutic Options**

D. Sayah, MD, PhD, Los Angeles, CA

2:45 Sarcoid/HP

R. Adamson, MBBS, Seattle, WA
3:15  Opportunistic Pulmonary Infections in HIV and Non-HIV Patients  
B. Coruh, MD, Seattle, WA

3:45  Hospital-Acquired Pneumonia and Ventilator-Associated Pneumonia  
C.S. Dela Cruz, MD, PhD, New Haven, CT

BEHAVIORAL • CLINICAL • TRANSLATIONAL

YEAR IN REVIEW

B81  NURSING YEAR IN REVIEW

Assembly on Nursing

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

Target Audience
Nurses and any other ATS members involved in lung health, clinical research and practice and with a particular interest in global perspectives.

Objectives
At the conclusion of this session, the participant will be able to:
• identify similarities and differences in international pulmonary clinical care and research;
• understand and identify gaps in the international evidence base;
• identify future international research considerations.

The session will cover key research advances in patient centered care from different international perspectives. Each presenter will present country specific advances and challenges in nursing practice and research whilst offering comparisons with international work.

Chairing:  J. Yorke, PhD, RN, Manchester, United Kingdom  
J. Choi, PhD, RN, Pittsburgh, PA

2:15  Control of TB in High Burden Countries: The China Experience  
Y. Jin, PhD, Changsha, China

2:35  Control of TB in Low Burden Settings: The UK Experience  
A. Story, PhD, RN, London, United Kingdom

2:55  Novel Approaches to Self-Management in Australian Adults with Severe Asthma  
V. McDonald, PhD, RN, New Lambton Heights, Australia

3:15  Delivery System Research: Highlights in Pulmonary Nursing Care in the USA and Beyond  
H.Q. Nguyen, PhD, RN, Pasadena, CA

3:35  Integrated Care Services for Chronic Pulmonary Patients  
C. Hernandez, PhD, RN, Barcelona, Spain

3:55  General Discussion

BEHAVIORAL • CLINICAL • TRANSLATIONAL

CLINICAL TOPICS IN PULMONARY MEDICINE

B82  SEEING BEYOND THE VAPORS: CURRENT TOPICS ON ELECTRONIC CIGARETTE USE

Assemblies on Clinical Problems; Behavioral Science and Health Services Research; Environmental, Occupational and Population Health; Nursing

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

Target Audience
Pulmonologists, internists/hospitalists, trainees and researchers, clinical supervisors, nurses, respiratory therapists, pharmacists, attendees interested in electronic cigarettes, tobacco use and addiction, smoking cessation and tobacco regulation.

Objectives
At the conclusion of this session, the participant will be able to:
• describe the use patterns and health perceptions by e-cigarette users nationally and internationally;
• learn the current status of regulation of e-cigarettes;
• counsel patients regarding the role of e-cigarettes in smoking cessation.

Electronic cigarette (e-cigarette) use is increasing at an exponential rate in the U.S. and internationally. This symposium will provide a contemporaneous update on
key topics surrounding e-cigarettes. The speakers will review prevalence and use patterns within the U.S. as well as internationally. To ensure relevance to conference attendees, additional topics will cover the diverse issues surrounding e-cigarettes including lung harms and second-hand exposure, FDA and governmental regulatory update and the role of e-cigarettes in smoking cessation. The symposium will conclude with a panel discussion on e-cigarettes.

Chairing: M.B. Drummond, MD, MHS, Baltimore, MD
M.N. Eakin, PhD, Baltimore, MD

K.F. Harrington, PhD, MPH, Birmingham, AL

2:35 Effect of E-Cigarettes on Pulmonary Host Defense Responses
I. Jaspers, PhD, Chapel Hill, NC

2:55 Update on State and Federal E-Cigarette Regulations
D.J. Upson, MA, MD, Albuquerque, NM

3:15 E-Cigarette Use: An International Perspective
K. Carlsen, MD, PhD, Oslo, Norway

3:35 E-Cigarettes as a Smoking Cessation Tool
F.T. Leone, MD, MS, Philadelphia, PA

3:55 Panel Discussion

There will be a 5-minute discussion after each talk.

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

• diagnose a variety of complex respiratory disorders;
• develop new strategies to manage the care of infants and children with complex or confusing respiratory disorders;
• apply appropriate diagnostic tests in complex cases.

This session discusses interesting clinical cases related to Pediatric Pulmonology. The focus is to choose cases from submitted abstracts that are unique, but also have a clear story to tell that will be of educational benefit to the audience. Duplication of cases presented in previous years are avoided by reviewing previous years’ topics. Cases are presented by fellows or junior faculty and then subsequently discussed by an expert in the field. While the case presentation will be of interest to all Pediatric Pulmonologists; special focus is given to make this session of interests for trainees. Interactive questions are included in all case presentation to engage and involve the audience actively in the process of solving the clinical dilemma to encourage interactive learning.

Chairing: J.S. Debley, MD, MPH, Seattle, WA
S. Goldfarb, MD, Philadelphia, PA
J. Harrison, MBChB, MRCP, MRCPCH, Melbourne, Australia

2:15 Pediatric Clinical Cases
Objectives
At the conclusion of this session, the participant will be able to:

• more appropriately transfuse blood products in hemorrhagic shock;

• understand and apply available evidence to determine family presence for CPR;

• apply available evidence in deciding whether to place invasive monitoring catheters in critically ill patients.

This session will present expert review of evidence in many topics within critical care and will provide strategies for making decisions “at the edge of the evidence,” where the data do not provide a clear answer. Subjects will range from when to allow family to witness resuscitation attempts to assessing neurologic prognosis after arrest to transfusion guidelines in hemorrhagic shock.

Chairing:
K.A. Hibbert, MD, Boston, MA
H.B. Gershengorn, MD, Bronx, NY
M. Hua, MD, MSc, New York, NY

2:15 Introduction
K.A. Hibbert, MD, Boston, MA

2:20 The Cold Truth: Can You Accurately Determine Neurologic Prognosis After Cooling?
D. Greer, MD, New Haven, CT

2:35 Witness to the End: Family Presence During Resuscitation Attempts
Speaker To Be Announced

2:50 1:1: What? Which Blood Products Should We Transfuse in Hemorrhagic Shock?
Speaker To Be Announced

3:05 The Drier the Better? When Should you Diurese a Critically Ill Patient?
M.J. Lanspa, MD, MS, Salt Lake City, UT

3:20 Poking Holes in Practice: Can Intensive Care be Less Invasive?
A. Garland, MD, MA, Winnipeg, Canada

3:35 Wake Up and Live: When Should Patients with ARDS be Awakened?
S.J. Hsieh, MD, Brooklyn, NY

3:50 A Lingering Questions: When is ECMO the Answer in Adult ARDS?
A. Combes, MD, PhD, Paris, France

4:05 Question and Answer
H.B. Gershengorn, MD, Bronx, NY

BASIC • TRANSLATIONAL
BASIC SCIENCE CORE

B85 LUNGS CAN TELL TIME: CLOCK GENES, INFLAMMATION, IMMUNOLOGY AND SLEEP

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

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

Target Audience
Basic and translational Investigators studying inflammatory conditions of the lung, sepsis, sleep medicine, and metabolism. Systems biologists interested in genome-wide analyses of complex airway diseases. Clinicians interested in the genetic basis for time sensitive symptoms in airway disease such as nocturnal asthma and COPD.

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

• describe the organization of the circadian clock at the whole organism level and specifically within the lung;

• learn new findings about how clock genes regulate the lung antimicrobial responses and inflammation;

• learn new findings about the relationships between sleep, clock genes and the ill health effects competence of shift work.

Discussions will cover complex airway diseases. This session will also cover inflammatory conditions of the lung, sepsis, sleep medicine, and metabolism.
BASIC • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

B86 IMMUNOTHERAPY FOR LUNG CANCER: POWER TO THE HOST

Assemblies on Thoracic Oncology; Allergy, Immunology and Inflammation
2:15 p.m. - 4:15 p.m.

Target Audience
Providers of lung health, pulmonary oncologists and/or practitioners of all health specialties participating in tumor boards, researchers in cancer and immunology, nursing (all subspecialties), pulmonary trainees.

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

• learn and apply new FDA approved agents for immunotherapy in lung cancer to correct subsets with the disease;
• understand new strategies to manage the care of advanced-stage lung cancer patients;
• improve current treatments through translational development and improve basic biological understanding of the immune system in lung cancer.

This scientific symposium will focus on both existing and promising translational approaches to immunotherapy in the treatment of lung cancer. It will cover both biological mechanisms that mediate baseline immunosuppression in lung cancer along with rational and state of the art use of existing (FDA approved) and highly promising approaches to achieve immune-mediated regression and/or cures in advanced-stage lung cancer. Developments in adjuvant immune-checkpoint and whole cell-based as well as vaccine approaches together with basic science concepts in immunologic signaling and host microenvironment will also be included. The science will cover novel genetic and epigenetic concepts as well.

Chairing: M.M. Fuster, MD, San Diego, CA
Z.G. Fridlender, MD, Jerusalem, Israel

2:15 State of PD1/PDL1 Targeting in Lung Cancer
R.M. Huber, MD, PhD, Munich, Germany

2:35 Immunity Biomarkers and the Mutational Landscape in Lung Cancer
E.B. Garon, MD, Los Angeles, CA

2:55 Novel Immune Checkpoint Blockade Approaches
S. Patel, MD, La Jolla, CA

3:15 Immunosuppression and the Tumor Microenvironment
A.M. Houghton, MD, Seattle, WA

3:35 Treating Thoracic Malignancies with Adoptive T Cell Transfer: Successes and Challenges
S. Albelda, MD, Philadelphia, PA

3:55 Immune Considerations and Therapy for Mesothelioma
D.H. Sterman, MD, New York, NY
BEYOND BMPR2: EMERGING ROLES OF DNA DAMAGE AND SOMATIC MUTATION IN PULMONARY ARTERIAL HYPERTENSION

Assemblies on Pulmonary Circulation; Respiratory Cell and Molecular Biology

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

Target Audience
Basic research scientists and clinician scientists.

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

- learn new findings about how BMPR2 mutations impact the redox state and signaling environment of pulmonary arterial cells and impose a mutagenic risk on the mitochondrial genome;

- learn new concepts about mitochondria retrograde signaling to the nucleus and how this process is impacted by mtDNA mutations;

- learn new concepts about DNA damage and somatic mutation in pulmonary arterial hypertension.

Like cancer, pulmonary artery hypertension (PAH) has a prominent genetic component. For example, in familial as well as a proportion of sporadic PAH, germline mutations in the BMPR2 gene are a documented risk factor for the disease. In addition, hypertensive pulmonary cells also display an array of somatic mutations, but little is known about mechanisms of their formation, their functional consequences, and the potential that such somatic mutations could serve as diagnostic or prognostic biomarkers or therapeutic targets. Accordingly, the goal of this Scientific Symposium is to highlight emerging roles of DNA damage and somatic mutation in pulmonary arterial hypertension.

Chairing: M. Aldred, PhD, Cleveland, OH
M.N. Gillespie, PhD, Mobile, AL

BEHAVIORAL • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

B88 IMPROVING REAL WORLD CARE THROUGH INNOVATIVE TRIAL DESIGNS

Assemblies on Behavioral Science and Health Services Research; Critical Care; Thoracic Oncology

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

Target Audience
Pulmonary and critical care clinicians, trainees, clinical researchers.

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

- understand and learn about novel techniques in clinical trial design;

- learn new findings about management of respiratory infection, lung cancer, and pulmonary nodules;

- better apply clinical trial findings to making decisions for individual patients.
Pulmonary, sleep, and critical care medicine are plagued with expensive negative clinical trials that do not change clinical practice. To advance patient care in an increasingly resource constrained research environment, innovative, creative study designs have evolved. These designs move beyond traditional approaches that largely explore one intervention in one disease in a single population to monitoring multiple treatments and combinations of treatments in real world populations. In this symposium, we will use exemplars from recent and ongoing high profile trials across the fields of pulmonary and critical care medicine to show how novel designs can greatly improve efficiency, value, and translatability of findings to individual patients.

Chairing: H.C. Prescott, MD, MA, Ann Arbor, MI
V. Liu, MD, MS, Oakland, CA
S.J. Bartlett, PhD, Montreal, Canada

2:15 Novel Trial Designs to Optimize Efficiency and Real World Impact
S.J. Bartlett, PhD, Montreal, Canada

2:20 PREPAREing for Future Epidemics: Platform Trial with Adaptive Randomization
A. Nichol, MD, Dublin, Ireland

2:40 Personalizing Care for Lung Cancer: Testing 10 Treatments All at Once
J. Kern, MD, Denver, CO

3:00 Real World Management of Lung Nodules: Large Pragmatic Trials
M.K. Gould, MD, MS, Pasadena, CA

3:20 Making Trials More Useful by Analyzing RCTs for Heterogeneity of Treatment Effects
T.J. Iwashyna, MD, PhD, Ann Arbor, MI

3:35 Evaluative Frameworks to Confirm Research Paradigms Work as Intended
Speaker To Be Announced

3:50 Panel Discussion
W.M. Vollmer, PhD, Portland, OR
S.D. Halpern, MD, PhD, Philadelphia, PA
L. Reineck, MD, Bethesda, MD

B89 HEALTH EFFECTS OF INHALED TOXINS: FROM THE BENCH TO THE TRENCHES: A GLOBAL PERSPECTIVE

Assemblies on Environmental, Occupational and Population Health; Clinical Problems
2:15 p.m. - 4:15 p.m.

Target Audience
Basic scientists and translational researchers interested in mechanisms of inhalation injury and emerging therapies; clinicians treating patients acutely exposed to inhalational toxins; clinicians, public health physicians, and epidemiologists involved in long term care of these patients.

Objectives
At the conclusion of this session, the participant will be able to:
• learn new findings regarding lung injury due to inhalational toxins;
• apply this knowledge to the care of individuals presenting with inhalational lung injury;
• discuss emerging new potential strategies for the treatment of the acute and chronic effects of lung injury due to inhalational toxins.

The symposium will provide a venue for basic, scientific, clinical, and epidemiologic researchers to present an overview of our current understanding of the underlying biology of inhalational lung injury as well as recent advances in the medical management of specific inhalational toxins. Within this broad field, we plan to focus on recent global events, which either have affected or are putting at risk local populations for injury secondary to tear and chlorine gas. Following mass-inhalational events, those with underlying lung disease are at increased risk for short and long-term pulmonary and systemic effects, including increased susceptibility to infections, increased airway hyperreactivity, development of restrictive lung diseases as well as cardiac abnormalities. With this session, we aim to improve knowledge of pulmonary and critical care specialists caring for victims of acute
lung injury secondary to inhalational toxins, as well as providing care for those with chronic respiratory disease following inhalational injury. Further, we will provide updates and pave the way for future collaborative endeavors and studies to assess the effectiveness of countermeasures. We are very fortunate to have a number of outstanding speakers including the Scientific Committee Chair for the Turkish Thoracic Society, with direct involvement of patients exposed to massive amounts of tear gas in Turkey; the Deputy Medical Director of Medecins Sans Frontieres (MSF); and a disaster epidemiologist, who performed ground-breaking epidemiological studies on persons exposed to chlorine during the Graniteville train derailment and a number of basic and translational scientists who contributed greatly in our understanding of basic mechanisms by which tear gas and chlorine damage the cardiopulmonary systems.

Chairing: S. Matalon, PhD, Birmingham, AL

2:15 Introduction
E. Summerhill, MD, Pawtucket, RI

2:20 Pulmonary and Systemic Consequences of Tear Gas Exposure in an Urban Turkish Population
E. Dagli, MD, Istabul, Turkey

2:40 Chemosensation and Reflex Control in Inhalational Exposures
S.E. Jordt, PhD, Durham, NC

3:00 Mechanisms and Modification of Chlorine and Other Halogen Gas Induced Injury
S. Matalon, PhD, Birmingham, AL

3:15 Graniteville, SC Railway Derailment: Acute and Chronic Effects of Chlorine Gas Exposure
E.R. Svendsen, PhD, Charleston, SC

3:35 Managing Chemical Disasters Across the Globe: A Doctor Without Borders Perspective
D. Olson, MD, New York, NY

3:55 Novel Countermeasures for Inhalational Exposures: Is There Hope on the Horizon?
C.W. White, MD, Denver, CO

BASIC SCIENTIFIC SYMPOSIUM

B90 NEW INSIGHTS INTO THE PREDISPOSITION, PATHOGENESIS, AND MANAGEMENT OF FUNGAL PNEUMONIA

Assemblies on Microbiology, Tuberculosis and Pulmonary Infections; Allergy, Immunology and Inflammation; Critical Care; Respiratory Cell and Molecular Biology

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

Target Audience
Basic or clinical translational scientists interested in learning about the latest advances in the field of respiratory fungal diseases; clinicians seeking to update their knowledge on the management of immune suppressed or immune competent patients with endemic or opportunistic fungal pneumonia.

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

• learn new findings about the genetic defects and other immune factors that predispose the host to develop fungal pneumonia;

• apply new knowledge about the molecular and cellular mechanisms that underlie the pathophysiology of fungal pneumonia;

• diagnose and integrate new treatment options for fungal pneumonia.

This session will provide attendees with a state of the art review of emerging scientific principles and clinically relevant advances that are pertinent to the understanding of invasive fungal infection of the respiratory system. Individual speakers will describe novel primary immune deficiencies that predispose certain individuals to fungal pneumonia as well as the systems biology approach to comprehensively understand fungal-host cell interactions. Recent insights molecular and cellular pathogenesis of endemic and opportunistic fungal pneumonias will then be considered. Finally, the latest advances in clinical
diagnostic strategies and therapeutic approaches for respiratory fungal diseases will be reviewed.

Chairing:  S. Qureshi, MD, Montreal, Canada  
S.E. Evans, MD, Houston, TX  
C.S. Dela Cruz, MD, PhD, New Haven, CT

2:15 Primary Immunodeficiencies Underlying Respiratory Fungal Infection  
A. Puel, PhD, Paris, France

2:35 Systems Biology Analysis of the Fungal-Host Cell Interaction  
L. Romani, MD, PhD, Perugia, Italy

2:55 Pathogenesis of Opportunistic Fungal Pneumonia  
A.H. Limper, MD, Rochester, MN

3:15 Subversion of Host Immunity by Endemic Fungal Pathogens  
S. Qureshi, MD, Montreal, Canada

3:35 Novel Diagnostic Tools and Approaches to Fungal Pneumonia  
C.A. Hage, MD, Indianapolis, IN

3:55 Current Therapeutic Approaches for Fungal Pneumonia  
S.E. Evans, MD, Houston, TX

There will be a 5-minute discussion after each talk.

Target Audience
All readers and potential authors of AJRCCM, and early career researchers in particular.

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

• understand the scope of the ATS family of journals and what makes a good and acceptable paper;
• highlight main papers in airways disease asthma and COPD including critical care;
• describe major issues in publication ethics.

AJRCCM (Blue Journal) is the premier respiratory journal with the high impact factor for respiratory journals. The aim of this session is to showcase key papers on airways disease from AJRCCM issues over the past year with examples of papers accepted and summarize key findings. Also the session will be organized on issues in publication ethics and the role of the early career AJRCCM group. Time for discussion will be very valuable.

Chairing:  L.J. Brochard, MD, Toronto, Canada  
J.A. Wedzicha, MD, PhD, London, United Kingdom

2:15 Introduction: ATS Family of Journals  
J.A. Wedzicha, MD, PhD, London, United Kingdom

2:25 Highlights in Critical Care in AJRCCM  
L.J. Brochard, MD, Toronto, Canada

2:50 Progress in COPD in AJRCCM  
F.J. Martinez, MD, New York, NY

3:15 Asthma Papers in AJRCCM: Children and Adults  
F.D. Martinez, MD, Tucson, AZ

3:40 Early Career Researchers: How Can You Help?  
A.J. Mackay, MBBS, London, United Kingdom
3:55  Publication Ethics: How to Navigate the Issues
J.A. Wedzicha, MD, PhD, London, United Kingdom

There will be a 5-minute discussion after each talk.
MONDAY • MAY 16

5:00 p.m. - 7:00 p.m.

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 Assembly Membership Meetings will be held on Monday, May 16, 2016, 5:00 p.m. - 7:00 p.m., with the exception of the Assemblies on Behavioral Science and Health Services Research and Pediatrics (see below.)

ALLERGY, IMMUNOLOGY AND INFLAMMATION
Chairing: M.A. Olman, MA, MD, Cleveland, OH

BEHAVIORAL SCIENCE AND HEALTH SERVICES RESEARCH
Chairing: K.A. Riekert, PhD, Baltimore, MD
This Assembly will meet on Sunday, May 15, 2016
6:30 p.m. - 8:30 p.m.

CLINICAL PROBLEMS
Chairing: G. Tino, MD, Philadelphia, PA

CRITICAL CARE
Chairing: C.S. Calfee, MD, San Francisco, CA

ENVIRONMENTAL OCCUPATIONAL AND POPULATION HEALTH
Chairing: J.R. Harkema, DVM, PHD, East Lansing, MI

MICROBIOLOGY, TUBERCULOSIS AND PULMONARY INFECTIONS
Chairing: R.G. Wunderink, MD, Chicago, IL

NURSING
Chairing: D.M. Donesky, PhD, San Francisco, CA

PEDIATRICS
Chairing: J.F. Chmiel, MD, MPH, Cleveland, OH
This Assembly will meet on Sunday, May 15, 2016
6:30 p.m. - 8:30 p.m.

PULMONARY CIRCULATION
Chairing: T. Stevens, PhD, Mobile, AL

PULMONARY REHABILITATION
Chairing: C.L. Rochester, MD, New Haven, CT

RESPIRATORY CELL AND MOLECULAR BIOLOGY
Chairing: N. Kaminski, MD, New Haven, CT

RESPIRATORY STRUCTURE AND FUNCTION
Chairing: R.A. Panettieri, MD, New Brunswick, NJ

SLEEP AND RESPIRATORY NEUROBIOLOGY
Chairing: S.P. Patil, MD, PhD, Baltimore, MD

THORACIC ONCOLOGY
Chairing: M.K. Gould, MD, MS, Pasadena, CA
7:00 p.m. - 10:00 p.m.

ASSEMBLY DINNERS AND RECEPTIONS

Assembly members and non-members, students and fellows are invited to join us for an evening of good food, great company, camaraderie and a very entertaining program. 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 on Monday May 16, 2016 from 7:00 p.m. - 10:00 p.m. immediately following the Assembly Membership Meetings.

Assembly on Allergy, Immunology and Inflammation (All)
&
Assembly on Respiratory Cell and Molecular Biology (RCMB)
Joint Reception
$27.00 - For all

Assembly on Pediatrics Dinner
$80.00 - Fellow
$100.00 - Member
$110.00 - Non Member

Assembly on Clinical Problems (CP) Reception
$17.00 - Fellow
$37.00 - Member
$47.00 - Non Member

Assembly on Respiratory Structure and Function (RSF) Reception
$80.00 - Fellow
$100.00 - Member
$110.00 - Non Member

Assembly on Critical Care (CC) Reception
$17.00 - Fellow
$37.00 - Member
$47.00 - Non Member

Assembly on Sleep, Respiratory and Neurobiology (SRN) Reception
$50.00 - Fellow
$90.00 - Member
$110.00 - Non Member

Assembly on Microbiology, Tuberculosis and Pulmonary Infections (MTPI) Reception
$17.00 - Fellow
$37.00 - Member
$47.00 - Non Member

Assembly on Thoracic Oncology (TO) Reception
$17.00 - Fellow
$37.00 - Member
$47.00 - Non Member

Dinner/Reception Disclaimer – Event prices reflect menu selections.
For more information on the Assembly Dinners and Receptions please visit the ATS Assembly home page at: http://www.thoracic.org/members/assemblies/about/
CLINICAL

PEDIATRIC CLINICAL CORE CURRICULUM

PCC3 PEDIATRIC CLINICAL CORE CURRICULUM

Pediatric Core Curriculum Working Group
6:45 a.m. - 7:45 a.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:
• remain current with medical knowledge relevant to their practice in pediatric pulmonology;
• evaluate their understanding of key skills and content areas in pediatric pulmonology as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
• support clinicians who are engaged in maintenance of certification activities by providing updates on subjects included in recertification requirements.

The Pediatric Core Curriculum symposia promotes lifelong learning and the enhancement of the clinical judgment and skills essential for practicing pediatricians. The symposia will address topics that have been identified by an ATS pediatric working group, which is comprised of members of the ATS Education Committee and the International Conference Committee, who have identified important areas within pediatric medicine (including vasculitic pulmonary diseases, lung defense mechanism, congenital abnormalities of the airways, and respiratory failure). Attendees will increase their medical knowledge as a result of attending this symposium, and this will be measured by a comparison of pre-test vs. post-test results on the corresponding maintenance of certification module. The ATS Pediatric Core Curriculum will focus on a 3-year content cycle of key medical content in the area of pediatric medicine.

Chairing: D.M. Boyer, MD, Boston, MA
P.E. Moore, MD, Nashville, TN

6:45 Congenital Abnormalities of the Upper Airways
D. Simon, MD, Atlanta, GA

7:15 Congenital Abnormalities of the Lower Airways
C.M. Oermann, MD, Kansas City, MO

SUNRISE SEMINARS

Registration Fee: $65.00 (includes continental breakfast.)
Attendance is limited. Pre-registration is required.

6:45 a.m. - 7:45 a.m.

SS201 INNOVATIONS IN ASTHMA THERAPY: INHALED STATINS?
A.A. Zeki, MD, MAS, Sacramento, CA

SS202 BEHAVIORAL ECONOMICS AND PATIENT DECISION-MAKING IN THE AFFORDABLE CARE ACT ERA
M.R. Patel, PhD, MPH, Ann Arbor, MI
N. Thakur, MD, MPH, San Francisco, CA

SS203 NEW DEVELOPMENTS IN CYSTIC FIBROSIS
B. Quon, MD, MBA, Vancouver, Canada

SS204 LUNG TRANSPLANTATION: UPDATE IN PATIENT REFERRAL, SELECTION, AND EVALUATION
J.C. Lee, MD, Philadelphia, PA
SS205  RISK PREDICTION IN IDIOPATHIC PULMONARY FIBROSIS  
B.J. Ley, MD, San Francisco, CA

SS206  IDENTITY THEFT: IS IT REALLY SARCOID?  
E.M. Carmona, MD, PhD, Rochester, MN

SS207  NEW ADVANCES IN INTERSTITIAL LUNG DISEASE  
C.J. Ryerson, MD, Vancouver, Canada

SS208  APPROACH TO THE DIAGNOSTIC WORKUP AND INITIAL MANAGEMENT OF PULMONARY VASCULITIS  
M. Baqir, MBBS, Rochester, MN

SS209  ANTICOAGULATION AND PROCEDURES: OIL AND WATER?  
A.C. Argento, MD, Chicago, IL  
K. Mahmood, MD, Durham, NC

SS210  REBOOTING CODE STATUS: GUIDING PATIENTS AND FAMILIES THROUGH LIFE-THREATENING ILLNESS  
S.M. Brown, MD, MS, Murray, UT

SS211  PHYSIOLOGIC EVALUATION OF PATIENTS WITH OCCUPATIONAL LUNG DISEASE FOR DIAGNOSIS, IMPAIRMENT, AND DISABILITY  
C.J. Schroedl, MD, Chicago, IL

SS212  TREATMENT OF NTM: ALTERNATIVES TO CURRENT ANTIMICROBIALS  
J. Cook, MD, Maywood, IL  
M. Prickett, MD, MPH, Chicago, IL

SS213  MANAGEMENT OF PARAPNEUMONIC EFFUSION IN CHILDREN: AN UPDATE  
R.E. Myers, MD, Cleveland, OH  
K.R. Ross, MD, Cleveland, OH

SS214  DIAGNOSING PULMONARY HYPERTENSION: TRICKS OF THE TRADE  
A. Vaidya, MD, Philadelphia, PA

SS215  INSPIRATORY MUSCLE TRAINING IN COPD  
D. Langer, PhD, PT, Leuven, Belgium

SS216  OPTIMIZATION OF THE 3D IN VITRO ASSAY TO STUDY LUNG STEM/PROGENITOR CELLS  
A.E.M. Hegab, MD, PhD, Tokyo, Japan

SS217  UPDATE IN HYPERBARIC MEDICINE  
J. Evangelista, MD, Detroit, MI

SS218  SLEEP DISORDERED BREATHING IN ADULTS WITH NEUROMUSCULAR DISEASE  
J.E. Orr, MD, La Jolla, CA

SS219  LUNG CANCER IN ASIANS: A DIFFERENT BEAST ALTOGETHER?  
C. Chang, MD, Los Angeles, CA

FD2  NUTS AND BOLTS IN NEGOTIATING A JOB  
Pre-registration is required. There is no additional fee. Attendance is limited.

6:45 a.m. - 7:45 a.m.

Target Audience  
Early career clinical and/or research faculty, clinical and post doctoral fellows, graduate students, residents, nurses, and allied health professionals already involved in or seeking a career in academic pulmonary, allergy, critical care, and/or sleep medicine.

Objectives  
At the conclusion of this session, the participant will be able to:
• identify how their success is gauged.
• understand basic elements needed for advancement in their ideal job.
• learn strategies to negotiate for key items to support their career development.

As a junior faculty member, are you unsure of how to prepare a CV, how to prepare for an interview and how to negotiate what you want when applying for a job? This seminar will provide helpful tips on how to best prepare for and negotiate your ideal job.

Chairing:  C.C. Thomson, MD, MPH, Cambridge, MA

Speakers:  M. Moss, MD, Aurora, CO  
S.S. Carson, MD, Chapel Hill, NC  
J.M. Beck, MD, Denver, CO  
C.S. Rand, PhD, Baltimore, MD
The Presidential Keynote Series provides state of the art lectures on selected topics in an unopposed format to showcase major discoveries in pulmonary, critical care and sleep medicine. The speakers have been chosen by input from the members and various ATS committees with consensus built via the ATS executive committee.

Two sessions are presented each morning during the conference. Below are the breakthroughs for the Tuesday, May 17th series.

**K5  THE CHANGING NATURAL COURSE OF COPD**  
8:00 a.m. - 8:45 a.m.  
**Speaker:** Bartolome R. Celli, MD, Boston, MA  
This session will be chaired by Thomas W. Ferkol, MD, St. Louis, MO

**K6  STRUCTURAL INSIGHTS INTO GPCR SIGNALING: IMPLICATIONS FOR DRUG DISCOVERY**  
8:00 a.m. - 8:45 a.m.  
**Speaker:** Brian Kobilka, MD, Stanford, CA  
This session will be chaired by Atul Malhotra, MD, La Jolla, CA
C1  CLINICAL YEAR IN REVIEW 3
9:00 a.m. - 11:00 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 topic reviews of the key clinical research publications over the last year. Each speaker is asked to review the 5-7 most important and influential publications on their topic in the prior year.

Chairing:  J.L. Taylor-Cousar, MD, Denver, CO
D.J. Lederer, MD, MS, New York, NY
D.W. Ford, MD, MSCR, Charleston, SC

9:00  Palliative Care  
C.E. Cox, MD, MPH, Durham, NC

9:30  Lung Cancer  
N.T. Tanner, MD, MSCR, Charleston, SC

10:00  Sleep in Critical Illness  
R.L. Owens, MD, La Jolla, CA

10:30  Sleep Disordered Breathing  
J.L. Pepin, MD, PhD, Grenoble, France

C2  TOBACCO SMOKING AND CESSATION IN VULNERABLE POPULATIONS

Assemblies on Clinical Problems; Behavioral Science and Health Services Research
9:00 a.m. - 11:00 a.m.

Target Audience
Physicians, nurses, public health officials, physicians in training.

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

• enhance the knowledge of smoking behaviors and smoking cessation therapies in different subpopulations;
• become aware of targeted or customized treatment options for smoking cessation;
• understand and become aware of the risks of light or moderate smoking.

Tobacco smoking is a major risk factor for a variety of diseases. Tobacco smoking substantially impacts respiratory, cardiac, and vascular health resulting in excess health care costs and premature loss of life. Some ethnic groups and communities are disproportionately impacted, manifesting greater risk of smoking-related lung cancer and death. This session explores the state of the knowledge on the genetics of tobacco smoking and smoking cessation; tobacco use in several ethnic groups; and targeted smoking cessation programs.

Chairing:  M.G. Foreman, MD, Atlanta, GA
D.J. Upson, MA, MD, Albuquerque, NM

9:00  Tobacco Use in African Americans  
E.R. Neptune, MD, Baltimore, MD

9:25  Tobacco Use in Latinos  
F. Holguin, MD, MPH, Pittsburgh, PA

9:50  Ethnic Variation in Lung Cancer Among Smokers  
M.P. Rivera, MD, Chapel Hill, NC
10:15  Best Approaches to Smoking Cessation in Targeted Groups
M. Castro, MD, MPH, St. Louis, MO

10:40  Genetics of Tobacco Addiction and Smoking Cessation
M.G. Foreman, MD, Atlanta, GA

C3  KEY MANAGEMENT CONSIDERATIONS IN SARCOIDOSIS

Assemblies on Clinical Problems; Allergy, Immunology and Inflammation
9:00 a.m. - 11:00 a.m.

Target Audience
Practitioners who actively care for patients with sarcoidosis, as well as investigators involved in clinical or translational sarcoidosis studies.

Objectives
At the conclusion of this session, the participant will be able to:
• screen for and diagnose cardiac sarcoidosis;
• understand when to start immunosuppression for pulmonary sarcoidosis and for other “dangerous” sarcoidosis phenotypes;
• devise a steroid sparing treatment regimen, and know better how to counsel patients on the rationale for the various options.

We begin this session by a review of the pathophysiology of sarcoidosis from the perspective of providing rationale for treatment strategies. We then highlight management of cardiac sarcoidosis, fibrotic pulmonary sarcoidosis, and pulmonary hypertension - the phenotypes of sarcoidosis most associated with poor outcomes and increased mortality. Following this, we review indications and use of currently available immunosuppressive agents, and introduce potential new therapies for sarcoidosis by summarizing the status of current clinical trials.

Chairing:  K.C. Patterson, MD, Philadelphia, PA
A.S. Morgenthau, MD, New York, NY

9:00  A Patient’s Perspective
Speaker To Be Announced

9:05  Etiology and Immunopathogenesis of Sarcoidosis
D.R. Moller, MD, Baltimore, MD

9:20  When Is a Sarcoidosis Patient in Danger from Their Disease and in Need of Treatment?
A.U. Wells, MD, London, United Kingdom

9:35  When Should We Move on from Prednisone and What Should We Give?
J.C. Grutters, MD, PhD, Nieuwegein, Netherlands

9:50  What Is the Role of Immunosuppression in Preventing Pulmonary Fibrosis in Sarcoidosis?
K.C. Patterson, MD, Philadelphia, PA

10:05  Should Sarcoidosis-Associated Pulmonary Hypertension be treated?
R.P. Baughman, MD, Cincinnati, OH

10:20  How Should We Diagnose and Treat Cardiac Sarcoidosis?
D.A. Culver, DO, Cleveland, OH

10:35  What Are the Potential New Treatments for Sarcoidosis? An Update on Clinical Trials
A.S. Morgenthau, MD, New York, NY

C4  SEPSIS CARE FROM START TO FINISH

Assemblies on Critical Care; Clinical Problems; Nursing
9:00 a.m. - 11:00 a.m.

Target Audience
Clinicians and researchers who seek to improve the care of sepsis patients.

Objectives
At the conclusion of this session, the participant will be able to:
• understand methods of improving the early identification of sepsis, including public awareness.
campaigns, EMS identification, and SOFA score in ER/hospital ward;

• deliver evidence-based care, including fluid-resuscitation, use of e-ICU;

• improve health system approaches to quality improvement and addressing long-term sequelae of sepsis.

Sepsis is the single most expensive cause of hospitalization and the largest contributor to hospital death. Despite its staggering impact, almost nothing is known about how to treat sepsis patients outside of the six “golden hours” immediately after presentation. In this session, leading experts will review the emerging evidence to inform clinicians about improving sepsis treatment across different time windows and discuss critical knowledge gaps that require future research. In the process, attendees will gain new insight into the intersection of sepsis with pre-hospital care, sepsis care on the wards, sepsis related hospital readmission, and systems-level sepsis quality improvement.

Chairing: V. Liu, MD, MS, Oakland, CA
H.C. Prescott, MD, MA, Ann Arbor, MI

9:00 Sepsis Screening in the Community: How Do We Inform the Public?
S. Simpson, MD, Kansas City, KS

9:18 Pre-Hospital Care of Sepsis: Leveraging Emergency Medical Service Providers
C.W. Seymour, MD, MSc, Pittsburgh, PA

9:35 Life After Rivers: Neither EGDT Nor Neglect
S. Peake, PhD, Victoria, Australia

9:52 Identifying Sepsis Outside the ICU: SIRS or qSOFA?
D.C. Angus, MD, MPH, Pittsburgh, PA

10:09 Enabling Best Sepsis Care Through Tele-Medicine
D.W. Ford, MD, MSCR, Charleston, SC

10:26 The Long Tail of Sepsis: Readmissions and Beyond
H.C. Prescott, MD, MA, Ann Arbor, MI

10:43 Optimizing Learning Health Care Systems to Address Sepsis
V. Liu, MD, MS, Oakland, CA
C6 A REPORT CARD ON EDUCATION DURING PULMONARY REHABILITATION: HOW ARE WE DOING?
Assemblies on Pulmonary Rehabilitation; Behavioral Science and Health Services Research; Nursing
9:00 a.m. - 11:00 a.m.

Target Audience
Individuals engaged in the education of pulmonary patients; physicians, nurses, physical/physiotherapists and respiratory therapists.

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

• outline the current approach to patient education in pulmonary rehabilitation and present the evidence illustrating the effects of patient education on outcomes such as knowledge, quality of life, self-efficacy, healthcare utilization;

• formulate ideas for future directions in education in pulmonary rehabilitation.

The objectives of this symposium are to explore our current approaches to engaging people with COPD in educational activities, using pulmonary rehabilitation education programs as a model. We will explore current educational approaches (didactic and interactive self-management education), their successes and failures in our current communities of practice, and how we might adapt these approaches to modernize educational activities and meet the learning needs of people with COPD in 2015. Participants will be involved in a discussion on the complexity of facilitating health behavior change in people with COPD, how education may be a component of this and what future directions may be in the digital learning world.

Chairing:
S. Lareau, MS, RN, Aurora, CO
R. ZuWallack, MD, Hartford, CT
L. Nici, MD, Providence, RI
F.C. Blackstock, PhD, BPhysio(Hons), Melbourne, Australia

9:00 Historical Approach to Education in Pulmonary Rehabilitation for People with COPD
S. Lareau, MS, RN, Aurora, CO

9:15 A Patient Perspectives on Education in Pulmonary Rehabilitation
Speaker To Be Announced

9:20 Current Educational Models in Pulmonary Rehabilitation: Do They Pass or Fail?
F.C. Blackstock, PhD, BPhysio(Hons), Melbourne, Australia

9:50 Health Literacy: “I Don’t Understand, So How Can I Learn?” Moving Towards Patient Tailored Education
M.R. George, AE-C, PhD, RN, New York, NY

10:15 Challenges of Changing Behavior: Education Is Only One Component
J. Bourbeau, MD, Montreal, Canada

10:40 Education in Pulmonary Rehabilitation: Where Do We Need to Go Next?
L. Nici, MD, Providence, RI
C7 UNDERSTANDING CLINICAL TRIALS DATA IN PULMONARY ARTERIAL HYPERTENSION AND USING THOSE DATA IN PRACTICE

Assemblies on Pulmonary Circulation; Clinical Problems
9:00 a.m. - 11:00 a.m.

Target Audience
Clinicians and clinical researchers in pulmonary disease

Objectives
At the conclusion of this session, the participant will be able to:
• understand how PAH trials are designed and the basics of statistical interpretation (e.g.-what is a hazard ratio?);
• understand the data emerging in PAH and how it applies to patients;
• outline the importance of various endpoints in PAH trials and why they are important to patient care.

This session will focus on the wealth of clinical trials data in pulmonary hypertension. Starting with a discussion of how such trials are designed and then covering specific trials and endpoints will give the audience an overview that they can apply to the care of patients with pulmonary arterial hypertension.

Chairing:
R.N. Channick, MD, Boston, MA
V. McLaughlin, MD, Ann Arbor, MI

9:00 How Are Clinical Trials in PAH Designed: The Basics
Speaker to be Announced

9:30 Comparing Endpoints in PAH Trials: Surrogate, Correlate, or Something Else?
S.M. Kawut, MD, MS, Philadelphia, PA

9:50 PRO: Long-Term Morbidity Mortality Trials Are the Way to Go in PAH
V. McLaughlin, MD, Ann Arbor, MI

10:05 CON: Event Driven Trials Are of Limited Value. Trials Need to Be Designed to Determine if a Drug Actually Improves Patients' Lives
V. Tapson, MD, West Hollywood, CA

10:20 PRO: Upfront Combination Therapy Should Now Be the Standard of Care in PAH
M.J.C. Humbert, MD, PhD, Le Kremlin Bicetre, France

10:35 CON: Upfront Combination Therapy Has Not Been Proven to Be Superior to Sequential Combination Therapy
R.N. Channick, MD, Boston, MA

10:50 Panel Discussion
R.N. Channick, MD, Boston, MA

C8 BREACHING BARRIERS: TARGETED DELIVERY OF THERAPEUTICS TO THE LUNG

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Pediatrics; Pulmonary Circulation; Respiratory Structure and Function; Thoracic Oncology
9:00 a.m. - 11:00 a.m.

Target Audience
Pulmonary and critical care clinicians (adult, pediatric, neonatal) and lung researchers.

Objectives
At the conclusion of this session, the participant will be able to:
• learn the latest findings about overcoming barriers to delivery of therapeutic agents to the lungs;
• learn the advantages and limitations of endothelial vs epithelial targeting for a variety of molecular entities in a range of lung diseases;
• apply knowledge regarding lung-specific delivery to overcome current limitations in treatment of both rare and common lung diseases.
Many therapeutics which show promise in vitro are abandoned because of systemic toxicity or inability to effectively penetrate lung tissue via airways or vasculature. Emerging knowledge and technology is improving lung-specific delivery, eliminating critical barriers in treatment of many lung diseases.

Chairing: J. Hagood, MD, La Jolla, CA
Z. Borok, MD, Los Angeles, CA

9:00 Caveolar Pumping for Lung Specific Delivery
J. Schnitzer, MD, La Jolla, CA

9:25 Mucus Penetrating Nanoparticles for Drug Delivery
J.S. Suk, PhD, Baltimore, MD

9:50 Using Nanocarriers to Target the Lung Endothelium
V.R. Muzykantov, MD, PhD, Philadelphia, PA

10:15 Mesenchymal Stem Cell Exosomes Target the Acutely Injured Lung
M. Matthay, MD, San Francisco, CA

10:40 Panel Discussion
J. Hagood, MD, La Jolla, CA

CLINICAL • TRANSLATIONAL

C9 THE LINK BETWEEN CILIARY ASSEMBLY DEFECTS, NEONATAL RESPIRATORY DISTRESS AND BRONCHIECTASIS IN ADULTHOOD: A PRIMER ON PRIMARY CILIARY DYSKINESIA

Assemblies on Pediatrics; Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections; Respiratory Cell and Molecular Biology

9:00 a.m. - 11:00 a.m.

Target Audience
Pulmonologists, nurses, allied health professionals, clinical trainees, translational scientists.

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

• acquire an understanding of how inherited defects in ciliary assembly mechanisms lead to impaired ciliary structure and function;

• learn how to diagnose PCD with ciliary ultrastructural studies, genetic studies and nasal nitric oxide measurement;

• understand the adverse health consequences of impaired ciliary function from fetal development to adult life.

PCD is an inherited disease in which defects of the motile cilia lining the respiratory tract cause impaired mucociliary clearance, resulting in progressive bronchiectasis that may cause end-stage lung disease by adulthood. This session will highlight new insights into pathomechanisms of disease that have come from both model systems and human gene discovery studies, as well as clinical insights that have arisen from multi-center efforts in North America and Europe to study PCD cohorts over the past decade. Clinical insights will include genotype-phenotype associations, new diagnostic tests and an update on clinical trials that are currently being conducted around the world.

Chairing: S.D.M. Dell, MD, Toronto, Canada
T.W. Ferkol, MD, St. Louis, MO

9:00 A Patient’s Perspective
Speaker To Be Announced

9:05 Mechanisms of Ciliary Assembly Defects in PCD
S. Brody, MD, St. Louis, MO

9:30 Phenotype-Genotype Relationships in Children and Adults
S. Davis, MD, Indianapolis, IN

9:50 Incorporating Emerging Genetic Testing into Diagnostic Strategies
M. Leigh, MD, Chapel Hill, NC

10:10 Airway Microbiology and Inflammation in PCD
K.N. Olivier, MD, MPH, Bethesda, MD

10:30 The Impact of Disease Management Strategies on Long-Term Prognosis
J. Lucas, PhD, Southampton, United Kingdom

There will be a 5-minute discussion after each talk.
BEHAVIORAL • CLINICAL • TRANSLATIONAL
SCIENTIFIC SYMPOSIUM

C10 ACHIEVING “ENVIRONMENTAL JUSTICE”: A MAJOR STEP TOWARD RESPIRATORY HEALTH EQUALITY
Assemblies on Environmental, Occupational and Population Health; Allergy, Immunology and Inflammation; Behavioral Science and Health Services Research; Clinical Problems; Critical Care; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Pediatrics; Sleep and Respiratory Neurobiology; Health Equality Sub-Committee
9:00 a.m. - 11:00 a.m.

Target Audience
Clinicians, researchers and public health practitioners focusing on the prevention and treatment of respiratory diseases.

Objectives
At the conclusion of this session, the participant will be able to:
• learn new findings about the impact of major environmental risk factors on respiratory health disparities;
• apply new strategies to advocate for environmental justice as means to achieve respiratory health equality;
• discuss feasible and necessary policies to achieve environmental justice and thus move toward respiratory health equality.

Because the frequency of major environmental risk factors for respiratory diseases differs across demographic groups (defined by socioeconomic status, race/ethnicity, sexual orientation, health care access, occupation, or other characteristics), respiratory health disparities are commonly encountered in pediatric and adult pulmonary medicine. Attainment of respiratory health equality requires the ending of respiratory health disparities, which can be achieved only through multidisciplinary efforts to eliminate detrimental environmental exposures. This symposium will review and discuss the current challenges posed by key environmental risk factors for health disparities (smoking, air pollution and occupation), focusing on knowledge gaps and health policy needs.

Chairing: J.C. Celedon, MD, DrPH, Pittsburgh, PA
J.M. Samet, MD, MS, Los Angeles, CA
E.G. Burchard, MD, MPH, San Francisco, CA

9:00 Environmental Justice and Health Equality: Conceptual Framework
J.C. Celedon, MD, DrPH, Pittsburgh, PA

9:20 Tobacco Use and Respiratory Health Disparities
P. Ling, MD, San Francisco, CA

9:40 Traffic-Related Air Pollution: Who Lives Closer to Major Highways?
J.R. Balmes, MD, San Francisco, CA

10:00 Countering Targeted Campaigns Against Vulnerable Populations: Menthol Cigarettes as a Case Study
E.R. Neptune, MD, Baltimore, MD

10:20 Not All Occupations Are Equal: Migrant Workers as a Case Study
M.B. Schenker, MD, MPH, Davis, CA

10:40 Short and Long Term Policies to Achieve Environmental Justice
M.B. Rice, MD, MPH, Boston, MA

BASIC • CLINICAL • TRANSLATIONAL
SCIENTIFIC SYMPOSIUM

C11 PATHOGENESIS AND TREATMENT OF OBSTRUCTIVE LUNG DISEASES: NEW INSIGHTS
Assemblies on Respiratory Structure and Function; Allergy, Immunology and Inflammation; Microbiology, Tuberculosis and Pulmonary Infections; Respiratory Cell and Molecular Biology
9:00 a.m. - 11:00 a.m.

Target Audience
Allergists, pulmonologists, basic scientists, physiologists, translational researchers, fellows and residents, and graduate trainees interested in the pathophysiology and emerging treatment options for obstructive lung diseases.
Objectives

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

- describe factors contributing to the onset and progression of obstructive lung diseases;
- understand the role of genetics, epigenetics and the microbiome on lung function in obstructive lung diseases;
- learn about new findings on potential therapeutic strategies and research endeavors in obstructive lung diseases.

The factors responsible for the initiation, maintenance, progression, and exacerbations of obstructive lung diseases are incompletely understood. Airway remodeling, acute and chronic inflammation and airway hyperresponsiveness are well known established hallmarks of these syndromes. However, the contributions of microbial and environmental exposures as well as the influence of genetic and epigenetic changes to disease risk and treatment are being actively investigated, elucidated and appreciated. This integrated symposium will present insights into the impact of these diverse factors to the development and progression of asthma and COPD, and how this knowledge is being applied to identify novel targets for therapy.

Chairing:
B. Camoretti-Mercado, PhD, Tampa, FL
R. Penn, PhD, Philadelphia, PA
J.E. Bourke, PhD, Clayton, Australia

9:00 Obstructive Pulmonary Disease: What Went Wrong and How to Fix It
M. Kraft, MD, Tucson, AZ

9:20 Detection of Early Stages of Pulmonary Obstructive Disease: An Ambitious Goal
S.I. Rennard, MD, Melbourn, United Kingdom

9:40 Genomics of Obstructive Lung Diseases: New and Old Players
P.G. Woodruff, MD, MPH, San Francisco, CA

10:00 Epigenetic Control of Smooth Muscle Phenotype
W. Gerthoffer, PhD, Mobile, AL

10:20 Significance and Interactions of the Lung Microbiome in Obstructive Lung Diseases
S.V. Lynch, PhD, San Francisco, CA

10:40 Searching New Interventions for Obstructive Lung Diseases: Promises and Challenges
S.R. White, MD, Chicago, IL

There will be a 5-minute discussion after each talk.
of target engagement and biological effects in early development, and early markers of toxicity or harms and patient risk stratification. The session will define biomarkers, their clinical utility and provide a development and regulatory perspective on their use in clinical trials.

Chairing: T.F. Reiss, MD, New Hope, PA  
J. Moss, MD, PhD, Bethesda, MD  
P. Mazzone, MD, MPH, Cleveland, OH

9:00 How to Identify a Biomarker  
J.A. Wagner, MD, PhD, Cambridge, MA

9:24 Cross-Talk Among Medical Subspecialties Facilitates Biomarker Discovery and Use in Clinical Trial Design  
R. Vessey, MA, BM, BCh, Summit, NJ

9:48 Biomarkers: Here, There and Everywhere: Lessons from a Longitudinal Study of LAM  
J. Moss, MD, PhD, Bethesda, MD

10:12 Molecular Testing as a Guide to Lung Cancer Therapeutics  
C.A. Powell, MD, New York, NY

10:36 The Regulatory Perspective: Acceptability of Biomarkers as Surrogate Endpoints in Clinical Trials  
R. Meyer, MD, Silver Spring, MD

BASIC SCIENTIFIC SYMPOSIUM

C13 PROGRESS IN STEM CELL BIOLOGY AND DISEASE APPLICATIONS

9:00 a.m. - 11:00 a.m.

Target Audience
All clinicians, basic researchers, and other lung health care professionals looking to learn about state of the art developments in stem cell biology and their applications to lung diseases

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

- appreciate the current state of the art with respect to stem cell biology;
- appreciate the current state of the art with respect to cancer stem cells;
- appreciate applications of stem cell and cancer stem cell biology to respiratory diseases and critical illnesses.

The potential for use of stem cells to prevent or treat human disease has led to unprecedented growth of the field of regenerative medicine. Moreover, increasing evidence demonstrates the feasibility of utilizing an individual's own cells in developing potential stem cell-based therapeutic approaches: the ultimate in personalized medicine. This symposium will provide a strong basic scientific and clinical rationale and current state of the art in this rapidly developing area. The speakers are all accomplished stem cell investigators from outside the respiratory field who will bring new knowledge and perspective that will help guide future developments in lung regenerative medicine.

Chairing: D.J. Weiss, MD, PhD, Burlington, VT  
D.N. Kotton, MD, Boston, MA

9:00 Normal and Neoplastic Stem Cells  
I. Weissman, MD, Stanford, CA

9:30 Imaging Cancer Heterogeneity and Therapy Resistance in Real Time  
T. Reya, PhD, La Jolla, CA

10:00 Interspecific Blastocyst Complementation: A Novel Approach to Generate Functional Organs  
Speaker To Be Announced

10:30 Defining the Lung Cell By Cell  
M. Krasnow, PhD, Palo Alto, CA

Oral And Poster Presentations Of Scientific Research And Case Reports Abstract Sessions Will Be Published In The Final Program.
BASIC • CLINICAL • TRANSLATIONAL
WORKSHOP

WS5 LATEST ADVANCES IN THE LUNG MICROBIOME

Registration Fee: $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

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

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

Target Audience
Clinical and laboratory investigators and health care professionals interested in microbiome research and application of microbiome to patient care in the outpatient, hospital and/or critical care setting, including physicians, trainees, early career investigators.

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

• learn recent advances in our understanding of the host-microbe interactions on disease and maintenance of lung health;

• appreciate the vast emerging information on microbial communities in specific disease states and how the dynamic host-microbe interaction affects disease progression and treatment decisions, allowing attendees the ability to apply this knowledge to their own areas of interest;

• understand the functional significance of the lung microbiome and how these microbes can alter the lung environment in specific disease states. Attendees will be able to critically examine microbiome research and further investigate how these organisms can affect the lung milieu.

Understanding the composition of various aspects of what makes us who we are and how we develop disease is paramount to understanding disease pathogenesis, treatment responses, and personalizing medical care. The lung microbiome is not only an area of emerging research interest, but also one that has considerable clinical impact. Improved knowledge about microbial communities in the lung will ultimately contribute to development of innovative...
approaches and therapies to diagnose and treat chronic respiratory diseases. This workshop will highlight the latest findings on lung microbiome investigations in gut-lung interactions, disease states such as asthma and HIV, and the potential for novel therapeutic strategies.

**Chairing:** M.R. Gingo, MD, MS, Pittsburgh, PA
H.L. Twigg, MD, Indianapolis, IN

11:45 **Normal Lung Microbiome and Lung Pneumotypes**
L. Segal, MD, New York, NY

12:07 **Microbiome and Asthma**
Y.J. Huang, MD, Ann Arbor, MI

12:29 **Gut-Lung Microbial Interaction**
S.V. Lynch, PhD, San Francisco, CA

12:51 **Correlation of the Lung Microbiome with Metabolome in HIV**
S.K. Cribbs, MD, MSc, Decatur, GA

**BEHAVIORAL • CLINICAL**

**WORKSHOP**

**WS6 TO TWEET OR NOT TO TWEET: SOCIAL MEDIA IN HEALTH CARE AND EDUCATION**

Registration Fee: $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

Assemblies on Behavioral Science and Health Services Research; Allergy, Immunology and Inflammation; Clinical Problems; Pediatrics; Respiratory Cell and Molecular Biology

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

**Target Audience**
Health care providers, educators, and researchers at all levels of digital fluency, from beginner to expert; individuals interested in learning about how these digital platforms are being used in health care and for research.

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

- become acquainted with and review different types of social media and web-based information sharing platforms;
- discover how patients and providers are using digital and social media to transform the way health care is delivered and taught worldwide;
- develop strategies to integrate social media into clinical practice, academic research, and education.

Social media and digital communication are dramatically changing the way patients and health care providers communicate and interact. Cell phones allow 63% of cell phone owners to use mobile internet where social media has empowered patients to expand their health care knowledge and participate in research. Social media provides practitioners with new ways to learn about real-time information about relevant topics, lead discussions, promote causes, and build relationships with patients. In this session, five social media experts will discuss how to navigate social media platforms and review how others are using digital tools and social media platforms to improve communication, increase knowledge acquisition, and improve patient care. With a combined following of over 13,000 Twitter followers, these four experts demonstrate how both junior and senior faculty, individuals with MDs and PhDs, can incorporate Twitter into their daily lives to discuss the results of studies, promote studies, ask questions, and network. This workshop includes a hands-on component as participants who sign up for a Twitter account prior to the workshop will have the opportunity to tweet questions to the speakers using a predesignated workshop hashtag. The speakers will answer questions at the end of the session and also tweet responses during the workshop. This interactive component will have two purposes. First, participants will get their questions answered. Secondly, participants will learn some of the basics of tweeting, retweeting, marking favorites, using hashtags and more. Finally, we will discuss how to leverage social media to improve the health education of students, patients, and providers.

**Chairing:**
W.G. Carlos, MD, MSCR, Indianapolis, IN
A.C. Wu, MD, MPH, Boston, MA

11:45 **To Thine Own Self Be True: What to Expect**
W.G. Carlos, MD, MSCR, Indianapolis, IN
11:50 Much Ado About Something: Introduction to Social Media
B.E. Himes, PhD, Philadelphia, PA

12:05 The Taming of Social Media: #ATS2016
C.L. Carroll, MD, Hartford, CT

12:20 All of Health Care Research is a Stage: The Role of Social Media
A.C. Wu, MD, MPH, Boston, MA
N. Kaminski, MD, New Haven, CT

12:40 The Merchant of Medical Education
A.S. Clay, MD, Durham, NC

12:50 As You Tweet It: The Perils of a Social Media Presence
E. Skinner, PhD, PT, Melbourne, Australia

1:00 All’s Well That Ends Well
A.C. Wu, MD, MPH, Boston, MA
W.G. Carlos, MD, MSCR, Indianapolis, IN

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 ROLE OF VITAMIN D IN ASTHMA AND ABPA
M. Singh, MD, Chandigarh, India

MP602 A GUIDE TO SUBMITTING A SUCCESSFUL APPLICATION TO PCORI
J.A. Krishnan, MD, PhD, Chicago, IL

MP603 FLEISCHNER SOCIETY GUIDELINES FOR PULMONARY NODULES
A.C. Mehta, MBBS, Cleveland, OH

MP604 PULMONARY VASCULITIS: CONCEPTUAL APPROACH TO MANAGEMENT
U. Specks, MD, Rochester, MN

MP605 INTERSTITIAL LUNG PATHOLOGY FOR NON-PATHOLOGISTS
K.D. Jones, MD, San Francisco, CA

MP606 APPROACH TO THE PATIENT WITH REFRACTORY CHRONIC COUGH
P.V. Dicpinigaitis, MD, Bronx, NY

MP607 ADVANCES IN THE MANAGEMENT OF PULMONARY ARTERIAL HYPERTENSION: A CASE-BASED DISCUSSION OF APPLYING THE LATEST GUIDELINES AND CLINICAL RESEARCH
M.M. Chakinala, MD, St. Louis, MO

MP608 LIFE AFTER DEATH: ENHANCING TRANSPLANTATION VIA OPTIMAL MANAGEMENT OF THE ORGAN DONOR
D.R. Nunley, MD, Louisville, KY

MP609 AIR POLLUTION DOESN’T RECOGNIZE THE BORDER: GLOBAL PERSPECTIVE OF AIR POLLUTION
M. Akpinar-Elci, MD, MPH, Norfolk, VA

MP610 DIAGNOSTIC ALGORITHMS FOR SUSPECTED PNEUMONIA IN VENTILATED PATIENTS
R.G. Wunderink, MD, Chicago, IL

MP611 A DIFFICULT CONVERSATION: TALKING TO YOUR PATIENT ABOUT SEX
G.S. Bauldoff, PhD, RN, Powell, OH
E.G. Collins, PhD, RN, Chicago, IL

MP612 A SYSTEMATIC APPROACH TO PULMONARY DISEASE IN CHILDREN WITH COMPLEX CARDIAC DISEASE
R.R. Deterding, MD, Aurora, CO

MP613 DELIVERING EFFECTIVE PULMONARY REHABILITATION WITH MINIMAL RESOURCES
J. Alison, PhD, MSc, PT, Lidcombe, Australia

MP614 DAY/NIGHT AND CLOCK IN LUNG PATHOPHYSIOLOGY
I. Rahman, PhD, Rochester, NY

MP615 PERSONALIZED MEDICINE FOR ASTHMA: WHAT’S THE HYPE ABOUT PHENOTYPE?
G.S. Skloot, MD, New York, NY

MP616 IMPACT OF MILD OSA ON CARDIOVASCULAR OUTCOMES: A REPORT FROM THE ATS SRN TASK FORCE
S. Chowdhuri, MD, MS, Detroit, MI

MP617 INSIGHTS ON RUNNING A MULTIDISCIPLINARY TEAM DISCUSSION FOR LUNG NODULES
D. Upadhyay, MD, Fresno, CA
MEDICAL EDUCATION SEMINAR

ME3  PRACTICAL SKILLS FOR TEACHING IN SMALL GROUPS

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

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

Target Audience
Providers, including physicians, nurses and advanced practice providers, within pulmonary, critical care and sleep medicine who seek to expand their teaching repertoire and, in particular, improve their skills in small group setting.

Objectives
At the conclusion of this session, the participant will be able to:
• describe strategies that can be employed before entering the classroom to ensure a productive small group learning environment;
• delineate an approach to manage challenging learners in the small group setting;
• describe the appropriate balance of speech between students and teacher and tools for managing the white board effectively during small group teaching.

The small group is one of the primary settings in which medical educators may be asked to interact with learners. While often a highly rewarding experience, it can be a challenging environment in which to teach due to the small number of learners, the emphasis on interaction and active participation and the less structured nature of the teaching encounter. This session will use an interactive format to impart strategies for managing these and other challenges and ensuring successful small group teaching encounters.

Speaker:  A.M. Luks, MD, Seattle, WA

THEMATIC SEMINAR SERIES

TSS1  CONTEMPORARY CONTROVERSIES IN THE DIAGNOSIS AND MANAGEMENT OF IDIOPATHIC PULMONARY FIBROSIS: A PRO/CON DEBATE

Registration Fee: $140.00 for full series (includes box lunch)
Attendance is limited. Pre-registration is required.

This is part 3 of a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The program for the full series is included with the Sunday, May 15, 12:15 p.m. program.

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

PRO: Decline of 10% or Greater in FVC Should be Regarded as Treatment Failure in IPF
V. Cottin, MD, PhD, Lyon, France

CON: Decline of 10% or Greater in FVC Should be Regarded as Treatment Failure in IPF
P.W. Noble, MD, Los Angeles, CA

TSS2  REDUCING HOSPITAL READMISSIONS

Registration Fee: $140.00 for full series (includes box lunch)
Attendance is limited. Pre-registration is required.

This is part 3 of a 3-part series. Those registering for this seminar series will be registered for all 3 parts. The program for the full series is included with the Sunday, May 15, 12:15 p.m. program.

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

PRO: Medications Are the Key to Reducing Readmissions in COPD
G.T. Ferguson, MD, Livonia, MI

CON: Medications Are the Key to Reducing Readmissions in COPD
R.A. Wise, MD, Baltimore, MD
Target Audience
Internists and subspecialists 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:

- remain current with medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their understanding of key skills and content areas in pulmonary, critical care, and sleep medicine, as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
- 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 medical content in the areas of pulmonary, critical care, and sleep medicine. The topics are also aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to assist clinicians with staying current with the growth of information relevant to their medical practice, as well as provide an opportunity to evaluate individual knowledge and skills while earning MOC Medical Knowledge points.

Chairing:
J.S. Balachandran, MD, Chicago, IL
T.S. Wang, MD, Los Angeles, CA

2:15 Circadian Disorders: Overview of Biology
S.P. Shea, PhD, Portland, OR

2:45 Circadian Disorders: Shift Work, Advanced, Jet Lag
K.M. Sharkey, MD, PhD, Providence, RI

3:15 Parasomnias: REM
S. Pamidi, MD, Montreal, Canada

3:45 Parasomnias: NREM
A.V. Shelgikar, MD, Ann Arbor, MI

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 TOPICS IN PULMONARY MEDICINE

C82 INFECTION AND EXACERBATIONS: LEARNING ACROSS PULMONOLOGY
Assemblies on Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections
2:15 p.m. - 4:15 p.m.
Target Audience
Clinicians and researchers interested in infection as applied to exacerbations and progression of chronic respiratory disease.

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

• describe new findings about infection as applied to disease progression and exacerbations across the major chronic respiratory diseases;

• understand novel strategies to manage infection in the context of chronic lung diseases;

• apply learning from different disease areas in relation to infection, exacerbations, and the healthy human airway microbiome.

We believe that clinicians and scientists in one discipline can learn much from the experience of those working in others, even within a specialty such as pulmonology. This symposium unites the areas of infection and clinical problems across disease areas, to discuss the role of infection and exacerbations in chronic respiratory disease. The Symposium will be of interest to a wide range of clinicians, scientists and industry professionals from across our Society.

Chairing:  J.R. Hurst, MBChB, PhD, London, United Kingdom
            K.L. Gates, MD, Chicago, IL
            S. Sethi, MD, Buffalo, NY

2:15 The Healthy Human Airway Microbiome
R.P. Dickson, MD, Ann Arbor, MI

2:35 Infection and Exacerbations of Asthma
Y.J. Huang, MD, Ann Arbor, MI

3:00 Respiratory Infection and COPD
J.R. Hurst, MBChB, PhD, London, United Kingdom

3:25 Microbial Dysbiosis and Exacerbations of Bronchiectasis
J.D. Chalmers, MBChB, PhD, Dundee, United Kingdom

3:50 The Role of Infection in the Progression of ILD
H.R. Collard, MD, San Francisco, CA

There will be a 5-minute discussion after each talk.
3:27 Chronic Lung Allograft Dysfunction (CLAD) Classification Update
A.R. Glanville, MBBS, MD, Sydney, Australia

3:51 Pathology of Pulmonary Allograft Dysfunction
G.J. Berry, MD, Palo Alto, CA

There will be a 5-minute discussion after each talk.

C84 THE NEW ICU RECOVERY TOOLKIT: 5 HAMMERS LOOKING FOR THE RIGHT NAIL

Assemblies on Critical Care; Behavioral Science and Health Services Research; Clinical Problems
2:15 p.m. - 4:15 p.m.

Target Audience
Clinicians working in the ICU or dealing with patients in its aftermath.

Objectives
At the conclusion of this session, the participant will be able to:
• more appropriately evaluate proposals for what post-ICU interventions their program should find;
• recommend resources to their patients on ICU discharge more selectively and with increased effectiveness;
• understand the strengths and limitations of existing data on ICU recovery interventions.

While we all know that problems are common after the ICU, nobody really knows what to do to make those problems better. Some people are worried enough that they seem ready to jump on any potential solution. Five approaches seem to garner the most excitement. In this session, we step back from the individual solutions to ask emerging leaders in the field: Why should this approach work? What are the data so far? (And why might they have been negative despite the approach still being hopeful?) How do we pick the right patient and system for that intervention?

Chairing: T.J. Iwashyna, MD, PhD, Ann Arbor, MI
C. Hodgson, PT, PhD, Melbourne, Australia
N. Pinto, MD, Chicago, IL

2:15 Fix the Brain
J.C. Jackson, PsyD, Nashville, TN

2:35 Move the Body
C. Hodgson, PT, PhD, Melbourne, Australia

2:55 Recruit the General Practitioners
J. Gensichen, MD, MSc, MPH, Jena, Germany

3:15 Do it Ourselves (with a Post-ICU Clinic)
E. Wilcox, MD, MPH, Toronto, Canada

3:35 Help Survivors Help Each Other
M.E. Mikkelsen, MD, Philadelphia, PA

3:55 Not if, but Which: Selecting the Right Follow-Up for the Right Patient
H.C. Prescott, MD, MA, Ann Arbor, MI

C85 SCIENTIFIC BREAKTHROUGHS IN RNA BIOLOGY: WHAT'S NEW, EXCITING AND THERAPEUTIC!

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

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

Target Audience
Providers and trainees interested in clinical, basic and translational lung physiology, development and disease and molecular biology.

Objectives
At the conclusion of this session, the participant will be able to:
• understand and improve knowledge of the role of Linc RNA in lung development;
• understand the potential use of MicroRNAs as therapeutic targets.
This session will focus on some of the recently identified and novel roles of RNA species in regulating lung development and in treating lung disease. Speakers will discuss the role of long non-coding RNA in lung development and the potential for micro RNA as therapies for lung cancer. Thus the session will span basic biology and development to cutting edge therapeutics. It will synergize with the 2016 Scientific Core theme. Presentations from experts in the field will be complemented by abstract related to the topic being discussed.

Speakers And Talks To Be Announced

BEHAVIORAL • CLINICAL

C86 SELF-MANAGEMENT AND RISK REDUCTION CHALLENGES IN VULNERABLE POPULATIONS

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

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

Target Audience
Nurses, physicians, physician assistants, respiratory therapists, respiratory care practitioners, pharmacists, physical therapists involved in providing or directing care in underserved populations in developed countries.

Objectives
At the conclusion of this session, the participant will be able to:
• identify current disparities in health delivery in underserved, disenfranchised and vulnerable populations.
• foster health professional attitudes to promote and frame actions to reduce disparities through identification and management of key risk factors;
• look to the future of greater equity in the delivery and access to health care for all communities.

This session will identify vulnerable populations across the world and discuss the unique challenges of modifying risk in these groups.

Chairing: R.T. Disler, PhD, RN, Sydney, Australia
L.B. Gerald, MSPH, PhD, Tucson, AZ

2:15 A Patient’s Perspective
Speaker To Be Announced

2:20 Differences in Self-Management Preferences Increases Risk of Uncontrolled Asthma in Urban Black Adults
M.R. George, AE-C, PhD, RN, New York, NY

2:40 Disparities in Respiratory Health in Indigenous Australians
E. Tikof, CNC, Alice Springs, Australia

3:00 Tuberculosis Among Homeless People in London, United Kingdom
A. Story, PhD, RN, London, United Kingdom

3:20 Sexual Orientation, Respiratory Disease Risk Factors and Access to Health Care
N. Sitkin, BS, New Haven, CT

3:40 Children with Asthma Living in Rural Settings
L. Cicutt, PhD, RN, Denver, CO

BASIC

PUBLIC ADVISORY ROUNDTABLE

C87 NEW INSIGHTS INTO THE GENETIC BASIS OF PEDIATRIC LUNG DISEASE

Public Advisory Roundtable; Assembly on Pediatrics

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

Target Audience
Physicians, basic and translational scientists, clinician-investigators, nurses, patients, and parents.

Objectives
At the conclusion of this session, the participant will be able to:
• understand the genetics of interstitial lung diseases in neonates and children, and how this information is providing new insights into pathogenesis, improved diagnostic tests, and potential therapeutic targets;
• appreciate the emerging genetics of primary ciliary dyskinesia and importance as a diagnostic approach, and understand genotype-phenotype relationships in this disease;
recognize the importance of genetics in the pathophysiology of cystic fibrosis lung disease, and how this knowledge has led to the development of precision medicine.

The emergence of powerful, more affordable genomic technologies have advanced our knowledge of lung diseases at a rapid pace, providing greater insights into the genetics and pathophysiology of pulmonary diseases in children and adults. The progress made in genomics will increasingly translate into improved patient health, with improved diagnostic tests and personalized therapies. This session will highlight the progress made in genomics of lung diseases, focusing on the genetic and cellular bases of four childhood diseases, which will serve as a roadmap for other conditions.

Chairing: G.R. Porta, BS, Mason, OH
T.W. Ferkol, MD, St. Louis, MO

2:15 Annual PAR Awards
G.R. Porta, BS, Mason, OH

2:30 Introduction
T.W. Ferkol, MD, St. Louis, MO

2:35 Neonatal Lung Diseases
F.S. Cole, MD, St. Louis, MO

3:00 Cystic Fibrosis
G.R. Cutting, MD, Baltimore, MD

3:25 Primary Ciliary Dyskinesia
M. Knowles, MD, Chapel Hill, NC

3:50 Childhood Interstitial Lung Diseases
L.M. Nogee, MD, Baltimore, MD

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

- understand and learn about recent epidemiological data on respiratory viruses as etiology of community acquired pneumonia;
- learn new diagnostics tools to detect viral infection, including understanding the utility of procalcitonin in clinical medicine;
- understand how to integrate new information on respiratory viruses into clinical practice.

This session will provide the learner a comprehensive overview on how respiratory viruses contribute to current causes of community acquired pneumonia (CAP) and acute lung injuries in the ICU especially in the setting of the increasing use of genetic-based diagnostic approaches to detect viruses. Speakers in this symposium will highlight the current epidemiology of viral CAP and review the existing diagnostics of viral CAP including a pro/con debate on the role of procalcitonin in viral pneumonia. The role of viral pneumonia as cause of ARDS, and how RSV contributes to the disease in children and the elderly will be explored. And finally, given the increased use of molecular diagnostics to detect respiratory viruses, there will be a timely and careful discussion on what to do with a positive respiratory virus panel, including an analysis of whether rhinovirus ever causes pneumonia. These series of talks will update the audience on the recent information on viral pneumonia in clinical medicine with the goal of improving not only understanding of this topic but better implementation of current knowledge on viral pneumonia into practice.

Chairing: C.S. Dela Cruz, MD, PhD, New Haven, CT
R.D. Shah, MD, Chicago, IL

2:15 Epidemiology of Viral CAP
W. Self, MD, MPH, Nashville, TN

2:35 Pro/Con Debate: Procalcitonin for Viral Pneumonia (Con)
G.W. Waterer, MBBS, PhD, MBA, Perth, Australia

2:50 Pro/Con Debate: Procalcitonin for Viral Pneumonia (Pro)
T. File, MD, Akron, OH
Emerging literature has begun to reveal a remarkable number of roles for the respiratory epithelium, from conducting airway to alveolus, in innate and adaptive immunity. Far from housekeeping cells that form a simple mechanical barrier, epithelial cells are increasingly recognized in a new light as professional immune sentinels that instruct hematopoietic cells and also promote repair during infection, asthma, fibrosis, and other disorders. This session brings together leading experts to discuss recent paradigm shifting findings on the respiratory epithelium as a master regulator of the inflammatory, immune, fibrotic, and repair processes that underlie both acute and chronic lung disease.

Chairing: M.B. Fessler, MD, Research Triangle Park, NC
A.A. Humbles, PhD, Gaithersburg, MD

2:15 Transcriptional Regulation of Epithelial Biology and Its Contributions to Lung Disease
J.A. Whitsett, MD, Cincinnati, OH

2:35 Novel Immune Functions of the Alveolar Epithelium During Pneumonia
J.P. Mizgerd, ScD, Boston, MA

2:55 Role of MUC5B in Pulmonary Fibrosis and Beyond
D.A. Schwartz, MD, Aurora, CO

3:15 Epithelial Cytokines in Allergic Pulmonary Inflammation
C.M. Lloyd, PhD, London, United Kingdom

3:35 Regulation of Airway Basal Stem Cell Self-Renewal in Health and Disease
B. Gomperts, MD, Los Angeles, CA

3:55 Running Interference: The Lung Epithelium as Orchestrator of the Interferon Response
A.S. Prince, MD, New York, NY

There will be a 5-minute discussion after each talk.
**C90 IT TAKES TWO TO TANGO: RIGHT AND LEFT VENTRICLE INTERACTIONS IN PULMONARY VASCULAR DISEASE**

Assemblies on Pulmonary Circulation; Clinical Problems; Critical Care; Respiratory Cell and Molecular Biology

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

**Target Audience**
Basic, translational and clinical researchers interested in right and left ventricular function in health and disease. Clinicians (especially internists, pulmonologists/ intensivists, and cardiologists) interested in RV and LV function as well as in RV-directed therapies in pulmonary vascular diseases.

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

- understand differences and similarities between the RV and LV
- identify the interplay between RV and LV function in health and disease
- understand how research and therapeutic approaches to LV disease can be translated to RV disease

This session will focus on interactions between the right ventricle (RV) and left ventricle (LV) in pulmonary hypertension (PH). While it has long been known that the RV is at risk for failing in PH, little is known about how PH and RV dysfunction affect the LV. Similarly, the potential effect of PH-specific therapies on LV function has been poorly understood. Lastly, the exact mechanisms of RV dysfunction in LV disease are only incompletely understood. This session will address these knowledge gaps by providing novel evidence indicating that complex RV and LV interactions underlie the pathophysiology of decreased cardiac output in PH. Novel and emerging approaches in LV research and their implications for the study of the RV will be discussed.

**Chairing:**
T. Lahm, MD, Indianapolis, IN
C.E. Ventetuolo, MD, MS, Providence, RI
W.M. Kuebler, MD, PhD, Toronto, Canada

**Sessions**

- **2:15** RV and LV: Twins or Strangers?
  T. Lahm, MD, Indianapolis, IN

- **2:39** RV Involvement in LV Disease: What Makes the RV Fail in the Setting of LV Failure?
  R. Tedford, MD, Baltimore, MD

- **3:03** Relax! RV and LV Diastology in Pulmonary Hypertension
  F. De Man, PhD, Amsterdam, Netherlands

- **3:27** Left, Right, or Both? Is There a Role for Beta Blockers, ACE Inhibitors, or Neurohormonal Modulators in RV Failure?
  C.E. Ventetuolo, MD, MS, Providence, RI

- **3:51** Lessons Learned from Left Heart Failure: Which Novel Approaches and Directions in LV Research Can Be Applied to the RV?
  M. Bristow, MD, PhD, Denver, CO

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**C91 OPTIMIZING ICU ROUNDS: EVIDENCE-BASED APPROACHES FOR IMPROVING PATIENT CARE AND TEACHING**

Assemblies on Behavioral Science and Health Services Research; Clinical Problems; Critical Care; Nursing; Sleep and Respiratory Neurobiology

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

**Target Audience**
Families of critically ill patients, critical care providers, and those with clinical, teaching, research, or administrative responsibilities.

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

- become familiar with evidence based interventions designed to improve patient care and teaching during ICU rounds;
• integrate effective strategies regarding communication with patients and their families while rounding in the ICU;

• understand the importance of incorporating multidisciplinary teams (nursing, respiratory therapists, pharmacists, and other providers) into ICU rounds.

The scientific symposium aims to provide the attendee with complementary tools leading to organized and efficient ICU rounds that also excel in delivering high value patient care and quality resident and fellow teaching. Attendees will gain a better understanding of the forces influencing change in the current rounding structure. Attendees will then learn about seminal work in the development and evaluation of interventions to improve the rounding structure. Gaps in our current understanding and areas for further exploration will be emphasized.

Chairing:  J.D. Thornton, MD, MPH, Cleveland, OH
          A. Amaral, MD, Toronto, Canada
          D.K. Costa, PhD, RN, Ann Arbor, MI

2:15  The Challenge of Competing Priorities in ICU Rounding in 2016
      J.D. Thornton, MD, MPH, Cleveland, OH

2:25  Pre-Rounding in the ICU: The Effects of Disrupted Patient and Provider Sleep on ICU Outcomes
      B.K. Gehlbach, MD, Iowa City, IA

2:45  Beyond Pimping: Teaching Effectively While Rounding Efficiently
      A.S. Clay, MD, Durham, NC

3:05  Choosing Wisely in the ICU: Integrating Principles of High Value Care into Rounds
      J. Wagner, MD, MSHP, Philadelphia, PA

3:25  Speak Up: Incorporating Patients and Their Families into Daily Rounds
      M. Happ, PhD, RN, Columbus, OH

3:45  Embracing Multidisciplinary Team Rounding in the ICU
      D.K. Costa, PhD, RN, Ann Arbor, MI

4:05  Integrating the Evidence for Effective Rounding in the ICU
      A. Amaral, MD, Toronto, Canada

There will be a 5-minute discussion after each talk.

BEHAVIORAL • CLINICAL • TRANSLATIONAL

SCIENTIFIC SYMPOSIUM

C92  ATS CLINICAL PRACTICE GUIDELINES: CLINICAL PRACTICE ON THE CUTTING EDGE

Documents Development and Implementation Committee; International Conference Committee; Education Committee; Assemblies on Behavioral Science and Health Services Research; Critical Care; Microbiology, Tuberculosis and Pulmonary Infections; Nursing; Pediatrics; Pulmonary Circulation

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

Target Audience
Physicians, nurses, respiratory therapists, and others who care for children who require flexible bronchoscopy or have pulmonary hypertension, or for adults or children with acute respiratory distress syndrome, hospital-acquired pneumonia, ventilator-associated pneumonia or tuberculosis.

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 and technical standards in clinical practice, improving patient outcomes;

• obtain new strategies to manage exercise induced bronchoconstriction, pulmonary hypertension of sickle cell disease, Bronchiolitis Obliterans Syndrome.

This session is the second annual scientific symposium highlighting recently approved or published ATS evidence-based clinical practice guidelines and technical standards. This year’s symposium will highlight guidelines on hospital-acquired and ventilator-associated pneumonia, diagnosis of tuberculosis, treatment of tuberculosis, and
pediatric pulmonary hypertension, as well as technical standards on pediatric flexible bronchoscopy. Speakers will describe the clinical recommendations formulated by the guideline panels, discuss the rationale for each, and critically review the evidence supporting each recommendation. Speakers will also describe how the guidelines provide the foundation for improving care. Speakers include the chairs of the panels that developed the guidelines and technical standards.

Chairing:  
K.C. Wilson, MD, New York, NY  
C.C. Thomson, MD, MPH, Cambridge, MA

2:15  
Implementation of ATS Clinical Practice Guidelines  
C.C. Thomson, MD, MPH, Cambridge, MA

2:25  
Strength of Recommendations and Quality of Evidence  
K.C. Wilson, MD, New York, NY

2:35  
Hospital Acquired Pneumonia/Ventilator-Associated Pneumonia Guidelines  
M.L. Metersky, MD, Farmington, CT

2:50  
Diagnosis of Tuberculosis Guidelines  
D.M. Lewinsohn, MD, PhD, Portland, OR

3:05  
Treatment of Drug Sensitive Tuberculosis Guidelines  
P. Nahid, MD, MPH, San Francisco, CA

3:20  
Pediatric Pulmonary Hypertension Guidelines  
S.H. Abman, MD, Aurora, CO

3:35  
Pediatric Bronchoscopy Technical Standards  
A. Faro, MD, St. Louis, MO

3:50  
Late Breaking Guidelines  
K.C. Wilson, MD, New York, NY

There will be a 5-minute discussion after each talk.
PCC4 PEDIATRIC CLINICAL CORE CURRICULUM

Pediatric Core Curriculum Working Group

6:45 a.m. - 7:45 a.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:

• remain current with medical knowledge relevant to their practice in pediatric pulmonology;

• evaluate their understanding of key skills and content areas in pediatric pulmonology as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;

• 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 pediatricians. The symposia will address topics that have been identified by an ATS pediatric working group, which is comprised of members of the ATS Education Committee and the International Conference Committee, who have identified important areas within pediatric medicine (including vasculitic pulmonary diseases, lung defense mechanism, congenital abnormalities of the airways, and respiratory failure). Attendees will increase their medical knowledge as a result of attending this symposium, and this will be measured by a comparison of pre-test vs. post-test results on the corresponding maintenance of certification module. The ATS Pediatric Core Curriculum will focus on a 3-year content cycle of key medical content in the area of pediatric medicine.

Chairing: D.M. Boyer, MD, Boston, MA
P.E. Moore, MD, Nashville, TN

6:45 Acute Respiratory Failure
J. Rettig, MD, Boston, MA

7:15 Chronic Respiratory Failure
C.D. Baker, MD, Aurora, CO

SUNRISE SEMINARS

Registration Fee: $65.00 (includes continental breakfast.)
Attendance is limited. Pre-registration is required.

6:45 a.m. - 7:45 a.m.

SS301 ROLE OF THE MICROENVIRONMENT IN CELL FATE: MACROPHAGES MEET MECHANOBIOLOGY
R.G. Scheraga, MD, Cleveland, OH

SS302 HEME OXYGENASE ACTIVITY IN PULMONARY DISEASE MEASURED BY TRANSCUTANEOUS CARBOXYHEMOGLOBIN
L.E. Kurlandsky, MD, Fayetteville, NY

SS303 CHRONIC LUNG DISEASE IN HIV
J. Leung, MD, Vancouver, Canada

SS304 DIFFUSE CYSTIC LUNG DISEASE
N. Gupta, MD, Cincinnati, OH
SS305 APPEARANCE TO PATIENTS WITHOUT DEFINITE UIP ON HRCT: LESSONS LEARNED FROM DIFFICULT CASES
M. Porteous, MD, Philadelphia, PA

SS306 ADVANCES IN NON-CF BRONCHIECTASIS THROUGH THE LENS OF PRIMARY CILIARY DYSKINESIA
M. Prickett, MD, MPH, Chicago, IL

SS307 COPD PHENOTYPES: DO THEY MAKE A DIFFERENCE?
T. Beiko, Dr., Charleston, SC

SS308 EVALUATION AND MANAGEMENT OF PATIENTS WITH CTD-ILD FOR LUNG TRANSPLANTATION
R.J. Shah, MD, San Francisco, CA

SS309 A SECOND LUNG TRANSPLANT: WHO AND UNDER WHAT CIRCUMSTANCES?
A.L. Gray, MD, Durham, NC

SS310 RACIAL AND ETHNIC HEALTH DISPARITIES IN SEPSIS
G.J. Soto, MD, Bronx, NY

SS311 VITAMIN D AND ASTHMA
J.M. Brehm, MD, MPH, Pittsburgh, PA

SS312 TREATMENT OF DRUG RESISTANT INFECTIONS IN INDIVIDUALS WITH BRONCHIECTASIS
E.C. Dasenbrook, MD, Cleveland, OH

SS313 UNTANGLING PATIENT REPORTED OUTCOME AND EXPERIENCE MEASURES
M. Hodson, MSC, RN, London, United Kingdom
J. Yorke, PhD, RN, Manchester, United Kingdom

SS314 NON-INVASIVE POSITIVE PRESSURE VENTILATION FOR THE PEDIATRIC PULMONOLOGIST
R. Amin, MD, Toronto, Canada

SS315 ACUTE RIGHT HEART FAILURE: THE PRACTICAL NUTS AND BOLTS OF ASSESSMENT AND MANAGEMENT
W.H. Fares, MD, MSc, New Haven, CT

SS316 “MIND THE GAP”: USE OF NATIVE TISSUE SLICES AND DECELLULARIZED HUMAN MATRICES AS EX VIVO MODELS OF REGENERATION AND DISEASE
D.E. Wagner, PhD, Munich, Germany

SS317 THE MODERN APPROACH TO THE MANAGEMENT OF PNEUMOTHORAX AND AIR LEAK
A. Chopra, MD, Albany, NY

SS318 EXERCISE TRAINING IN SLEEP DISORDERED BREATHING: TIME TO MAKE A NEW FRIEND
M. Macrea, MD, MPH, PhD, Salem, VA

SS319 MANAGEMENT OF MALIGNANT PLEURAL EFFUSION BY THE PULMONOLOGIST: UPDATES
S. Shojaee, MD, Richmond, VA
A.C. Argento, MD, Chicago, IL

Faculty Development Seminar

FD3 THE ROADMAP TO SUCCESS IN EARLY ACADEMIC CAREER DEVELOPMENT: YOUR FIRST FIVE YEARS
Pre-registration is required. There is no additional fee. Attendance is limited.
6:45 a.m. - 7:45 a.m.

Target Audience
Early career clinical and/or research faculty, clinical and post doctoral fellows, graduate students, residents, nurses, and allied health professionals already involved in or seeking a career in academic pulmonary, allergy, critical care, and/or sleep medicine.

Objectives
At the conclusion of this session, the participant will be able to:
• able to identify components necessary for success in their career path;
• understand how to balance various expectations and interests needed for career advancement;
• gain strategies to protect their time from competing obligations.

As a junior faculty member, are you confronted with numerous, potentially competing, obligations on your time and effort? The first five years of your faculty appointment is crucial for establishing the proper trajectory of your career. This seminar will provide valuable insights and strategies on balancing professional activities while developing a successful academic career.

Chairing: J.C. Horowitz, MD, Ann Arbor, MI

Speakers: L.E. Crotty Alexander, MD, San Diego, CA
M. Peters-Golden, MD, Ann Arbor, MI
J.B. Richards, MD, MA, Charleston, SC
M. Ballinger, PhD, Columbus, OH
C.M. Waters, PhD, Memphis, TN
The Presidential Keynote Series provides state of the art lectures on selected topics in an unopposed format to showcase major discoveries in pulmonary, critical care and sleep medicine. The speakers have been chosen by input from the members and various ATS committees with consensus built via the ATS executive committee.

Two sessions are presented each morning during the conference. Below are the breakthroughs for the Wednesday, May 18th series.

<table>
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<tr>
<th>K7</th>
<th>BIOMARKERS FOR PRECISION MEDICINE IN ASTHMA</th>
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<td>8:00 a.m. - 8:45 a.m.</td>
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<tr>
<td><strong>Speaker:</strong></td>
<td>Serpil C. Erzurum, MD, Cleveland, OH</td>
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<td>This session will be chaired by Polly E. Parsons, MD, Burlington, VT</td>
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<th>K8</th>
<th>ARDS: MECHANISMS AND PROFESSIONAL SOCIETIES</th>
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<tr>
<td><strong>Speaker:</strong></td>
<td>Brian P. Kavanagh, MD, Toronto, Canada</td>
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<tr>
<td>This session will be chaired by Marc Moss, MD, Aurora, CO</td>
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D1  CLINICAL YEAR IN REVIEW

9:00 a.m. - 11:00 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 topic reviews of the key clinical research publications over the last year. Each speaker is asked to review the 5-7 most important and influential publications on their topic in the prior year.

Chairing:  J.L. Taylor-Cousar, MD, Denver, CO  
D.J. Lederer, MD, MS, New York, NY  
D.W. Ford, MD, MSCR, Charleston, SC

9:00  Asthma
A. Sood, MD, MPH, Albuquerque, NM

9:30  Medical Education
J.W. McCallister, MD, Columbus, OH

10:00  Pulmonary Vascular Disease
H.J. Bogaard, MD, PhD, Amsterdam, Netherlands

10:30  ILD
D.J. Lederer, MD, MS, New York, NY

D2  WHAT, WHEN, WHERE: CLEARING THE AIR ON STEM CELL THERAPIES IN PULMONARY DISEASES

Assemblies on Clinical Problems; Respiratory Cell and Molecular Biology

9:00 a.m. - 11:00 a.m.

Target Audience
Providers of lung health; patients victimized by biotourism; researchers; clinicians.

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

• understand the terminology surrounding stem cell therapies;
• recognize the lack of efficacy data surrounding cell based therapies at this time;
• discuss future areas of investigation and application of cell based therapies in lung disease.

This session will highlight seminal basic science information and recent advances in the application of cell based therapeutics to the treatment of lung disease (IPF, COPD, and ARDS). For patients and physicians who search for treatments for incurable lung diseases, stem cell therapies have drawn increasing attention. Unfortunately, patients become victims of biotourism. Several well designed and completed phase 1 clinical trials have now been completed with mesenchymal stem cells (MSCs) that demonstrate patient safety. The results of these trials will be reviewed as they are paving the way for productive phase 2 and 3 studies and ultimately new therapeutic modalities. Controversies and cautions will be addressed.

Chairing:  M. Glassberg, MD, Miami, FL  
V. Lama, MD, MS, Ann Arbor, MI  
M. Rojas, MD, Pittsburgh, PA

9:00  Introduction and Overview
M. Glassberg, MD, Miami, FL
D3 TRANSLATIONAL ADVANCES IN PLEURAL DISEASES: WHAT CLINICIANS NEED TO KNOW

Target Audience
Clinicians and allied health professionals with clinical and research responsibilities in respiratory diseases; especially chest physicians, interventional pulmonologists, respiratory nurses, thoracic surgeons, internists, general physicians and junior

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

• understand and learn the rationale of gene therapy, stem cell treatment and phenotyping of malignant effusion patients;

• describe the interactions between bacteria and the pleura, and its therapeutic potentials;

• learn new technologies being applied in pleural diagnosis and management;

This symposium will provide learners with up to date information and evidence on several exciting developments in translational research of pleural diseases which have impacted clinical care, or are likely to do so in the future. The session will provide leading translational research on pleural disease, including pleural malignancy and infection, and novel investigative technologies. The session will cover cutting edge approaches of using stem cell therapy in the pleura and the role of mesothelial cells in lung fibrosis.

Chairing: N.M. Rahman, MSc, PhD, Oxford, United Kingdom
M.M. Wahidi, MD, Durham, NC

9:00 Gene Therapy for Pleural Cancers: Hurdles and Progresses
D.H. Sterman, MD, New York, NY

9:20 Phenotyping Malignant Pleural Effusions: Why and What for?
N.A. Maskell, MD, Bristol, United Kingdom

9:40 Stem Cell Therapy in Pleural Diseases: Fact or Fiction
S. Janes, MD, PhD, London, United Kingdom

10:00 The Pleura: A New Co-Conspirator in Pulmonary Fibrosis
V.B. Antony, MD, Birmingham, AL

10:20 Bacteria, Fibrinolytics and Pleural Space: Exciting New Lessons
Y.G. Lee, MBChB, PhD, Perth, Australia

10:40 Novel Interventional Technologies in Pleural Diseases
D.J. Feller-Kopman, MD, Baltimore, MD
D4  CRITICAL CARE MEETS SILICON VALLEY: TECH SOLUTIONS FOR RESEARCH AND PRACTICE

Assemblies on Critical Care; Behavioral Science and Health Services Research

9:00 a.m. - 11:00 a.m.

Target Audience
Practicing clinicians who care for critically ill adults, researchers studying critical illness, health system administrators and trainees.

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

• understand how apps may be developed and used to improve clinical research and bedside critical care;

• describe how real-time analytics can be leveraged to improve critical care delivery;

• understand how a re-engineered electronic health records system will improve the delivery of critical care.

Silicon Valley companies like Google, Apple, and Uber create simple tech solutions to enhance our everyday lives. These innovations also have pertinent applications in critical care, and this session will detail technological solutions that can enhance clinical research and care for patients with critical illness. Examples highlighted in the session will include developing apps to improve patient care tasks, crowd-sourcing research communities for solutions to complex problems in critical care, gathering data from wearable devices to monitor critical illness, utilizing real-time analytics to identify critical illness and improve hospital efficiency, and re-engineering EHR’s to improve bedside critical care.

Chairing: M.W. Sjoding, MD, Ann Arbor, MI
M.M. Churpek, MD, MPH, PhD, Chicago, IL
C.E. Cox, MD, MPH, Durham, NC

9:10  Mapping Real-Time Alerts to Identify Critical Illness
M.M. Churpek, MD, MPH, PhD, Chicago, IL

9:28  Crowdsourcing Research Communities to Solve Problems in Critical Care
T.J. Pollard, PhD, Cambridge, MA

9:46  Building EHR-Integrated Apps for More “Meaningful” Use in Critical Care
C.E. Cox, MD, MPH, Durham, NC

10:04  Next Generation Wearable Technologies for Monitoring Critical Illness
Speaker To Be Announced

10:22  Bringing the “Sharing Economy” to Hospitals
V. Liu, MD, MS, Oakland, CA

10:40  Engineering Electronic Health Record Systems of the Future
M.N. Gong, MD, MS, Bronx, NY

D5  IMPROVING OUR UNDERSTANDING OF RESPIRATORY SYMPTOMS, REFRACTORY CHRONIC COUGH AND INTERPROFESSIONAL MANAGEMENT

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

9:00 a.m. - 11:00 a.m.

Target Audience
Anyone involved in the provision of care for those with respiratory problems and specifically with chronic cough.

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

• explore issues related to respiratory symptom management and respiratory symptom clusters with a focus on cough;

• identify a theoretical understanding of the relationship of psychologic symptoms and chronic cough and to
understand the role of speech pathology in the management of chronic cough;

• become aware of recent findings of systematic reviews and guidelines related to the diagnosis and management of chronic refractory cough.

This session will use interprofessional inquiry and recent findings from the literature to broaden the attendees understanding of the symptom of chronic cough and refractory chronic cough and its management in 2016.

Chairing: P.M. Meek, RN, PhD, Denver, CO
A. Russell, MSc, London, United Kingdom

9:00 Reflections from Symptom Management
P.M. Meek, RN, PhD, Denver, CO

9:15 Respiratory Symptom Clusters
J. Yorke, PhD, RN, Manchester, United Kingdom

9:30 Examining Change in Symptoms of Depression, Anxiety, and Stress in Adults After Treatment of Chronic Cough
C.L. French, PhD, RN, Worcester, MA

9:45 Update Refractory Chronic Cough and Management
P.G. Gibson, MBBS, Newcastle, Australia

10:00 The Role of the Speech Pathologist and Speech Pathology in the Management of Chronic Cough
A.E. Vertigan, PhD, MBA, BAppSc(Sp.Path), Newcastle, Australia

10:15 Is the Refractory Cough of a Psychogenic Nature a Habit or an Undiagnosed Tic Cough?
R.S. Irwin, MD, Worcester, MA

10:30 Panel Discussion

9:00 a.m. - 11:00 a.m.

Target Audience
Pulmonologists, pediatricians, respiratory therapists, nurses practitioners, sleep medicine research scientists, epidemiologists, public health providers and health services researchers.

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

• discuss neurodevelopmental and respiratory effects of cannabis use in adolescents and young adults;

• learn emerging data on effects of cannabis on sleep and novel therapeutic applications of cannabimetic drugs in sleep related breathing;

• review effects of opioids on sleep related breathing and discuss ampakines; a novel therapy for opioid induced respiratory depression.

Legalization of cannabis in the U.S. and other countries has led to increasing medicinal and recreational use of cannabis. This symposium will describe the known effects of cannabis on neurodevelopment of adolescents and its effects on sleep. Current and potential therapeutic uses of cannabis and cannabimimetics in sleep and breathing disorders will be discussed. Acute and chronic use of opioids in hospitalized patients, perioperative settings and for opioid use disorders is increasingly prevalent. Effects of opioids on sleep related breathing and novel preclinical pharmacologic interventions to reverse opioid effects on breathing will be reviewed.

Chairing: B. Prasad, MD, MS, Chicago, IL
L. Kheirandish-Gozal, MD, MSc, Chicago, IL

9:00 A Patient’s Perspective
Speaker To Be Announced

9:05 Opioid-Induced Sleep Apnea: Precursor to Periodicity
S. Chowdhuri, MD, MS, Detroit, MI

9:25 Ampakine Therapy for Alleviating Opioid-Induced Respiratory Depression
J.J. Greer, PhD, Edmonton, Canada
9:50 Cannabis and Human Sleep: What Have We Learned So Far?
K. Babson, PhD, Menlo Park, CA

10:10 Neurodevelopmental and Respiratory Effects of Cannabis in Adolescents and Adults
R. Bhattacharjee, MD, San Diego, CA

10:25 Cannabinoids: Novel Translational Potential for Sleep Apnea Therapy?
D.W. Carley, PhD, Chicago, IL

There will be a 5-minute discussion after each talk.

BASIC • CLINICAL • TRANSLATIONAL
SCIENTIFIC SYMPOSIUM

D7 EXPLOITING GPCRS FOR NEW AND IMPROVED ASTHMA MEDICINE

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

9:00 a.m. - 11:00 a.m.

Target Audience
Basic, translational and clinical scientists who wish to learn about the exciting discoveries of new targets for asthma therapy, and how these targets are being validated both in vitro and in vivo.

Objectives
At the conclusion of this session, the participant will be able to:
- learn new findings about the identification and validation of new asthma drug targets;
- screen drug candidates that improve lung function;
- gain knowledge on GPCR signaling in the lung.

There is still an urgent need to develop new and improved therapy for asthma. G-protein coupled receptors (GPCRs) are the targets of more than 50% of all known pharmaceuticals. Current mainstay asthma therapies including beta-agonists, anticholinergics, and leukotriene inhibitors, all directly target GPCRs. Recent studies have identified several GPCRs and many of them unexpectedly as new potential targets for asthma therapy. In this session, we will bring a high-caliber list of experts to discuss the latest developments in this exciting area that promises to change the face of asthma medicine in the coming decades.

Chairing:
Q. Lu, PhD, Boston, MA
R. Penn, PhD, Philadelphia, PA

9:00 Targeting Calcium Sensing Receptor (CaSR) in Allergic Asthma
D. Riccardi, PhD, Cardiff, United Kingdom

9:20 Function and Targeting of Proton-Sensing GPCR OGR1 in ASM
R. Penn, PhD, Philadelphia, PA

9:40 Bitter Taste Receptors as Targets for Novel Bronchodilators
D.A. Deshpande, PhD, Philadelphia, PA

10:00 Screening GPCR Targets with Force
R. Krishnan, PhD, Boston, MA

10:20 Structural Insights into β2-Adrenergic Receptor Signaling
R. Sunahara, PhD, La Jolla, CA

10:40 Cholecystokinin (CCK) and Its Receptor CCKAR as Novel Therapeutic Targets for Asthma
Q. Lu, PhD, Boston, MA

BASIC • CLINICAL • TRANSLATIONAL
SCIENTIFIC SYMPOSIUM

D8 ATS MYTHBUSTERS: ABERRANT TISSUE REGENERATION IS A PRIMARY DRIVER OF COPD PATHOGENESIS

Assemblies on Respiratory Cell and Molecular Biology; Allergy, Immunology and Inflammation; Clinical Problems; Critical Care; Environmental, Occupational and Population Health; Microbiology, Tuberculosis and Pulmonary Infections; Pulmonary Circulation; Pulmonary Rehabilitation; Respiratory Structure and Function; Thoracic Oncology

9:00 a.m. - 11:00 a.m.
Target Audience
Lung health care providers, scientists and investigators interested or involved in basic, translational and clinical research related to lung biology and clinical aspects of COPD and related human lung diseases. Research and care providers engaged in pulmonary and critical care medicine.

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

• understand how aberrant airway and alveolar regeneration contributes to the pathogenesis of airway remodeling, emphysema and inflammation in COPD;

• learn how aberrant tissue repair mechanisms interact with other components of COPD pathogenesis (oxidative stress, inflammation, altered innate immunity and host-microbe interactions);

• understand how to translate the novel knowledge about the role of aberrant tissue regeneration in COPD pathogenesis into clinically relevant “personalized” (precision medicine) approaches to better prevent, diagnose and treat COPD.

This session continues the “ATS Mythbusters” series focused on emerging areas of translational lung biology and medicine. The central theme of the current ATS Mythbuster session is recently evolved concept of abnormal airway and alveolar structural maintenance and regeneration as the driving force of COPD pathogenesis and progression. Recently developed data supporting this novel concept (“myth”) will be presented by the investigators who contributed to these discoveries and then discussed by internationally recognized leading scientists (“busters”) in the COPD field.

Chairing: R. Shaykhiev, MD, PhD, New York, NY
I. Petrache, MD, Denver, CO
J.C. Hogg, MD, PhD, Vancouver, Canada

9:00 Introduction to the Myth: Emerging Non-inflammatory Origins of COPD
I. Petrache, MD, Denver, CO

9:15 Altered Epithelial Barrier Function in COPD Airways
I.H. Heijink, PhD, Groningen, Netherlands

9:30 Pathologic Programming of Airway Basal Stem Cells in COPD
R. Shaykhiev, MD, PhD, New York, NY

9:45 Epithelial-Mesenchymal Interactions and Airway Fibrosis in COPD
S. Nishimura, MD, San Francisco, CA

10:00 Wnt Signaling Shift in COPD and Aging
M. Königshoff, MD, PhD, Munich, Germany

10:15 Telomere Dysfunction and Alveolar Stem Cell Failure in Emphysema
M. Armanios, MD, Baltimore, MD

10:30 “Mythbusters” Discussion
L.M. Fabbri, MD, Modena, Italy
M. Saetta, MD, Padova, Italy
S.I. Rennard, MD, Melbourn, United Kingdom
P.J. Barnes, MD, DSc, London, United Kingdom

D9 CRACKING THE CELL CODE: UNDERSTANDING THE CONTRIBUTION OF CELLS TO PULMONARY VASCULAR DISEASES

Assemblies on Pulmonary Circulation; Respiratory Cell and Molecular Biology

9:00 a.m. - 11:00 a.m.

Target Audience
Pulmonary and critical care physicians, nurse practitioners, pulmonary vascular biologists and trainees who conduct research in diseases of the pulmonary circulation.

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

• review the state of the art knowledge regarding normal development of the pulmonary circulation and how these cellular mechanisms are recapitulated in adult disease;

• discuss how interactions between components of the vessel wall (endothelial cells, pericytes, fibroblasts and smooth muscle cells) serve to respond to
vascular injury and how their dysregulation can result in disease;

- establish relevance of abnormal cell to cell interactions in the setting of specific pulmonary vascular diseases such as pulmonary arterial hypertension, lung fibrosis and ARDS.

As a vital part of the cardiovascular system, the pulmonary circulation is dependent on its cell components to coordinate adequate responses in both health and disease. While much focus has been devoted to understanding the work of individual cells, limited attention has been given to how these cells interact with each other to preserve the balance required for adequate gas exchange. This symposium will summarize seminal findings regarding how cell behavior is organized during development and how these actions are recapitulated as part of the pulmonary vasculature’s efforts to preserve homeostasis in response to injury and disease.

Chairing: V. De Jesus Perez, MD, Stanford, CA
K. Birukov, MD, PhD, Chicago, IL
C. Guignabert, PhD, Le Plessis Robinson, France

9:00 Development of the Pulmonary Circulation: A Blueprint for Understanding Pulmonary Vascular Diseases
D. Greif, MD, Guilford, CT

9:20 Pulmonary Angiogenesis in Health and Disease
V. De Jesus Perez, MD, Stanford, CA

9:40 Endothelial-Pericyte Interactions in Health and Disease
C. Guignabert, PhD, Le Plessis Robinson, France

10:00 Exosomes, Microparticles in Cell-Cell Communication Within the Pulmonary Circulation
J.R. Klinger, MD, Providence, RI

10:20 The Pulmonary Circulation Under Attack: Endothelial-Leukocyte Communication During Lung Injury
K. Birukov, MD, PhD, Chicago, IL

10:40 Epithelial-Mesenchymal Crosstalk During Lung Tissue Remodeling
O. Eickelberg, MD, Munchen, Germany

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SCIENTIFIC SYMPOSIUM

D10 NEW CONCEPTS IN TB IMMUNITY AND TARGETS FOR TREATMENT
Assemblies on Allergy, Immunology and Inflammation; Microbiology, Tuberculosis and Pulmonary Infections
9:00 a.m. - 11:00 a.m.

Target Audience
Providers of care for tuberculosis, those with clinical and research interests in TB drug development and immune responses, and those who research the immune response to other intracellular pathogens and treatment of those infections.

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

- learn new findings and developments about host response and susceptibility to TB and other intracellular infections;
- apply knowledge gained from the session to new diagnostic and biomarker strategies for patients with TB or other infections;
- utilize knowledge gained to help form new strategies for treatment or prevention of TB and other intracellular infections.

This session will provide an update on developments in innate and acquired immunity on tuberculosis, seeking lessons that may be gleaned from the host responses to other intracellular pathogens. This session will seek cross fertilization of knowledge of the host response between TB and non-TB infections. The session will discuss new developments in TB
biomarkers and diagnostics, consider host susceptibilities, present TB strain differences in pathogenicity, TB lineage and co-evolution, and conclude with therapeutic targets for MTB treatment utilized in new treatment.

**Chairing:** J.J. Saukkonen, MD, Boston, MA  
J.M. Keane, MD, Dublin, Ireland  
A. Haczku, MD, PhD, Davis, CA

**9:00 Developments in Innate Immunity of Tuberculosis**  
J.M. Keane, MD, Dublin, Ireland

**9:20 Developments in Acquired Immunity of Tuberculosis and Other Intracellular Pathogens**  
S.A. Khader, PhD, St. Louis, MO

**9:40 TB Lineage, Host Response and Biomarkers**  
P. Nahid, MD, MPH, San Francisco, CA

**10:00 New Developments in TB Diagnostics**  
C. Boehme, MD, Geneva, Switzerland

**10:20 TB Treatment Targets, Vaccines, and Host-Directed Therapies**  
R. Wallis, MD, Johannesburg, South Africa

**10:40 Panel Discussion**

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**BASIC • TRANSLATIONAL SCIENTIFIC SYMPOSIUM**

**D11 ARDS AND INFLAMMATORY INJURY**

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

**9:00 a.m. - 11:00 a.m.**

**Target Audience**
Clinical researchers, basic scientists and clinicians interested in understanding the inter-dependence between the innate immune response, excessive inflammation, and acute lung injury/ARDS.

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

- understand the mechanisms which lead to differing outcomes in ARDS;
- learn and understand the mechanisms contributing to inflammatory response following ALI.

Acute respiratory distress syndrome (ARDS), the most severe form of ALI, has a mortality rate of approximately 40%, despite modern ICU care. The importance of inflammation in initiation and progression of acute lung injury has been previously established. Inflammasome signaling is critical in the host defense response to infectious and non-infectious agents known to contribute to lung pathology. Inflammatory responses are typically initiated by the innate immune system, leading to the production of IL-1β and IL-18, which recruit neutrophils and monocytes to the site of infection. However, these same cytokines and cells can damage the alveolus and impair respiratory function. An important goal of this session is to illustrate how data derived from patient samples and clinically relevant animal models points to a common pathway(s) and helps to define the basic mechanisms which impacts disease outcomes in patients.

**Chairing:** C. Hardin, MD, PhD, Boston, MA  
T. Cohen, PhD, Gaithersburg, MD

**9:00 Bridging Human, Animal and In-Vitro Data**  
M. Matthay, MD, San Francisco, CA

**9:20 Airway Responses to Bacterial Pathogens**  
A.S. Prince, MD, New York, NY

**9:40 Regulation of Nod-Like Receptors in Acute Lung Injury**  
K.M. Ridge, PhD, Chicago, IL

**10:00 RAGE and Acute Lung Injury**  
J. Constantin, MD, PhD, Clermont-Ferrand, France

**10:20 Alveolar Epithelial Repair After Inflammatory Injury**  
R.L. Zemans, MD, Denver, CO

**10:40 The Transcription Factor Miz1 in the Lung: Good or Bad?**  
J. Liu, PhD, Chicago, IL
CLINICAL
SCIENTIFIC SYMPOSIUM

D12 ADVANCES IN TOBACCO DEPENDENCE TREATMENT FOR THE HOSPITALIZED PATIENT

Tobacco Action Committee
9:00 a.m. - 11:00 a.m.

Target Audience
Health care workers treating tobacco dependence and tobacco related disease.

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

• gain new strategies to initiate a quit attempt for hospitalized smokers;

• become familiar with the tools available to implement a hospital-based smoking cessation program that includes post-discharge follow up;

• improve smoking cessation rates among hospitalized patients.

Hospitalization marks a unique opportunity to impact the tobacco epidemic. The effective health care system must consider a number of variables in devising interventions for promoting abstinence and facilitating transition to outpatient care. In this session various aspects of tobacco dependence treatment in hospitalized smokers will be explored. Common obstacles including initial counseling of resistant patients, personalizing treatment plans, use of technology, and effective discharge planning will be reviewed.

Chairing: F.T. Leone, MD, MS, Philadelphia, PA

9:00 The Inpatient Tobacco Treatment Consultation
F.T. Leone, MD, MS, Philadelphia, PA

9:25 Implementing Hospital Cessation: The Ottawa Model
S. Gilman, MD, Montreal, Canada

9:50 Initiating NRT and Other Treatments
D. Sachs, MD, Palo Alto, CA

10:15 Transitioning into Post-Discharge Care
S. Pakhale, MD, Ottowa, Canada

10:35 Should We Allow E-Cigarette Use in Hospitals?
D.J. Upson, MA, MD, Albuquerque, NM

There will be a 5-minute discussion after each talk.
**WS7  UPDATE ON EBUS: PRACTICAL QUESTIONS ANSWERED**

**Registration Fee:** $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

**Assemblies on Clinical Problems; Thoracic Oncology**
11:45 a.m. - 1:15 p.m.

**Target Audience**
Providers of lung health; practitioners who perform or who are interested in bronchoscopy and EBUS; physicians-in-training.

**Objectives**
At the conclusion of this session, the participant will be able to:
- identify the indications and diagnostic yield of EBUS;
- understand the various factors that can affect diagnostic yield, safety and efficiency of EBUS;
- apply the information learned to plan an optimal EBUS procedure with consideration of the various equipment and support available.

Endobronchial ultrasound (EBUS) was introduced in the last decade, enabling real-time guidance of transbronchial needle aspiration (TBNA) of mediastinal and hilar structures and parabronchial lung masses.

Many publications about EBUS-TBNA have led to a better understanding of the performance characteristics of this procedure. The goal of this workshop is to examine the current literature on the practical aspects of EBUS-TBNA to provide evidence-based and expert guidance to clinicians.

**Chairing:**
A.C. Argento, MD, Chicago, IL
M.M. Wahidi, MD, Durham, NC
C.T. Gillespie, MD, Chicago, IL
H. Lee, MD, Baltimore, MD

**11:45  Introduction**
A.C. Argento, MD, Chicago, IL

**11:55  EBUS Diagnostic Yield**
M.M. Wahidi, MD, Durham, NC

**12:15  Patient Factors That Affect EBUS**
A.C. Argento, MD, Chicago, IL

**12:35  Procedural Aspects of EBUS**
C.T. Gillespie, MD, Chicago, IL

**12:55  Training for EBUS**
H. Lee, MD, Baltimore, MD

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**WS8  PRECISION MEDICINE IN ASTHMA: CURRENT PRACTICE, GAPS, FUTURE DIRECTIONS**

**Registration Fee:** $75.00 (includes box lunch)
Attendance is limited. Pre-registration is required.

**Assemblies on Allergy, Immunology and Inflammation; Environmental, Occupational and Population Health; Pediatrics**
11:45 a.m. - 1:15 p.m.

**Target Audience**
Clinicians will benefit by learning about the current state of the art in the treatment and prophylaxis of asthma, which they may consider applying to their practice; researchers will benefit by identifying gaps for future research; trainees will benefit by learning a cutting-edge concept in scientifically underpinned medical management.
Objectives
At the conclusion of this session, the participant will be able to:

- apply knowledge in day-to-day management of asthma patients;
- identify new areas for asthma related research;
- recognize the full scope of personal factors that affect asthma development and outcomes.

Before precision medicine became a household term and focus of research, physicians treating asthma had grappled with the different endotypes of this syndrome and had sought to understand why some patients develop hard to treat asthma, while others are protected. We are finally at the point where research insights are starting to inform treatment decisions in a tailored approach to asthma treatment. Much more needs to be done. This session will crystallize the current state of the art, that can be immediately implemented in clinical practice, as well as identify areas of interest for future research.

Chairing:  S. Garantziotis, MD, Research Triangle Park, NC
D.A. Schwartz, MD, Aurora, CO

11:45  Identifying Biologic and Genetic Risk Factors for Asthma in Minority Patients
E.G. Burchard, MD, MPH, San Francisco, CA

12:00  Genes, Psychosocial Stress and Asthma
J.C. Celedon, MD, DrPH, Pittsburgh, PA

12:15  Microbiome Factors in the Development and Severity of Asthma
E. von Mutius, MD, MS, Munich, Germany

12:30  Asthma Endotypes: Are the Visions Becoming Reality?
S.E. Wenzel, MD, Pittsburgh, PA

12:45  Role of Environmental Exposures in the Precision Medicine Approach to Asthma
F. Gilliland, MD, MPH, PhD, Los Angeles, CA

1:00  Plenary Session: An Integrated Approach to Precision Asthma Treatment
S. Garantziotis, MD, Research Triangle Park, NC
AIRWAYS CLINICAL RESEARCH CENTERS, ALA

L21  LATE BREAKING RESULTS FOR THE ALA-ACRC LASST 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:
• learn new findings about new, safe, and effective approaches to asthma treatment;
• gain new strategies to manage the care of asthma;
• learn new findings about adherence, safety, and tolerability of LASST.

The ALA Airways Clinical Research Centers’ (ACRC) purpose is to conduct clinical trials with practical importance to both adults and children with COPD and asthma. One of the trials was the LASST Study (Long-acting Beta Agonist Step Down Study). This trial verified these findings: to test the hypothesis that in patients with well-controlled asthma on combination ICS/LABA, discontinuing LABA while continuing with the same ICS dose will be inferior to continuing LABA and reducing the dose of ICS in preventing treatment failure during step-down therapy. This session will be the first presentation of the results of the LASST Study.

Chairing:  W.C. Bailey, MD, Birmingham, AL
R.A. Wise, MD, Baltimore, MD

12:15  LASST Background and Rationale
K. Blake, PharmD, Jacksonville, FL

12:30  LASST Study Design and Baseline Characteristics
C. Bime, MD, Tucson, AZ

12:45  LASST Main Results, Summary, and Conclusions
L. Rogers, MD, New York, NY

1:00  Discussion/Questions and Answers
R.A. Wise, MD, Baltimore, MD

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

L22  RESPIRATORY HAZARDS OF WORKING WITH METALS: FROM MACROPHAGES TO MICROBIOMES

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

Target Audience
Providers of lung health; clinicians caring for industrial workers; clinicians and researchers with interest in exposure-related lung disease.

Objectives
At the conclusion of this session, the participant will be able to:
• learn new findings about exposure to metals (beryllium, indium) and disease;
• recognize occupational causes of lung disease related to exposure to metals or metalworking fluid;
• improve understanding of the potential role of the lung microbiome in occupational lung disease.

This session will highlight recent research at NIOSH on unique lung diseases related to work with metals. Both well-described and novel diseases will be discussed. Findings related to clinical features and exposure-response relationships will be presented. Implications for disease prevention will be explored.

Chairing:  K. Cummings, MD, MPH, Morgantown, WV

12:15  NIOSH Research on Beryllium Disease
E. Fechter-Leggett, DVM, Morgantown, WV

12:30  Understanding Indium Lung Disease
R. Harvey, DVM, Morgantown, WV

12:45  A Novel Lung Disease Related to Metalworking Fluid
R. Nett, MD, Morgantown, WV

1:00  Lung and Workplace Microbiomes in a Metalworking Fluid Environment
L. Segal, MD, New York, NY
**U.S. FOOD AND DRUG ADMINISTRATION**

**L23 PULMONARY UPDATE FROM THE U.S. FOOD AND DRUG ADMINISTRATION**

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

**Target Audience**
Clinicians in practice, researchers, pharmaceutical industry representatives, international regulators.

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

- understand how FDA-approved biomarkers can be used to enhance clinical trial drug development;
- learn new therapeutic targets for asthma (general asthma population as well as specific phenotypic subsets);
- integrate new treatment options regarding maintenance bronchodilator choices for management of stable asthma, and understand the role of clinical and biomarker criteria for patient selection for anti-IL-5 therapy.

The most recent regulatory FDA actions including discussion of current safety and efficacy issues of products for pulmonary indications will be presented. A summary of the Agency’s biomarker qualification process exemplified by the recent qualification of fibrinogen for use in COPD clinical trials will be discussed. Recent approvals for asthma highlighting targeted therapy to specific asthma phenotypes, as well as the use of a long-acting anticholinergic as a new bronchodilator in asthma will be presented.

**Chairing:** L.I. Gilbert-McClain, MD, Silver Spring, MD

**12:15 Update on Current Pulmonary Issues at the FDA**
L.I. Gilbert-McClain, MD, Silver Spring, MD

**12:33 Old Drug New Use: Anticholinergics and Asthma**
S.J. Chin, MD, Silver Spring, MD

**12:51 Targeted Therapy for Asthma: Lessons from the IL-5 Pathway**
K.M. Donohue, MD, Silver Spring, MD

**1:09 Questions and Answers**
L.I. Gilbert-McClain, MD, Silver Spring, MD

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**VARIOUS ORGANIZATIONS**

**L24 RESEARCH FUNDING OPPORTUNITIES**

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

**Target Audience**
Any ATS member who conducts research and is seeking funding.

**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;
- discuss practical steps that researchers take to improve quality of grant applications;
- identify a funding agency that is most closely aligned with the attendee’s research interests.

This session will introduce programs and research grant opportunities offered from major funding agencies. Speakers will present current research priorities and mechanisms of research funding available from each agency.

**Chairing:** J. Yorke, PhD, RN, Manchester, United Kingdom
J. Choi, PhD, RN, Pittsburgh, PA

**12:15 National Institute of Nursing Research**
N. Redeker, PhD, RN, West Haven, CT

**12:25 National Heart, Lung, and Blood Institute**
L. Reineck, MD, Bethesda, MD

**12:35 Department of Veterans Affairs**
E.G. Collins, PhD, RN, Chicago, IL

**12:45 American Lung Association**
S. Rappaport, MPH, New York, NY
L25 NEW RESULTS FROM THE COPDGENE STUDY

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

Target Audience
Those with clinical or research responsibilities.

Objectives
At the conclusion of this session, the participant will be able to:
• learn about imaging in the COPDGene study;
• understand and learn about subtypes identified by the COPDGene study;
• learn about longitudinal follow-up in the COPDGene study.

Chronic obstructive pulmonary disease (COPD), the third leading cause of death in the United States, 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: 1) to identify new genetic loci that influence the development of COPD and COPD-related phenotypes and 2) to reclassify COPD into subtypes that can ultimately be used to develop effective therapies. This session will describe the progress and future plans of the COPDGene study.

Chairing:
E.K. Silverman, MD, PhD, Boston, MA
J.D. Crapo, MD, Denver, CO
L. Postow, PhD, Bethesda, MD

12:15 Overview of COPDGene
J.D. Crapo, MD, Denver, CO
vascular diseases. This session will introduce these programs and present data from these studies.

Chairing: L. Xiao, MD, PhD, Bethesda, MD  
C.J. Blaisdell, MD, Bethesda, MD

12:15  NHLBI PVDOMICS Program Overview  
S.C. Erzurum, MD, Cleveland, OH

12:27  Data Fusion: A Sustainable, Open Source Registry Advancing Pediatric Pulmonary Vascular Disease Research - Part I  
S.H. Abman, MD, Aurora, CO

12:39  Data Fusion: A Sustainable, Open Source Registry Advancing Pediatric Pulmonary Vascular Disease Research - Part II  
K. Mandl, MD, MPH, Boston, MA

12:51  Pulmonary Hypertension Breakthrough Initiative (PHBI) Update  
M. Geraci, MD, Indianapolis, IN

1:03  PVDOMICS Study Design and Update  
J.H. Newman, MD, Nashville, TN

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NATIONAL HEART, LUNG, AND BLOOD INSTITUTE,  
DIVISION OF LUNG DISEASES, NIH

L27  OXIDANT STRESS IN HIV-RELATED CHRONIC LUNG DISEASE

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

Target Audience  
Providers of lung health; medical fellows in training; graduate post-doctoral fellows; established scientists in basic research on lung biology, HIV pathogenesis and infection disease.

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

• understand the role of oxidative stress in the onset of lung diseases associated with HIV infection in the HAART era;

• improve target possibilities for treating lung inflammatory diseases such as pulmonary hypertension in HAART treated HIV patients;

• learn new findings about the role of oxidative stress in the onset of lung complications in HIV (+) patients undergoing ART.

HIV-infected patients on antiretroviral therapy (ART) have now a longer life expectancy, but as a consequence chronic diseases are increasingly becoming a major cause of morbidity and death. Many pulmonary conditions, including PAH, and COPD are more prevalent in HIV infected individuals under treatment but the mechanisms by which HIV and ART induce cellular dysfunction that may trigger these pathologies are largely unknown. One such pathway is oxidative stress (OS), which results from excessive free radical production, and exceeding endogenous antioxidant defense mechanisms, which can damage a wide variety of cellular components. The session will address current research and results in this area and will give an overview of current HIV research on the oxidative stress role in HIV infection. Presenters will delineate current knowledge of lung complications in relationship to OS, and describe latest results and techniques utilized in their projects.

Chairing: H.L. Twigg, MD, Indianapolis, IN  
E. Caler, PhD, Bethesda, MD

12:15  HIV Proteins and Pulmonary Hypertension  
S. Flores, PhD, Aurora, CO

12:30  Oxidative Stress in HIV Associated COPD  
B.D. Medoff, MD, Boston, MA

12:45  Redox Stress and Chronic Lung Disease in HIV  
J. Roman, MD, Louisville, KY

1:00  HIV+ Alveolar Macrophage Oxidant-Mediated Apoptosis of Pulmonary Endothelium  
M.R. Staudt, PhD, New York, NY
NATIONAL HEART, LUNG, AND BLOOD INSTITUTE, DIVISION OF LUNG DISEASES, NIH

L28  NHLBI PETAL CLINICAL TRIAL NETWORK: PREVENTION AND EARLY TREATMENT OF ACUTE LUNG INJURY

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

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. Persons interested in clinical trial design and conduct would also benefit from this session.

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 outreach efforts of the network
- have a better understanding of PETAL trial design and conduct including utilization of a central IRB

This session will provide information 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, provide an overview of the trials currently under way, and describe features of the PETAL network including utilization of a central IRB and outreach efforts.

Chairing: R.G. Brower, MD, Baltimore, MD
L. Reineck, MD, Bethesda, MD

12:15  Introduction
R.G. Brower, MD, Baltimore, MD

12:25  ROSE Trial Update
M. Moss, MD, Aurora, CO

12:35  New Trial Presentation
Speaker To Be Announced

12:50  Outreach Efforts
B.T. Thompson, MD, Boston, MA

1:00  General Discussion

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CC6  CRITICAL CARE CLINICAL CORE CURRICULUM II

Adult Core Curriculum Working Group
1:30 p.m. - 3:30 p.m.

Target Audience
Internists and subspecialists 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:

- remain current with medical knowledge relevant to their practice in pulmonary, critical care, and sleep medicine;
- evaluate their understanding of key skills and content areas in pulmonary, critical care and sleep medicine, as well as receive feedback on their comprehension of a result of a pre-test/post-test comparison;
- 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 medical content in the
areas of pulmonary, critical care, and sleep medicine. The topics are also aligned with corresponding MOC Medical Knowledge modules. This symposium is intended to assist clinicians with staying current with the growth of information relevant to their medical practice, as well as provide an opportunity to evaluate individual knowledge and skills while earning MOC Medical Knowledge points.

**Chairing:** J.I. McSparron, MD, Boston, MA
A.M. Luks, MD, Seattle, WA

**1:30** Non-Invasive Ventilation  
B.K. Patel, MD, Chicago, IL

**2:00** Managing Exacerbations of Obstructive Lung Disease  
N.G. Shah, MD, Baltimore, MD

**2:30** Management of Severe Hypoxemic Respiratory Failure  
A. Rogers, MD, MPH, Palo Alto, CA

**3:00** Sedation, Delirium, and Mobilization in the ICU  
W.D. Schweickert, MD, Philadelphia, PA

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**BASIC • CLINICAL • TRANSLATIONAL**

**CLINICAL TOPICS IN PULMONARY MEDICINE**

**D82 THE ROAD TO PRECISION MEDICINE IN IPF: BIOMARKERS AND CLINICAL PREDICTORS**

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

1:30 p.m. - 3:30 p.m.

**Target Audience**
Anyone interested in idiopathic pulmonary fibrosis, other interstitial lung diseases, outcome prediction, biomarkers and Precision Medicine. Trainees at all levels will find the information and style of open discussion uniquely informative as will clinicians, translational researchers, health care delivery experts, and patient advocacy group members.

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

- gain and in depth understanding of the role of molecular markers in implementation of precision medicine approaches in IPF;
- learn new findings on the potential value of lung and BAL molecular analyses in guiding diagnosis and management of IPF;
- understand findings on the clinical management of patients with IPF.

Despite significant progress in understanding disease mechanisms, genetics, and approval of two drugs, IPF remains a significant challenge to practicing physicians, in part because of its grave prognosis and unpredictable course. In this interactive session we summarize the huge amount of information collected on the use of molecular and clinical markers and try to answer the question whether they can be used in clinical practice. Each talk will include a dynamic interaction with the audience through social media and other tools and after the talks, the chairs will provide a brief summary of the talks and open them for discussion. The session will end with a general discussion followed by a vote by the audience on the feasibility and potential for clinical application of molecular markers in IPF.

**Chairing:** R.P. Marshall, MBBS, MD, PhD, Stevenage, United Kingdom  
J. Herazo-Maya, MD, New Haven, CT  
J.S. Lee, MD, Aurora, CO

**1:30** What Does the Clinician Need from Molecular Markers?  
H.R. Collard, MD, San Francisco, CA

**1:45** The Road to Precision Medicine in IPF Goes Through the Lung  
R.G. Jenkins, MD, PhD, Nottingham, United Kingdom

**2:01** No Need for Biopsy: BAL Predicts Outcome, New Mechanisms in IPF  
A. Prasse, MD, Hannover, Germany

**2:17** It's Not Your Cells but Your Bugs: The Microbiome in IPF  
T.M. Maher, MD, MSc, PhD, London, United Kingdom
BASIC • BEHAVIORAL
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CLINICAL TOPICS IN PULMONARY MEDICINE

D83 COPD EXACERBATIONS: BIOLOGY AND TARGETS FOR NOVEL TREATMENTS

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

1:30 p.m. - 3:30 p.m.

Target Audience
Clinicians, clinical researchers and trainees who are involved in the research and care of patients with COPD.

Objectives
At the conclusion of this session, the participant will be able to:
• understand what cells and mechanisms are important during COPD exacerbation;
• understand the potential role of several novel treatments for COPD;
• understand the inflammation is not the only mechanism for targeted treatment in COPD exacerbations.

This session will be focused on COPD exacerbations and discussed the biology and targets for novel treatments in this disease.

Chairing:
G.J. Criner, MD, Philadelphia, PA
B.R. Celli, MD, Boston, MA
S.I. Rennard, MD, Melbourn, United Kingdom

1:30 The Biology of Acute Exacerbations of COPD
P.J. Barnes, MD, DSc, London, United Kingdom

1:45 The Physiology of Acute Exacerbations of COPD
B.R. Celli, MD, Boston, MA

2:00 Role of the Eosinophil in COPD Exacerbations
C.E. Brightling, BSc, MBBS, PhD, Leicester, United Kingdom

2:15 Kinases and PDE-4 Inhibitors and COPD Exacerbations
F.J. Martinez, MD, New York, NY

2:30 Antioxidant Therapy to Prevent COPD Exacerbations
R.A. Wise, MD, Baltimore, MD

2:45 Potential Role of Anti-Fibrotic Therapy in COPD
G.J. Criner, MD, Philadelphia, PA

3:00 Stimulating Lung Repair Following Acute Exacerbations
S.I. Rennard, MD, Melbourn, United Kingdom

3:15 Targeting the Neutrophil in COPD Exacerbations
H. Magnussen, MD, PhD, Grosshansdorf, Germany

D84 STAY AWAY FROM THE ICU: IS PREVENTING ICU ADMISSION GOOD FOR PATIENTS?

Assembly on Critical Care

1:30 p.m. - 3:30 p.m.

Target Audience
Critical care and emergency medicine professionals;
anesthesia clinicians, including physicians, nurses, and advanced practice providers.

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

• learn new data on how to identify patients at risk for clinical deterioration;
• better discuss the risks and benefits of ICU admission with patients and their families;
• better identify patients that will not benefit from ICU admission.

ICU beds and the nurses and physicians that staff them remain a scarce and costly resource. In addition, admission to an ICU is associated with both increased intensity of therapy, but also potential increased risks of treatment. One way to deal with the limitations of bed space as well as the increased risk of ICU care is to attempt to identify and treat patients at risk for critical illness earlier in their illness. This session will review available data on identification of and treatment for patients on the wards and in the prehospital phase, and whether this will prevent need for ICU admission

Chairing: J.E. Sevransky, MD, MHS, Atlanta, GA
C.R. Cooke, MD, MSc, Ann Arbor, MI
K.S. Mathews, MD, MPH, New York, NY

1:30 Risks and Benefits of ICU Admission
C.R. Cooke, MD, MSc, Ann Arbor, MI

1:50 Can Patients with Severe Sepsis Be Safely Treated on the Wards?
M.E. Mikkelsen, MD, Philadelphia, PA

2:10 Prehospital Identification of Severe Sepsis Patients
C. Polito, MD, MSc, Atlanta, GA

2:30 Early Warning Systems to Predict Clinical Deterioration: Do They Work?
M.M. Churpek, MD, MPH, PhD, Chicago, IL

2:50 Should Palliative Care Consultation Be Used to Prevent ICU Admissions?
N. Khandelwal, MD, Seattle, WA

3:10 Prevention of Lung Injury
E. Festic, MD MS, Jacksonville, FL

BASIC • BEHAVIORAL
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SCIENTIFIC SYMPOSIUM

D85 EARLY LIFE ORIGINS OF CHRONIC DISEASE

Assemblies on Pediatrics; Clinical Problems; Environmental, Occupational and Population Health; Pulmonary Rehabilitation; International Health Committee
1:30 p.m. - 3:30 p.m.

Target Audience
Providers of lung health; trainees; fellows; junior faculty; research scientists; clinical academics.

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

• learn new findings about early life origins of chronic disease;
• gain and apply new knowledge gained to thinking about disease causation;
• understand how early life exposures can increase life long disease risk.

Globally chronic disease is increasing in both developed and developing countries. Evidence is increasing that most chronic disease has its origin in early life, that is during the peri-conceptual period, during fetal development and in early postnatal life. This session will highlight current thinking in how early life exposures result in chronic disease in later life.

Chairing: M. Rosenfeld, MD, MPH, Seattle, WA
J.C. Celedon, MD, DrPH, Pittsburgh, PA

1:30 Developmental Origins of Health and Disease: The DOHAD Studies
M. Hanson, MA, DPhil, Southampton, United Kingdom

1:55 Impact of Prenatal and Early Life Exposures on Development
T. Bastain, PhD, MPH, Los Angeles, CA
2:20 The Role of Microbiomes in Defining Health and Disease
S.V. Lynch, PhD, San Francisco, CA

2:45 Impact of Early Life Exposures on Respiratory Disease
A. Bush, MD, London, United Kingdom

3:10 Common Origins of Chronic Respiratory and Non-Respiratory Diseases
P.D. Sly, DSc, MBBS, MD, South Brisbane, Australia

**CLINICAL • TRANSLATIONAL**

**SCIENTIFIC SYMPOSIUM**

**D86 CONTROVERSIES AND ADVANCES IN THE MANAGEMENT OF VENTILATOR ASSOCIATED PNEUMONIA**

Assemblies on Microbiology, Tuberculosis and Pulmonary Infections; Critical Care

1:30 p.m. - 3:30 p.m.

**Target Audience**
Clinicians working in the ICU, including doctors (attending and fellow), respiratory therapists, nurses and trainees.

**Objectives**
At the conclusion of this session, the participant will be able to:
• understand new diagnostic tools for VAP;
• learn how to apply biomarkers to manage VAP;
• discuss the value and limitation of reporting VAC rates.

Ventilator associated pneumonia (VAP) remains an important illness in the ICU, in spite of reports of “zero VAP”. In the current era, we are being asked to report rates of ventilator associated complications (VAC), although the relation to VAP remains unclear. At the same time, we may be able to improve management with the application of anti-inflammatory therapies, rapid diagnostics, and biomarker-guided therapy, and new antibiotics are being developed. This session will examine these issues.

Chairing: M.S. Niederman, MD, New York, NY
J.E. Chastre, MD, Paris, France

1:30 Can Anti-Inflammatory Therapy Help Improve Outcomes in VAP?
C. Feldman, MBBCh, DSc, PhD, Johannesburg, South Africa

1:50 Are New Antibiotics Going To Help Us Manage VAP in the ICU?
M. Kollef, MD, St. Louis, MO

2:10 Can Biomarkers Help with Antibiotic Stewardship in the ICU?
R.G. Wunderink, MD, Chicago, IL

2:30 Does Reporting Rates of VAC Improve Patient Care?
M.S. Niederman, MD, New York, NY

2:50 New Diagnostic Tests for VAP: Faster and Better?
I.S. Douglas, MD, Denver, CO

3:10 Discussion
J.E. Chastre, MD, Paris, France

**BASIC • CLINICAL**

**SCIENTIFIC SYMPOSIUM**

**D87 CLIMATE CHANGES AND RESPIRATORY INFECTIONS**

Assemblies on Environmental, Occupational and Population Health; Clinical Problems; Microbiology, Tuberculosis and Pulmonary Infections; Pediatrics

1:30 p.m. - 3:30 p.m.

**Target Audience**
Scientists and clinicians seeking novel insights on the climate change and respiratory infections.

**Objectives**
At the conclusion of this session, the participant will be able to:
• understand the latest advances in climate changes and health impact;
• learn and understand recent epidemiological changes in respiratory infections;
• describe climate change sensitive respiratory infection and control methods.

This symposium will integrate the current state of the art knowledge on how climate change affects respiratory health and infections. Talks will be given by speakers who are experts in the field. We will also highlighting the important initiative on the impact of global climate change in respiratory diseases. The talk will be 15 minutes followed by 5 minutes of audience questions.

Chairing:  M. Mirsaeidi, MD, Miami, FL  
C.S. Dela Cruz, MD, PhD, New Haven, CT  
K.E. Pinkerton, PhD, Davis, CA

1:30 Climate Change, Policy and Development and Respiratory Diseases  
K. Ebi, PhD, MPH, Seattle, WA

1:50 Epidemiology Changes of Climate Sensitive Infectious Diseases  
I. Annesi-Maesano, MD, PhD, Paris, France

2:10 Adverse Outcome Pathways (AOP) for Infectious Disease Which Are Influenced by Climate Change  
K.E. Pinkerton, PhD, Davis, CA

2:30 Respiratory Fungal Infections and Climate Changes  
A. Catanzaro, MD, La Jolla, CA

2:50 Nontuberculous Mycobacteria and Climate Change  
J.O. Falkinham, PhD, Blacksburg, VA

3:10 Poverty, Pollution and Pneumonia: A Malawian Perspective on Environment, Occupation and Infection  
S. Gordon, MD, Blantyre, Malawi

BEHAVIORAL • CLINICAL

SCIENTIFIC SYMPOSIUM

D88 THE PATIENT-CENTERED JUGGERNAUT: THE RIGHT MOVE FOR CLINICAL CARE, POLICY, AND RESEARCH?

Assemblies on Behavioral Science and Health Services Research; Critical Care; Thoracic Oncology

1:30 p.m. - 3:30 p.m.

Target Audience  
Clinicians or researchers who incorporate patient centered outcomes in their practice or research.

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

• understand the benefits and limitations of patient and family satisfaction as a quality metric in critical care;

• learn about advantages and disadvantages of shared decision making as a policy requirement in lung cancer screening;

• determine if the methods to conduct high quality patient engaged research are available for implementation by researchers.

There is an emerging trend toward incorporating patients' values, opinions and feedback in both patient care and research. Patient engagement is expected to address patients' health care concerns and close the gaps in evidence needed to improve key outcomes. However, it remains unclear how this process will actually improve meaningful clinical outcomes and research products. Despite the difficulties in measuring the benefits and harms of this strategy, patient centered approaches are being adopted in clinical care, health policy and research. We will select case examples from key pillars of PCCM to highlight the current controversies for and against incorporating patient centered outcomes.

Chairing:  D.R. Sullivan, MD, MA, Portland, OR  
L.C. Feemster, MD, MSc, Seattle, WA  
R.S. Wiener, MD, MPH, Boston, MA
A Patient’s Perspective
Speaker To Be Announced

Incorporating Patient Centered Outcomes in Clinical Practice and Research
S.D. Halpern, MD, PhD, Philadelphia, PA

PRO: Patient and Family Satisfaction is a Key Quality Metric in Critical Care
E.K. Kross, MD, Seattle, WA

CON: Patient and Family Satisfaction is a Key Quality Metric in Critical Care
G.D. Rubenfeld, MD, MSc, Toronto, Canada

general discussion

CON: Shared Decision Making Improves Outcomes in Lung Cancer Screening
C.G. Slatore, MD, Portland, OR

PRO: Shared Decision Making Improves Outcomes in Lung Cancer Screening
R.S. Wiener, MD, MPH, Boston, MA

General Discussion

CON: Shared Decision Making Improves Outcomes in Lung Cancer Screening
C.G. Slatore, MD, Portland, OR

PRO: Shared Decision Making Improves Outcomes in Lung Cancer Screening
R.S. Wiener, MD, MPH, Boston, MA

General Discussion

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General Discussion
This session will discuss emerging problems related to health care access and delivery in migrant populations.

Chairing: J. Roman, MD, Louisville, KY
J.C. Celedon, MD, DrPH, Pittsburgh, PA
I.S. Douglas, MD, Denver, CO
D.J. Upson, MA, MD, Albuquerque, NM

1:30 Introduction
J.C. Celedon, MD, DrPH, Pittsburgh, PA

1:35 Health Inequality in Latinos
Speaker to be announced

1:55 Rapid Deployment of International Tele-ICU During Conflict in Syria
A.M. Moughrabieh, MD, MPH, Detroit, MI

2:20 Asthma in Migrants: A Route to Health or More Triggers?
F. Holguin, MD, MPH, Pittsburgh, PA

2:40 Sleep and Migrant Health
S.R. Patel, MD, Pittsburgh, PA

3:00 Infectious Diseases in Migrant Populations
J. Ramirez, MD, Louisville, KY

3:20 Summary
J.C. Celedon, MD, DrPH, Pittsburgh, PA
I.S. Douglas, MD, Denver, CO
D.J. Upson, MA, MD, Albuquerque, NM
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