



## 2021 Strategic Research Award: AASM Strategic Plan Goals Hot Topics

### 1. Public Awareness

#### Population Sleep Health

- Impact of COVID-19 on sleep disorders diagnosis and treatment
- Racial and gender disparities in sleep health related to COVID-19
- Healthcare disparities regarding accessibility to PAP therapy and barriers to adherence
- Health disparities and sleep disorders diagnosis and treatment
- Sex differences in sleep disorders and treatment
- Disparities and effect of social determinants on sleep
- Disparities in access to telehealth services
- Gender differences in sleep apnea
- Racial health disparities in treatment of insomnia
- Public sleep health awareness
- What other COVID-related changes will we see in our sleep? Insomnia due to encephalopathy? More sleep apnea due to lung and airway injury?
- Gaps in sleep across the menstrual cycle

#### Physician Burnout

- The role of sleep and sleep disorders in the epidemic of physician burnout

#### Sleep Disorders in Special Populations

- Impact of inpatient sleep services on reduction of hospital readmissions by diagnosing and treating sleep apnea in high risk patients
- Post-hospital discharge communication with patients by third party call centers- screening for sleep apnea, testing and treating to reduce readmissions
- Pediatric movement disorders, pathophysiology, treatment options, etc
- Home sleep testing in pediatrics: validity and feasibility
- Gaps in diagnostic criteria of sleep apnea for pregnant women
- Gaps in sleep disorder treatment effects on pregnancy outcomes
- Novel treatment approaches for managing irregular sleep wake rhythm disorders in individuals with dementia and in nursing home residents
- Novel approaches to treating sleep disturbance and hypersomnia due to medical disorders (e.g., Parkinsons Disease, posttraumatic)
- Sleep apnea in transgender patients on hormonal therapies
- Novel and innovative treatment strategies for reducing sleep-related bruxism. Understanding the pathophysiology and causes of sleep-related bruxism. Identifying the clinical outcomes associated with untreated sleep-related bruxism.

### 2. Technology Innovation

#### Artificial Intelligence/Machine Learning

- Artificial Intelligence

- Use of machine learning applied to PSG signal for diagnosis of sleep disorders (sleep disordered breathing, REM sleep behavior disorder, central disorders of hypersomnolence)
- Use of machine learning applied to PSG signal to predict relevant symptoms and sequela of sleep disorders (ie sleepiness, cardiovascular disease)
- Artificial Intelligence/Machine Learning Machine learning applied to remote patient monitoring (wearables, PAP generated data)
- Use of machine learning to predict treatment response

### **Consumer Sleep Technology**

- Validation of actigraphy (or other ambulatory monitoring devices) for diagnosis of idiopathic hypersomnia
- Wearable devices
- Can fitness trackers replace actigraphy prior to MSLT?
- Can the atrial fibrillation detection on Apple Watch also screen for sleep apnea?
- Does a wearable headband with a CBT-I program reduce insomnia more than CBT-I alone?
- Does a cooling headband improve insomnia more than headbands that use acoustic tones?

## **3. Advocacy to Improve Patient Care**

### **Obstructive Sleep Apnea**

- PAP troubleshooting to maximize adherence and efficacy
- Measuring sleep apnea severity beyond AHI
- Development of a diagnostic sleep apnea testing decision tree
- Medical therapies for obstructive sleep apnea
- Understanding appropriate treatment pathways based on OSA phenotype
- Pathogenesis, diagnosis and treatment of persistent sleepiness in patients with OSA receiving PAP therapy
- Development and Validation of Patient Reported Outcomes for CNS Disorders of Hypersomnolence
- Comparison of treatment outcomes between Narcolepsy type 1 and 2 (unclear if groups should be lumped or split in assessing treatment efficacy)

### **Hypersomnias**

- Assessing treatment efficacy for cataplexy in Narcolepsy Type 1 with SSRI/SNRI medications (no data for the most commonly used medication treatment!)
- Assessment of treatment efficacy and adverse events of traditional stimulants and modafinil in pediatric Narcolepsy
- Assessment of treatment efficacy and adverse effects of behavioral therapies for CNS Disorders of Hypersomnolence (naps, CBT, etc)
- Gaps in treatment of idiopathic hypersomnia
- Pathophysiology and treatment of idiopathic hypersomnia
- The underlying physiological differences between narcolepsy type 1, narcolepsy type 2, and idiopathic hypersomnia (eg., relative importance of sleep disruption, sleep duration)

### **Health Policy**

- Healthcare outcomes of patients with sleep disorders using novel care pathways during COVID19 - can include economic analyses, clinical outcomes"
- Did the various COVID mitigation strategies implemented across the country work? How many should become the new standard?
- Alternative payment models (APMs) in sleep medicine

## **Sleep Scoring**

- Manual vs. computerized scoring of sleep stages and respiratory events with subsequent treatment using autoPAP vs in lab titration and evaluating metric X (daytime hypersomnia, daytime inattention, or whatever they want) to see if all automated (computerized scoring + autoPAP) is superior, inferior or equivalent to manual scoring + in lab CPAP titration.
- Evaluation of the utility of new REM sleep without Atonia Scoring Rules
- Prospective evaluation of 3% or Arousal hypopnea definition as a risk factor for hypertension and/or cardiovascular disease
- Comparison of the European Scoring Rules for Periodic Limb Movements with the AASM Rules with respect to symptoms of hypersomnia or insomnia
- Montage comparison of combined M1, M2 average reference on slow wave amplitude as many labs use this to decrease cardiac artifact. This could impact scoring of slow wave sleep.