

December 21, 2018



# CTS INSPIRATIONS

## CTS NEWS

### President's Message

Dear friends and colleagues,

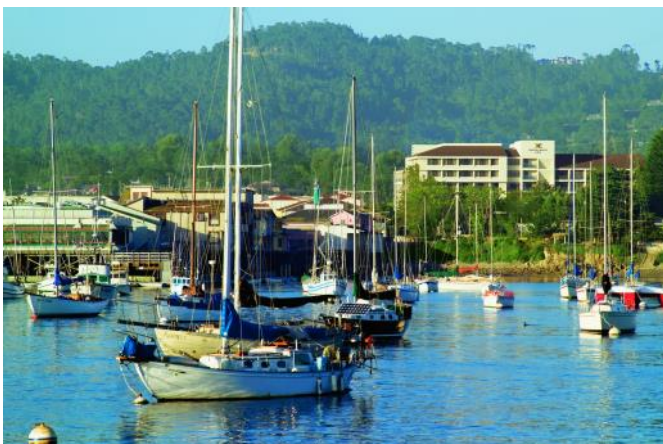
It has been an honor to serve as your CTS President in 2018. It was an exciting year for CTS. We saw continued growth of our two educational conferences (Southern and Northern California), expansion of our leadership pipeline and committee membership, enhanced participation in matters of advocacy and health policy, and importantly, an improved financial outlook.

I am extremely grateful for all those who helped me this past year. I could not have done it without you! I'd like to personally thank Phil Porte (Executive Director), Chris Garvey (Past-President), Lorriana Leard (President-Elect), Laren Tan (Secretary), Vipul Jain (Treasurer), and all my hardworking committee chairs: James Brown (Legislative & Public Policy), Douglas Li (Pediatrics), Asha Devereaux (Clinical Practice), William Stringer and George Su (Multidisciplinary), George Chaux and Brooks Kuhn (Membership), Angela Wang and Lekshmi Santhosh (Council of Chapter Representatives), Tisha Wang (Nominating) and Shazia Jamil and Michelle Cao (Education).

I will be passing the gavel to Lorriana Leard at our Northern California Educational Conference in Monterey, California. We hope that you will be joining us at the Portola Hotel on January 18-19, 2019. We have a superb program, with outstanding faculty! Read on below for more details. It is not too late to register – the Early Bird deadline is December 31, 2018. I look forward to seeing many of you there!

A handwritten signature in black ink, appearing to read 'Philippe Montgrain'.

Philippe Montgrain, MD  
President, California Thoracic Society



*The CTS Annual Conference will be held January 18 and 19, 2019 at the Portola Hotel in Monterey CA. Topics will include advances in ARDS, Sleep Disordered Breathing, Noninvasive Ventilation and more. For more information and to register go to the following link:*

<https://calthoracic.org/events/2019-annual-educational-conference/>

## 2019 CTS Annual Winter Conference

### Michelle Cao, MD

Clinical Associate Professor  
Division of Sleep Medicine and Division of Neuromuscular Medicine  
Stanford University School of Medicine



### William W. Stringer, MD

Professor of Medicine  
David Geffen School of Medicine at UCLA  
Division of Respiratory and Critical Care, Pulmonary and Medicine  
Los Angeles Biomedical Institute (LABIOMED) at Harbor-UCLA Medical Center



### George Su, MD

Associate Professor of Medicine  
Division of Pulmonary, Critical Care Medicine  
UCSF/ZSFG



The California Thoracic Society Annual Conference, to be held in Monterey California on January 18th (Friday) and 19th (Saturday), 2019, promises to be an outstanding educational event for Pulmonary, Critical Care, and Sleep Medicine providers.

Friday's program will focus on ARDS, specifically, the strategies for ventilator management to improve outcomes and minimize lung injury. Important topics that will be addressed include recent advances in ventilator management of ARDS, the importance of driving pressure, ways to address refractory hypoxemia, respiratory failure biomarkers, and prone/recruitment maneuvers. The distinguished group of speakers includes *Michael Matthay* from UCSF, *Atul Malhotra* from UCSD, and *Neil MacIntyre* from Duke. The conference will feature a number of educational modalities, including high value lectures, interactive group sessions, audience response technology, downloadable slide presentations, case presentations with discussion, and assessments of knowledge gained. The multidisciplinary attendees (academic and practicing attending physicians, fellows in training, nurses, respiratory therapists, mid-level practitioners, etc.) are encouraged to interact and ask questions of our distinguished faculty in a relaxed and informative atmosphere. Additionally, a number of companies will also be present in the exhibit hall to demonstrate their hardware and pharmacologic interventions aimed at improving ICU care. This is a fantastic opportunity for all ICU providers to learn the latest ARDS literature, ongoing research trials, and the most up to date information from national experts.

Saturday's program will focus on Advances in Sleep Disordered Breathing Syndromes and Non-Invasive Ventilation. The morning topics will cover advances in Obstructive Sleep Apnea evaluation and management, and latest treatment options beyond PAP therapy. Important topics include updates on cardiovascular consequences of sleep apnea, peri-operative evaluation of sleep apnea, and management of Central Sleep Apnea syndromes secondary to heart failure and chronic opioid use. The use of home sleep testing versus in-laboratory polysomnogram will also be discussed. The afternoon will focus on complex sleep disordered breathing syndromes; from sleep hypoventilation to chronic respiratory failure, including evaluation and management of the hypercapnic COPD, obesity hypoventilation, and neuromuscular patient. A highlight of the afternoon will include small group sessions to discuss the latest technological advances of PAP devices; from bilevel, to servo ventilators (ASV), to volume guaranteed pressure support devices (VAPS), and home ventilators. Distinguished speakers include *Atul Malhotra* from UC San Diego and *Lisa Wolfe* from Northwestern University.

## Pulmonary Rehabilitation Update

by Chris Garvey FNP, MSN, MPA, MAACVPR  
UCSF Sleep Disorders and Pulmonary Rehabilitation



The evidence of effectiveness of pulmonary rehabilitation (PR) continues to strengthen in magnitude, with PR now well established as the standard of care for persons with chronic lung disease (1,2). Reimbursement for PR is grossly inadequate (less than ½ of payment for cardiac rehabilitation) and likely contributes to limited availability of this effective intervention. Alternative modes of PR have been explored, but to date, there is lack of evidence of equivalence of effectiveness vs. traditional center-based PR. Further, promoting alternate modes may have the unintended consequence of short circuiting efforts to improve both reimbursement and availability of traditional PR in the [US](#).

ATS along with the PR assembly leadership, have begun to address this important disparity, and **CTS members can help**. A survey of 1350 US hospitals demonstrates undercharging for PR on Medicare cost reports, a key factor in declining PR reimbursement. Clinicians who recognize the clinical value of PR are best suited to bring these concerns to hospital CFOs and financial leaders. Be aware that hospitals normally charge 4-7 times the amount that is actually paid by Medicare. By addressing inadequate charging for PR, reimbursement will gradually improve which will likely result in increased availability of PR. An upcoming AJRCCM editorial will provide further details of this critical initiative. For more information, please see <https://www.aacvpr.org/Advocacy/Pulmonary-Rehabilitation-Toolkit> (9)

### References

1. Spruit MA, Singh SJ, Garvey C, ZuWallack R, Nici L, et al. An official American Thoracic Society/ European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation. *Am J Respir Crit Care Med*. 2013;188(8):e13-64. doi: 10.1164/rccm.201309-1634ST. PubMed PMID: 24127811.
2. Casaburi R, ZuWallack R. Pulmonary rehabilitation for management of chronic obstructive pulmonary disease. *N Engl J Med* 2009;360:1329-35.
3. AACVPR Pulmonary Rehabilitation Toolkit: Guidance to Calculating Appropriate Charges for G0424 <https://www.aacvpr.org/Advocacy/Pulmonary-Rehabilitation-Toolkit>. Accessed 7/1/2018

## Lung Cancer in 2018

### Philippe Montgrain

**Mark Fuster**  
Professor of Medicine  
Division of Pulmonary & Critical Care  
VA San Diego Healthcare System,  
University of California, San Diego, Division of Pulmonary and Critical Care



**Screening:** The long-awaited results of the NELSON trial were presented this year. This very large lung cancer screening trial recruited high-risk subjects from the Netherlands and Belgium and followed them for more than 10 years. NELSON is now the second randomized controlled trial to demonstrate a reduction in lung cancer mortality with CT screening. CT scanning decreased mortality by 26% in high-risk men and up to 61% in high-risk women over a 10-year period. This trial further cements the life-saving impact of lung cancer screening in high-risk individuals.

**Staging:** The eighth edition of the tumor, node, and metastasis (TNM) staging of lung cancer was implemented in January 2018. Some of the key features of the eighth edition are: Tumor size is subdivided in 1-cm increments up to 5 cm; Tumors >5 but <7 cm are classified as T3; Tumors >7 cm are classified as T4; Tumors involving the main stem bronchus or causing lung atelectasis or obstructive pneumonitis are classified as T2 regardless of distance from the carina or whether they cause partial or total lung atelectasis; Tumors involving the diaphragm are classified as T4; Tumors involving a single distant (extrathoracic) site are classified as M1b; Tumors involving multiple distant sites are classified as M1c. This revision will enhance prognostication and significantly impact the management of patients with lung cancer.

**Treatment:** Immune checkpoint inhibition (ICI) continues to show promise in many different lung cancer treatment scenarios. Combination ICI with standard chemotherapy in advanced (metastatic) lung cancer was shown to be superior to chemotherapy alone. 2018 also brought the first FDA-approved ICI for stage III lung cancer (durvalumab). In terms of biomarkers, tumor mutational burden (TMB) has shown great promise as a new, strong predictor of tumor response to ICI. Finally, guidelines were published on the management of immune-related adverse events in patients treated with immune checkpoint inhibition.

## Sleep Medicine

**Shannon S. Sullivan, MD**

**Clinical Associate Professor  
Department of Psychiatry and Behavioral Sciences  
Stanford University, Center for Sleep Sciences  
Director of the Center's ACGME Sleep Medicine  
Fellowship program  
current member of the Sleep Public Safety Committee**



In last month's midterm elections, California voter turnout set a midterm record at an estimated 65%. Engagement, though, doesn't have to end with exercising the right to vote. In the State of California, one issue with particular relevance to sleep medicine and sleep health has been in the limelight this year: middle and high school start times. In September, outgoing Governor Jerry Brown vetoed Senate Bill 328 (Portantino). The bill, which passed in both the State Senate and Assembly to make it to the Governor's desk, would have delayed the start time for non-rural public California high schools and middle schools until at least 8:30 a.m. This is in line with specific formal recommendations from the American Academy of Sleep Medicine, as well as the American Academy of Pediatrics and the American Medical Association, which cite evidence of linkage between early start times and sleep deprivation, worse academic outcomes, negative impacts on physical and mental health, and impaired driving safety in teens. Equally, the American Thoracic Society recommends that school start times for adolescents be delayed to align with the physiological circadian propensity. While the bill failed to be signed into law in the State of California, hundreds of individual schools across the country have delayed start times, demonstrating longer sleep and improved health, safety, and academic outcomes, and last month a bill to pilot later school start times for adolescents was introduced in the State of New Jersey. Recent evidence indicates that only about third of American teenagers report getting at least eight hours of sleep on an average school night. So, at the close of 2018, with school vacations on the horizon, it's a good time to take a moment to consider our state's adolescent population, many of whom will finally have a chance to, in the time-honored tradition of Clement C. Moore, begin settling their brains for a long winter's nap.

## IPF 2018

**Bernie Y. Sunwoo, MBBS**  
**Associate Professor of Clinical Medicine**  
**Medical Director, Pulmonary and Sleep Medicine**  
**University of California San Diego**



Idiopathic pulmonary fibrosis (IPF) is a chronic fibrotic lung disease of unknown cause, characterized pathologically by a usual interstitial pneumonia (UIP) pattern. Prognosis is poor so timely and accurate diagnosis is essential given the availability now of disease progression modifying therapies. 2018 saw the publications of updated clinical practice guidelines by the American Thoracic Society/European Respiratory Society/Japanese Respiratory Society/Latin American Thoracic Association (ATS/ERS/JRS/ALAT) for the diagnosis of IPF and the Fleischner Society White Paper Diagnostic criteria for IPF. Both publications put significant weight on high-resolution chest computed tomography (HRCT) findings in diagnosing UIP. Following 2011 guidelines, selected patients with “possible UIP” based on HRCT were highly likely to have histopathologic UIP and the updated guidelines categorize HRCT patterns to typical UIP, probable UIP, indeterminate for UIP and alternative diagnosis. In the right clinical context, a typical HRCT UIP pattern is now sufficient to secure a confident diagnosis of IPF without need for additional invasive diagnostic testing. In all other circumstances, multidisciplinary discussion (MDD) is recommended for diagnostic decision-making. Consistency of MDD between expert groups, however, requires international consensus agreement on diagnostic criteria and while these publications highlight the progress made in establishing diagnostic criteria for IPF, similar criteria are lacking for non-IPF fibrotic lung diseases. Ongoing efforts directed at establishing diagnostic criteria for non-IPF interstitial lung diseases are needed.

## What’s the Buzz in COPD?

**Richard Casaburi, PhD, MD**  
**Professor of Medicine, UCLA School of Medicine**  
**Medical Director, Rehabilitation Clinical Trials Center**  
**Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center**



I’ve been involved in COPD research for over 25 years. Every year there are topics trending. Here are a few major issues this year in COPD therapeutics that have caught my attention.

**Is eosinophilia important?** Because Complete Blood Counts (CBCs) include a measurement of blood eosinophils, we have a number of clinical trials that have been able to assess whether blood eosinophil counts predict exacerbations and predict response to COPD therapies. Emerging evidence seems to show a useful level of prediction. The issue to be resolved is defining the threshold of clinical significance. Arguments that this threshold is as low as 1-2% or as high as 3-5% have been put forward. The latter thresholds would capture only a small slice of the COPD population.

**Which patients benefit from inhaled corticosteroids (ICS)?** Over the past several years, we’ve become convinced that we’re giving ICS therapy to too large a fraction of COPD patients. Our conviction that ICS therapy helps to reduce COPD exacerbations had been shaken by demonstrations that patients with frequent exacerbations on dual bronchodilator therapy plus ICS could be weaned off ICS without increasing exacerbation frequency. This year, though, the very large IMPACT trial found a 25% lower exacerbation rate in those on LABA+LAMA+ICS versus those receiving LABA+LAMA alone. Refinement of treatment algorithms will require that the totality of clinical trial data be considered; more studies may be needed.

**Can pulmonary rehabilitation be saved?** Despite demonstrations that pulmonary rehabilitation improves exercise tolerance, reduces dyspnea and increases health-related quality of life better than any other COPD therapy, it is available to only a sliver of the patients who would benefit. In the United States, inadequate funding has caused programs to close; the situation is dire in rural areas and for underserved populations. Rehabilitation advocates are exploring approaches to reverse this trend, promoting research to demonstrate additional clinically important benefits and employing strategies designed to increase reimbursement for this important therapy.

## Updates in the field of Pulmonary Hypertension, looking back at an exciting 2018!

**Sachin Gupta MD, FCCP**  
**Director - CPMC Adult Pulmonary Hypertension Program**



Much occurred in the year of 2018 in the field of Pulmonary Hypertension, beginning with the 6<sup>th</sup> World Symposium on PH held in late February in Nice, France. As we will later discuss, there was robust discussion and ultimately revision to the diagnostic criteria, to recommendations for genetic testing, as well as guidelines for management of PH based on data from the past 5 years since the last World Symposium. At the ISHLT, ATS, PHA meetings this year further data was presented that helped us keep the focus on precision care in the risk stratification of patients at diagnosis and follow up of the various PH sub-types.

Utilizing set variables that define low, intermediate, and high-risk features of PH, these conferences shared data that helped further emphasize that close attention to the risk categories in which patients belong can impact outcomes. As was emphasized, PH specific therapies should be added in a manner to direct patients towards lower risk features, given the intermediate and long-term data we now have demonstrating the impact this can have on morbidity and mortality. This includes care to attention to not only initial and follow up WHO Functional Class and 6- minute walk distance, but also to hemodynamic data and BNP. Further advances in what we know about management of CTEPH came up this year as more centers develop expertise in surgical thromboendarterectomy and balloon pulmonary angioplasty in non-operable CTEPH cases. Close attention to at risk individuals (especially those with history of connective tissue disease, cirrhosis, or PE) and early referral of patients with possible and/or defined PH to PH specialty centers was again heavily emphasized as having tremendous impact on patient outcomes.

The biggest change came last week in the final official recommendations from the task force of the 6<sup>th</sup> World Health Symposium on the hemodynamic definition of PH. With data revealing that right heart catheterization defined normal mean PA pressure in healthy individuals is 14mmHg, and studies revealing that outcomes are impacted in individuals with mean PA pressures >20mmHg, the previously (arbitrarily) defined cut off of PH from a mean PA pressure of 25mmHg was reduced to 20mmHg. Notably, other heart catheterization defined hemodynamic considerations for the diagnosis of PAH are unchanged, including the requirement of a PVR of >3 and PCWP <15mmHg.

Looking ahead to 2019, the new research data and guidelines on diagnosis and management of PAH from 2018 will not only re-shape future research but also have tremendous real-world implications for us who care for patients at risk for PH and who are ultimately diagnosed with the disease.

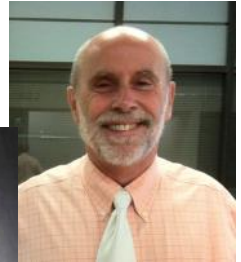
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CSRC Clinical Practice Committee**

**Richard M. Ford, BS RRT FAARC**



The California Society for Respiratory Care is committed to provide education programs and resources that enhance the practice of respiratory care and pulmonary medicine. Part of this mission is demonstrated by sponsoring or cosponsoring over a dozen education programs each year as well as the Annual CSRC State Meeting. CSRC members have much to share and are active in research projects that range from seeking best practice to evaluating delivery devices. In an effort to share such information the CSRC launched "RC Squared" in February 2014, an interactive on-line journal to publish and archive scientific abstracts, posters, and presentations that are created by, and targeted to, those clinicians that treat patients with pulmonary disorders. Research-related topics presented at CSRC annual meetings, as well as various regional, national, and international meetings, are listed in RC Squared by title/author(s), along with their abstracts and, in some cases, companion files (posters, handouts, slide shows, and videos). The quality and integrity of the content is overseen by an Editorial Board that is comprised of Bob Demers, Josh Cosa, Jim Fink, Rick Ford, Kristen Merriman, Mark Siobal, and Mel Welch. If you're interested in navigating to the journal's Home Page, go to:

<http://www.respiratorycareresearchclub.com/Welcome.html>

The home page includes additional information about RC Squared, templates/instructions for submission and access any of the Journal Volumes that incorporate all of the entries to date. The RC Squared Editorial Board invites you to view and share content, consider submission, and to encourage respiratory care clinicians to take advantage of this resource at no cost.

For additional information please contact Bob Demers BS RRT FAARC, Co-Chair of the RC Squared Editorial Board: [BobDemers@AOL.com](mailto:BobDemers@AOL.com)

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