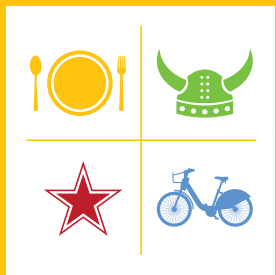


# FINAL PROGRAM



# SLEEP 2014

MINNEAPOLIS, MN | MAY 31-JUNE 4, 2014

## KEYNOTE SPEAKERS

**Giulio Tononi, MD, PhD**  
Sleep and the Price of Plasticity

**Andrew Renda, MD, MPH**  
Managed Care Perspective on Long-term Treatment,  
Outcomes and Economics of Sleep Disorders

The 28th Annual  
Meeting of the  
Associated Professional  
Sleep Societies, LLC  
A joint meeting of the  
American Academy of  
Sleep Medicine and the  
Sleep Research Society

Please visit us at  
Booth #209 to learn more



**Horizant**<sup>®</sup>  
*gabapentin enacarbil  
extended-release tablets*



# MINNEAPOLIS CONVENTION CENTER

*Welcome to SLEEP 2014, the 28<sup>th</sup> Annual Meeting of the Associated Professional Sleep Societies, LLC (APSS)!*

The Program Committee is confident that this year's meeting will provide you with access to the latest advances in the fields of sleep medicine and sleep research while also allowing ample time for you to network with colleagues old and new.

SLEEP 2014 offers a host of programs designed specifically to appeal to clinicians and researchers: a full slate of didactic postgraduate courses and more than 90 interactive and in-depth sessions, including bench to bedside sessions, brown bag reports of challenging cases, business- and patient-related clinical workshops, discussion groups, lunch debate sessions, meet the professor sessions and symposia. Additionally, more than 1,000 abstracts will be presented in oral and poster formats. Once again, we will be offering receptions on Monday and Tuesday evenings for poster viewing. More details about these sessions are included in this guide; they will help you plan your schedule and select the programs that fit your individual interests and learning style.

Networking is always an important aspect of the meeting, and SLEEP 2014 allows multiple opportunities for engagement with your colleagues and exhibiting companies. The "Pizza with a Purpose" Welcome Reception on June 1 is an opportunity to reconnect with old friends and forge new relationships with your sleep colleagues while raising valuable money for the American Sleep Medicine Foundation and the Sleep Research Society Foundation. We are excited to again this year offer the SLEEP 2014 Annual Meeting mobile app available on the iOS and Android. This app was made possible by Vanda Pharmaceuticals. You will also be able enjoy

complimentary internet access in session rooms thanks to Vanda Pharmaceuticals. We're making it easier than ever to stay connected while enjoying the educational content that we have to offer. We also invite you to network using social media. Information about all of these items is available on page 8 of this program.

The vast exhibit hall features the latest products and services available in sleep medicine from more than 100 companies. The AASM and SRS are each hosting general membership meetings and membership section meetings to provide members with the opportunity to learn about the societies' latest initiatives and how to get involved.

With changes and developments occurring in sleep medicine and research every day, it is important that clinicians and researchers are provided the opportunity to meet, interact and share their experiences and discuss the issues of greatest importance to the field. It is the hope of the APSS Program Committee that you enjoy your experience at SLEEP 2014 and are able to both renew and initiate relationships with colleagues from around the world who share your interests. Through these relationships, we can mold the future of sleep. Enjoy the meeting.

Sincerely,



Douglas Kirsch, MD  
Chair, APSS Program Committee

## getting started

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## APSS Program Committee

### A Joint Committee of the American Academy of Sleep Medicine and the Sleep Research Society

Douglas Kirsch, MD, *Chair*  
Harvard Medical School  
Boston, MA

Kenneth Wright Jr., PhD, *Incoming Chair*  
University of Colorado  
Boulder, CO

Charles Atwood, MD  
University of Pittsburgh  
Pittsburgh, PA

Neil Freedman, MD  
NorthShore University HealthSystem  
Bannockburn, IL

Charlene Gamaldo, MD  
Johns Hopkins University  
Baltimore, MD

Robert Greene, MD, PhD  
University of Texas Southwestern Medical Center  
Dallas, TX

Monique LeBourgeois, PhD  
University of Colorado  
Boulder, CO

Michael Littner, MD  
VA Greater Los Angeles Healthcare Systems  
Sepulveda, CA

Hans Van Dongen, PhD  
Washington State University  
Spokane, WA

Phyllis Zee, MD, PhD  
Northwestern University Medical School  
Chicago, IL


Valerie Crabtree, PhD, *Psychologist Reviewer*  
St. Jude Children's Research Hospital  
Memphis, TN

Jerome A. Barrett  
Executive Director

## Educational Opportunities

### Below are descriptions of the session types offered at SLEEP 2014.

*Those with an \* are free sessions included with your registration. There are more than 90 free sessions this year!*

- C** **Postgraduate Courses** — Intensive reviews of topics presented in a half-day or full-day session format prior to the scientific program.
- B** **\* Bench-to-Bedside Integrated Sessions** — Two-hour sessions focusing on the latest advances in translational science and clinical applications on a specific topic.
- W** **\* Clinical Workshops** — Reviews of patient-related and business-related aspects of sleep centers. Workshops address difficult clinical situations, business challenges and trends that clinicians experience in their daily practices.
- D** **\* Discussion Groups** — Forums for informal presentations of a specific topic, which may include conversations on controversial subjects or pro/con discussions and presentations.
- I** **\* Invited Lecturers** — One-hour lectures during which senior-level investigators/clinicians present in their areas of expertise.
- L** **Lunch Debates** — Large-group lunch sessions during which two experts in the field debate on a single topic.
- M** **Meet the Professors** — Small-group lunch sessions during which an expert in the field leads an informal discussion on a single topic.
- O** **\* Oral Presentations** — Fifteen-minute presentations during which investigators present their latest research and new ideas in the field.
- P** **\* Poster Presentations** — Visual representations of the latest research and new ideas in the field.
- R** **\* Brown Bag Report Sessions** — Review of challenging cases by an expert panel.
- S** **\* Symposia** — Two-hour sessions focusing on the latest data and ideas in the field.
-  **BSM ICON** — Sessions with this icon focus on the behavioral therapies for sleep disorders.

# General Information

## Location

Minneapolis Convention Center  
1301 Second Avenue South  
Minneapolis, Minnesota 55403  
Phone: (612) 335-6000

## Co-headquarter hotels:

Hyatt Regency Minneapolis and Hilton Minneapolis

## On-site Registration Hours

|                   |                  |
|-------------------|------------------|
| Friday, May 30    | 4:30pm – 6:00pm* |
| Saturday, May 31  | 6:30am – 5:30pm  |
| Sunday, June 1    | 6:30am – 5:30pm  |
| Monday, June 2    | 6:30am – 5:30pm  |
| Tuesday, June 3   | 7:30am – 5:00pm  |
| Wednesday, June 4 | 7:30am – 5:00pm  |

*\*Registration on Friday is only for pre-registered attendees.*

Registration materials (including badges, final programs, tickets, etc.) will be provided at the registration counter located in the Auditorium Lobby on Level One of the Minneapolis Convention Center. Tickets are required for entry to Postgraduate Courses, Meet the Professor sessions and Lunch Debate sessions. Tickets for sessions that are not sold out are available for on-site purchase at registration.

## Guest Passes

A registered attendee may elect to buy a guest pass. Guest passes are for family members only and allow entrance to the exhibit hall and industry sponsored events only. Guests must be 16 years of age in order to enter the exhibit hall. Guests are not permitted to attend any of the general or ticketed sessions.

## Badge Identification

All meeting participants and guests must wear a badge. Badges allow entrance to the scientific sessions and SLEEP 2014 exhibit hall. Your cooperation with this policy is appreciated.

**Recycle your badge holder. Bins for collecting badge holders will be located in the convention center for you to recycle your badge holder.**

## Exhibit Hall

The SLEEP 2014 exhibit hall showcases booth displays of pharmaceutical companies, equipment manufacturers, medical publishers and software companies. You must be at least 16 years of age to enter the exhibit hall.

## Exhibit Hall Hours

The exhibit hall will be open during the following hours:

|                   |                  |
|-------------------|------------------|
| Monday, June 2    | 10:00am – 4:00pm |
| Tuesday, June 3   | 10:00am – 4:00pm |
| Wednesday, June 4 | 10:00am – 2:00pm |

## Job Boards

Current job opportunities may be posted on the job boards located near the registration area. Postings are restricted to 8.5" x 11" in size and will be removed if they are deemed inappropriate. The APSS assumes no responsibility for these postings.

## Trainee Symposia Series

The 19th Annual Sleep Research Society Trainee Symposia Series will be held Saturday, May 31 – Sunday, June 1, 2014, at the Minneapolis Convention Center. The event is free to AASM and/or SRS student members who registered by April 16, 2014. On-site registration for this program is not available. For complete program information, please see pages 35-38.

## Speaker Ready Room

Speakers participating in Oral Presentations, Bench to Bedside sessions, Brown Bag Reports, Invited Lectures, Symposia, Discussion Groups, Postgraduate Courses, Lunch Debate sessions and Clinical Workshops are required to use the Speaker Ready Room to upload their PowerPoint presentations onto a central server. The Speaker Ready Room is located in Room 101A at the Minneapolis Convention Center. Speakers must upload their presentations 24 hours in advance of their scheduled session time. Technicians will be available to provide assistance. Speaker Ready Room hours of operation are:

|                   |                 |
|-------------------|-----------------|
| Friday, May 30    | 4:30pm – 6:00pm |
| Saturday, May 31  | 6:30am – 5:30pm |
| Sunday, June 1    | 6:30am – 5:30pm |
| Monday, June 2    | 6:30am – 5:30pm |
| Tuesday, June 3   | 7:30am – 5:00pm |
| Wednesday, June 4 | 7:30am – 5:00pm |

## Press Room

Members of the press are encouraged to utilize the press room in Room 101A, operating during meeting registration hours from Sunday, June 1 at 12:00pm through Wednesday, June 4 at 12:00pm. The press room contains resources to assist reporters with their stories, including detailed information on the participating organizations, meeting program books and a computer.

## Society Booth

Details about membership and products from the American Academy of Sleep Medicine, Sleep Research Society, American Association of Sleep Technologists, American Academy of Dental Sleep Medicine and/or Society of Behavioral Sleep Medicine are available at the Society Booth located between rooms 101E and 102A.

## Photography/Recording Policy

Photography and/or recording of any kind, other than by the APSS or registered press approved by the APSS, of sessions, speakers and the exhibit hall is prohibited. No cameras or recording devices will be allowed on the exhibit floor or in the meeting rooms at any time. Violation of this rule could result in removal from the Minneapolis Convention Center and the confiscation of the film or recording device.

## Seating

Open-seating sessions are filled on a first-come, first-served basis. The APSS does its best to match room size with anticipated demand; however, interest in a topic occasionally exceeds seating capacity. Seating limits are strictly enforced by the Convention Center Fire Marshal. We encourage you to arrive at meeting rooms as early as possible for best seating.

## Free Wi-Fi



Vanda Pharmaceuticals is proud to offer complimentary Wi-Fi to SLEEP 2014 attendees.

Here's how to connect:

1. Go to settings on your mobile device.
2. Select the Wi-Fi option.
3. Click **HETLIOZ 701**

## SLEEP 2014 Mobile App

Vanda Pharmaceuticals is proud to sponsor the SLEEP 2014 mobile app. The SLEEP 2014 app can be downloaded for iPhone, iPad, Android and web viewing.



## SLEEP 2014 Abstract Supplement

All abstracts from SLEEP 2014 are published in an on-line abstract supplement of the journal SLEEP. To view these abstracts, visit [www.sleepmeeting.org/attendees/abstract-supplement](http://www.sleepmeeting.org/attendees/abstract-supplement).

## We Want Your Feedback

All attendees are encouraged to evaluate each session they attend throughout the conference. Visit [www.sleepmeeting.org/evaluations](http://www.sleepmeeting.org/evaluations) or use your mobile app at any time during the meeting to rate the sessions. The site will close on July 1, 2014.

The sole purpose of this site is to evaluate speakers and sessions that you attend during SLEEP 2014. The Program Committee will use this information to plan future events. To claim credit from the meeting, visit [www.sleepmeeting.org/credits](http://www.sleepmeeting.org/credits). The deadline to claim credit is October 1, 2014.

## Commemorative Posters

Posters commemorating SLEEP 2014 are available on a first-come, first served basis to full meeting registrants. Posters are limited to one per person while supplies last. Pick up your poster at the Society Booth.

## Other Activities

**American Academy of Dental Sleep Medicine (AADSM)**  
23<sup>rd</sup> Annual Meeting  
May 29 – May 31, 2014  
Hyatt Regency Minneapolis

**American Association of Sleep Technologists (AAST)**  
36<sup>th</sup> Annual Meeting  
June 1 – June 3, 2014  
Minneapolis Convention Center, Room 200F

**SRS Trainee Hospitality Room**  
June 2 – June 4, 2013  
Minneapolis Convention Center, Room M100A



## Complimentary Wi-Fi for SLEEP 2014 Attendees



### Here's how to connect:

1. Go to Settings on your mobile device
2. Select the Wi-Fi option.
3. Click on the Wi-Fi network: **HETLIOZ 701**

*No password required.*

## Download the Official SLEEP 2014 app for the iPhone or Android



- Quickly view the SLEEP 2014 *Schedule*
- Find booths in the *Exhibit Hall*
- Find where you're at with the interactive *Floor Plan*
- Receive *Instant Alerts* about program changes or updates
- Learn about the best places to go while in *Minneapolis*
- Join the conversation on *Social Media*
- *And much more!*

Scan to download now!



**SLEEP 2014 Wi-Fi and Official SLEEP 2014 app sponsored by**



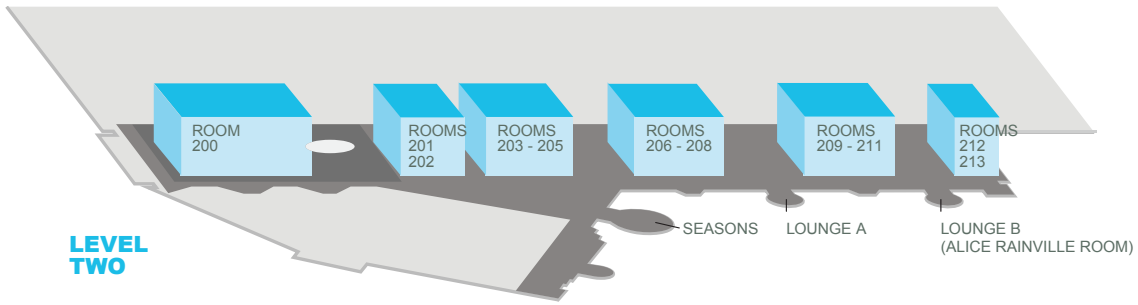
# #SLEEP2014



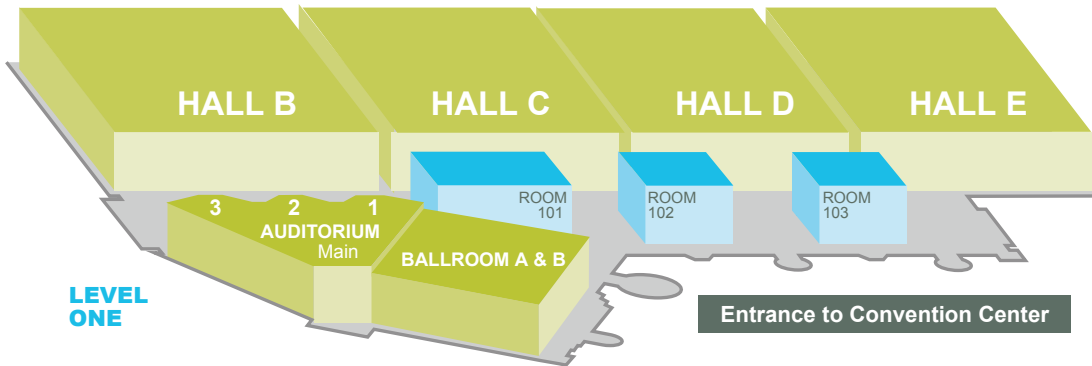
- Join the Conversation on Twitter using #SLEEP2014
- Share your photos of Minneapolis on Instagram and include #SLEEP2014 in your post
- Check in at SLEEP 2014 on Facebook and Foursquare
- Follow the American Academy of Sleep Medicine and Sleep Research Society for SLEEP 2014 news and photos



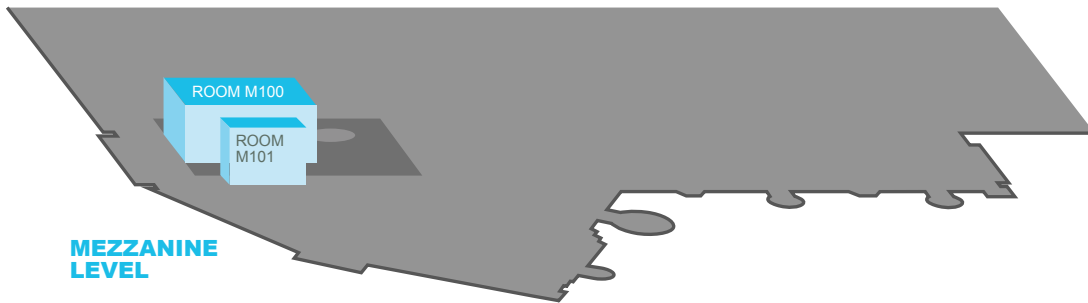
Download the SLEEP 2014 mobile app for more detailed floor plans. See page 8 for more information



- SLEEP General Sessions
- AAST General Session
- Lunch Debates
- AASM/SRS Section Meetings
- Trainee Symposia Series Welcome, Keynote Address and Career Development Fair
- AASM/SRS Membership Meetings



- Registration
- Society Booth
- Exhibit Hall
- SLEEP General Sessions
- Postgraduate Courses



- Meet the Professor Sessions
- Trainee Symposia Series Workshops

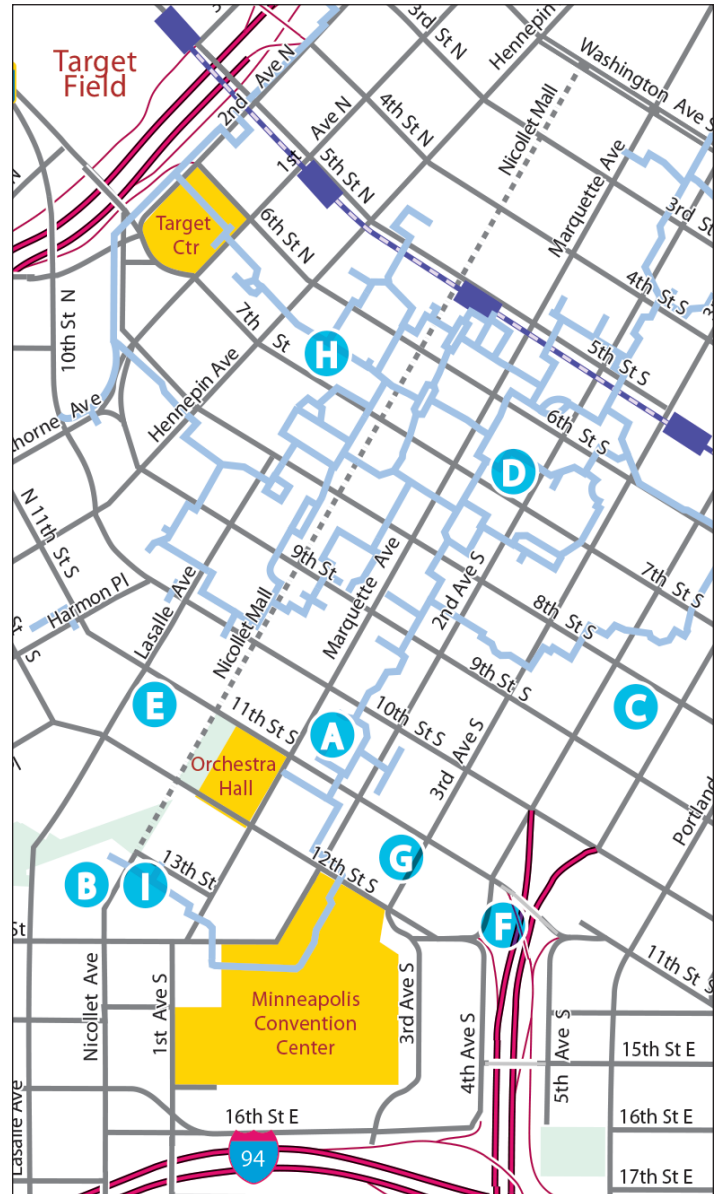


- SLEEP General Sessions
- SRS Section Meetings

## Hotel Information & Getting Around Minneapolis

Questions regarding SLEEP 2014 housing should be directed to:

SLEEP 2014 Housing Bureau  
 c/o Meet Minneapolis Housing Services  
 Toll-Free: (888) 947-2233  
 Fax: (612) 767-8201  
 Email: [housing@minneapolis.org](mailto:housing@minneapolis.org)



| Hotel   | Phone          | Address                  |
|---|----------------|--------------------------|
| <b>A</b> Hilton Minneapolis – CO-HEADQUARTER HOTEL        | (612) 376-1000 | 1001 Marquette Ave South |
| <b>B</b> Hyatt Regency Minneapolis – CO-HEADQUARTER HOTEL | (612) 370-1234 | 1300 Nicollet Mall       |
| <b>C</b> Best Western Plus Normandy Inn & Suites          | (612) 370-1400 | 405 S. 8th Street        |
| <b>D</b> Crowne Plaza Northstar                           | (612) 338-2288 | 618 2nd Ave South        |
| <b>E</b> DoubleTree Suites by Hilton Minneapolis          | (612) 332-6800 | 1101 LaSalle Avenue      |
| <b>F</b> Hilton Garden Inn Minneapolis Downtown           | (612) 339-6633 | 1101 4th Ave South       |
| <b>G</b> Holiday Inn Express & Suites                     | (612) 341-3300 | 225 S. 11th Street       |
| <b>H</b> Minneapolis Marriott City Center                 | (612) 349-4000 | 30 S. 7th Street         |
| <b>I</b> Millennium Hotel Minneapolis                     | (612) 332-6000 | 1313 Nicollet Mall       |

## Light Rail and Bus System

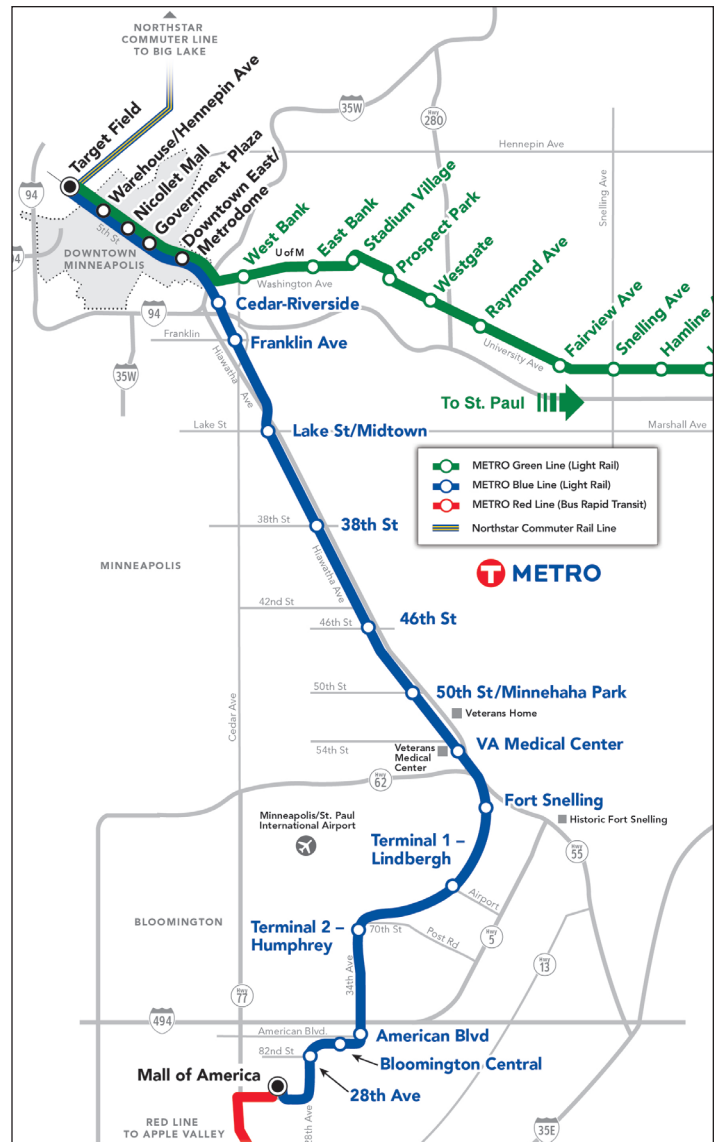
The light rail offers fast, quiet transportation service to 19 stations between downtown Minneapolis and Mall of America, including the Minneapolis-St. Paul International Airport.

One-way rail fares are \$2 during rush hours and \$1.50 at all other times.

Rush hour fares apply Monday through Friday (except holidays) from 6:00am to 9:00am and from 3:00pm to 6:30pm. Trains do not run from 1:00am to 4:00am.

For further information about the light rail, visit <http://metrotransit.org/hiawatha-line-route-55.aspx>.

Free buses run along Nicollet Mall, connecting several hotels within the SLEEP 2014 housing block with the Minneapolis Convention Center. Look for the buses marked "Free Ride" on Nicollet Mall. For additional information, visit [www.metrotransit.org](http://www.metrotransit.org).



# APSS Corporate Supporters

The APSS acknowledges and thanks the following organizations for their generous support and investment in the future of sleep medicine and sleep research as APSS Corporate Supporters.



Gold Supporter Member

Silver Supporter Member

Bronze Supporter Member



## Thank you to our SLEEP 2014 Sponsors

- |                            |                                      |                            |                               |                            |                            |
|----------------------------|--------------------------------------|----------------------------|-------------------------------|----------------------------|----------------------------|
| ActiGraph                  | Cleveland Clinic Wellness Enterprise | Human Design Medical       | KEGO FMI Diagnostic Solutions | Nihon Kohden America, Inc. | Transcend                  |
| BRAEBON Home Apnea Testing | Compumedics USA, Inc.                | Indigo Arc, LLC            | Lighting Science              | Philips Respironics        | Vanda Pharmaceuticals Inc. |
| Cadwell Laboratories, Inc. | Ez Sleep In-Home Testing             | Jazz Pharmaceuticals, Inc. | Natus Neurology Incorporated  | ResMed                     | Welltrinsic Sleep Network  |
|                            |                                      |                            |                               | Re-Timer Sleep Glasses     | XenoPort, Inc              |



## Introducing the First FDA Cleared Device for Patients Suffering Loss of Sleep Due to Primary Restless Legs Syndrome.

The Relaxis™ Pad, developed by Sensory Medical, is the first non-pharmacological medical device for patients suffering loss of sleep due to primary RLS. Our FDA cleared device uses vibratory counterstimulation to provide external stimulus to the affected area, which has been clinically proven to relieve RLS symptoms and allow patients to quickly return to sleep without having to get out of bed.

### A First-In-Class Device

The Relaxis™ Pad is the first prescription device cleared by the FDA to improve the quality of sleep in patients with primary RLS through the use of vibratory counterstimulation.

### Clinical Studies

Sensory Medical performed two randomized, multi-center, controlled clinical trials to assess the safety and effectiveness of vibratory counterstimulation in the treatment of patients with primary RLS. Patient inclusion criteria (moderate to severe RLS) as well as primary and secondary endpoints, as measured with standardized outcome instruments, were identical for both studies.

### Publications

Analysis of the clinical studies, including four published peer-reviewed articles, can found on our web site at: [www.sensorymedical.com](http://www.sensorymedical.com).

**Stop by Booth 1018 for more info and a product demonstration.**



**INDICATIONS FOR USE:** The purpose of the Relaxis™ Pad is to improve the quality of sleep in patients with primary Restless Legs Syndrome (RLS) through the use of vibratory counterstimulation.

## Continuing Medical Education (CME) Credit for Physicians

### Accreditation Statement

SLEEP 2014 meeting activities have been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Academy of Sleep Medicine (AASM) and the Associated Professional Sleep Societies, LLC (APSS). The American Academy of Sleep Medicine is accredited by the ACCME to provide continuing medical education for physicians.

The American Academy of Sleep Medicine designates this live educational activity for a maximum of 38.25 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### Sessions Available to Earn CME Credit

SLEEP 2014 offers physicians the opportunity to earn as many as 38.25 CME credits. CME credit is awarded for Brown Bag Reports, Clinical Workshops, Discussion Groups, Invited Lectures, Keynote Address, Lunch Debate sessions, Meet the Professor sessions, Oral Presentations, Postgraduate Courses and Symposia. Specific details as to which sessions are eligible for CME credit are listed on the CME Reference Form, distributed at registration. Only those sessions sponsored by the APSS and listed on the CME Credit Claim Form are eligible for CME credit. Note: Poster viewing and the Late-breaking Abstract sessions are not eligible for CME credit.

Credit is awarded based on the amount of time spent in each activity (rounded to the nearest quarter hour). Physicians may earn the following maximum number of credits each day:

|                    |      |
|--------------------|------|
| Saturday, May 31:  | 7.50 |
| Sunday, June 1:    | 7.75 |
| Monday, June 2:    | 7.00 |
| Tuesday, June 3:   | 8.00 |
| Wednesday, June 4: | 8.00 |

CME may also be available by attending industry sponsored events. These credits are made available by the event organizer and are not processed by the AASM.

### Satisfactory Completion

To receive CME credits, SLEEP 2014 attendees must register for CME credit and pay the appropriate fee. The administrative fees are \$25.00 for members and \$40.00

for nonmembers. Individuals must complete an online claim form to receive CME credit. Further information will be detailed on the CME Reference Form, distributed at registration.

### Target Audience for SLEEP 2014

Participants of the SLEEP 2014 meeting will include clinicians, scientists, students and other health care professionals seeking to increase their knowledge of the fields of sleep medicine and sleep research. Attendees should possess a basic knowledge of biological systems and/or operational issues in medical practice.

### Overall Educational Objectives

Attendance at SLEEP 2014 should give participants a broad understanding of the current state-of-the-art of sleep medicine, including current clinical practices used when investigating and treating sleep disorders in adults and children; areas of controversy in clinical practice; recent basic science research in both animals and humans; and social, business and political issues relevant to sleep medicine.

By the end of SLEEP 2014, participants should be able to:

1. Summarize relevant information on the latest sleep research and clinical practices;
2. Identify present issues or challenges in diagnosis/treatment of sleep disorders, practice of sleep medicine or topics related to the field of sleep;
3. Integrate strategies and tools for the enhancement/advancement of sleep medicine; and
4. Recognize and have a basic understanding of common sleep disorders.

## Continuing Education (CE) for Psychologists

### Accreditation Statement

SLEEP 2014 is co-sponsored by Amedco and the Associated Professional Sleep Societies, LLC (APSS). Amedco is approved by the American Psychological Association to sponsor Continuing Education for psychologists. Amedco maintains responsibility for this program and its content.

### Sessions Available to Earn CE Credit

Psychologists may receive up to 37.25 hours of continuing education credit for attending SLEEP 2014. CE credit is awarded for Brown Bag Reports, Clinical Workshops, Discussion Groups, Invited Lectures, Keynote Address, Oral Presentations, Postgraduate Courses and Symposia. Note: Poster viewing, Late-breaking Abstracts, Lunch Debate sessions and Meet the Professor sessions are not eligible for CE credit.

Psychologists may earn the following maximum number of CE credits per day:

|                    |      |
|--------------------|------|
| Saturday, May 31:  | 7.50 |
| Sunday, June 1:    | 7.75 |
| Monday, June 2:    | 7.00 |
| Tuesday, June 3:   | 8.00 |
| Wednesday, June 4: | 7.00 |

### Satisfactory Completion for Psychologists

To receive CE credits, SLEEP 2014 attendees must register for CE credit. The administrative fees are \$45.00 for members and nonmembers. Attendees must have attended each of their sessions in their entirety and complete an online evaluation form in order to receive a certificate of completion/attendance. Participants not fulfilling these requirements will not receive a certificate. Failure to complete the evaluation form will result in forfeiture of credit for the entire conference. No exceptions will be made. Partial credit of individual sessions is not available. Further information will be detailed on the CE Reference Form, distributed at registration.

### AANP Contact Hours for Nurse Practitioners

#### Accreditation Statement

This program is approved for 38.25 contact hour(s) of continuing education (which includes 6.75 hours of pharmacology) by the American Association of Nurse Practitioners. Program ID 1404231. This program was planned in accordance with AANP CE Standards and Policies and AANP Commercial Support Standards..

#### Sessions Available to Earn CE Credit

Credit is offered for Bench to Bedside sessions, Brown Bag Reports, Clinical Workshops, Discussion Groups, Invited Lectures, Keynote Address, Lunch Debate sessions, Meet the Professor sessions, Oral Presentations, Postgraduate Courses and Symposia. Note: Poster viewing and Late-breaking Abstracts are not eligible for AANP contact hours for nurse practitioners. Credit is awarded based on the amount of time spent in each activity and is rounded to the nearest quarter hour.

### Satisfactory Completion for Nurse Practitioners

To receive CE contact hours, SLEEP 2014 attendees must register for CE contact hours for nurse practitioners and pay the appropriate fee. The administrative fees are \$25.00 for members and \$40.00 for nonmembers. Attendees must have attended each of the sessions in their entirety and complete an online claim form in order to receive a credit letter. Further information will be detailed on the Nurse Practitioner CE Reference Form, distributed at registration.

## Continuing Education for Others

### Accreditation Statement

The AMA Council on Medical Education mandates that accredited providers only offer *AMA PRA Category 1 Credits™* to physicians. The AASM will issue individuals who are not eligible for any type of continuing education credits offered at SLEEP 2014 a letter of attendance outlining the number of *AMA PRA Category 1 Credits™* designated for the sessions they attend at SLEEP 2014.

To receive a letter of attendance, SLEEP 2014 attendees must register and pay the appropriate fee. The administrative fees are \$25.00 for members and \$40.00 for nonmembers. Individuals must complete an online claim form to receive the letter of attendance. Further information will be detailed on the Letter of Attendance Reference Form, distributed at registration.

**AASST CECs are not provided for SLEEP 2014 sessions. Sleep technologists should register for a letter of attendance.**

### Do Not Forget to Register for Credits

Follow the instructions below to ensure that you receive credit for SLEEP 2014:

1. When you register for SLEEP 2014, be sure to add the appropriate continuing education credits to your registration. This is a separate fee from the general session registration fee.
2. Pick up the appropriate Reference Form at the Continuing Education table near the SLEEP 2014 registration counters.
3. Use the Reference Form to track the sessions that you attend at SLEEP 2014.
4. After June 9, visit [www.sleepmeeting.org/credits](http://www.sleepmeeting.org/credits) to claim your credits. Instructions will be included on the Reference Form.

### Deadline to complete online credit claim forms:

- July 16, 2014 for CE for Psychologists
- October 1, 2014 for CME, AANP Credit and Letters of Attendance

**After these dates, individuals will no longer be able to receive credits.**

## Schedule at a Glance

| Saturday<br>May 31 | Sunday<br>June 1 | Monday<br>June 2 | Tuesday<br>June 3 | Wednesday<br>June 4 |
|--------------------|------------------|------------------|-------------------|---------------------|
|--------------------|------------------|------------------|-------------------|---------------------|

**Registration Open** 6:30am – 5:30pm

**Full-day Postgraduate Courses** 8:00am – 5:00pm

C01: Year in Review 2014 101E

C02: Trends in Sleep Medicine 102A

**Half-day Postgraduate Courses** 8:00am – 12:00pm

C03: Pediatric Sleep Medicine  
Clinical Challenges: Who, What, When, How and Why Auditorium 1

C04: Video-Polysomnographic Evaluation (Diagnosis and Scoring) of Sleep Related Movement Disorders Auditorium 2

C05: Difficult Cases That Keep You Up at Night: Case Based Review of Challenging Clinical Scenarios for the Sleep Medicine Specialist Auditorium 3

**Lunch Break** 12:00pm – 1:00pm

**Half-day Postgraduate Courses** 1:00pm – 5:00pm

C06: Pediatric Behavioral Sleep Medicine Auditorium 1

C07: RLS Treatment Developments: Expanded Medication Choices and Advances in Treatment for Pregnancy and Pediatric RLS Auditorium 2

C08: CPAP or Oral Appliance Therapy: Which Treatment for Which Patient? Auditorium 3

| Saturday<br>May 31 | Sunday<br>June 1 | Monday<br>June 2 | Tuesday<br>June 3 | Wednesday<br>June 4 |
|--------------------|------------------|------------------|-------------------|---------------------|
|--------------------|------------------|------------------|-------------------|---------------------|

**Registration Open** 6:30am – 5:30pm

**Full-day Postgraduate Courses** 8:00am – 5:00pm

C09: 2014 State of the Art for Clinical Practitioners 101E

C10: Gizmos and Gadgets: Using Technology to Enhance the Care of Patients with Sleep Disorders 102A

C11: It is Not Just About Treating Insomnia Anymore: Expanding the Reach of Behavioral Sleep Medicine Across Disorders and Provider Types Auditorium 1

**Half-day Postgraduate Courses** 8:00am – 12:00pm

C12: Update on Pediatric Guidelines: Surveillance, Evaluation and Management of Sleep Disorders in Specific Pediatric Populations Auditorium 2

C13: Sleep and the Heart Auditorium 3

**Lunch Break** 12:00pm – 1:00pm

**Half-day Postgraduate Courses** 1:00pm – 5:00pm

C14: Diagnosis and Treatment of Circadian Rhythm Sleep-Wake Disorders Auditorium 2

C15: Home Sleep Apnea Testing: The ABC's of Setting Up Your Own Program Auditorium 3

**General Sessions** 1:00pm – 3:00pm

O01: Medical Disorders and Sleep L100J

S01: Consequences of Chronic Sleep Restriction: New Insights from Animal Models and Human Studies L100H



|  |       |
|--|-------|
| Ground-breaking Theories<br>S02: on Sleep Regulation and<br>Function | L100F |
|--|-------|

**Refreshment Break** 3:00pm – 3:15pm

**General Sessions** 3:15pm – 5:15pm

|   |       |
|---|-------|
| O02: Novel Insights into Pediatric<br>Sleep Disorders | L100H |
|---|-------|

|  |       |
|--|-------|
| S03: Clinical and Basic Science<br>Perspectives on Mechanisms<br>of REM Sleep Behavior<br>Disorder | L100F |
|--|-------|

|  |       |
|--|-------|
| S04: Substrates, Mechanisms and<br>Neurodevelopment of Sleep<br>Regulation | L100J |
|--|-------|

**Pizza with a Purpose Welcome  
Reception** 6:00pm – 7:30pm

Northstar Ballroom, 2<sup>nd</sup> Floor  
Hyatt Regency



# SLEEP 2014

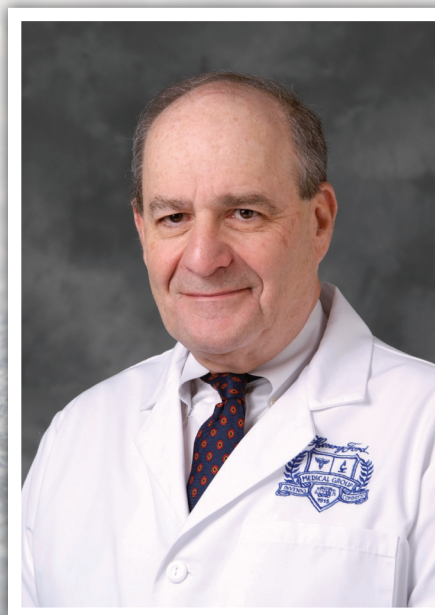
MINNEAPOLIS, MN

PRESENTS

## Pizza with a Purpose Welcome Reception

Sunday, June 1 | 6:00pm – 7:30pm  
Northstar Ballroom | Hyatt Regency Minneapolis

Network with colleagues and join  
us in celebrating the career and  
legacy of Thomas Roth, PhD



**Pre-registration is required! Purchase tickets  
at the SLEEP 2014 registration counters.**

Proceeds benefit the American Sleep  
Medicine Foundation (ASMF) and Sleep  
Research Society Foundation (SRSF).

## Schedule at a Glance

| Saturday<br>May 31 | Sunday<br>June 1 | Monday<br>June 2 | Tuesday<br>June 3 | Wednesday<br>June 4 |
|--------------------|------------------|------------------|-------------------|---------------------|
|--------------------|------------------|------------------|-------------------|---------------------|

**Registration Open** 6:30am – 5:30pm

**Poster Set-up** - (Exhibit Hall B) 7:00am – 8:00am

**Plenary Session and Keynote Addresses** 8:00am – 10:00am

I01: *Giulio Tononi, MD, PhD*  
Sleep and the Price of Plasticity Auditorium

I02: *Andrew Renda, MD, MPH*  
Managed Care Perspective on Long-term Treatment, Outcomes and Economics of Sleep Disorders Auditorium

**Exhibit Hall Open** (Exhibit Hall B) 10:00am – 4:00pm

**Refreshment Break** (Exhibit Hall B) 10:00am – 10:30am

**General Sessions** 10:30am – 11:30am

O03: Sleep Questionnaires: New Developments 102A

**General Sessions** 10:30am – 12:30pm

W01: RLS in Childhood, Migraine and Growing Pains: Close Relationship or Casual Association? L100H

D01: Tailoring Sleep Medications for Individual Patients 101E

O04: Evaluating Sleep Disordered Breathing L100J

S05: Disturbed Sleep as a Suicide Risk Factor and Novel Treatment Target: An Opportunity for Prevention 102F

S06: Neurodegeneration: Advances in Translational Neuroscience 205A

S07: Circadian Rhythms, Sleep and Metabolism L100F

**General Sessions** 11:30am – 12:30pm

O05: Investigations Evaluating the Relationship and Potential Mechanisms Underlying Sleep and Neurological Disorders 102A

**Lunch Break** 12:30pm – 1:45pm

**AASM General Membership Meeting** (205D) 12:30pm – 1:45pm

**Lunch Sessions** 12:30pm – 1:30pm

R01: Brown Bag Report: Challenging Cases 102A

L01: Should Non-commercial Drivers have Driving Licenses Suspended Pending a Sleep Apnea Evaluation? 200I

M01: A 24-Year Rumination on Oral Appliance Therapy for OSA M100B

M02: Complex Nocturnal Behaviors M100C

M03: Sleepiness and Driver Safety on the Real Road M100D

M04: Sleep, Recovery and Human Performance in Elite Athletes: Case Presentation and Clinical Management M100E

M05: Business of Sleep Medicine M100F

M06: Nighttime Settling Difficulties in Children: Physiological Insights M100G

M07: Adaptive Servoventilation for Treatment of Central Sleep Apnea M100H

M08: Successes and Challenges in Disseminating Behavioral Treatments of Insomnia M100I

**Late-breaking Abstracts** (102F) 12:40pm – 1:40pm

**SRS Membership Section Meetings** 12:45pm – 1:45pm

**Invited Lecturers** 1:45pm – 2:45pm

I03: *Carol Worthman, PhD*  
Sleep “in the Wild”: Insights from Comparative Cross-cultural Research L100H

I04: *Sonia Ancoli-Israel, PhD*  
Sleep Disorders in Parkinson’s Disease 101E

**Oral Presentations** 1:45pm – 2:45pm

O06: Sleep and Metabolism: Basic Research 205A

O07: Neurocognitive and Mood Effects of Sleep in Women L100F

O08: TMS, TDCS and Other Novel Approaches to Studying Sleep Related Movement Disorders 102A

O09: Chronobiology and Brain Function L100J

**Refreshment Break** (Exhibit Hall B) 2:45pm – 3:00pm

**General Sessions** 3:00pm – 5:00pm

B01: Research to Practice: Sleep Science and the New Regulations on Duty Hours in the Trucking and Aviation Industries 101E

W02: More is Less and Less is More: Augmentation Phenomena in Restless Legs Syndrome L100H

D02: International Implementation of an Internet Intervention for Insomnia 102F

D03: Options for Treatment of Obstructive Sleep Apnea in Children and Improving Positive Airway Pressure Compliance L100F

O10: Development, Aging and the Sleeping Brain 102A

O11: Treating Obstructive Sleep Apnea L100J

S08: Dissection of Neural Circuitry Regulating Sleep-Wake Using Genetically Engineered Systems 205A

**Invited Lecturer** 4:00pm – 5:00pm

*Thomas Roth, PhD*  
Inaugural Thomas Roth Lecture of Excellence Auditorium 1

**Poster Presentations** (Exhibit Hall B) 4:00pm – 6:00pm

**AASM Membership Section Meetings** 5:15pm – 6:15pm



**Join the SBSM Today**

The SBSM is committed to advancing the scientific approach to behavioral sleep medicine and supporting sleep psychologists and behavioral sleep providers.

**Visit the Society Booth for more information and to join the SBSM.**



**SBSM Membership Reception:**  
Monday, June 2, 2014 from 5:00pm to 7:00pm  
at the Hyatt Regency, Minneapolis

**Room: Northstar Ballroom B, 2<sup>nd</sup> Floor, Hyatt Regency Minneapolis**

## Schedule at a Glance

| Saturday<br>May 31 | Sunday<br>June 1 | Monday<br>June 2 | Tuesday<br>June 3 | Wednesday<br>June 4 |
|--------------------|------------------|------------------|-------------------|---------------------|
|--------------------|------------------|------------------|-------------------|---------------------|

**AASM PAC Breakfast** (Room 200I) **7:00am – 8:00am**

**Poster Set-up** (Exhibit Hall B) **7:00am – 8:00am**

**Registration Open** **7:30am – 5:00pm**

**Invited Lecturer** **8:00am – 9:00am**

I05: *Ravi Allada, MD*  
How Molecular Genetics Can Tell Us How We Wake Up and Why We Sleep L100H

**General Sessions** **8:00am – 10:00am**

B02: Exercise as a Behavioral Sleep Medicine Intervention 102F

D04: Teens and Sleep Health 102A

O12: Role of Sleep in Psychiatric Functioning L100J

S09: Upper Airway Stimulation for Obstructive Sleep Apnea 101E

S10: Sleep Loss and Inflammation in Mice and Man: Cytokine Mechanisms for Sleep and Health Outcomes 205A

S11: Current Research and Clinical Insights into Sleep, Recovery and Performance in Elite Athletes L100F

**Invited Lecturer** **9:05am – 10:05am**

I06: *Sean P.A. Drummond, PhD*  
- Brain Function During Sleep Deprivation and Sleep Disorders: Is There a Common Dysfunction? L100H

**Exhibit Hall Open** **10:00am – 4:00pm**

**Refreshment Break** (Exhibit Hall B) **10:00am – 10:20am**

**General Sessions** **10:20am – 12:20pm**

W03: Positive Airway Pressure Therapy in Children: Reflecting on Experience and Developing Best Practices L100H

D05: A New Sleep Care Paradigm 101E

O13: Circadian Entrainment, Disruption and Physiological Effects of Light 205A

O14: Sleep/Wake Regulatory Circuitry: New Findings 102A

O15: Sleep and Behavior in Children and Adolescents L100J

S12: Cognitive and Behavioral Interventions for Insomnia in Military Populations 102F

S13: Reward Processing: The Impact of Sleep on What We Find Reinforcing L100F

**Lunch Break** **12:20pm – 1:30pm**

**Overcoming the Challenges of the Future: The Welltrinsic Sleep Network** (101E) **12:20pm – 1:20pm**

**SRS General Membership Meeting** (205D) **12:30pm – 1:30pm**

**Lunch Sessions** **12:30pm – 1:30pm**

R02: Brown Bag Report: Challenging Cases 102A

L02: Is APAP as Good as CPAP for Titration or Treatment? 200I

M09: Geriatric Sleep: Dispelling Some Myths About Sleep and Aging M100B

M10: Fatal Familial Insomnia - Prion Disease: Past, Present and Future M100C

M11: Utilization Review for Sleep Studies: What You Need To Know M100D

|      |  |       |
|------|--|-------|
| M12: | Sleep Disturbance in Patients with Heart Failure                         | M100E |
| M13: | Management of Pediatric Sleep Apnea                                      | M100F |
| M14: | Treatment of Narcolepsy  | M100G |
| M15: | Fatigue Risk Management<br>Science and Technology Solutions for Industry | M100H |
| M16: | Using Video to Aid in CPAP Adherence                                     | M100I |

**Invited Lecturers 1:30pm – 2:30pm**

|      |  |       |
|------|--|-------|
| I07: | <i>Mehdi Tafti, PhD</i><br>Molecular Genetics of Sleep | L100H |
| I08: | <i>Christopher Barnes, PhD</i><br>Sleep and Work       | 101E  |

**Oral Presentations 1:30pm – 2:30pm**

|      |  |       |
|------|--|-------|
| O16: | Investigating Disparities in Delivering Sleep Medicine Education and Health Care | 102A  |
| O17: | Parasomnias  | 205A  |
| O18: | New Sleep Analysis Techniques: Clinical Aspects                                  | L100F |
| O19: | Novel Sleep Therapeutics in Preclinical Models                                   | L100J |

**Refreshment Break (Exhibit Hall B) 2:30pm – 2:45pm**

**Sleep Medicine Fellowship Directors Council Forum (Room 200I) 2:30pm – 4:30pm**

**General Sessions 2:45pm – 4:45pm**

|      |  |       |
|------|--|-------|
| B03: | Sleep and Emotion Regulation from Bench to Bedside                                     | L100H |
| W04: | PAP Adherence: Utilizing Team-based Care and a Behavioral Approach to Maximize Success | 102F  |
| W05: | Occupational Sleep Medicine  | 101E  |

|      |  |       |
|------|--|-------|
| D06: | Stone Soup: Leveraging Research Resources and Opportunities          | 102A  |
| O20: | Insomnia: Treatment  | L100F |
| O21: | Sleep Loss, Behavior and Physiology: Connecting the Dots             | L100J |
| S14: | Differential Neural Mechanisms of Adenosine in Sleep-Wake Regulation | 205A  |

**Poster Presentations (Exhibit Hall B) 4:00pm – 6:00pm**

**AASM Membership Section Meetings 5:15pm – 6:15pm**

## Schedule at a Glance

| Saturday<br>May 31 | Sunday<br>June 1 | Monday<br>June 2 | Tuesday<br>June 3 | Wednesday<br>June 4 |
|--------------------|------------------|------------------|-------------------|---------------------|
|--------------------|------------------|------------------|-------------------|---------------------|

|   |   |                          |
|---|---|--------------------------|
| <b>Nurses Breakfast</b> (Room 200I)       |   | <b>7:00am – 8:00am</b>   |
| <b>Poster Set-up</b> (Exhibit Hall B)     |   | <b>7:00am – 8:00am</b>   |
| <b>Registration Open</b>                  |   | <b>7:30am – 5:00pm</b>   |
| <b>Invited Lecturer</b>                   |   | <b>8:00am – 9:00am</b>   |
| I09:                                      | <i>Adam Darkins, MD, MPH</i><br>Telehealth: Changing the Location of Care to Make the Home and Local Community into Preferred Sites of Care | 101E                     |
| <b>General Sessions</b>                   |   | <b>8:00am – 10:00am</b>  |
| D07:                                      | International Collaborations to Promote Discovery and Replication of Genetic Risk Factors for Sleep Disorders                               | L100H                    |
| O22:                                      | Sleep Deficiency and its Consequences   | 102A                     |
| O23:                                      | Assessments and Associations of Obstructive Sleep Apnea   | L100J                    |
| S15:                                      | Insomnia Subtypes: The Mind, the Brain and the Body   | 102F                     |
| S16:                                      | A Perfect Time for Chronomedicine   | L100F                    |
| S17:                                      | What is Cataplexy?  | 205A                     |
| <b>Invited Lecturer</b>                   |   | <b>9:05am – 10:05am</b>  |
| I10:                                      | <i>Tonya Palermo, PhD</i><br>Sleep and Pediatric Chronic Pain: Innovative Approaches to Assessment and Treatment                            | 101E                     |
| <b>Exhibit Hall Open</b>                  |   | <b>10:00am – 2:00pm</b>  |
| <b>Refreshment Break</b> (Exhibit Hall B) |   | <b>10:00am – 10:20am</b> |
| <b>General Sessions</b>                   |   | <b>10:20am – 12:20pm</b> |

|  |   |                          |
|--|---|--------------------------|
| W06:   | Critical Issues in the Evaluation, Diagnosis and Management of RBD Patients                           | L100H                    |
| D08:   | The American Sleep Medicine Foundation: Stimulating Innovation through Expanded Funding Opportunities | 205A                     |
| O24:   | Insomnia: Comorbid Associations   | 102A                     |
| O25:   | Obstructive Sleep Apnea: Effects and Treatment  | L100F                    |
| S18:   | Sleep in Children with Chronic Health Conditions: Challenges and Opportunities                        | 102F                     |
| S19:   | Metabolomics and Sleep: Translational Approaches from Animals to Humans                               | L100J                    |
| S20:   | Future Models of Care: The Veterans Health Administration Experience                                  | 101E                     |
| <b>Poster Presentations</b> (Exhibit Hall B) |   | <b>10:20am – 12:20pm</b> |
| <b>Lunch Break</b>                           |   | <b>12:20pm – 1:30pm</b>  |
| <b>Lunch Sessions</b>                        |   | <b>12:30pm – 1:30pm</b>  |
| L03:   | Does Objective Measuring of Compliance Improve Outcome?   | 200I                     |
| M17:   | Treatment Updates on Insomnia   | M100B                    |
| M18:   | Exercise and Sleep  | M100C                    |
| M19:   | Home Sleep Testing  | M100D                    |
| M20:   | The Expanding Role of APRNs and PAs in Sleep Medicine   | M100E                    |
| M21:   | How to Evaluate and Manage Excessive Daytime Sleepiness in Childhood                                  | M100F                    |
| M22:   | Increasing Public Awareness of Sleep through Employers  | M100G                    |

|      |   |       |
|------|---|-------|
| M23: | Tired Cops and First Responders: Sleep, Justice and Public Safety | M100H |
| M24: | Sleep, Memory and Emotion   | M100I |

**Invited Lecturer 1:30pm – 2:30pm**

|      |  |      |
|------|--|------|
| I11: | <i>Atul Malhotra, MD</i> - The Future of Sleep Apnea Therapy | 101E |
|------|--|------|

**Oral Presentations 1:30pm – 2:30pm**

|      |   |       |
|------|---|-------|
| O26: | Sleep Quality in Older Adults                             | 102A  |
| O27: | Narcolepsy and Hypersomnias Related Psychiatric Disease   | 205A  |
| O28: | Sleep State Analysis: New Methods and Models              | L100J |
| O29: | Circadian Misalignment and Circadian Sleep-Wake Disorders | L100H |
| O30: | Sleep Timing, Duration and Napping: New Insights          | L100F |

**Refreshment Break 2:30pm – 2:45pm**

**General Sessions 2:45pm – 4:45pm**

|      |  |       |
|------|--|-------|
| B04: | Shining a Light on Sleep, Metabolism and Body Weight   | L100H |
| W07: | Hypersomnia and Narcolepsy in the Pediatric Population   | L100F |
| O31: | Insomnia: Modifying Factors  | 102A  |
| O32: | Biobehavioral Impact of Short Sleep Duration and Shift Work  | L100J |
| S21: | The Importance of Sleep Disturbance in Mood Disorders: Evidence from Clinical Interventions and Scientific Experiments | 102F  |
| S22: | Autonomic Consequences of Sleep Loss and Risk of Hypertension  | 205A  |

|      |  |      |
|------|--|------|
| S23: | Does OSA Cause Metabolic Consequences: Summary of the Existing Evidence and Presentation of New Data | 101E |
|------|--|------|



# Daily deals exclusively for



## AASM Deal of the Day Packages

**30% OFF!**

**SATURDAY, MAY 31**  
**New Learning Module Package**

Earn 21 CME credits while learning the ins and outs of managing the complex patient with co-morbid conditions and understand tips and best practices to successfully navigate reimbursement.

**30% OFF!**

**TUESDAY, JUNE 3**  
**Accreditation Package**

Prepare your center for the AASM Accreditation process and ensure your staff is ready to handle coding, billing and marketing of your center.

**30% OFF!**

**SUNDAY, JUNE 1**  
**Patient Ready Package**

Make sure all of your patients are as comfortable as possible as they go through the process of a sleep test.

**30% OFF!**

**WEDNESDAY, JUNE 4**  
**ICSD Package**

Learn the significant content changes made to the International Classification of Sleep Disorders – Third Edition (ICSD-3) when you receive a printed copy and an electronic copy of the ICSD-3. Also included is the ICD-9, ICD-10 Crosswalk to help make the transition to the ICD-10 codes a smooth one.

**30% OFF!**

**MONDAY, JUNE 2**  
**Clinical and Business Trends Package**

Stay on trend with the latest information about Telemedicine, AutoPAP, the ACA, Insurance Reimbursement and the impact of Stark Laws.

### AVAILABLE EVERY DAY

**50% OFF!**

**Slide Set Package** - Receive over 850 slides when you purchase this package which includes all 8 AASM Slide Sets. Slides range in topics and skill level. Be prepared to teach others about Pediatrics, RLS, Insomnia, Sleep Apnea and more!

**14% OFF!**

In addition to these packages, all individual products are 14% off!



Register for the 2014 National Sleep Medicine Course and the Intensive Scoring Review course at the Society Booth to save 20%! On-site deal only!





# SLEEP 2014 attendees!



## SRS Package Deals Available Every Day



### Essentials Package

Prepare today with SRS essentials. Whether you are preparing for a specialty exam associated with basic and clinical sleep sciences or looking to develop, write and implement scientific research grants, the SRS Essentials Package has you covered!



### Slide Set Package

Learn the Basics of Sleep through this peer-reviewed slide set of 10, hour-long didactic lectures that feature over 600 slides and nearly 400 references.

## Also at the Society Booth...



### AASM STAFF QUESTION TIME

Your chance to ask questions one-on-one with staff experts!

| Stop by and ask the expert at these times! |                              |
|--|------------------------------|
| ICSD-3 Highlights                          | Monday, June 2<br>10:30am    |
| Sleep Medicine Lobbying 101                | Monday, June 2<br>11:30am    |
| Accreditation                              | Monday, June 2<br>3:15pm     |
| Coding/Reimbursement                       | Monday, June 2<br>4:00pm     |
| Scoring Manual Updates                     | Tuesday, June 3<br>10:30am   |
| Inter-scorer Reliability                   | Tuesday, June 3<br>2:00pm    |
| Sleep Care Paradigm                        | Tuesday, June 3<br>3:00pm    |
| Maintenance of Certification (MOC)         | Wednesday, June 4<br>10:00am |



### AASM INTER-SCORER RELIABILITY (ISR) DEMOS

Last chance for the best deal!

- View new system updates
- Hear Facility benefits
- Ask detailed ISR questions
- Start a free trial



### Are You a New Member of the AASM or SRS? Have you been a member for 5+ years?

The AASM and SRS would like to recognize new members and long-term members by distributing a special attendee badge ribbon. Stop by the Society Booth to claim your ribbon while supplies last!



### Are you a Member of the SBSM?

Don't forget to pick up your SBSM Membership ribbon at the Society Booth!



## Join Congressman Erik Paulsen at the 2014 AASM PAC Breakfast



Keynote speaker Congressman Erik Paulsen (R-MN), of the influential House Ways and Means Committee, will provide an insider's perspective on legislative changes that affect physicians, current health care debates in Congress and how you can influence policy.



The AASM PAC Breakfast is Tuesday, June 3 at 7a.m.  
Minneapolis Convention Center - Room 200I



Tickets are \$50.00 and can be purchased at the SLEEP 2014 Registration Desk. Advanced registration is required.

### Exclusively at SLEEP

**2014:** contribute \$200+ to the AASM PAC to receive a unique pen custom-made by Executive Director Jerry Barrett.



Your contribution supports the AASM's efforts to increase awareness of sleep medicine in DC and gain critical legislative support for key AASM initiatives.

\*Contributions must be received at the AASM PAC desk, near the Society Booth. Previous or future donations do not apply. Contributions from corporate accounts and non-AASM members are not permitted. Pen colors and designs will vary based on availability and contribution amount (\$200 minimum). Pens include a certificate of authenticity. Supplies are limited.

[www.aasmpac.org](http://www.aasmpac.org)



## Members Connect at SLEEP 2014



While at SLEEP 2014, network with your colleagues at the General Membership Meetings



**AASM General Membership Meeting**  
Monday, June 2 – 12:30-1:45 PM  
Room 205D



**SRS General Membership Meeting**  
Tuesday, June 3 – 12:30-1:30 PM  
Room 205D



Share your plans for SLEEP 2014 on Facebook and Twitter using our official hashtag **#SLEEP2014**.

### STILL NOT A MEMBER?

Now is the best time to join the nearly 11,500+ sleep medicine professionals who are already members. **All SLEEP 2014 attendees are eligible to save up to 50% with prorated dues.**

Members receive access to networking events and courses throughout the year, the Membership Directory, and the journal *SLEEP*. Members also save on all products sold at the Society Booth.



**American Academy of Sleep Medicine Membership:**

[www.aasmnet.org/membership.aspx](http://www.aasmnet.org/membership.aspx)



**Sleep Research Society Membership:**

[www.sleepresearchsociety.org/membership.aspx](http://www.sleepresearchsociety.org/membership.aspx)

Join today at the Society Booth!

### GIULIO TONONI, MD, PHD

#### Sleep and the Price of Plasticity

Monday, June 2, 2014

Auditorium



*Dr. Tononi's lecture is during the Plenary Session and will follow the welcome address and AASM and SRS presentations.*

Giulio Tononi, MD, PhD received his medical degree and specialized in psychiatry at the University of Pisa, Italy. After serving as a medical officer in the

Army, he obtained a PhD in neuroscience as a fellow of the Scuola Superiore, based on his work on sleep regulation. From 1990 to 2000, he was at The Neurosciences Institute, first in New York and then in San Diego. He is currently Professor of Psychiatry, Distinguished Professor in Consciousness Science, and the David P. White Chair in Sleep Medicine at the University of Wisconsin, Madison. In 2005 he received the NIH Director's Pioneer Award for his work on sleep. His laboratory studies consciousness and its disorders as well as the mechanisms and functions of sleep.

Dr. Tononi is a frequent lecturer and invited speaker at scientific symposia. He is the author of approximately 200 scientific publications, co-editor of the volume *Selectionism and the Brain* (with Olaf Sporns), and author of two recent books on the neural basis of consciousness: *A Universe of Consciousness* (with Gerald M. Edelman) and *Galileo and the Photodiode*. His latest book on consciousness, *PHI: A Voyage from the Brain to the Soul*, was published in August 2012.

### ANDREW RENDA, MD, MPH

#### Managed Care Perspective on Long-term Treatment, Outcomes and Economics of Sleep Disorders

Monday, June 2, 2014

Auditorium



*Dr. Renda's lecture is during the Plenary Session and will follow the welcome address and AASM and SRS presentations.*

Andrew Renda, MD, MPH, is Program Manager for the Chronic Care Strategies Team at Humana. He is responsible for strategy and solutions, as

well as monitoring spend, trend and utilization, for respiratory and metabolic conditions.

Dr. Renda has designed and implemented population health clinical interventions for chronic conditions ranging from messaging campaigns and self-care interventions to clinician-led disease management programs. Significant projects include: metabolic syndrome support service, asthma and COPD disease management and self-care programs, sleep apnea diagnostics and management strategy, flu/pneumonia campaign, tobacco cessation service integration and outreach.

He also serves on several Humana boards and committees, including: Humana Active Outlook Medical Advisory Board, Comprehensive Health Insights Research Advisory Committee, Clinical Disparities and Cultural Diversity Committee.

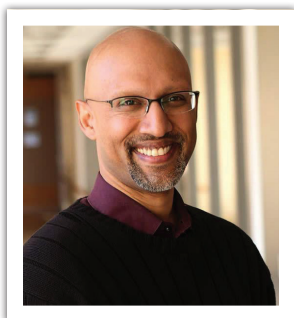
Dr. Renda has a bachelor of science in psychology and biology from the University of Kentucky where he was a National Science Foundation Undergraduate Fellow. He received his medical degree and a diploma in clinical psychiatry from the Royal College of Surgeons in Ireland, followed by a masters in public health from Harvard University.

## Invited Lecturers

### **RAVI ALLADA, MD**

#### **How Molecular Genetics Can Tell Us How We Wake Up and Why We Sleep**

**Tuesday, June 3, 2014 | 8:00am – 9:00am  
Room L100H**



Ravi Allada, MD, is the Professor and Chair of the Department of Neurobiology, Professor in the Department of Pathology, and Associate Director for the Center for Sleep and Circadian Biology at Northwestern University.

Dr. Allada received his medical degree from the University of

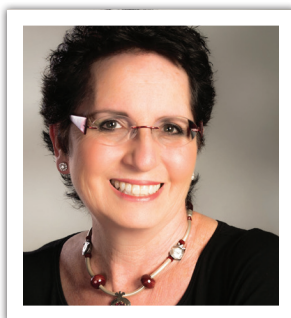
Michigan and completed his residency in clinical pathology from Brigham and Women's Hospital. During medical school, he was a Howard Hughes Medical Institute-National Institutes of Health Research Scholar and worked on the molecular genetics of general anesthesia using the fruit fly *Drosophila* as a model system. He received an HHMI Physician Postdoctoral Fellowship with Michael Rosbash at Brandeis University where he cloned the *Drosophila* Clock gene, a master transcription factor for circadian rhythms. In 2000, he joined the faculty at Northwestern University.

The Allada laboratory has identified and characterized novel components of the core circadian clock including the discovery of a novel translational control pathway involving the neurodegeneration gene *Ataxin2* in *Drosophila* as well as neuropeptide receptors and ion channels that are important for conveying temporal information from the clock to regulate behavior such as sleep and wake. His laboratory has also exploited the *Drosophila* model for sleep, discovering links between sleep homeostasis and memory processing as well as protein degradation pathways. His recent work also extends to mammalian systems including humans. His work has been recognized by a Burroughs Wellcome Career Award and a NARSAD Young Investigator Award.

### **SONIA ANCOLI-ISRAEL, PHD**

#### **Sleep Disorders in Parkinson's Disease**

**Monday, June 2, 2014 | 1:45pm – 2:45pm  
Room 101E**



Sonia Ancoli-Israel, PhD, is a Professor Emeritus and Professor of Research in the Departments of Psychiatry and Medicine at the University of California San Diego (UCSD) School of Medicine, Director of the Gillin Sleep and Chronomedicine Research Center, and Director of

Education at the Sleep Medicine Center at UCSD. Dr. Ancoli-Israel received her bachelor's degree from the State University of New York, Stony Brook, a master's degree in psychology from California State University, Long Beach and a PhD in psychology from the University of California, San Francisco. Dr. Ancoli-Israel's expertise is in the field of sleep disorders and sleep research in aging. Her current interests include the longitudinal effect of sleep disorders on aging, the effect of circadian rhythms on sleep, therapeutic interventions for sleep problems in dementia and fatigue, particularly the relationship between sleep, fatigue and circadian rhythms in cancer and other chronic illnesses.

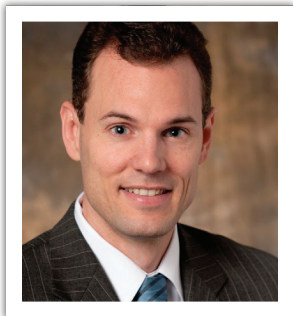
Dr. Ancoli-Israel is Past-President of the Sleep Research Society, Past-President of the Society for Light Treatment and Biological Rhythms, and was a founding member of the Executive Board of the National Sleep Foundation. She was honored in 2007 with the National Sleep Foundation Life Time Achievement Award and the Sleep Research Society Mary A. Carskadon Outstanding Educator Award and in 2012 with Society of Behavioral Sleep Medicine Distinguished Career Award. Dr. Ancoli-Israel has been a guest on television and radio programs including NPR's Morning Edition and Fresh Air with Terry Gross. Dr. Ancoli-Israel is published regularly in medical and psychiatric journals with close to 400 publications in the field.

## Invited Lecturers

### CHRISTOPHER BARNES, PHD

#### Sleep and Work

Tuesday, June 3, 2014 | 1:30pm – 2:30pm  
Room 101E



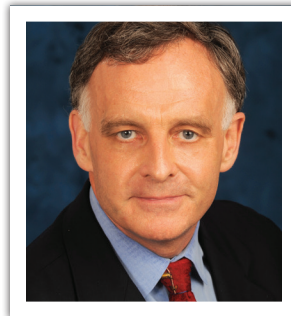
Christopher Barnes, PhD, is currently an Assistant Professor of Management in the Foster School of Business, University of Washington. Dr. Barnes has a bachelor of science with a major in psychology and a minor in biology from Pacific Lutheran University, and an MBA from Webster

University. He spent four years as a research manager in the Fatigue Countermeasures Branch of the Air Force Research Laboratory. Following this, he obtained his PhD in organizational behavior from Michigan State University. Dr. Barnes' research focuses on the nexus of sleep and work, emphasizing in particular the influence of sleep on work outcomes. His research has been published in several top management and applied psychology journals, including *Academy of Management Review*, *Journal of Applied Psychology*, *Organizational Behavior and Human Decision Processes*, and *Personnel Psychology*. His research has been covered in many mass media outlets, including ABC News, MSNBC, *The New York Times*, *Wall Street Journal*, BBC Radio, *Harvard Business Review*, and Huffington Post.

### ADAM DARKINS, MD, MPH

#### Telehealth: Changing the Location of Care to Make the Home and Local Community into Preferred Sites of Care

Wednesday, June 4, 2014 | 8:00am – 9:00am  
Room 101E



Adam Darkins, MD, leads the national telehealth programs for the Department of Veterans Affairs (VA). Successful implementation of telehealth within the VA involves the use of health informatics and disease management technologies to enhance and extend care and case management.

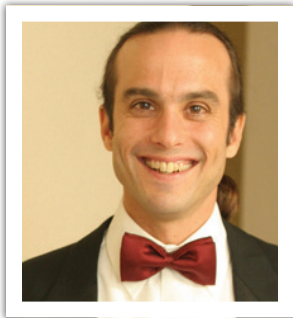
Under Dr. Darkins' leadership, the VA has developed the clinical, technology and business underpinnings to successfully implement and sustain enterprise-wide telehealth-based services that have demonstrably improved access to care for patients, reduced utilization of health care resources and been associated with very high levels of patient satisfaction.

Since 1991, Dr. Darkins has worked in health services development, including transitioning care from hospitals into home and community settings and implementing enterprise information technology systems in the US and UK. He has a clinical background in neurosurgery.

## SEAN P.A. DRUMMOND, PHD

### Brain Function During Sleep Deprivation and Sleep Disorders: Is There a Common Dysfunction?

Tuesday, June 3, 2014 | 9:05am – 10:05am  
Room L100H



Sean P.A. Drummond, PhD, first became fascinated with sleep research when he volunteered as an undergraduate research assistant in the Sleep Research Laboratory at the University of Arizona under the direction of Richard Bootzin, PhD and Michael Perlis, PhD (then a graduate student). He attended

the SDSU-UCSD Joint Doctoral Program in Clinical Psychology where he worked with J. Christian Gillin, MD, and completed his pre-doctoral internship at the Tucson VA hospital. Dr. Drummond then returned to UCSD as a postdoctoral fellow working with Gregory G. Brown, PhD. He joined the faculty in the Department of Psychiatry in October 2002.

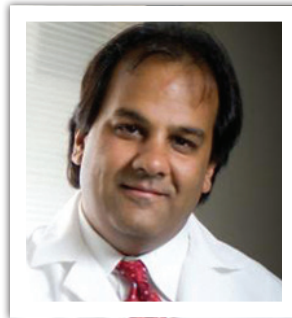
Dr. Drummond's main program of research seeks to understand the impact of sleep and sleep deprivation on cognitive performance, brain function, as well as overall clinical symptoms and quality of life. He conducts both experimental studies and clinical studies.

Dr. Drummond has an active clinical role in the Veterans Affairs San Diego Healthcare System as the Associate Director of the Cognitive Behavioral Interventions Program. This clinic treats insomnia and nightmares in a variety of patient populations, including PTSD, mood disorders and primary care patients.

## ATUL MALHOTRA, MD

### The Future of Sleep Apnea Therapy

Wednesday, June 4, 2014 | 1:30pm – 2:30pm  
Room 101E



Atul Malhotra, MD is the Division Chief of Pulmonary and Critical Care Medicine, Director of Sleep Medicine and Kenneth M. Moser Professor of Medicine at UC San Diego. He is very involved in the leadership of the American Thoracic Society as the current ATS Vice President and future ATS President in

2015-2016. Dr. Malhotra is an avid researcher and prolific writer with over 190 peer-reviewed original articles and over 125 reviews/chapters since coming on faculty in 2000. His investigative interests include the pathogenesis of sleep apnea, the metabolic/cardiovascular complications of sleep disorders, and mechanical ventilation in acute respiratory distress syndrome.

## Invited Lecturers

### TONYA PALERMO, PHD

#### Sleep and Pediatric Chronic Pain: Innovative Approaches to Assessment and Treatment

Wednesday, June 4, 2014 | 9:05am – 10:05am  
Room 101E



Tonya Palermo, PhD, is a pediatric psychologist and a Professor in the Department of Anesthesiology and Pain Medicine at University of Washington with adjunct appointments in Pediatrics and Psychiatry. Dr. Palermo received her BA in psychology from the University of California

at Los Angeles and her MA and PhD in clinical psychology from Case Western Reserve University. She completed her predoctoral internship in pediatric psychology at Columbus Children's Hospital and a postdoctoral fellowship at Rainbow Babies & Children's Hospital in pediatric psychology/pain management.

Dr. Palermo has a NIH-funded research program in the area of pediatric chronic pain and sleep. She is specifically interested in cognitive-behavioral interventions, delivery of psychological treatment via the internet, sleep disturbances and parent/family factors. She has published over 110 peer-reviewed articles and a book on cognitive-behavioral therapy for chronic pain in children and adolescents. Dr. Palermo has held leadership positions in the American Psychological Association and the American Pain Society. She is a Fellow of the American Psychological Association. Dr. Palermo is an Associate Editor for the *Clinical Journal of Pain* and for the *Journal of Pediatric Psychology*. Dr. Palermo also serves as a regular member of an NIH study section, Behavioral Medicine Interventions and Outcomes. Training and mentorship are an important part of Dr. Palermo's work and she serves as Program Director for the T32 Anesthesiology and Perioperative Medicine Research Training Program at the University of Washington.

### MEHDI TAFTI, PHD

#### Molecular Genetics of Sleep

Tuesday, June 3, 2014 | 1:30pm – 2:30pm  
Room L100H



Mehdi Tafti, PhD, received his doctorate working with Dr. Michel Billiard at the University of Montpellier-France investigating the regulation of sleep in narcolepsy. Dr. Tafti subsequently joined the Center for Narcolepsy Research at Stanford University where he worked with Dr. Emmanuel

Mignot on neuroanatomy, pharmacology and genetics of canine narcolepsy. In 1995, Dr. Tafti established the first laboratory dedicated to the genetics of sleep and sleep disorders at the Department of Psychiatry, University of Geneva-Switzerland. In 2004, he joined the Center for Integrative Genomics at Lausanne University-Switzerland as an associate professor. Dr. Tafti acts as the founding co-director of the Center for Investigation and Research in Sleep at the Lausanne University Hospital. Dr. Tafti was promoted to full professor (neurogenetics) in 2011 at the University of Lausanne-Switzerland.

Research in his laboratories focuses on the molecular basis of sleep and sleep disorders. His group identified several genes that regulate the sleep EEG in mice. He is also one of the leading experts in narcolepsy research and member of the European Narcolepsy Network. Dr. Tafti was the first to discover TRIB2 auto-antibodies in narcolepsy, a mutation in MOG that causes a familial form of narcolepsy, a HLA allele that strongly protects against narcolepsy and introduced intravenous immunoglobulin therapy for narcolepsy with cataplexy.



## CAROL WORTHMAN, PHD

### Sleep “in the Wild”: Insights from Comparative Cross-cultural Research

Monday, June 2, 2014 | 1:45pm – 2:45pm  
Room L100H



Carol Worthman, PhD, currently holds the Samuel Candler Dobbs Chair in the Department of Anthropology, Emory University, where she also directs the Laboratory for Comparative Human Biology. After taking a dual undergraduate degree in biology and botany at Pomona College, Dr. Worthman took her

PhD in biological anthropology at Harvard University, having also studied endocrinology at UCSD and neuroscience at MIT under Jack Geller and Richard Wurtman, respectively. She joined the nascent anthropology faculty at Emory University in 1986, and established a pioneering laboratory advancing the use of biomarkers in population research.

Professor Worthman takes a biocultural approach to pursuit of comparative interdisciplinary research on human development, reproductive ecology, and biocultural bases of differential mental and physical health. She has conducted cross-cultural biosocial research in thirteen countries, including Kenya, Tibet, Nepal, Egypt, Japan, Papua New Guinea, Vietnam and South Africa, as well as in rural, urban, and semi-urban areas of the United States. For the past 20 years, she has collaborated with Jane Costello and Adrian Angold in the Great Smoky Mountains Study, a large, longitudinal, population-based developmental epidemiological project in western North Carolina. Current work includes a study of the impact of television on adolescent sleep/wake patterns in the context of a controlled experiment with Vietnamese villages lacking both television and electricity.

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\*Assuming 10 minutes of questionnaire interface time per day.

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# NARCOLEPSY NETWORK

*supporting people with narcolepsy since 1986*

Narcolepsy Network is a nationwide nonprofit organization dedicated to increasing early diagnosis of narcolepsy, advocating for and supporting persons with narcolepsy and their families, and promoting critical research for treatment and a cure.

### Services for people with narcolepsy and their supporters:

- quarterly newsletter
- educational materials
- support groups (in person & online)
- advocacy
- annual conference

### Services for medical professionals and educators:

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- educational materials
- research support
- annual conference

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## Join us for our 29<sup>th</sup> annual conference

for patients, supporters and health care providers

October 17-19, 2014

Hyatt Regency Denver Tech Center

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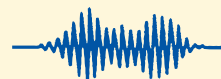
Narcolepsy Network's annual conference gathers people with narcolepsy and their supporters, caregivers and treating professionals for a weekend of information and support. Sessions include research updates, treatment options, education and workplace accommodations, lifestyle adjustments and more.

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This program is for trainees who registered by April 16, 2014. On-site registration is not available. All sessions are at the Minneapolis Convention Center.

## Saturday, May 31, 2014

### Grant Writing Workshop

1:00pm – 5:00pm  
**Room M100B**

### Trainee Symposia Series Welcome and Keynote Address

5:00pm – 6:30pm  
**Room 200F**

#### Welcome Address

Janet Mullington, PhD  
*SRS President*

Philip Gehrman, PhD  
*TEAC Chair*

Jared Saletin, PhD  
*SRS Trainee Member-at-Large*

#### Keynote Address

##### Big Data

*Till Roenneberg, PhD*

### Datablitz & Career Development Fair

6:30pm – 8:30pm  
**Room 200F**

This event will start with a 30-minute datablitz of research presented by fellow trainees. Then, representatives from universities and research organizations will be available at the Career Development Fair to discuss their research programs and to advertise student postdoctoral and faculty positions.

## Sunday, June 1, 2014

### Workshop 1: 8:00am – 9:00am

#### Analysis Methods for Circadian Data

Kenneth Wright Jr., PhD  
**Room M100B**

Differentiate between research protocols that assess circadian versus non-circadian daily patterns, identify different tools used to measure circadian physiology, and identify techniques to measure circadian phase, amplitude and period.

#### Integrating Patient Oriented Research into Clinical Practice

Hrayr Attarian, MD  
**Room M100C**

Discuss how to do patient based research in a busy clinical practice by relying on Electronic Medical Records, identify the various parameters collected in EMRs and the mechanisms available to conduct selective and fruitful searches of the databases in order to obtain appropriate information to answer the various research questions, and outline the advantages and limitations of relying on electronic databases to conduct retrospective chart review based research.

#### How-To Guide to Success in Grad School

Sean P.A. Drummond, PhD  
**Room M100D**

Discuss various models for surviving and succeeding in graduate school, be it a program that is research-oriented, clinically-oriented, or both, and review balancing school, lab, clinic and life demands.

#### Fostering Mentor-Mentee Relationships

Richard Bootzin, PhD  
**Room M100E**

Discuss how to develop successful mentoring relationships and the responsibilities and rewards for each.

#### The Future of Fatigue: Identifying Fatigue Biomarkers

Thomas Balkin, PhD  
**Room M100F**

As 24-hour-per day operations become increasingly common

in both the civilian and military sectors, the potential for sleepiness-related errors and accidents increases accordingly – as does the need to develop and implement effective fatigue management strategies. Discuss current and future efforts to discover objective biomarkers of sleepiness.

## Circadian Rhythms and Mood

Helen Burgess, PhD

### Room M100G

Discuss the influence of circadian timing on mood in healthy and clinical populations and review circadian interventions aimed at improving mood.

## History of Sleep in Humans: The Loss of Segmented Sleep

Roger Ekirch, PhD

### Room M100H

Review the origins, dynamics, and consequences of sleep's modernization, comparing segmented and consolidated sleep.

## Sleep Abnormalities within Psychiatric Disorders and Special Populations

Ruth Benca, MD, PhD

### Room M100I

Review sleep abnormalities in major psychiatric disorders and neurodegenerative disorders, with emphasis on the role of how sleep may provide useful diagnostic and prognostic markers, as well as the potential utility of sleep therapies.

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## Workshop 2: 9:10am – 10:10am

### Differences between Short and Long Sleepers

Kristen Knutson, PhD

#### Room M100B

Review the morbidity and mortality risks associated with both short and long sleep durations and discuss the potential underlying mechanisms for these associations.

### Publicly Available NIH Datasets

Michael Twery, PhD

#### Room M100C

This session focuses on examples of early-stage exploratory analyses using a growing array of nationally representative surveillance data in the public domain and selected community-based datasets available through data sharing agreements.

### Careers in Behavioral Sleep Medicine

Jason Ong, PhD

#### Room M100D

Discuss the role of a behavioral sleep medicine (BSM) practitioner in a sleep medicine practice, conducting BSM research, and education and training in BSM.

### Teaching a Sleep Course

Mary Carskadon, PhD

#### Room M100E

Review issues to consider in teaching a sleep course and how to construct such a course, with attendees contributing background and experiences to help broaden the approaches to designing a course, identifying resources, and evaluating outcomes.

### Actigraphy Applications and Misapplications

Hawley Montgomery-Downs, PhD

#### Room M100F

Discuss the state-of-the-science, validity, and best practices for actigraphy in sleep research and medicine.

### Experimental Sleep Restriction and Deprivation Designs: Pros and Cons

Dean Beebe, PhD

#### Room M100G

Illustrate key design issues to consider in experimental sleep restriction and deprivation studies, focusing on the advantages and drawbacks of different options.

### Neurobiological Control of Sleep and Wakefulness

Ronald Szymusiak, PhD

#### Room M100H

Review the basic functional neuroanatomy and neuropharmacology of brain systems and circuits that regulate sleep and arousal.

### Tools for Studying Sleep, Circadian Rhythms and Metabolism

Frank A.J.L. Scheer, PhD

#### Room M100I

Discuss study procedures, measurement techniques, and potential confounding factors and challenges in the assessment of circadian rhythms, sleep, metabolism, and their interactions, focusing on human studies.

## Workshop 3: 10:20am – 11:20am

### Bioinformatics of Sleep

Christopher Winrow, PhD

#### Room M100B

Review novel applications of new sequencing technologies, comprehensive genetic datasets, nonclinical resources and collaborations between academic and industrial teams, and discuss specific examples of how genetic and bioinformatic approaches have broadened our understanding of sleep physiology and enabled drug discovery.

### Internet-based Data Collection

Colin Espie, PhD

#### Room M100C

Describe how digital data collection (web and mobile) can help to advance clinical and research practice and discuss integration of self-report data with data derived from worn devices.

### Postdocs: How to Get Them and Make the Most of Them

Erin Wamsley, PhD

#### Room M100D

Discuss strategies for finding (and securing) the right postdoc for you, as well as how to be certain that you get the most out of your time during this critical transition period.

### CV Advice

Carole Marcus, MBCh

#### Room M100E

Discuss factors to take into account when building your CV as you embark on your academic career and review interviewing skills and negotiation points for academic positions.

### Sleep and Circadian Rhythms across Development

Monique LeBourgeois, PhD

#### Room M100F

Review theoretical models important for conceptualizing sleep and sleep problems across the first two decades of life, and discuss current empirical findings on developmental changes in sleep behavior, the sleep EEG, circadian rhythms and sleep homeostasis.

### Quantitative EEG Analysis

Derk-Jan Dijk, PhD

#### Room M100G

Discuss some of the most commonly used qEEG approaches and review examples of their application to the study of the pharmacology, physiology and genetics of sleep.

### Sleep and Exercise

Kelly Baron, PhD

#### Room M100H

Review the association between fitness and sleep in the population, describe key experimental studies of the relationship of exercise among healthy adults, and discuss the relationship between exercise and sleep in sleep disordered populations.

### Sleep Spindles and Cognition

Igor Timofeev, PhD

#### Room M100I

Recognize the phenomenon of sleep spindles focusing on the different kinds of spindles occurring during sleep and how they are measured in humans and discuss studies indicating an association between spindle activity and cognitive capabilities.

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## Workshop 4: 11:30am – 12:30pm

### Combining Omics Data across Levels

Ron Anafi, MD, PhD

#### Room M100B

Discuss strategies and pitfalls for combining data types from large-scale data sets describing varied aspects of biology including transcriptional profiling, proteomics, metabolomics, and genetic linkage to provide new insights.

### Population Based Development Studies

Yun-Kwok Wing, MBChB

#### Room M100C

Review the data on the current success and limitations as well as future directions in the population-based studies of sleep disorders with an emphasis on the evolution and development of the course of these disorders.

## How to Review a Data-based Article

Michael V. Vitiello, PhD

**Room M100D**

Discuss a strategy for effective review of data-based manuscripts.

## Funding Outside NIH

Charles Czeisler, MD, PhD

**Room M100E**

## Global versus Local Sleep

James Krueger, PhD

**Room M100F**

Discuss how sleep regulatory circuits likely help coordinate such synchronization mechanisms to form global sleep states and describe how viewing sleep as a fundamental property of local networks provides parsimonious explanations for depth of sleep and wake states, waking performance variation, dissociated states, post-lesion recovery of sleep, and other sleep phenomena.

## Sleep and Sleep Disorders in Aging and Neurodegeneration

Aleksandar Videnovic, MD

**Room M100G**

Review the basis for sleep dysfunction in neurodegenerative disorders and discuss common sleep disorders associated with neurodegeneration with an emphasis on Alzheimer's and Parkinson's disease.

## The Power of Napping

Rebecca Spencer, PhD

**Room M100H**

Discuss why napping is necessary throughout development, when and why children transition out of needing to nap, and whether napping is beneficial beyond the period of time when it is no longer biologically necessary.

## Role for Sleep in Brain Plasticity

Marcos Frank, PhD

**Room M100I**

Discuss the effects of sleep on brain plasticity and how these effects depend on the types of experience that precede sleep, the type of neural circuit under examination, and when in the sleep cycle measurements are made.

## Postgraduate Course Information

Saturday  
May 31

Sunday  
June 1

Monday  
June 2

Tuesday  
June 3

Wednesday  
June 4

The APSS will provide Postgraduate Course materials in an electronic format only. Attendees were provided with the materials on a flash drive. Prior to the meeting, attendees who pre-registered were provided instructions to download and print the course materials. Please note that the APSS will not supply computers or tablets to view the material or power for computers or tablets. It is imperative that attendees wishing to view the course materials on their laptops or tablets have them sufficiently powered prior to arrival at the meeting each day

In order to register for Postgraduate Courses, you must be registered for SLEEP 2014. The APSS does not offer registration to attend only Postgraduate Courses. All Postgraduate Courses require additional registration fees. Tickets for available sessions can be purchased at the SLEEP 2014 registration counters.

### We Want Your Feedback



You are encouraged to evaluate each session you attend.

Visit the SLEEP 2014 mobile app or [www.sleepmeeting.org/evaluations](http://www.sleepmeeting.org/evaluations) at any time during the meeting to rate the sessions.

The evaluation site will close on July 1.

## C01: Year in Review 2014

Saturday, May 31, 2014 | 8:00am – 5:00pm  
Room 101E

**Co-chairs:** Charles Atwood, MD; and Kenneth Wright Jr., PhD

**Faculty:** David Dinges, PhD; Anne Germain, PhD; Mark Opp, PhD; Carol Rosen, MD; Thomas Scammell, MD; Michael Silber, MBChB; and Jamie Zeitzer, PhD

**Psychologist Level of Content:** Intermediate

### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 9:15am   | 1. Basic Sleep Update   |
| 9:15am – 10:15am  | 2. Sleep and Pediatrics: Publications That Might Change Your Practice |
| 10:15am – 10:30am | Break   |
| 10:30am – 11:15am | 3. Movement Disorders in Sleep  |
| 11:15am – 12:00pm | 4. Year in Review 2014: Sleep Apnea                                   |
| 12:00pm – 1:00pm  | Lunch (on your own)   |
| 1:00pm – 2:00pm   | 5. Circadian Rhythms  |
| 2:00pm – 3:15pm   | 6. Sleep Deprivation: The Answers are in Dynamics                     |
| 3:15pm – 3:30pm   | Break   |
| 3:30pm – 4:15pm   | 7. Narcolepsy   |
| 4:15pm – 5:00pm   | 8. Insomnia   |

### C02: Trends in Sleep Medicine

**Saturday, May 31, 2014 | 8:00am – 5:00pm**  
**Room 102A**

**Co-chairs:** Charlene Gamaldo, MD; and Douglas Kirsch, MD

**Faculty:** Bartley Bryt, MD; Colin Espie, PhD; Samuel Fleishman, MD; Neil Freedman, MD; Timothy Morgenthaler, MD; Richard Schwab, MD; and Jaspal Singh, MD

**Psychologist Level of Content:** Intermediate

#### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:15am   | Introduction  |
| 8:15am – 9:15am   | 1. Utilization Management Programs for Sleep: Design and Data                           |
| 9:15am – 10:15am  | 2. Small Fish in a Big Pond: Integrating Sleep Medicine in a Large Hospital System      |
| 10:15am – 10:30am | Break   |
| 10:30am – 11:15am | 3. NPs and PAs in Sleep Medicine: Current Roles and Potential Impact on Future Practice |
| 11:15am – 12:00pm | 4. Gizmos, Gadgets and Apps: New Ambulatory Approaches in Sleep Medicine                |
| 12:00pm – 1:00pm  | Lunch (on your own)   |
| 1:00pm – 1:45pm   | 5. In-hospital Sleep Consultations  |
| 1:45pm – 2:30pm   | 6. Sleep Medicine and PCPs: Models of Care  |
| 2:30pm – 3:15pm   | 7. Quality Metrics in Sleep Medicine  |
| 3:15pm – 3:30pm   | Break   |
| 3:30pm – 4:30pm   | 8. The Challenges of Online CBT for Insomnia  |
| 4:30pm – 5:00pm   | Discussion  |

### C03: Pediatric Sleep Medicine Clinical Challenges: Who, What, When, How and Why

**Saturday, May 31, 2014 | 8:00am – 12:00pm**  
**Auditorium 1**

**Co-chairs:** Madeleine Grigg-Damberger, MD; and Sanjeev Kothare, MD

**Faculty:** Eliot Katz, MD; and Daniel Lewin, PhD

**Psychologist Level of Content:** Intermediate

#### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:45am   | 1. Evaluation and Treatment Strategies for Pediatric Sleep Apnea Following Adenotonsillectomy |
| 8:45am – 9:30am   | 2. Central Hypersomnias in Children   |
| 9:30am – 10:15am  | 3. Strategies for Treating Insomnia in Pediatric Patients with Neuropsychiatric Comorbidities |
| 10:15am – 10:30am | Break   |
| 10:30am – 11:15am | 4. Obstructive Sleep Apnea in Infants   |
| 11:15am – 12:00pm | 5. Discussion   |



## C04: Video-Polysomnographic Evaluation (Diagnosis and Scoring) of Sleep Related Movement Disorders

Saturday, May 31, 2014 | 8:00am – 12:00pm  
Auditorium 2

**Co-chairs:** Raffaele Ferri, MD; and Mauro Manconi, MD, PhD  
**Faculty:** Lynn Marie Trotti, MD

**Psychologist Level of Content:** Introductory

### Agenda:

|                   |  |
|-------------------|--|
| 8:00am – 8:10am   | 1. Introduction to the New ICSD  |
| 8:10am – 8:35am   | 2. Technical Rules to Record and Calibrate EMG from Tibialis Anterior and Chin Muscles |
| 8:35am – 9:20am   | 3. Movement Scoring Rules  |
| 9:20am – 10:15am  | 4. Quantitative Analysis of EMG during Sleep   |
| 10:15am – 10:30am | Break  |
| 10:30am – 11:30am | 5. Video-PSG Examples of Frequent and Infrequent SRMD                                  |
| 11:30am – 12:00pm | 6. Practical Scoring Exercises   |

## C05: Difficult Cases That Keep You Up at Night: Case Based Review of Challenging Clinical Scenarios for the Sleep Medicine Specialist

Saturday, May 31, 2014 | 8:00am – 12:00pm  
Auditorium 3

**Chair:** Raman Malhotra, MD  
**Faculty:** Alon Avidan, MD, MPH; Lee Brown, MD; and Nathaniel Watson, MD, MS

**Psychologist Level of Content:** Advanced

### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:05am   | Introduction and Overview                                   |
| 8:05am – 8:50am   | 1. Harrowing Hypersomnia Cases                              |
| 8:50am – 9:35am   | 2. Complex Conundrums in Sleep Apnea Care                   |
| 9:35am – 9:50am   | Questions and Answers                                       |
| 9:50am – 10:15am  | 3. Puzzling Parasomnias and Intriguing Insomnia             |
| 10:15am – 10:30am | Break   |
| 10:30am – 11:05am | 3. (Continued) Puzzling Parasomnias and Intriguing Insomnia |
| 11:05am – 11:50am | 4. The Sleep Sleuth: Solving the Mysteries of the Night     |
| 11:50am – 12:00pm | Questions and Answers                                       |

### C06: Pediatric Behavioral Sleep Medicine

**Saturday, May 31, 2014 | 1:00pm – 5:00pm**  
**Auditorium 1**

**Chair:** Sarah Honaker, PhD

**Faculty:** Kristin Avis, PhD; Valerie Crabtree, PhD; and Lisa Meltzer, PhD

**Psychologist Level of Content:** Intermediate

**Agenda:**

|                 |   |
|-----------------|---|
| 1:00pm – 1:15pm | 1. Introduction and Overview of Pediatric Behavioral Sleep Medicine                         |
| 1:15pm – 2:00pm | 2. Actigraphy with Pediatric Populations  |
| 2:00pm – 2:45pm | 3. Bedtime Problems and Night Wakings in Infants and Young Children                         |
| 2:45pm – 3:15pm | 4. Interventions for Children and Adolescents with Behavioral Sleep Disturbance             |
| 3:15pm – 3:30pm | Break   |
| 3:30pm – 4:00pm | 4. (Continued) Interventions for Children and Adolescents with Behavioral Sleep Disturbance |
| 4:00pm – 4:45pm | 5. CPAP Adherence in Children and Adolescents   |
| 4:45pm – 5:00pm | Questions and Answers   |

### C07: RLS Treatment Developments: Expanded Medication Choices and Advances in Treatment for Pregnancy and Pediatric RLS

**Saturday, May 31, 2014 | 1:00pm – 5:00pm**  
**Auditorium 2**

**Chair:** Richard Allen, PhD

**Faculty:** Mark Buchfuhrer, MD; Christopher Earley, PhD; and Daniel Picchietti, MD

**Psychologist Level of Content:** Intermediate

**Agenda:**

|                 |  |
|-----------------|--|
| 1:00pm – 1:55pm | 1. Alpha-2 Delta Drugs and Opioids for Treating RLS                                    |
| 1:55pm – 2:15pm | 2. Long-acting Dopaminergic Agonists: Augmentation and Efficacy                        |
| 2:15pm – 2:45pm | 3. How to Switch or Combine Medications: Drug Holiday vs. Medication during Withdrawal |
| 2:45pm – 3:15pm | 4. IV Iron: Alternate Formulations and Methods   |
| 3:15pm – 3:30pm | Break  |
| 3:30pm – 4:00pm | 5. Managing Daytime and Non-sensorimotor RLS Symptoms (Treatment Goals)                |
| 4:00pm – 4:20pm | 6. Treatment During Pregnancy and Lactation  |
| 4:20pm – 5:00pm | 7. Pediatric RLS   |

## C08: CPAP or Oral Appliance Therapy: Which Treatment for Which Patient?

**Saturday, May 31, 2014 | 1:00pm – 5:00pm**  
**Auditorium 3**

**Chair:** David White, MD

**Faculty:** Peter Cistulli, MD, PhD; Aarnoud Hoekema, MD, DMD, PhD; Samuel Kuna, MD; and Clete Kushida, MD, PhD, RST, RPSGT

**Psychologist Level of Content:** Intermediate

### Agenda:

|                 |   |
|-----------------|---|
| 1:00pm – 1:15pm | 1. Do Oral Appliances Measure Up to CPAP? What Does the Future Hold?        |
| 1:15pm – 2:15pm | 2. CPAP and Oral Appliance Therapy: Which is Better?                        |
| 2:15pm – 3:15pm | 3. Do Clinical Features Help Direct OSA Patients to a Therapeutic Modality? |
| 3:15pm – 3:30pm | Break   |
| 3:30pm – 4:15pm | 4. Can the Polysomnogram Provide Guidance in Selection of Therapy for OSA?  |
| 4:15pm – 5:00pm | 5. Devices, Side Effects and Compliance                                     |

### C09: 2014 State of the Art for Clinical Practitioners

**Sunday, June 1, 2014 | 8:00am – 5:00pm**  
**Room 101E**

**Co-chairs:** Charlene Gamaldo, MD; and Phyllis Zee, MD, PhD  
**Faculty:** Alon Avidan, MD, MPH; Nancy Collop, MD; Douglas Kirsch, MD; Shalini Paruthi, MD; David Plante, MD; Rachel Salas, MD; and Michael Silber, MBChB

**Psychologist Level of Content:** Intermediate

#### Agenda:

|                   |  |
|-------------------|--|
| 8:00am – 8:05am   | Introduction   |
| 8:05am – 9:00am   | 1. RBD and Other Parasomnias   |
| 9:00am – 9:45am   | 2. RLS and Other Sleep Kicks   |
| 9:45am – 10:15am  | 3. Narcolepsy and Hypersomnias   |
| 10:15am – 10:30am | Break  |
| 10:30am – 10:45am | 3. (Continued) Narcolepsy and Hypersomnias   |
| 10:45am – 11:30am | 4. Best Practice Pediatric Sleep Review  |
| 11:30am – 12:00pm | Questions and Answers  |
| 12:00pm – 1:00pm  | Lunch (on your own)  |
| 1:00pm – 1:45pm   | 5. Circadian Rhythm Sleep-Wake Disorders   |
| 1:45pm – 2:30pm   | 6. Managing the Non-obstructive Sleep Apneas: Complex, Central and Treatment Emergent Apneas |
| 2:30pm – 3:15pm   | 7. Diagnosing OSA in an Ambulatory World   |
| 3:15pm – 3:30pm   | Break  |
| 3:30pm – 4:30pm   | 8. The Sleepless Patient   |
| 4:30pm – 5:00pm   | Questions and Answers  |

### C10: Gizmos and Gadgets: Using Technology to Enhance the Care of Patients with Sleep Disorders

**Sunday, June 1, 2014 | 8:00am – 5:00pm**  
**Room 102A**

**Chair:** Neil Freedman, MD

**Faculty:** Madeleine Grigg-Damberger, MD; Dennis Hwang, MD; Shahrokh Javaheri, MD; Douglas Kirsch, MD; Atul Malhotra, MD; Susheel Patil, MD, PhD; and Lisa Wolfe, MD

**Psychologist Level of Content:** Advanced

#### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:45am   | 1. Consumer Directed Technology for the Management of Sleep Disorders and Advanced Non-PAP Treatments for OSA |
| 8:45am – 9:30am   | 2. APAP for OSA: Devices, Compliance Software Review and Troubleshooting Problems                             |
| 9:30am – 10:15am  | 3. Advanced Technology for the Diagnosis and Treatment of Central Sleep Apnea Syndromes                       |
| 10:15am – 10:30am | Break   |
| 10:30am – 12:00pm | 4. Advanced Technology for the Management of Hypoventilation Syndromes  |
| 12:00pm – 1:00pm  | Lunch (on your own)   |
| 1:00pm – 1:45pm   | 5. Home Sleep Apnea Testing: A Paradox of Choice  |
| 1:45pm – 2:30pm   | 6. Emerging Technologies for Managing Sleep Disorders in Children and Patients with Neurological Disorders    |
| 2:30pm – 3:15pm   | 7. Telemedicine and Sleep: What's the Connection  |
| 3:15pm – 3:30pm   | Break   |
| 3:30pm – 5:00pm   | 8. The Future of Advanced Diagnostics for Sleep Disordered Breathing and Other Sleep Disorders                |

## C11: It is Not Just About Treating Insomnia Anymore: Expanding the Reach of Behavioral Sleep Medicine Across Disorders and Provider Types

Sunday, June 1, 2014 | 8:00am – 5:00pm  
Auditorium 1

**Chair:** Jack Edinger, PhD

**Faculty:** Colleen Carney, PhD; Colin Espie, PhD; Anne Germain, PhD; Rachel Manber, PhD; Jason Ong, PhD; Michael Smith, PhD; and James Wyatt, PhD

**Psychologist Level of Content:** Intermediate

### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:15am   | Introduction  |
| 8:15am – 9:15am   | 1. Managing Sleep Difficulties Among Patients with Chronic Pain                                     |
| 9:15am – 10:15am  | 2. Circadian Rhythm Disorders   |
| 10:15am – 10:30am | Break   |
| 10:30am – 11:15am | 3. Behavioral Sleep Medicine Techniques for Sleep Apnea Patients With and Without Comorbid Insomnia |
| 11:15am – 12:00pm | 4. How Best to Train Others in the Delivery of CBT-I  |
| 12:00pm – 1:00pm  | Lunch (on your own)   |
| 1:00pm – 1:15pm   | Questions and Answers   |
| 1:15pm – 2:15pm   | 5. What to Do With Those Disturbing Nightmares?   |
| 2:15pm – 3:15pm   | 6. Cognitive Behavioral Therapy for Those with Major Depressive Disorder and Insomnia (MDD-I)       |
| 3:15pm – 3:30pm   | Break   |
| 3:30pm – 4:15pm   | 7. Behavioral Sleep Medicine for the Narcolepsy Patient   |
| 4:15pm – 5:00pm   | 8. Non-Rem Parasomnia as Psychophysiological Disorder: Is There a Place for BSM Strategies?         |

## C12: Update on Pediatric Guidelines: Surveillance, Evaluation and Management of Sleep Disorders in Specific Pediatric Populations

Sunday, June 1, 2014 | 8:00am – 12:00pm  
Auditorium 2

**Co-chairs:** Louella Amos, MD; and Beth Malow, MD

**Faculty:** Julie Baughn, MD; and Nanci Yuan, MD

**Psychologist Level of Content:** Intermediate

### Agenda:

|                   |  |
|-------------------|--|
| 8:00am – 8:45am   | 1. The Spectrum of Sleep Problems in Children with Down Syndrome                             |
| 8:45am – 9:30am   | 2. Surveillance of Sleep Disorders in Children with Prader-Willi Syndrome and Achondroplasia |
| 9:30am – 10:15am  | 3. Sleep Disorders and Management in Children with Neuromuscular Disease                     |
| 10:15am – 10:30am | Break  |
| 10:30am – 11:15am | 4. A Practice Pathway for Managing Insomnia in Children with Autism Spectrum Disorders       |
| 11:15am – 12:00pm | Cases and Questions and Answers  |

### C13: Sleep and the Heart

**Sunday, June 1, 2014 | 8:00am – 12:00pm**

**Auditorium 3**

**Co-chairs:** Virend Somers, MD; and Robert Thomas, MD

**Faculty:** Jean-Louis Pépin, MD, PhD; and Winfried Randerath, MD

**Psychologist Level of Content:** Advanced

#### Agenda:

|                   |   |
|-------------------|---|
| 8:00am – 8:55am   | 1. Cardiometabolic Consequences of Sleep Disruption |
| 8:55am – 9:45am   | 2. The Carotid Body, Heart and Heart Failure        |
| 9:45am – 10:15am  | 3. Sleep Apnea and Cardiac Arrhythmias              |
| 10:15am – 10:30am | Break   |
| 10:30am – 10:50am | 3. (Continued) Sleep Apnea and Cardiac Arrhythmias  |
| 10:50am – 11:40am | 4. Sleep Apnea and Congestive Heart Failure         |
| 11:40am – 12:00pm | Questions and Answers                               |

### C14: Diagnosis and Treatment of Circadian Rhythm Sleep-Wake Disorders

**Sunday, June 1, 2014 | 1:00pm – 5:00pm**

**Auditorium 2**

**Chair:** R. Robert Auger, MD

**Faculty:** Helen Burgess, PhD; Katherine Sharkey, MD, PhD; and James Wyatt, PhD

**Psychologist Level of Content:** Introductory

#### Agenda:

|                 |  |
|-----------------|--|
| 1:00pm – 1:05pm | Introduction   |
| 1:05pm – 2:10pm | 1. Basics of Circadian Physiology and Assessment Tools                     |
| 2:10pm – 3:15pm | 2. Circadian Aspects of Jet Lag and Shift Work                             |
| 3:15pm – 3:30pm | Break  |
| 3:30pm – 4:15pm | 3. Advanced Sleep-Wake Phase Disorder and Advance-related Sleep Complaints |
| 4:15pm – 5:00pm | 4. Delayed Sleep-Wake Phase Disorder                                       |

## C15: Home Sleep Apnea Testing: The ABC's of Setting Up Your Own Program

**Sunday, June 1, 2014 | 1:00pm – 5:00pm**  
**Auditorium 3**

**Chair:** Nancy Collop, MD

**Faculty:** Charles Atwood, MD; Richard Berry, MD; David Kuhlmann, MD; and Tracey Stierer, MD

**Psychologist Level of Content:** Intermediate

### Agenda:

|                 |   |
|-----------------|---|
| 1:00pm – 1:45pm | 1. Setting up Your HSAT Program                         |
| 1:45pm – 2:30pm | 2. Picking Out Your HSAT Device                         |
| 2:30pm – 3:15pm | 3. Scoring and Interpreting HSAT                        |
| 3:15pm – 3:30pm | Break   |
| 4:00pm – 4:15pm | 4. Accreditation Standards and Quality Control for HSAT |
| 4:15pm – 5:00pm | 5. Using HSAT in the Perioperative Period               |

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### Seating



General sessions are filled on a first-come, first-served basis. The APSS does its best to match room size with anticipated demand; however, interest in a topic occasionally exceeds seating capacity. Seating limits are strictly enforced by the Convention Center Fire Marshal. We encourage you to arrive at meeting rooms as early as possible for best seating.

### Educational Opportunities:

**C:** Postgraduate Course

**B:** Bench to Bedside

**W:** Clinical Workshop

**D:** Discussion Group

**I:** Invited Lecturer

**L:** Lunch Debate

**M:** Meet the Professor

**O:** Oral Presentation

**P:** Poster Session

**R:** Brown Bag Case Report

**S:** Symposia



**BSM ICON** – Sessions with this icon focus on the behavioral therapies for sleep disorders.

See page 5 for a description of these session types.

## O01: Medical Disorders and Sleep

1:00pm – 3:00pm

Room L100J

**Chair:** Henry Klar Yaggi, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss sleep, sleep duration, and their associations with chronic medical problems and adverse health outcomes.

- 0705** 1:00pm - 1:15pm  
**SLEEP AND QUALITY OF LIFE IN THE SPIROMICS COHORT**  
*Zeidler MR, Martin J, Schneider H, Kleerup E, Badr MS*
- 0706** 1:15pm - 1:30pm  
**A RANDOMIZED TRIAL OF COGNITIVE BEHAVIOR THERAPY AND ARMODAFINIL TO TREAT INSOMNIA AND DAYTIME SLEEPINESS IN CANCER SURVIVORS**  
*Garland SN, Barilla H, Findley J, Gehrman P, Perlis ML*
- 0707** 1:30pm - 1:45pm  
**HEMODIALYSIS DECREASES OVERNIGHT ROSTRAL FLUID SHIFT AND IMPROVES OBSTRUCTIVE SLEEP APNEA IN OVERHYDRATED PATIENTS WITH END STAGE RENAL DISEASE**  
*Ogna A, Forni V, Mihalache A, Pruijm M, Cornette F, Haba Rubio J, Burnier M, Heinzer R*
- 0708** 1:45pm - 2:00pm  
**CIRCADIAN AND ENERGY METABOLISM GENE POLYMORPHISMS ARE ASSOCIATED WITH MEASURES OF SLEEP TIMING AND CHRONOTYPE AMONG ADULTS WITH HIV/AIDS**  
*Lee KA, Gay CL, Aouizerat B*
- 0709** 2:00pm - 2:15pm  
**SLEEP CHARACTERISTICS AMONG BLACKS WITH METABOLIC SYNDROME**  
*Marsan R, Williams NJ, Racine C, Casimir G, Pandi-Perumal S, Zizi F, Ogedegbe G, Jean-Louis G*

- 0710** 2:15pm - 2:30pm  
**SLEEP DISTURBANCE, SLEEP RELATED SYMPTOMS AND BIOLOGICAL RHYTHMS IN HEART FAILURE PATIENTS WHO HAVE INSOMNIA**  
*Redeker NS, Jeon SS, Pacelli J, Anderson G*
- 0711** 2:30pm - 2:45pm  
**THE CONTRIBUTION OF SHORT SLEEP DURATION TO ALL-CAUSE MORTALITY IN CARDIOMETABOLIC DISORDERS**  
*Vgontzas AN, Fernandez-Mendoza J, Liao D, Pejovic S, Calhoun SL, Bixler EO*
- 0712** 2:45pm - 3:00pm  
**THE ASSOCIATION BETWEEN SLEEP CHARACTERISTICS AND PROTHROMBOTIC MARKERS IN A POPULATION BASED SAMPLE: CHICAGO AREA SLEEP STUDY (CASS)**  
*Carnethon MR, Tosur Z, Knutson KL, Goldberger JJ, De Chavez P, Liu K, Kim K, Zee PC, Green D*

- 1:00pm – 1:30pm  
**Behavioral and Neurobiological Consequences of Chronic Restriction in Rats**  
*Robert Strecker, PhD*
- 1:30pm – 2:00pm  
**Changes in Daily Sleep Patterns, Psychomotor Vigilance Task Performance and FosB/deltaFosB Induction in a Rat Model of Chronic Sleep Restriction**  
*Kazue Semba, PhD*
- 2:00pm – 2:30pm  
**The Toll of Chronic Sleep Loss: Injured Cells and Insufficient Repair**  
*Carol Everson, PhD*
- 2:30pm – 3:00pm  
**Chronic Sleep Restriction, Neurobehavioral Impairment and Modeling of Allostasis**  
*Hans Van Dongen, PhD*

## S01: Consequences of Chronic Sleep Restriction: New Insights from Animal Models and Human Studies

1:00pm – 3:00pm  
 Room L100H

**Chair:** Kazue Semba, PhD  
**Faculty:** Carol Everson, PhD; Robert Strecker, PhD; and Hans Van Dongen, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Recognize neurobehavioural, physiological, cognitive, performance and psychosocial impacts of chronic sleep loss;
2. Discuss new findings on the effects of chronic sleep restriction on bone remodeling, intestinal cell integrity, and gene expression in the brain which may explain impairments and adaptations to chronic sleep restriction; and
3. Review the pattern of cognitive impairment during chronic sleep restriction in humans, model cognitive deficits and adaptation in sleep and performance patterns, and relate these findings to psychosocial factors.

## S02: Ground-breaking Theories on Sleep Regulation and Function

1:00pm – 3:00pm  
 Room L100F

**Chair:** Carol Everson, PhD  
**Faculty:** Mark Blumberg, PhD; Carsten Korth, MD, PhD; Markus Schmidt, MD, PhD; and Jerome Siegel, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the dynamics of four new and updated theories about why we sleep;
2. Recognize, with broad understanding, the forces acting on sleep and affecting central and peripheral functions attributable to sleep;
3. Gain insight into why sleep is a vital life experience and why it may have evolved.

- 1:00pm – 1:05pm  
**New Frameworks for Thinking About Why We Sleep**  
*Carol Everson, PhD*
- 1:05pm – 1:30pm  
**Sleep as an Energy Conservation Tool**  
*Jerome Siegel, PhD*

- 1:30pm – 2:00pm **A Co-evolutionary Theory of Sleep: Revisited in Light of New Scientific Insights**  
*Carsten Korth, MD, PhD*
- 2:00pm – 2:30pm **Developing Sensorimotor Systems in Our Sleep**  
*Mark Blumberg, PhD*
- 2:30pm – 3:00pm **The Energy Allocation Theory: A Unifying Model Integrating Energy Metabolism, Sleep-Wake Organization and Evolution**  
*Markus Schmidt, MD, PhD*



## Refreshment Break

3:00pm – 3:15pm

## O02: Novel Insights into Pediatric Sleep Disorders

3:15pm – 5:15pm  
Room L100H

**Co-chairs:** Susan Redline, MD; and Ehab Dayyat, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss novel findings on the risk, treatment and functional outcomes of disordered sleep in the pediatric population.

- 0859** 3:15pm - 3:30pm  
**UNDERSTANDING BEHAVIORAL OUTCOMES IN CHILDREN WITH SLEEP DISORDERED BREATHING WITH NOVEL INDICES FROM THE OVERNIGHT PHOTOPLETHYSMOGRAM**  
*Dean DA, Daly R, Marcus CL, Taylor HG, Weng J, Amin RS, Chervin RD, Small MM, Carskadon MA, Redline S*
- 0860** 3:30pm - 3:45pm  
**SERUM FERRITIN THRESHOLD FOR IRON SUPPLEMENTATION IN A REFERRED PEDIATRIC POPULATION WITH RESTLESS SLEEP**  
*Connor A, Dore-Stites D, Hassan F, Hoban T, Kidwell K, Felt B*
- 0861** 3:45pm - 4:00pm  
**THE EFFECT OF SLEEP DISORDERED BREATHING ON CEREBROVASCULAR HEALTH IN PEDIATRIC PATIENTS WITH SICKLE CELL DISEASE**  
*Kim J, Leung J, Narang I, Williams S, Kassner A*
- 0862** 4:00pm - 4:15pm  
**LONG-TERM EFFECTS OF CAFFEINE THERAPY FOR APNEA OF PREMATURITY ON SLEEP**  
*Marcus CL, Meltzer LJ, Roberts RS, Asztalos E, Opie G, Doyle LW, Biggs SN, Nixon GM, Narang I, Schmidt B*
- 0863** 4:15pm - 4:30pm  
**DOES OZONE EXPOSURE INCREASE APNEA AND BRADYCARDIA DURING SLEEP IN INFANTS?**  
*Chin CI, McConnell R, Shen E, Lurmann FW, Platzker AC, Keens TG, Corwin MJ, Chen J, Davidson-Ward SL*
- 0864** 4:30pm - 4:45pm  
**ALTERED NEURONAL RESPONSE TO LOWER BODY NEGATIVE PRESSURE IN CHILDREN WITH OSA MEASURED BY MAGNETOENCEPHALOGRAPHY**  
*Amin R, Gibson R, McConnell K, Shamsuzzaman A, Szczesniak R, Fenchel M, DiFrancesco M*
- 0865** 4:45pm - 5:00pm  
**THE RELATIVE EFFECT OF SLEEP DISORDERED BREATHING AND OBESITY ON NEUROCOGNITIVE FUNCTIONING IN ADOLESCENTS: GENDER EFFECTS**  
*Calhoun SL, Fernandez-Mendoza J, Eckert C, Santaniello M, Gaines J, Vgontzas AN, Liao D, Bixler EO*
- 0866** 5:00pm - 5:15pm  
**DOES MECHANICALLY ASSISTED VENTILATION INFLUENCE SLEEP ORGANIZATION AND STRUCTURE IN PRETERM NEONATES?**  
*Decima P, Tourneux P, Pelletier A, Degrugilliers L, Delanaud S, Leke A, Bach V, Libert J, Stephan-Blanchard E*

## S03: Clinical and Basic Science Perspectives on Mechanisms of REM Sleep Behavior Disorder

3:15pm – 5:15pm  
Room L100F

**Chair:** John Peever, PhD

**Faculty:** Isabelle Arnulf, MD; Mark Blumberg, PhD; and Carlos Schenck, MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Identify disease mechanisms in REM sleep behavior disorder (RBD);
2. Analyze the link between RBD and degenerative disorders;
3. Recognize how RBD may be used to develop neuroprotective treatment for degenerative diseases;
4. Discuss basic brain mechanisms controlling REM sleep; and
5. Review how malfunction of REM sleep circuitry contributes to RBD.

3:15pm – 3:45pm **Optogenetic Dissection of Brainstem Circuitry Underlying REM Sleep**

*John Peever, PhD*

3:45pm – 4:15pm **REM Sleep without Atonia and Dream Reenactment: The View from Early Infancy**

*Mark Blumberg, PhD*

4:15pm – 4:45pm **Identifying Disease Mechanisms in RBD Patients using Functional MRI and Video Analysis**

*Isabelle Arnulf, MD*

4:45pm – 5:15pm **RBD as the First Manifestation of a Neurodegenerative Disease**

*Carlos Schenck, MD*

## S04: Substrates, Mechanisms and Neurodevelopment of Sleep Regulation

3:15pm – 5:15pm  
Room L100J

**Co-chairs:** Thomas Kilduff, PhD; and Salome Kurth, PhD

**Faculty:** Chiara Cirelli, MD, PhD; and Jared Saletin, BA

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review the state-of-the-art findings regarding sleep regulation at molecular, anatomical and behavioral levels;
2. Discuss the most recent findings from research of humans and animals related to substrates of sleep regulation and possible mechanisms;
3. Identify anatomical correlates of the rodent and human sleep EEG and discuss the implications of novel findings for individual differences and brain development; and
4. Describe various animal and human models to better understand sleep regulation.

3:15pm – 3:45pm **Cortical Interneurons and the Regulation of Sleep and Wakefulness**

*Thomas Kilduff, PhD*

3:45pm – 4:15pm **Sleep Homeostasis and Changes in Synaptic Density in Young Mice: Does Slow Wave Activity Decline during Adolescence Because of Synaptic Pruning?**

*Chiara Cirelli, MD, PhD*

4:15pm – 4:45pm **The Structural and Functional Substrates of Sleep**

*Jared Saletin, BA*

4:45pm – 5:15pm **Neurodevelopment and Sleep Regulation in Children**

*Salome Kurth, PhD*



**SLEEP 2014 "Pizza with a Purpose" Welcome Reception**

6:00pm – 7:30pm | Hyatt Regency Minneapolis | Northstar Ballroom | 2<sup>nd</sup> Floor

Pre-registration is required. See page 17 for details. Purchase tickets at the SLEEP 2014 registration counters.

### Industry Supported Activities



Please see page 103 for information regarding industry supported activities at SLEEP 2014.

#### Educational Opportunities:

- C:** Postgraduate Course
- B:** Bench to Bedside
- W:** Clinical Workshop
- D:** Discussion Group
- I:** Invited Lecturer
- L:** Lunch Debate
- M:** Meet the Professor
- O:** Oral Presentation
- P:** Poster Session
- R:** Brown Bag Case Report
- S:** Symposia



**BSM ICON – Sessions with this icon focus on the behavioral therapies for sleep disorders.**

See page 5 for a description of these session types.

### We Want Your Feedback



You are encouraged to evaluate each session you attend.

Visit the SLEEP 2014 mobile app or [www.sleepmeeting.org/evaluations](http://www.sleepmeeting.org/evaluations) at any time during the meeting to rate the sessions.

The evaluation site will close on July 1.

## Poster Set-Up

7:00am – 8:00am

**Exhibit Hall B**

Posters should be set-up during this time and should not be removed until 6:00pm.

## Plenary Session

8:00am – 10:00am

**Auditorium**

### Welcome

*Douglas Kirsch, MD, Chair, APSS Program Committee*

### AASM and SRS Presentations

*M. Safwan Badr, MD, President, AASM*  
*Janet Mullington, PhD, President, SRS*

## Keynote Addresses

Immediately following the welcome address and SRS/AASM presentations.

### I01: Sleep and the Price of Plasticity

*Giulio Tononi, MD, PhD (Bio on page 28)*

**Psychologist Level of Content:** Intermediate

#### Objectives:

1. Discuss the role of sleep in synaptic plasticity;
2. Describe how sleep affects restoration of cellular homeostasis; and
3. Analyze the interaction between sleep and learning and memory.

### I02: Managed Care Perspective on Long-term Treatment, Outcomes and Economics of Sleep Disorders

*Andrew Renda, MD, MPH (Bio on page 28)*

**Psychologist Level of Content:** Intermediate

#### Objectives:

1. Describe sleep disorder analytics: identification, stratification and outcome metrics;

2. Discuss the managed care approach to the economics of sleep disorder management; and
3. Recognize collaboration opportunities between clinicians, managed care and other stakeholders that will drive engagement and outcomes.

*Leary EB, Einen M, Malunjar S, Ruoff C, Walsh JK, Mignot E*

**1027** 11:15am - 11:30am  
**THE COLLEGE SLEEP QUESTIONNAIRE: STRUCTURE AND INITIAL PSYCHOMETRIC PROPERTIES**  
*Kelly C, Prichard J*

## Exhibit Hall Open

**10:00am – 4:00pm**

**Exhibit Hall B**

See pages 107 for a complete list of exhibitors.



## Refreshment Break in the Exhibit Hall

**10:00am – 10:30am**

## O03: Sleep Questionnaires: New Developments

**10:30am – 11:30am**

**Room 102A**

**Co-chairs:** Eileen Chasens, PhD, RN; and Carla Jungquist, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Review new developments in sleep questionnaires.

**1024** 10:30am - 10:45am  
**VALIDATION OF THE BRFSS SLEEP QUESTIONS**  
*Jungquist CR, Dickerson S, Mund J, Pender J, Aquilina A, Aghaie C*

**1025** 10:45am - 11:00am  
**EXAMINATION FOR THE FACTOR STRUCTURE OF THE PITTSBURGH SLEEP QUALITY INDEX IN HEALTHY POSTMENOPAUSAL WOMEN AND THOSE WITH BREAST CANCER**  
*Wu K, Bender CM, Sereika SM, Chasens ER*

**1026** 11:00am - 11:15am  
**VALIDATION OF THE ALLIANCE SLEEP QUESTIONNAIRE (ASQ) NARCOLEPSY MODULE IN SLEEP DISORDERED PATIENTS**

## W01: RLS in Childhood, Migraine and Growing Pains: Close Relationship or Casual Association?

**10:30am – 12:30pm**  
**Room L100H**

**Co-chairs:** Oliviero Bruni, MD; and Daniel Picchietti, MD  
**Faculty:** Rosalia Silvestri, MD; and Arthur Walters, MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Explain the new clinical criteria for the definition of pediatric restless legs syndrome (RLS);
2. Review how to perform diagnosis of RLS in children with specific diagnostic instruments;
3. Recognize the “hidden” symptoms and the common mimics of pediatric RLS;
4. Evaluate the association between growing pains and RLS; and
5. Describe the comorbidity between migraine, growing pains and RLS in childhood.

10:30am – 11:00am **Pediatric Restless Legs Syndrome Diagnostic Criteria: Common Mimics**  
*Daniel Picchietti, MD*

11:00am – 11:30am **Pediatric RLS: Validation of a Diagnostic Instrument**  
*Rosalia Silvestri, MD*

11:30am – 12:00pm **Pediatric RLS and Growing Pains**  
*Arthur Walters, MD*

12:00pm – 12:30pm **Pediatric RLS, Migraine and Periodic Syndromes**  
*Oliviero Bruni, MD*

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## D01: Tailoring Sleep Medications for Individual Patients

10:30am – 12:30pm

Room 101E

**Chair:** Thomas Roth, PhD

**Faculty:** Ruth Benca, MD, PhD; Daniel Buysse, MD; Andrew Krystal, MD; Kenneth Lichstein, PhD; Mark Mahowald, MD; and Phyllis Zee, MD, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss important pharmacokinetics that define hypnotic efficacy and safety;
2. Explain clinical implications of individual differences in demographic variables, nature of insomnia and comorbid conditions impacting hypnotic use; and
3. Develop clinical guidelines for tailoring different medications for individual patients.

## O04: Evaluating Sleep Disordered Breathing

10:30am – 12:30pm

Room L100J

**Co-chairs:** Kathleen Sarmiento, MD; and Andrew Wellman, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Evaluate new data about assessments in OSA and obesity/hypoventilation.

**0288** 10:30am - 10:45am  
**WEIGHTED STOP-BANG AND SCREENING FOR SLEEP DISORDERED BREATHING**  
*Nahapetian R, Silva GE, Parthasarathy S, Vana KD, Quan SF*

**0289** 10:45am - 11:00am  
**RISK FACTORS FOR OSA BASED ON RESULTS FROM 200,421 PATIENTS UNDERGOING PORTABLE RECORDING: GENDER DIFFERENCES AND IMPLICATIONS FOR SCREENING**  
*Cairns A, Westbrook P, Poulos G, Bogan R*

**0290** 11:00am - 11:15am  
**HOME SLEEP TESTING**  
*Aurora RN, Swartz R, Minotti M, Punjabi NM*

**0291** 11:15am - 11:30am  
**INTER-SCORER AGREEMENT ACROSS MULTIPLE SITES FOR IDENTIFYING INSPIRATORY FLOW LIMITATION IN SLEEP STUDIES WITH LOW APNEA-HYPOPNEA INDEX**  
*Pamidi S, Ayappa I, Garbuio S, Hewlett M, Kimoff RJ, Palombini LO, Rapoport DM, Redline S*

**0292** 11:30am - 11:45am  
**CHANGES OF ELECTROENCEPHALOGRAM WITH FLOW LIMITATION DURING NREM STAGE II SLEEP IN PATIENTS WITH UPPER AIRWAY RESISTANCE SYNDROME EVALUATED BY A NOVEL RESPIRATORY CYCLE-BASED ANALYSIS**  
*Lin C, Lo M, Guilleminault C*

**0293** 11:45am - 12:00pm  
**RESPIRATORY CHEMOREFLEX ACTIVATION AND ATRIAL FIBRILLATION**  
*Thomas RJ*

**0294** 12:00pm - 12:15pm  
**IMPROVEMENT IN ACTIGRAPHY-DERIVED SLEEP METRICS FOLLOWING PAP-THERAPY IN OSA**  
*Aksan N, Tippin J, Dawson J, Anderson S, Rizzo M*

**0295** 12:15pm - 12:30pm  
**OPTIMAL TIDAL VOLUME FOR AVERAGE VOLUME ASSURED PRESSURE SUPPORT (AVAPS) IN OBESITY HYPOVENTILATION SYNDROME**  
*Kodali L, Majid R, Mathew R, Chug LE, Holland J, Castriotta R*

## S05: Disturbed Sleep as a Suicide Risk Factor and Novel Treatment Target: An Opportunity for Prevention

10:30am – 12:30pm  
Room 102F

**Chair:** Rebecca Bernert, PhD

**Faculty:** Vaughn McCall, MD; Michael Perlis, PhD; and Wilfred Pigeon, PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Review the evidence-base and public health significance supporting evaluation of disturbed sleep as a suicide risk factor and warning sign and common methodological problems that challenge this area of research;
2. Describe the scientific and clinical rationale regarding treatment development of interventions targeting sleep to reduce risk for suicide, as well as inherent methodological challenges; and
3. Discuss behavioral research findings in the development, conduct and feasibility testing of sleep-focused treatments for suicide prevention and preliminary indications of response.

|                   |   |
|-------------------|---|
| 10:30am – 11:00am | <b>Accounting for Wakefulness, Death by Suicide Exhibits an Increased Likelihood during the Circadian Night</b><br><i>Michael Perlis, PhD</i>       |
| 11:00am – 11:30am | <b>Concurrent Hypnotic Treatment Along with Fluoxetine in the Care of Suicidal, Depressed Patients with Insomnia</b><br><i>Vaughn McCall, MD</i>    |
| 11:30am – 12:00pm | <b>Effects of a Two- Versus Four-Session Behavioral Treatment of Insomnia on Depression and Suicidality</b><br><i>Wilfred Pigeon, PhD</i>           |
| 12:00pm – 12:30pm | <b>Treatment Development and Preliminary Testing of a Brief Behavioral Insomnia Treatment for Suicide Prevention</b><br><i>Rebecca Bernert, PhD</i> |

## S06: Neurodegeneration: Advances in Translational Neuroscience

**10:30am – 12:30pm**  
**Room 205A**

**Chair:** Clifford Saper, MD, PhD  
**Faculty:** Christian Baumann, MD; David Holtzman, MD; Miranda Lim, MD, PhD; and Jacques Montplaisir, MD, PhD

**Psychologist Level of Content:** Advanced

**Objectives:**

1. Review new data on the neuroscience of neurodegenerative disease and brain injury;
2. Discuss the association between genetic and sleep patterns, and development of specific neurodegenerative disorders; and
3. Analyze interventional strategies and their mechanisms.

|                   |   |
|-------------------|---|
| 10:30am – 10:40am | <b>Introduction</b><br><i>Clifford Saper, MD, PhD</i>   |
| 10:40am – 11:10am | <b>Sleep as a Window into Neurodegenerative Disease</b><br><i>Jacques Montplaisir, MD, PhD</i>  |
| 11:10am – 11:40am | <b>Effects of the Sleep-Wake Cycle on Alzheimer’s Disease-related Proteins: A Bi-directional Relationship?</b><br><i>David Holtzman, MD</i> |
| 11:40am – 12:05pm | <b>Sleep-Wake Disturbances Following Traumatic Brain Injury: Translational Insights</b><br><i>Christian Baumann, MD</i>                     |
| 12:05pm – 12:30pm | <b>Dietary Therapy as a Potential Treatment for Sleep-Wake Disturbances in Traumatic Brain Injury</b><br><i>Miranda Lim, MD, PhD</i>        |

## S07: Circadian Rhythms, Sleep and Metabolism

**10:30am – 12:30pm**  
**Room L100F**

**Chair:** Frank Scheer, PhD  
**Faculty:** Marta Garaulet, PhD; Christopher Morris, DPhil; Esra Tasali, MD; and Kenneth Wright Jr., PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Describe the impact of the circadian system, physiological sleep, and timing of food intake on glucose metabolism, caloric intake, energy expenditure, and body weight regulation;



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2. Recognize the adverse metabolic consequences of disturbances of the circadian system and/or sleep; and
3. Discuss some of the mechanisms underlying the physiological and pathophysiological changes observed during sleep and circadian disturbances.

|                   |   |
|-------------------|---|
| 10:30am – 10:35am | <b>Introduction</b><br><i>Frank Scheer, PhD</i>   |
| 10:35am – 11:05am | <b>Nutrigenetics and the Clock</b><br><i>Marta Garaulet, PhD</i>  |
| 11:05am – 11:35am | <b>Impact of Sleep and Sleep Deprivation on Energy Expenditure and Intake</b><br><i>Kenneth Wright Jr., PhD</i>                                   |
| 11:35am – 12:00pm | <b>Impact of Sleep Duration and Quality on Diabetes Risk</b><br><i>Esra Tasali, MD</i>  |
| 12:00pm – 12:30pm | <b>Separate and Interacting Circadian and Behavioral Cycle Effects on Glucose Metabolism and Energy Balance</b><br><i>Christopher Morris, PhD</i> |

## O05: Investigations Evaluating the Relationship and Potential Mechanisms Underlying Sleep and Neurological Disorders

**11:30am – 12:30pm**  
**Room 102A**

**Co-chairs:** Raman Malhotra, MD; and Nathaniel Watson, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss new investigations evaluating the neurobiological inter-relationship between sleep and neurological disorders.

- 0675** 11:30am - 11:45am  
**HEALTH CARE DISPARITIES IN THE DIAGNOSIS AND TREATMENT OF SLEEP DISORDERED BREATHING IN PATIENTS WITH SPINAL CORD INJURY**  
*Sankari A, Bascom AT, Martin JL, Badr MS*

- 0676** 11:45am - 12:00pm  
**PIB PET AMYLOID IS ASSOCIATED WITH SELF-REPORTED SLEEP IN COGNITIVELY HEALTHY LATE MIDDLE-AGED ADULTS**  
*Sprecher KE, Bendlin BB, Okonkwo OC, Christian BT, Sager MA, Johnson SC, Benca RM*
- 0677** 12:00pm - 12:15pm  
**BLOOD PRESSURE AND HEART RATE REGULATION IS ALREADY DISTURBED IN “IDIOPATHIC” REM SLEEP BEHAVIOUR DISORDER DUE TO PERIPHERAL AUTONOMIC DENERVATION**  
*Rupprecht S, Hoyer D, Witte OW, Schwab M*
- 0678** 12:15pm - 12:30pm  
**CYCLIC ALTERNATING PATTERN (CAP) NREM SLEEP MICROARCHITECTURE IN PATIENTS WITH CLINICALLY DIAGNOSED DEMENTIA WITH LEWY BODIES AND ALZHEIMER DISEASE**  
*Pao W, Chang C, Ferman T, Lin S, Potter C, Boeve BF, St. Louis EK*



### Lunch Break

**12:30pm – 1:45pm**



### American Academy of Sleep Medicine General Membership Meeting

**12:30pm – 1:45pm**

**Room 205D**

This meeting is open to all AASM members.

## R01: Brown Bag Report: Challenging Cases

12:30pm – 1:30pm

Room 102A

During this session, four challenging cases will be presented and an expert panel will discuss their approach to diagnosis and treatment. This session is included in the general session registration; lunch is not provided.

**Co-chairs:** Cathy Goldstein, MD; and Katherine Sharkey, MD, PhD

### Psychiatric Influences and Non-24 Sleep Wake Disorder in the Fully Sighted

*Callum Dupre, DO*

### A Case of Stroke Leading to a Circadian Rhythm Sleep-Wake Disorder

*James Wyatt, PhD*

### A Long Biological Night: A New Circadian Disorder? Overlap with the Idiopathic Hypersomnia Phenotype

*Robert Thomas, MD*

### Treating Totally Blind Patients with Non-24-Hour Circadian Rhythms

*Steven Lockley, PhD*

## L01: Should Non-commercial Drivers have Driving Licenses Suspended Pending a Sleep Apnea Evaluation?

12:30pm – 1:30pm

Room 200I

All Lunch Debate sessions require additional registration fees. *CE credits for psychologists are not provided for this session.*

**Faculty:** Indira Gurubhagavatula, MD; and Barbara Phillips, MD

#### Objectives:

1. Discuss driving risks associated with sleep-disordered breathing;

2. Review efficacy of treatments for sleep-disordered breathing; and
3. Consider the principles of fairness and justice.

## Meet the Professors

12:30pm – 1:30pm

All Meet the Professors sessions require additional registration fees. *CE credits for psychologists are not provided for these sessions.*

### M01: A 24-Year Rumination on Oral Appliance Therapy for OSA

Room M100B

*Todd Morgan, DMD*

### M02: Complex Nocturnal Behaviors

Room M100C

*Alon Avidan, MD, MPH*

### M03: Sleepiness and Driver Safety on the Real Road

Room M100D

*Torbjörn Åkerstedt, PhD*

### M04: Sleep, Recovery and Human Performance in Elite Athletes: Case Presentation and Clinical Management

Room M100E

*Charles Samuels, MD*

### M05: Business of Sleep Medicine

Room M100F

*Neil Freedman, MD*

### M06: Nighttime Settling Difficulties in Children: Physiological Insights

Room M100G

*Monique LeBourgeois, PhD*

### M07: Adaptive Servoventilation for Treatment of Central Sleep Apnea

Room M100H

*Shahrokh Javaheri, MD*

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## M08: Successes and Challenges in Disseminating Behavioral Treatments of Insomnia

Room M100I

Anne Germain, PhD

## Late-breaking Abstracts

12:40pm – 1:40pm

Room 102F

**Chair:** Douglas Kirsch, MD

Authors selected for the late-breaking abstract session are allowed a 10-minute time period to present their abstract followed by a 5-minute time period for questions and answers. The late-breaking abstracts presented during this session are on page 98.

*CME and CE for psychologists or nurse practitioners are not provided for this session.*

**LBA 1** 12:40pm - 12:55pm

### HOME SLEEP DURATION AND GLYCEMIA IN LEAN AND OBESE ADOLESCENTS

Koren D, O'Sullivan K, Gozal L, Bhattacharjee R, Gozal D

**LBA 2** 12:55pm - 1:10pm

### OPTOGENETIC INHIBITION OF BASAL FOREBRAIN PARVALBUMIN GABA NEURONS SUPPRESSES CORTICAL ACTIVATION FROM BOTH GAMMA BAND AUDITORY STIMULATION AND HYPERCARBIA-INDUCED AROUSALS FROM SLEEP

Thankachan S, Cordeira JW, Kim T, McNally JM, McKenna JT, Basheer R, Strecker RE, Brown RE, McCarley RW

**LBA 3** 1:10pm - 1:25pm

### NON-VISUAL EFFECTS OF LIGHT ON MOOD THROUGH THE MELANOPSYN PATHWAY IN SEASONAL DEPRESSION

Roecklein KA, Miller MA, Donofry SD, Hasler BP, Franzen PL, Gamlin PD

**LBA 4** 1:25pm - 1:40pm

### EFFICACY AND SAFETY OF ORAL ADX-N05 FOR THE TREATMENT OF EXCESSIVE DAYTIME SLEEPINESS IN ADULTS WITH NARCOLEPSY: RESULTS OF A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

Black J, Swick T, Feldman N, Doekel R, Khayrallah M, Bream G, Ruoff C



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## SRS Membership Section Meetings

12:45pm – 1:45pm

These meetings are open to all SRS members interested in SRS membership sections.

Basic Sleep Research  
Section Meeting

Room L100F

Sleep Disorders  
Research Section  
Meeting

Room 205C

Sleep and Behavior  
Research Section  
Meeting

Room 205A

Circadian Rhythms  
Research Section  
Meeting

Room L100J

## I03: Sleep “in the Wild”: Insights from Comparative Cross-cultural Research

1:45pm – 2:45pm

Room L100H

Carol Worthman, PhD (Bio on page 33)

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss sleep from a cultural ecological perspective;
2. Review findings from comparative cross-cultural studies; and
3. Analyze research design for community-based sleep studies.

## I04: Sleep Disorders in Parkinson's Disease

1:45pm – 2:45pm

Room 101E

Sonia Ancoli-Israel, PhD (Bio on page 29)

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Recognize the prevalence of sleep disorders in Parkinson's disease;
2. Review the effects of treating OSA in Parkinson's disease; and
3. Evaluate the relationship between REM sleep behavior disorder and other complaints in Parkinson's disease.

## O06: Sleep and Metabolism: Basic Research

**1:45pm – 2:45pm**  
**Room 205A**

**Co-chairs:** Josiane Broussard, PhD; and Jonathan Wisor, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Review new insights into the interaction between sleep and metabolism at the brain and peripheral levels.

**0051** 1:45pm - 2:00pm  
**SLEEP DISRUPTION IMPAIRS BLOOD-BRAIN BARRIER FUNCTIONS**  
*Pan W, He J, Hsuchou H, Kastin AJ*

**0015** 2:00pm - 2:15pm  
**HYPOXIA INDUCIBLE FACTOR-1 MEDIATES INCREASED HEPATIC LYSYL OXIDASE IN HYPOXIA, AND LIVER FIBROSIS IN DIET INDUCED HEPATIC STEATOSIS**  
*Mesarwi O, Shin M, Bevans-Fonti S, Jun J, Polotsky V*

**0016** 2:15pm - 2:30pm  
**COMMON GLUCOSE LEVEL RISK VARIANTS IN MTNR1B ASSOCIATE WITH INSOMNIA AND SHOW GENE ENVIRONMENT INTERACTION WITH GLUCOSE LEVELS IN A FINNISH POPULATION SAMPLE**  
*Ollila H, Kronholm E, Kettunen J, Silander K, Perola M, Salomaa V, Paunio T*

**0052** 2:30pm - 2:45pm  
**NON-REM DELTA POWER AND AGE ARE ASSOCIATED WITH GLUCOSE METABOLISM DURING WAKEFULNESS**  
*Wilckens KA, Nofzinger EA, James JA, Germain A, Siegle GJ, Daniel BJ*

## O07: Neurocognitive and Mood Effects of Sleep in Women

**1:45pm – 2:45pm**  
**Room L100F**

**Co-chairs:** Salvatore Insana, PhD; and Hawley Montgomery-Downs, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Recognize the impact of poor sleep on mood and neurocognitive functioning in women.

**0994** 1:45pm - 2:00pm  
**THE EFFECT OF EXERCISE ON SLEEP DURING PREGNANCY**  
*Okun M, Baker J, Rothenberger S, Kline C*

**0995** 2:00pm - 2:15pm  
**PERINATAL SLEEP AND POSTPARTUM DEPRESSION**  
*Kita L, Mayers A, McDougall S*

**0996** 2:15pm - 2:30pm  
**PSYCHOSOCIAL PREDICTORS OF SLEEP QUALITY AND QUANTITY DURING THE SHORT-TERM POSTPARTUM**  
*Lillis TA, Hamilton N, Pressman SD*

**0997** 2:30pm - 2:45pm  
**OBSTRUCTIVE SLEEP APNEA AND NEUROCOGNITIVE FUNCTION AMONG HISPANIC/LATINO MEN AND WOMEN: RESULTS FROM THE HISPANIC COMMUNITY HEALTH STUDY**  
*Ramos AR, Tarraf W, Rundek T, Wohlgemuth WK, Redline S, Loredo JS, Sacco RL, Mosely T, González HM*

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## O08: TMS, TDCS and Other Novel Approaches to Studying Sleep Related Movement Disorders

1:45pm – 2:45pm  
Room 102A

**Co-chairs:** Rachel Salas, MD; and Arthur Walters, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss current studies utilizing novel mechanistic and diagnostic approaches to movement disorders of sleep.

- 0617** 1:45pm - 2:00pm  
**PRELIMINARY STUDY: BRAIN IRON DEFICIENCY IN RESTLESS LEGS SYNDROME/WILLIS EKBOM DISEASE (RLS/WED) ASSESSED WITH QUANTITATIVE SUSCEPTIBILITY MAPPING (QSM) AT 7T IN RELATION TO SLEEP AND CORTICAL EXCITABILITY**  
*Li X, Liu H, Edden RA, Barker PB, Krum TE, Salas RE, Celnik PA, Earley CJ, van Zijl PC, Allen RP*
- 0618** 2:00pm - 2:15pm  
**EFFICACY OF TRANSCRANIAL DIRECT CURRENT STIMULATION IN PATIENTS WITH DRUG-NAIVE RESTLESS LEGS SYNDROME**  
*Koo Y, Kim S, Lee C, Lee B, Moon Y, Cho Y, Im C, Choi J, Kim K, Jung K*
- 0619** 2:15pm - 2:30pm  
**RIGHT TEMPORAL LOBE AND UNCINATE FASCICULUS STRUCTURAL ABNORMALITIES IN RLS**  
*Winkelman J, Schoerning L, Gonenc A*
- 0620** 2:30pm - 2:45pm  
**PERIODIC LIMB MOVEMENTS DURING SLEEP AND HYPERTENSION IN THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS**  
*Koo BB, Silau S, Dean D, Lutsey P, Redline S*

## O09: Chronobiology and Brain Function

1:45pm – 2:45pm  
Room L100J

**Chair:** Laura Fonken, PhD; and Beth Klerman, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Review changes in brain function by circadian disruption and misalignment.

- 0053** 1:45pm - 2:00pm  
**MELATONIN PROMOTES SLEEP BY INHIBITING OREXIN NEURONS**  
*Thakkar MM, Sharma R, Taranissi O, Dumontier S, Patel A, Kumar A, Sahota PK*
- 0164** 2:00pm - 2:15pm  
**THE ASSOCIATION OF CIRCADIAN RHYTHM AND SLEEP WITH COGNITIVE FUNCTIONING: A POPULATION-BASED STUDY**  
*Luik AI, Zuurbier LA, Ikram MA, Van Someren EJ, Tiemeier H*
- 0107** 2:15pm - 2:30pm  
**THE EFFECT OF A SPLIT SLEEP SCHEDULES (6H-ON/6H-OFF) ON NEUROBEHAVIOURAL PERFORMANCE AND SLEEPINESS**  
*Short M, Centofanti S, Hilditch C, Banks S, Lushington K, Dorrian J*
- 0466** 2:30pm - 2:45pm  
**HUNGER RATINGS CHANGE WITH CIRCADIAN MISALIGNMENT AND SLEEP DEPRIVATION**  
*Stothard ER, McHill AW, Jung CM, Higgins J, Connick E, Melanson EL, Wright KP*



Refreshment Break in the Exhibit Hall

2:45pm – 3:00pm

## B01: Research to Practice: Sleep Science and the New Regulations on Duty Hours in the Trucking and Aviation Industries

3:00pm – 5:00pm  
Room 101E

**Co-chairs:** Alexandra Holmes, PhD; and Francine James, PhD

**Faculty:** Kimberly Honn; and Amy Sparrow, MS

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the increasing role of sleep science in rulemaking for hours of service in transportation industries;
2. Review data sets and study results that were influential with regard to the new duty regulations in US trucking and aviation; and
3. Describe the value of sleep research in operational settings for furthering the science of sleep and for improving safety and well-being in the real world.

|                 |  |
|-----------------|--|
| 3:00pm – 3:30pm | <b>New Hours of Service Regulations in Trucking and Aviation</b><br><i>Francine James, PhD</i>                 |
| 3:30pm – 4:00pm | <b>Field Study of the 34-hour Restart Break in Truck Drivers</b><br><i>Amy Sparrow, MS</i>                     |
| 4:00pm – 4:30pm | <b>Data-driven Fatigue Risk Management on Ultra-long Range Flights</b><br><i>Alexandra Holmes, PhD</i>         |
| 4:30pm – 5:00pm | <b>Fatiguing Effects of Multiple Take-offs and Landings in Regional Airline Pilots</b><br><i>Kimberly Honn</i> |

## W02: More is Less and Less is More: Augmentation Phenomena in Restless Legs Syndrome

3:00pm – 5:00pm  
Room L100H

**Co-chairs:** Mauro Manconi, MD, PhD; and Michael Silber, MBChB

**Faculty:** Diego Garcia-Borreguero, MD; Alain Kaelin, MD; and David Rye, MD, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Identify augmentation, measure its severity and manage this severe drug-related complication by using a practical algorithm; and
2. Discuss possible mechanisms underlying augmentation.

|                 |  |
|-----------------|--|
| 3:00pm – 3:20pm | <b>Standard and Innovative Tools to Identify and Measure Augmentation</b><br><i>Diego Garcia-Borreguero, MD</i>                                    |
| 3:20pm – 3:45pm | <b>The Gear Behind the Ticking Bomb</b><br><i>David Rye, MD, PhD</i>   |
| 3:45pm – 4:10pm | <b>Two Long-term Dopaminergic Phenomena: Augmentation in RLS and Levodopa-induced Dyskinesia in Parkinson's Disease</b><br><i>Alain Kaelin, MD</i> |
| 4:10pm – 4:35pm | <b>Pulsatile vs. Stable Dopaminergic Stimulation: Extended Release Dopamine-agonists to Cope Augmentation</b><br><i>Mauro Manconi, MD, PhD</i>     |
| 4:35pm – 5:00pm | <b>Proposal for Clinical Practical Guidelines to Manage Augmentation</b><br><i>Michael Silber, MBChB</i>   |

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## D02: International Implementation of an Internet Intervention for Insomnia

3:00pm – 5:00pm  
Room 102F

**Chair:** Lee Ritterband, PhD

**Faculty:** Nicholas Glozier, MBBS, PhD; Charles Morin, PhD; Frances Thorndike, PhD; Øystein Vedaa, PsyD; and Robert Zachariae, MDSc

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Identify challenges related to adapting an eHealth intervention for an international audience; and
2. Discuss possible solutions for translating and localizing eHealth interventions.

## D03: Options for Treatment of Obstructive Sleep Apnea in Children and Improving Positive Airway Pressure Compliance

3:00pm – 5:00pm  
Room L100F

**Co-chairs:** Dawn Dore-Stites, PhD; and Fauziya Hassan, MD

**Faculty:** Richard Conley, DMD; Sean Edwards, DDS, MD; Carole Marcus, MBBCh; Ron Mitchell, MD; and Susan Redline, MD, MPH

**Psychologist Level of Content:** Advanced

### Objectives:

1. Examine strategies (e.g. PAP naps; systematic acclimation protocols) to increase adherence to CPAP;
2. Discuss alternatives to CPAP including both surgical options (e.g. uvulopalatopharyngoplasty (UPPP), mandibular advancement and non-surgical methods (e.g. nasal steroids; rapid maxillary expansion [RME]);
3. Identify strategies to assess success rates of surgical and non-surgical procedures especially in relation to the severity of OSA; and

4. Assess factors related to increased adherence to PAP therapy among children and programs.

## O10: Development, Aging and the Sleeping Brain

3:00pm – 5:00pm  
Room 102A

**Co-chairs:** Salome Kurth, PhD; and Leila Tarokh, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss the most recent findings on the relationship between sleep and brain development in animal and human models.

**0023** 3:00pm - 3:15pm

### THE SELF-TUNING SLEEPING BRAIN: ACTIVITY-DEPENDENT SCALING OF NETWORK ACTIVITY IN THE DEVELOPING BRAIN

*Tadjalli A, Tiriac A, Sokoloff G, Blumberg M*

**0024** 3:15pm - 3:30pm

### SLEEP PHENOTYPE CHARACTERIZATION OF MUSCLEBLIND-LIKE 1 AND 2 KNOCKOUT MICE, PERIPHERAL AND CENTRAL MODELS OF MYOTONIC DYSTROPHY

*Sakai N, Sato M, Charizanis K, Lee K, Swanson MS, Nishino S*

**0025** 3:30pm - 3:45pm

### PRONOCICEPTIVE BEHAVIOR IN ADOLESCENT MICE: AN EFFECT OF SLEEP RESTRICTION DURING POSTNATAL DEVELOPMENT

*Araujo P, Coelho CA, Oliveira MM, Tufik S, Andersen ML*

**0026** 3:45pm - 4:00pm

### LOWER SLEEP PRESSURE AT BEDTIME IS ASSOCIATED WITH LONGER SLEEP ONSET LATENCY IN PRESCHOOL CHILDREN

*Pierpoint LA, Achermann P, Rusterholz T, Jenni O, LeBourgeois MK*

**0027** 4:00pm - 4:15pm  
**ADOLESCENT DEVELOPMENT GOVERNS THE RESTORATIVE INFLUENCE OF SLEEP-SPINDLES ON NEXT-DAY HIPPOCAMPAL LEARNING**  
*Saletin JM, Greer SM, Mander BA, Krause A, Cerreta A, Harvey AG, Dahl RE, Walker MP*

**0028** 4:15pm - 4:30pm  
**HUMAN B-AMYLOID PATHOLOGY IMPAIRS MEMORY IN OLDER ADULTS THROUGH ITS IMPACT ON NREM SLOW WAVES**  
*Mander BA, Marks S, Rao V, Lu B, Saletin JM, Ancoli-Israel S, Jagust WJ, Walker MP*

**0029** 4:30pm - 4:45pm  
**GREY MATTER ATROPHY EXPLAINS IMPAIRED AGE-RELATED DISSIPATION OF HOMEOSTATIC SLEEP PRESSURE DURING THE NIGHT**  
*Dubé J, Lafortune M, Bouchard M, Latulipe-Loiselle A, Rosinvil T, Evans A, Doyon J, Lina J, Carrier J*

**0030** 4:45pm - 5:00pm  
**APOE4 GENOTYPE IMPAIRS SLEEP SPINDLE RESTORATION OF NEXT DAY HIPPOCAMPAL-DEPENDENT LEARNING IN OLDER ADULTS**  
*Mander BA, Vogel J, Rao V, Lu B, Saletin JM, Ancoli-Israel S, Jagust WJ, Walker MP*

## O11: Treating Obstructive Sleep Apnea

**3:00pm – 5:00pm**  
**Room L100J**

**Co-chairs:** Charles Davies, MD, PhD; and John Harrington, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss novel treatment methods for OSA.

**0296** 3:00pm - 3:15pm  
**AN EDUCATIONAL SMART PHONE APPLICATION IMPROVES CPAP ADHERENCE**  
*Hostler J, Sheikh K, Khramtsov A, Andrada T, Holley A*

**0297** 3:15pm - 3:30pm  
**COMORBID OSA AND PTSD: EFFECT ON OUTCOMES AND IMPACT OF CPAP**  
*Lettieri CJ, Collen JF, Williams SG*

**0298** 3:30pm - 3:45pm  
**OBSTRUCTIVE SLEEP APNEA: LONG-TERM TREATMENT WITH CONTINUOUS POSITIVE AIRWAY PRESSURE INCREASES MORE EXTENSIVE BRAIN CORTICAL VOLUME**  
*Kim H, Joo E, Kim J, Seo J, Choi S, Hong S*

**0299** 3:45pm - 4:00pm  
**CLAUSTROPHOBIC TENDENCIES AND CPAP ADHERENCE IN ADULTS WITH OBSTRUCTIVE SLEEP APNEA**  
*Cantey Edmonds J, King TS, Yang H, Sawyer AM*

**0300** 4:00pm - 4:15pm  
**TREATING AEROPHAGIA INDUCED GASTRIC DISTRESS (AIGD) ASSOCIATED WITH CPAP THERAPY TO IMPROVE CPAP TREATMENT OUTCOME: UNDERSTANDING THE RELATIONSHIP BEHIND ORAL PRESSURE LEAKAGE AND AIGD DEVELOPMENT IS KEY TO TREATMENT SUCCESS**  
*Simmons JH*

**0301** 4:15pm - 4:30pm  
**THE EFFECTS OF A-FLEX ON AUTO-PAP ADHERENCE AND EFFICACY**  
*Hostler J, Sheikh K, Khramtsov A, Andrada T, Foster B, Puderbaugh A, Holley A*

**0302** 4:30pm - 4:45pm  
**EIGHTEEN-MONTH SAFETY AND EFFICACY OF UPPER AIRWAY STIMULATION IN THE TREATMENT OF OBSTRUCTIVE APNEA**  
*Strohl KP, Strollo PJ*

**0303** 4:45pm - 5:00pm  
**EFFICACY AND TOLERANCE OF A CUSTOM-MADE MANDIBULAR REPOSITIONING DEVICE FOR THE TREATMENT OF OBSTRUCTIVE SLEEP APNEA**  
*Vecchierini M, d'Ortho M, Kerbrat J, Leger D, Monaca C, Monteyrol P, Morin L, Mullens E, Pigearias B, Meurice J*



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## S08: Dissection of Neural Circuitry Regulating Sleep-Wake Using Genetically Engineered Systems

3:00pm – 5:00pm  
Room 205A

**Chair:** Patrick Fuller, PhD

**Faculty:** Antoine Adamantidis, PhD; Elda Arrigoni, PhD; and Nigel Pedersen, MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the most recent molecular-genetic technologies for “systems-level” neuroscience research in freely behaving animals in the framework of behavioral state regulation, including sleep and waking;
2. Review the conditional deletion of genes based on Cre/loxP technology, RNA interference and the in vivo reversible manipulation of neurons through the expression of genetically modified receptor and channel complexes, including genetically engineered optical switches; and
3. Analyze new insights into several sleep neuropathologies.

3:00pm – 3:30pm **Genetically-driven Interrogation of Forebrain Networks Supporting Cortical Arousal**

*Patrick Fuller, PhD*

3:30pm – 4:00pm **Optogenetic Release of Histamine Reveals Distal and Autoregulatory Mechanisms for Controlling Arousal**

*Elda Arrigoni, PhD*

4:00pm – 4:30pm **Genetic Dissection of a New Hypothalamic Node in the Wake Network**

*Nigel Pedersen, MD*

4:30pm – 5:00pm **Optogenetic Dissection of MCH Neuron Modulation of REM Sleep**

*Antoine Adamantidis, PhD*

## Inaugural Thomas Roth, PhD Lecture of Excellence

4:00pm – 5:00pm | Auditorium 1  
*Thomas Roth, PhD*

As the only individual to serve as President of the AASM, two-time President of the SRS, Editor-in-Chief of SLEEP and Chair of the APSS Program Committee, the APSS is recognizing the contributions of Dr. Thomas Roth in perpetuity with the Thomas Roth Lecture of Excellence to be presented on an annual basis at the SLEEP meeting.

## Poster Viewing

4:00pm – 6:00pm | Exhibit Hall B



See page 127-194 for a complete listing of posters.

On Monday and Tuesday evenings, the Poster Hall will feature cash bar receptions. This is your opportunity to review the posters, discuss the latest discoveries in the field and network with colleagues.



## AASM Membership Section Meetings

5:15pm – 6:15pm

All AASM members are invited to attend the AASM section meetings. Section meetings provide members with focused interests a means to share those interests, discuss ideas, develop methodologies, recommend programs, promote education through the AASM, stimulate research and express concerns.

**Parasomnias Section Meeting**

Room 205C

**Childhood Sleep Disorders and Development Section Meeting**

Room 200I

**Sleep Related Breathing Disorders Section Meeting**

Room 205A

**Sleep Deprivation Section Meeting**

Room 205D

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May 31 - June 4

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### Industry Supported Activities



Please see page 103 for information regarding industry supported activities at SLEEP 2014.

#### Educational Opportunities:

**C:** Postgraduate Course

**B:** Bench to Bedside

**W:** Clinical Workshop

**D:** Discussion Group

**I:** Invited Lecturer

**L:** Lunch Debate

**M:** Meet the Professor

**O:** Oral Presentation

**P:** Poster Session

**R:** Brown Bag Case Report

**S:** Symposia



**BSM ICON** – Sessions with this icon focus on the behavioral therapies for sleep disorders.

See page 5 for a description of these session types.

### We Want Your Feedback



You are encouraged to evaluate each session you attend.

Visit the SLEEP 2014 mobile app or [www.sleepmeeting.org/evaluations](http://www.sleepmeeting.org/evaluations) at any time during the meeting to rate the sessions.

The evaluation site will close on July 1.



**AASM Political Action Committee (PAC) Breakfast**  
7:00am – 8:00am | Room 200I

The AASM invites all AASM members to the AASM PAC Breakfast, featuring Rep. Erik Paulsen (R-MN), co-chair of the U.S. House of Representatives' Medical Technology Caucus. Rep. Paulsen will talk about the important health care issues taking place in Washington, D.C. and discuss the importance of having our members participate in the political process. The meeting will also demonstrate how the AASM PAC is an essential part of our advocacy efforts. The cost of attending this event is \$50, and tickets can be purchased at registration.

### Poster Set-Up

7:00am – 8:00am

**Exhibit Hall B**

Posters should be set-up for display during this time and should not be removed until 6:00pm.

### I05: How Molecular Genetics Can Tell Us How We Wake Up and Why We Sleep

8:00am – 9:00am

**Room L100H**

Ravi Allada, MD (Bio on page 29)

**Psychologist Level of Content:** Intermediate

#### Objectives:

1. Analyze the molecular basis of circadian clock function and its conservation between flies and humans;
2. Describe novel genetic strategies to reveal sleep homeostasis mechanisms and links to learning and memory; and
3. Discuss the cardinal properties of sleep and their application to simple animal models.

## B02: Exercise as a Behavioral Sleep Medicine Intervention

8:00am – 10:00am  
Room 102F

**Chair:** Kelly Baron, PhD  
**Faculty:** Christopher Kline, PhD; Arthur Walters, MD; and Phyllis Zee, MD, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Describe the relationship between exercise and sleep in healthy sleepers;
2. Discuss the effects of exercise on sleep in the treatment of insomnia, circadian rhythm sleep disorders and obstructive sleep apnea; and
3. Review how exercise may be involved in the treatment of other sleep disorders conditions where there is little evidence, such as restless legs syndrome, periodic limb movements and circadian rhythm sleep disorders.

|                  |  |
|------------------|--|
| 8:00am – 8:25am  | <b>Introduction: Sleep and Physical Activity in Normal and Sleep Disorder Populations</b><br><i>Kelly Baron, PhD</i> |
| 8:25am – 8:50am  | <b>Exercise as a Treatment for Insomnia</b><br><i>Phyllis Zee, MD, PhD</i>   |
| 8:50am – 9:15am  | <b>Exercise as a Treatment for Obstructive Sleep Apnea</b><br><i>Christopher Kline, PhD</i>                          |
| 9:15am – 9:40am  | <b>Exercise as Treatment for Restless Legs Syndrome and Periodic Limb Movements</b><br><i>Arthur Walters, MD</i>     |
| 9:40am – 9:50am  | <b>Discussion</b><br><i>Phyllis Zee, MD, PhD</i>   |
| 9:50am – 10:00am | <b>Questions and Answers</b>   |

## D04: Teens and Sleep Health

8:00am – 10:00am  
Room 102A

**Co-chairs:** Conrad Iber, MD; and Kyla Wahlstrom, PhD  
**Faculty:** Dean Beebe, PhD; Mary Carskadon, PhD; Jessica Payne, PhD; Barbara Phillips, MD; and Michelle Short, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Identify and locate resources in community settings for improving adolescent sleep health;
2. Provide guidance to families and schools for rationale and methods to develop healthy sleep habits and policies; and
3. Recognize the role sleep medicine professionals may have in influencing local and national policies that promote sleep health in adolescents.

## O12: Role of Sleep in Psychiatric Functioning

8:00am – 10:00am  
Room L100J

**Co-chairs:** Anne Germain, PhD; and Sarah Honaker, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Recognize the impact of sleep on psychiatric functioning.

**0766** 8:00am - 8:15am  
**CHRONIC INSOMNIA SYMPTOMS IN EARLY ADOLESCENCE PREDICT NEURAL REWARD PROCESSING AND DEPRESSIVE SYMPTOMS**  
*Casement MD, Sitnick S, Keenan KE, Guyer AE, Hipwell AE, Forbes EE*

**0767** 8:15am - 8:30am  
**ARE PATIENTS WITH CHILDHOOD ONSET OF INSOMNIA AND DEPRESSION MORE DIFFICULT TO TREAT THAN THOSE WITH ADULT ONSETS OF THESE DISORDERS?: A REPORT FROM THE TRIAD STUDY**  
*Edinger JD, Manber R, Buysse DJ, Krystal AD, Thase ME, Fairholme CP, Luther J, Wisniewski S*

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**0768** 8:30am - 8:45am  
**WHEN ACCOUNTING FOR WAKEFULNESS, COMPLETED SUICIDES EXHIBIT AN INCREASED LIKELIHOOD DURING CIRCADIAN NIGHT**  
*Perlis ML, Grandner MA, Basner M, Chakravorty S, Brown GK, Morales KH, Thase ME, Dinges DF, Gehrman PR, Chaudhary NS*

**0769** 8:45am - 9:00am  
**SLEEP QUALITY IN PREGNANCY PREDICTS POSTPARTUM DEPRESSION AND STRESS**  
*Stone KC, Miller-Loncar CL, Salisbury AL*

**0770** 9:00am - 9:15am  
**YOU'LL FEEL BETTER IN THE MORNING: SLOW WAVE ACTIVITY AND OVERNIGHT MOOD REGULATION IN BIPOLAR DISORDER**  
*Soehner AM, Saletin J, Kaplan KA, Talbot LS, Hairston I, Eidelman P, Gruber J, Walker M, Harvey AG*

**0771** 9:15am - 9:30am  
**A SEVEN-DAY ACTIGRAPHY BASED STUDY OF SLEEP DISTURBANCE IN HIGH TRAIT RUMINATORS**  
*Pillai V, Kalmbach D, Roth T, Drake CL*

**0772** 9:30am - 9:45am  
**NEUROBIOLOGICAL EFFECTS OF PRAZOSIN ON NREM SLEEP IN VETERANS WITH PTSD**  
*Suter D, Mammen O, Insana S, Nofzinger E, Germain A*

**0773** 9:45am - 10:00am  
**THE RELATIONSHIP BETWEEN CORTISOL OUTPUT AND SLEEP EEG IN AUTISTIC AND TYPICALLY DEVELOPED ADULTS**  
*Chicoine M, Limoges É, Chevrier É, Lupien S, Mottron L, Godbout R*

## S09: Upper Airway Stimulation for Obstructive Sleep Apnea

8:00am – 10:00am

Room 101E

**Chair:** Atul Malhotra, MD

**Faculty:** Scott Longert; Alan Schwartz, MD; Ryan Soose, MD; Kingman Strohl, MD; and Patrick Strollo Jr., MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review the mechanism of upper airway stimulation (UAS) therapy;
2. Describe the clinical phenotypes that benefit from UAS;
3. Discuss the surgical implantation technique;
4. Analyze the safety and efficacy of UAS; and
5. Evaluate the patient's experience with UAS.

8:00am – 8:10am

**UAS: A Patient's Perspective**  
*Scott Longert*

8:10am – 8:35am

**UAS Prior Feasibility Studies and Mechanism of Action**  
*Alan Schwartz, MD*

8:35am – 9:00am

**Patient Selection and Surgical Technique**  
*Ryan Soose, MD*

9:00am – 9:25am

**STAR Trial: Safety and Long-term Effectiveness**  
*Kingman Strohl, MD*

9:25am – 9:50am

**UAS: Management and Health Economics**  
*Patrick Strollo Jr., MD*

9:50am – 10:00am

**Summary and Discussion**  
*Atul Malhotra, MD*

## S10: Sleep Loss and Inflammation in Mice and Man: Cytokine Mechanisms for Sleep and Health Outcomes

8:00am – 10:00am

Room 205A

**Co-chairs:** James Krueger, PhD; and Mark Opp, PhD  
**Faculty:** David Gozal, MD; Leila Kheirandish-Gozal, MD; and Alexandros Vgontzas, MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Describe the relationships between sleep regulatory molecules and molecules regulating inflammation;
2. Identify mechanisms by which localized inflammation can result in changes in sleep;
3. Recognize that sleep disruption, sleep apnea, obesity, aging and pain are associated with low grade inflammation; and

4. Review the important public health consequences to sleep disruption and inflammation.

|                  |  |
|------------------|--|
| 8:00am – 8:05am  | <b>Introduction</b><br><i>David Gozal, MD</i>  |
| 8:05am – 8:30am  | <b>Systemic Inflammation/Infection Signaling to Brain</b><br><i>James Krueger, PhD</i>   |
| 8:30am – 9:00am  | <b>Sleep Disruption, Cytokines and Mechanical Hypersensitivity: Bi-directional Interactions between Sleep and Pain</b><br><i>Mark Opp, PhD</i> |
| 9:00am – 9:30am  | <b>Sleep Loss in Men and Women: Health Implications</b><br><i>Alexandros Vgontzas, MD</i>  |
| 9:30am – 10:00am | <b>Sleep Apnea in Children: A Prototypic Clinical Model for Systemic Low-grade Inflammation</b><br><i>Leila Kheirandish-Gozal, MD</i>          |

## S11: Current Research and Clinical Insights into Sleep, Recovery and Performance in Elite Athletes

**8:00am – 10:00am**  
**Room L100F**

**Co-chairs:** Greg Roach, PhD; and Charles Samuels, MD  
**Faculty:** Sayaka Aritake, PhD; Amy Bender, MS; Charli Sargent, PhD; and Shawn Youngstedt, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the complex and controversial bidirectional relationship between exercise and sleep;
2. Explain the differences in sleep parameters that distinguish elite athletes from normal controls; and
3. Implement innovative research methods to investigate specific human performance outcomes using sleep/circadian interventions.

|                 |  |
|-----------------|--|
| 8:00am – 8:05am | <b>Introduction</b><br><i>Greg Roach, PhD; and Charles Samuels, MD</i> |
|-----------------|--|

|                  |  |
|------------------|--|
| 8:05am – 8:35am  | <b>Interactions between Exercise and Sleep</b><br><i>Shawn Youngstedt, PhD</i>   |
| 8:35am – 9:00am  | <b>Subjective Sleep Differences between Elite athletes and Non-athlete Healthy Controls</b><br><i>Amy Bender, MS</i>                       |
| 9:00am – 9:30am  | <b>Sleep in Collegiate Athletes</b><br><i>Sayaka Aritake, PhD</i>  |
| 9:30am – 10:00am | <b>Impact of Training Load on Daytime Sleepiness and Night-time Sleep Quantity/Quality in Elite Cyclists</b><br><i>Charli Sargent, PhD</i> |

## I06: Brain Function During Sleep Deprivation and Sleep Disorders: Is There a Common Dysfunction?

**9:05am – 10:05am**  
**Room L100H**

*Sean P.A. Drummond, PhD (Bio on page 31)*

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss changes in brain function, as measured with functional neuroimaging, during sleep deprivation and in sleep disorders;
2. Review common changes to the default mode network during sleep deprivation and in sleep disorders; and
3. Recognize potential physiological mechanisms underlying changes in brain function during sleep deprivation and in sleep disorders.

## Exhibit Hall Open

**10:00am – 4:00pm**

**Exhibit Hall B**

See page 107 for a complete list of exhibitors.



**Refreshment Break in the Exhibit Hall**

**10:00am – 10:20am**

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## W03: Positive Airway Pressure Therapy in Children: Reflecting on Experience and Developing Best Practices

10:20am – 12:20pm  
Room L100H

**Chair:** Darius Loghmanee, MD

**Faculty:** Rakesh Bhattacharjee, MD, RPSGT; Brigitte Fauroux, MD, PhD; Manisha Witmans, MD; and Lisa Wolfe, MD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. List indications for PAP therapy in children;
2. Describe the evidence that supports the use of new PAP technologies; and
3. Review strategies that address the unique needs of children on PAP therapy.

|                   |  |
|-------------------|--|
| 10:20am – 10:45am | <b>The Role of Desensitization and Follow-up in Promoting Adherence to PAP in Children of All Ages</b><br><i>Rakesh Bhattacharjee, MD, RPSGT</i>               |
| 10:45am – 11:15am | <b>Selecting the Appropriate Mask and PAP Device in Children</b><br><i>Brigitte Fauroux, MD, PhD</i>   |
| 11:15am – 11:35am | <b>The Use of Home Testing, PAP Downloads, and In-lab Titration in the Care of Children on PAP</b><br><i>Manisha Witmans, MD</i>                               |
| 11:35am – 12:00pm | <b>Transitioning Care for Chronically Ill Adolescents Requiring Treatment with Positive Airway Pressure: Important Considerations</b><br><i>Lisa Wolfe, MD</i> |
| 12:00pm – 12:20pm | <b>Pediatric PAP: Proposed Guidelines and Questions for Further Study</b><br><i>Darius Loghmanee, MD</i>   |

## D05: A New Sleep Care Paradigm

10:20am – 12:20pm  
Room 101E

**Co-chairs:** Lawrence Epstein, MD; and Ilene Rosen, MD  
**Faculty:** M. Safwan Badr, MD; Timothy Morgenthaler, MD; and Nathaniel Watson, MD, MS

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review the current sleep care paradigm used to diagnose and manage patients with sleep disorders;
2. Describe a new sleep care paradigm for diagnosing and managing patients with sleep disorders based on the Affordable Care Act and other changes in the health care system; and
3. Discuss the role of the board certified sleep medicine physician and the sleep team in the new sleep care paradigm.

## O13: Circadian Entrainment, Disruption and Physiological Effects of Light

10:20am – 12:20pm  
Room 205A

**Co-chairs:** Jeanne Duffy, PhD; and Andrew McHill, MS

**Psychologist Level of Content:** Intermediate

**Objective:** Describe phase angle of entrainment changes with development of delayed sleep phase disorder, consequences of circadian disruption and effects of light.

- 0108** 10:20am - 10:35am  
**CIRCADIAN PHASE AND SLEEP TIMING DIFFER BETWEEN NAPPING AND NON-NAPPING TODDLERS**  
*Akacem LD, Simpkin CT, Carskadon MA, Wright KP, LeBourgeois MK*
- 0109** 10:35am - 10:50am  
**SLEEP BEHAVIOR, CIRCADIAN PHASE, AND PHASE ANGLE OF ENTRAINMENT ACROSS ADOLESCENCE: A LONGITUDINAL STUDY**  
*Crowley SJ, Van Reen E, Tarokh L, Barker DH, LeBourgeois MK, Acebo C, Carskadon MA*

- |   |   |
|---|---|
| <p><b>0110</b> 10:50am - 11:05am<br/> <b>LATE CHRONOTYPE IS ASSOCIATED WITH INCREASED BODY MASS INDEX AND POORER DIETARY BEHAVIORS</b><br/> <i>Arora T, Taheri S</i></p>  | <p><b>0054</b> 10:20am - 10:35am<br/> <b>PHARMACOGENETIC STIMULATION OF THE RED NUCLEUS INFLUENCES MUSCLE TONE DURING RAPID EYE MOVEMENT (REM) SLEEP IN MICE</b><br/> <i>Li D, Peever J</i></p>   |
| <p><b>0111</b> 11:05am - 11:20am<br/> <b>DELAYED SLEEP TIMING IS ASSOCIATED WITH LOW LEVELS OF FREE-LIVING PHYSICAL ACTIVITY</b><br/> <i>Shechter A, St-Onge M</i></p>  | <p><b>0055</b> 10:35am - 10:50am<br/> <b>PHARMACOGENETIC MANIPULATION OF RAPID EYE MOVEMENT (REM) SLEEP CIRCUITRY</b><br/> <i>Torontali ZA, Peever JH</i></p>   |
| <p><b>0112</b> 11:20am - 11:35am<br/> <b>SEX DIFFERENCES IN THE CIRCADIAN VARIATION OF SLEEP IN HUMANS</b><br/> <i>Boivin DB, Boudreau P, Begum EA, Shechter A, Yeh W</i></p>   | <p><b>0056</b> 10:50am - 11:05am<br/> <b>OPTOGENETIC INVESTIGATION OF RAPID EYE MOVEMENT (REM) SLEEP CIRCUITRY</b><br/> <i>Fraigne JJ, Adamantidis A, Peever JH</i></p>   |
| <p><b>0117</b> 11:35am - 11:50am<br/> <b>PHYSIOLOGICAL FEEDING SCHEDULE RESTORED 24-HOUR ACTIVITY RHYTHM BUT NOT FRACTAL ACTIVITY IN ANIMALS WITHOUT THE SUPRACHIASMATIC NUCLEI</b><br/> <i>Chiang W, Lo M, Hsieh W, Sabath E, Escobar C, Buijs R, Hu K</i></p> | <p><b>0057</b> 11:05am - 11:20am<br/> <b>SLEEPLESS IS A BI-FUNCTIONAL REGULATOR OF NEURONAL EXCITABILITY AND CHOLINERGIC SYNAPTIC TRANSMISSION UNDERLYING CONTROL OF SLEEP IN DROSOPHILA</b><br/> <i>Wu M, Robinson JE, Joiner WJ</i></p>   |
| <p><b>0114</b> 11:50am - 12:05pm<br/> <b>EVENING BLUE-ENRICHED LIGHT EXPOSURE INCREASES HUNGER AND ALTERS METABOLISM IN NORMAL WEIGHT ADULTS</b><br/> <i>Cheung IN, Shalman D, Malkani RG, Zee PC, Reid KJ</i></p>  | <p><b>0058</b> 11:20am - 11:35am<br/> <b>OPTOGENETIC EXCITATION AND INHIBITION IDENTIFY A PHYSIOLOGICAL ROLE FOR BASAL FOREBRAIN PARVALBUMIN NEURONS IN CORTICAL GAMMA BAND OSCILLATIONS (GBO) IN FREELY BEHAVING MICE</b><br/> <i>Thankachan S, Kim T, McNally JM, McKenna JT, Basheer R, Strecker RE, Brown RE, McCarley RW</i></p> |
| <p><b>0115</b> 12:05pm - 12:20pm<br/> <b>SUB-CORTICAL TEMPORAL INTEGRATION OF ULTRA-SHORT FLASHES OF LIGHT</b><br/> <i>Najjar RP, Heller H, Zeitzer JM</i></p>  | <p><b>0059</b> 11:35am - 11:50am<br/> <b>NEUROANATOMICAL CIRCADIAN CIRCUITS IN HUMANS: EVIDENCE FROM VIRTUAL WHITE MATTER DISSECTIONS WITH DIFFUSION TENSOR IMAGING TRACTOGRAPHY</b><br/> <i>Koller K, Mullins PG, Rafal RD</i></p>   |

## O14: Sleep/Wake Regulatory Circuitry: New Findings

**10:20am – 12:20pm**  
**Room 102A**

**Co-chairs:** Clifford Saper, MD, PhD; and Ronald Szymusiak, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Review the latest discoveries in the neuroanatomical circuitry underlying sleep/wake regulation.

- 0165** 11:50am - 12:05pm  
**SLEEP SPINDLES, RESTING-STATE FUNCTIONAL CONNECTIVITY, AND EXECUTIVE FUNCTIONING IN YOUNGER AND OLDER ADULTS**  
*Mantua J, Baran B, Spencer RM*



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**0201** 12:05pm - 12:20pm  
**TNFA 308 POLYMORPHISM PREDICTS RESILIENCE TO PSYCHOMOTOR VIGILANCE PERFORMANCE IMPAIRMENT DURING TOTAL SLEEP DEPRIVATION IN A SAMPLE OF HEALTHY YOUNG ADULTS**  
*Satterfield BC, Schmidt MA, Field SA, Wisor JP, Van Dongen H*

## O15: Sleep and Behavior in Children and Adolescents

10:20am – 12:20pm  
Room L100J

**Co-chairs:** Daniel Lewin, PhD; and Simon Smith, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss manifestations and consequences of poor sleep health in childhood and adolescence.

**0867** 10:20am - 10:35am  
**PREDICTORS OF TREATMENT SUCCESS IN BEHAVIORAL SLEEP INTERVENTION AMONG PRESCHOOL CHILDREN**  
*Garrison MM*

**0868** 10:35am - 10:50am  
**IMPACT OF SLEEP PRACTICES IN CHILDCARE SETTINGS ON CHILD WELL-BEING**  
*Thorpe K, Staton S, Pattinson C, Smith S*

**0869** 10:50am - 11:05am  
**SLEEP PROBLEMS AND HOSPITALIZATION FOR SELF-HARM: A 15-YEAR FOLLOW-UP OF 9,000 NORWEGIAN ADOLESCENTS. THE YOUNG-HUNT STUDY**  
*Junker A, Bjørngaard JH, Gunnell DJ, Bjerkeset O*

**0870** 11:05am - 11:20am  
**CHARACTERIZING SLEEP OF CRITICALLY ILL CHILDREN IN THE PEDIATRIC INTENSIVE CARE UNIT WITH THE FAST FOURIER TRANSFORM**  
*Kudchadkar SR, Yaster M, Easley RB, Ellenbogen JM, Punjabi AN, Jastaniah EA, Murphy S, Punjabi NM*

**0871** 11:20am - 11:35am  
**SLEEP DISTURBANCES IN NAÏVE CHILDREN WITH ADHD COMPARED TO NORMAL CHILDREN IN SPANISH POPULATION**  
*Sans Capdevila O, Ferreira García E, Serrano Troncoso E, Alda Diez J, Izquierdo-Pulido M*

**0872** 11:35am - 11:50am  
**EFFECTS OF OBJECTIVE SLEEP ON MOOD, TESTING A COGNITIVE VULNERABILITY MODEL OVER RESTRICTED AND EXTENDED SLEEP OPPORTUNITIES IN ADOLESCENTS**  
*Bei B, Allen N, Trinder J*

**0873** 11:50am - 12:05pm  
**EXPERIMENTALLY MANIPULATED SLEEP DURATION IN ADOLESCENTS WITH ASTHMA: FEASIBILITY AND PRELIMINARY FINDINGS**  
*Meltzer LJ, Faino A, Gelfand EW, Covar RA, Szeffler SJ, Strand MJ*

**0874** 12:05pm - 12:20pm  
**SLEEP INSTABILITY AND PERCEIVED HEALTH IN PARENTAL CAREGIVERS OF VENTILATOR-ASSISTED CHILDREN**  
*Sanchez-Ortuno MM, Avis KT, Edinger JD, Meltzer LJ*

## S12: Cognitive and Behavioral Interventions for Insomnia in Military Populations

10:20am – 12:20pm  
Room 102F

**Co-chairs:** Alan Peterson, PhD; and Daniel Taylor, PhD  
**Faculty:** Philip Gehrman, PhD; Anne Germain, PhD; and Rachel Manber, PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Recognize the scope of the insomnia problem in deployed, post-deployed, and veteran service members;
2. Differentiate the effectiveness and efficacy of behavioral and cognitive-behavioral therapies for insomnia delivered to a variety of military populations (e.g., active duty, Veterans); and

- Discuss the effectiveness and efficacy of behavioral and cognitive-behavioral therapies for insomnia delivered to military populations in a variety of formats (e.g., in-person, internet, telehealth).

|                   |   |
|-------------------|---|
| 10:20am – 10:40am | <b>Insomnia in Active Duty Military Settings</b><br><i>Alan Peterson, PhD</i>   |
| 10:40am – 11:05am | <b>Comparing Internet and In-person Cognitive Behavioral Therapy of Insomnia</b><br><i>Daniel Taylor, PhD</i>         |
| 11:05am – 11:30am | <b>Telehealth Delivery of CBT-I to Active Duty Marines</b><br><i>Philip Gehrman, PhD</i>                              |
| 11:30am – 11:55am | <b>Insomnia Treatments in Military Service Members and Veterans: How Brief Can it Be?</b><br><i>Anne Germain, PhD</i> |
| 11:55am – 12:20pm | <b>Effectiveness of CBT-I among Veterans Treated by Newly Trained Clinicians</b><br><i>Rachel Manber, PhD</i>         |

10:20am – 10:50am

### The Circadian Mechanisms of Reward Processing

*Brant Hasler, PhD*

10:50am – 11:20am

### fMRI Activity on Striatal Regions Following Sleep Loss

*Peter Franzen, PhD*

11:20am – 11:50am

### The Effects of Sleep Loss on Food Preference

*W.D. Scott Killgore, PhD*

11:50am – 12:20pm

### The Effects of a Nap on Reward Seeking

*Jennifer Goldschmied, MS*



## Lunch Break

12:20pm – 1:30pm

## S13: Reward Processing: The Impact of Sleep on What We Find Reinforcing

10:20am – 12:20pm  
Room L100F

**Chair:** Jennifer Goldschmied, MS

**Faculty:** Peter Franzen, PhD; Brant Hasler, PhD; and W.D. Scott Killgore, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

- Describe the altered patterns of reward processing in the brain following sleep loss;
- Recognize the influence of circadian rhythms on reward processing; and
- Identify the behavioral consequences resulting from the relationship between sleep loss and reward processing.

## Overcoming the Challenges of the Future: The Welltrinsic Sleep Network



12:20 p.m. – 1:20 p.m.  
Room 101E

President and CEO Lawrence Epstein, MD, will describe how the new Welltrinsic Sleep Network empowers sleep physicians and accredited centers to stay on the cutting edge of sleep medicine while navigating the changing U.S. health care system. He will discuss how this national network protects the viability of your sleep practice and promotes quality-based care by connecting practice development, patient care, data management and insurance contracting.

**SLEEP RESEARCH  
SOCIETY GENERAL  
MEMBERSHIP MEETING**



12:30pm – 1:30pm

Room 205D

This meeting is open to all SRS Members.

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## R02: Brown Bag Report: Challenging Cases

12:30pm – 1:30pm

### Room 102A

During this session, three challenging cases will be presented and an expert panel will discuss their approach to diagnosis and treatment. This session is included in the general session registration; lunch is not provided.

**Co-chairs:** Neil Freedman, MD; and Phyllis Zee, MD, PhD

### A 10 Year Old with Nocturnal Dyspnea

*Louella Amos, MD*

### Status Dissociatus

*Muna Irfan, MD*

### Tongue Biting – A Rare Case of Sporadic Geniospasm

*Mandana Mahmoudi, MD*

## L02: Is APAP as Good as CPAP for Titration or Treatment?

12:30pm – 1:30pm

### Room 200I

All Lunch Debate sessions require additional registration fees. *CE credits for psychologists are not provided for this session.*

**Faculty:** Richard Berry, MD; and Sairam Parthasarathy, MD

### Objectives:

1. Discuss the strengths and weaknesses of APAP titration and its use in lieu of in-lab titration;
2. Evaluate patients for fitness with APAP or CPAP titration; and
3. Discuss interpretation of APAP download information and choose a level of CPAP for treatment.

## Meet the Professors

12:30pm – 1:30pm

All Meet the Professors sessions require additional registration fees. *CE credits for psychologists are not provided for these sessions.*

### M09: Geriatric Sleep: Dispelling Some Myths About Sleep and Aging

#### Room M100B

*Michael V. Vitiello, PhD*

### M10: Fatal Familial Insomnia – Prion Disease: Past, Present and Future

#### Room M100C

*William Jet Broughton, MD*

### M11: Utilization Review for Sleep Studies: What You Need to Know

#### Room M100D

*A. Gray Bullard, MD*

### M12: Sleep Disturbance in Patients with Heart Failure

#### Room M100E

*Nancy Redeker, PhD, RN*

### M13: Management of Pediatric Sleep Apnea

#### Room M100F

*Ann Halbower, MD*

### M14: Treatment of Narcolepsy

#### Room M100G

*Thomas Scammell, MD*

### M15: Fatigue Risk Management Science and Technology Solutions for Industry

#### Room M100H

*Daniel Mollicone, PhD*

### M16: Using Video to Aid in CPAP Adherence

#### Room M100I

*Mark Aloia, PhD*

## I07: Molecular Genetics of Sleep

1:30pm – 2:30pm

Room L100H

Mehdi Tafti, PhD (Bio on page 32)

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review the bases of genetic contribution to sleep and the sleep EEG;
2. Analyze the functional relationships between genes and sleep or EEG phenotypes; and
3. Discuss the methodology to localize and identify genes involved in sleep and the EEG.

## I08: Sleep and Work

1:30pm – 2:30pm

Room 101E

Christopher Barnes, PhD (Bio on page 30)

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review a broader variety of work-based outcomes of sleep;
2. Discuss various methods of pursuing sleep research; and
3. Identify tactics for better collaboration between sleep medicine researchers and management researchers.

## O16: Investigating Disparities in Delivering Sleep Medicine Education and Health Care

1:30pm – 2:30pm

Room 102A

**Co-chairs:** Luis Buenaver, PhD; and Nancy Collop, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss factors associated with current gaps in sleep medicine education and health care delivery and novel approaches to address it.

1014 1:30pm - 1:45pm

### REMOTE AMBULATORY MANAGEMENT OF VETERANS WITH OBSTRUCTIVE SLEEP APNEA

*Fields B, Pathak P, McCloskey S, True J, Richardson D, Thomasson A, Korom-Djakovic D, Davies K, Kuna ST*

1067 1:45pm - 2:00pm

### TRANSITION OF OUTPATIENT MANAGEMENT OF OBSTRUCTIVE SLEEP APNEA TO PRIMARY CARE MANAGERS: A PROCESS IMPROVEMENT PROJECT

*Ford CM, Scheuller HS, Brock MS, Collen J, Hansen S*

1068 2:00pm - 2:15pm

### WHAT IS THE COST OF POOR SLEEP FOR COLLEGE STUDENTS? CALCULATING THE CONTRIBUTION TO ACADEMIC FAILURES USING A LARGE NATIONAL SAMPLE

*Prichard J, Hartmann ME*

1069 2:15pm - 2:30pm

### SLEEP DURATION IS ASSOCIATED WITH ACCESS TO HEALTHCARE BUT RELATIONSHIPS DEPEND ON RACE/ ETHNICITY

*Bhatt S, Chakravorty S, Gurubhagavatula I, Grandner MA*

## O17: Parasomnias

1:30pm – 2:30pm

Room 205A

**Co-chairs:** Hrayr Attarian, MD; and Carlos Schenck, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss the relationship of sexsomnias and sleep forensics, and identify aspects of RBD across the age spectrum.

0602 1:30pm - 1:45pm

### SEXSOMNIA AND SLEEP FORENSICS: THE INTERFACE BETWEEN SLEEP-RELATED ABNORMAL SEXUAL BEHAVIORS AND THE LAW

*Cramer Bornemann MA, Mahowald MW, Schenck CH*

- 0603** 1:45pm - 2:00pm  
**DIAGNOSTIC THRESHOLDS FOR QUANTITATIVE REM SLEEP PHASIC BURST DURATION, MUSCLE DENSITIES, AND REM ATONIA INDEX IN REM SLEEP BEHAVIOR DISORDER WITH AND WITHOUT COMORBID OBSTRUCTIVE SLEEP APNEA**  
*McCarter SJ, St. Louis EK, Duwell ER, Timm PJ, Sandness DJ, Boeve BF, Silber MH*
- 0604** 2:00pm - 2:15pm  
**QUANTITATIVE ANALYSES OF REM SLEEP WITHOUT ATONIA IN CHILDREN AND ADOLESCENTS WITH REM SLEEP BEHAVIOR DISORDER**  
*Hancock KL, St. Louis EK, McCarter SJ, Kotagal S, Lloyd R, Boeve BF*
- 0605** 2:15pm - 2:30pm  
**A NOVEL NON-REM AND REM PARASOMNIA WITH SLEEP BREATHING DISORDER ASSOCIATED WITH ANTIBODIES AGAINST IGLON5**  
*Iranzo A, Sabater L, Gaig C, Gelpi E, Compta Y, Embid C, Vilaseca I, Santamaria J, Dalmau J, Gaus F*

## O18: New Sleep Analysis Techniques: Clinical Aspects

**1:30pm – 2:30pm**  
**Room L100F**

**Co-chairs:** Joanne Getsy, MD; and E. John Lee, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Review new methods under development for clinical sleep analysis.

- 1020** 1:30pm - 1:45pm  
**COMPARISON OF THE RESIDUAL APNEA HYPOPNEA INDICES OF THE POLYSOMNOGRAPHY AT THE SELECTED TITRATION PRESSURE AND FOLLOW UP VISIT POSITIVE AIRWAY PRESSURE DEVICE DATA: A REAL WORLD STUDY**  
*Agrawal R, Wang JA, Ko AG, Getsy JE*

- 1021** 1:45pm - 2:00pm  
**A SIMPLIFIED METHOD FOR DISTINGUISHING SLEEP AND WAKEFULNESS**  
*Younes M, Ostrowski M, Soiferman M, Younes H, Younes M, Raneri J, Hanly P*
- 1022** 2:00pm - 2:15pm  
**WAKING EEG ARTIFACT REJECTION TECHNIQUES: AUTOMATED AND VISUAL**  
*Cashmere D, Seres R, Begley A, Miewald J, Germain A, Buysse DJ*
- 1023** 2:15pm - 2:30pm  
**FORMANT FREQUENCIES OF TRACHEAL BREATH SOUND AS A SCREENING METHOD FOR OBSTRUCTIVE SLEEP APNEA DURING WAKEFULNESS**  
*Solà-Soler J, Fiz J, Torres A, Jané R*

## O19: Novel Sleep Therapeutics in Preclinical Models

**1:30pm – 2:30pm**  
**Room L100J**

**Co-chairs:** Helen Baghdoyan, PhD; and Éva Szentirmai, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Identify novel compounds and their potential mechanisms in development as sleep therapeutics.

- 0001** 1:30pm - 1:45pm  
**SLEEP PROMOTION BY DUAL AND NOVEL SELECTIVE OREXIN RECEPTOR ANTAGONISTS IN GENETIC MODELS SUGGEST ROLES FOR OX1R AND OX2R IN SLEEP REGULATION**  
*Gotter AL, Stevens J, Garson SL, Harrell CM, Tannenbaum PL, Yao L, Kuduk SD, Coleman PJ, Renger JJ, Winrow CJ*
- 0002** 1:45pm - 2:00pm  
**PRECLINICAL PHARMACOLOGICAL CHARACTERIZATION OF E2006, A NOVEL DUAL OREXIN RECEPTOR ANTAGONIST FOR INSOMNIA TREATMENT**  
*Beuckmann C, Suzuki M, Nakagawa M, Akasofu S, Ueno T, Arai T, Higashiyama H*

**0003** 2:00pm - 2:15pm  
**E2006, A NOVEL DUAL OREXIN RECEPTOR ANTAGONIST PROMOTES PHYSIOLOGICAL SLEEP IN MICE AND RATS WITHOUT CAUSING MOTOR IMPAIRMENT OR ALCOHOL INTERACTION**  
*Beuckmann C, Akasofu S, Nakagawa M, Suzuki M*

**0004** 2:15pm - 2:30pm  
**GAL-160, A NOVEL ORALLY BIOAVAILABLE MODULATOR OF BREATHING CONTROL, DECREASES THE SEVERITY OF OBSTRUCTIVE APNEAS IN RATS**  
*Hewitt MM, Baby S, Golder FJ, Mardirosian S, Peng S, MacIntyre DE*

2. Explain possible psychological and neurobiological mechanisms underlying hyperarousal, the most consistent characteristic of insomnia; and
3. Recognize targets for sleep manipulation to ameliorate emotional deregulation after trauma and in suffering from insomnia or PTSD.

2:45pm – 3:00pm

**Introduction: Sleep to Unwind: Opportunities to Understand Hyperarousal in Insomnia**  
*Eus Van Someren, PhD*

3:00pm – 3:25pm

**Sleep and Emotional Brain Homeostasis**  
*Matthew Walker, PhD*

3:25pm – 3:50pm

**REM Sleep Deprivation and Fear Extinction: Psychophysiology-fMRI Studies in Healthy Volunteers**  
*Victor Spoormaker, PhD*

3:50pm – 4:15pm

**The Role of Sleep in Emotional Memory Processing and PTSD: Animal Studies**  
*Gina Poe, PhD*

4:15pm – 4:45pm

**Sleep and Neural Circuits Underlying Threat Responses in PTSD**  
*Anne Germain, PhD*



**Refreshment Break in the Exhibit Hall**

**2:30pm – 2:45pm**

## Sleep Medicine Fellowship Directors Council Forum

**2:30pm – 4:30pm**

**Room 200I**

Join fellowship directors in a discussion of milestones for sleep medicine fellows to be implemented July 1, 2014.

## B03: Sleep and Emotion Regulation from Bench to Bedside

**2:45pm – 4:45pm**

**Room L100H**

**Chair:** Eus Van Someren, PhD

**Faculty:** Anne Germain, PhD; Gina Poe, PhD; Victor Spoormaker, PhD; and Matthew Walker, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the most recent findings of studies on the role of sleep in emotion regulation in animal models, healthy volunteers and people suffering from insomnia or PTSD;

## W04: PAP Adherence: Utilizing Team-based Care and a Behavioral Approach to Maximize Success

**2:45pm – 4:45pm**

**Room 102F**

**Chair:** Loretta Colvin, APRN-BC

**Faculty:** Ann Cartwright, PA-C; Jamie Cvengros, PhD; Patricia Dettenmeier, DNP, ANP, MSN; Neil Freedman, MD; and Robyn Woidtke, RN, RPSGT

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss behavioral approaches for PAP therapy adherence;
2. Identify benefits to team-based PAP therapy care; and
3. Develop implementation strategies for maximizing PAP adherence within a sleep center.

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- 2:45pm – 3:15pm **PAP Adherence: Keeping Pace with a Changing Future**  
*Loretta Colvin, APRN-BC*
- 3:15pm – 3:35pm **The Team-Based Approach: A Team is Better than the Sum of its Parts**  
*Neil Freedman, MD*
- 3:35pm – 3:55pm **Tailoring Care: Meeting Patients Where They Are to Improve Adherence**  
*Jamie Cvengros, PhD*
- 3:55pm – 4:15pm **Educating Patients: A Picture is Worth a Thousand Words**  
*Ann Cartwright, PA-C*
- 4:15pm – 4:30pm **The Evolving Sleep Technologist: New Roles in Enriching PAP Adherence**  
*Robyn Woidtke, RN, RPSGT*
- 4:30pm – 4:45pm **Success for the Claustrophobic Patient: Stop Fearing Fear Itself**  
*Patricia Dettenmeier, DNP, ANP, MSN*

## W05: Occupational Sleep Medicine

**2:45pm – 4:45pm**  
**Room 101E**

**Chair:** Stefanos Kales, MD  
**Faculty:** Christopher Drake, PhD; Charles Samuels, MD; and Hans Van Dongen, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Evaluate the clinical presentation of occupational sleepiness/fatigue, determine its sleep and circadian related causes, and assess the impact on safety and productivity in the work environment;
2. Implement effective treatment strategies for workers suffering from occupational sleepiness/fatigue; and
3. Advise occupational medicine colleagues and local industries/institutions running 24/7 operations about the health and human performance implications of shift work and shift work disorder.

2:45pm – 3:05pm **Fatigue and Fatigue Countermeasures in Occupational Settings**  
*Hans Van Dongen, PhD*

- 3:05pm – 3:25pm **Diagnosis and Treatment of Shift Work Disorder**  
*Christopher Drake, PhD*
- 3:25pm – 4:05pm **Sleep Disorders in Occupational Settings: Patient-based Management Approaches**  
*Stefanos Kales, MD*
- 4:05pm – 4:45pm **Case Studies in Occupational Sleep Medicine**  
*Charles Samuels, MD*

## D06: Stone Soup: Leveraging Research Resources and Opportunities

**2:45pm – 4:45pm**  
**Room 102A**

**Chair:** Janet Mullington, PhD  
**Faculty:** Charles Czeisler, MD, PhD; Allan Pack, MBChB, PhD; Till Roenneberg, PhD; Michael Twery, PhD; Kenneth Wright, Jr., PhD; and Phyllis Zee, MD, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Discuss the pipeline and the future of sleep and circadian research;
2. Evaluate ways in which existing resources can be leveraged to get research support for early stage investigators;
3. Recognize the importance of a diversified portfolio and the importance of making the health relevance of sleep and circadian neurobiology very clear in the grant proposal; and
4. Review the opportunities and challenges associated with the new era of Big Data, global research initiatives.

## O20: Insomnia: Treatment

**2:45pm – 4:45pm**  
**Room L100F**

**Co-chairs:** Colin Espie, PhD; and Brandy Roane, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss treatment options for insomnia.

**0488** 2:45pm - 3:00pm  
**A RANDOMIZED CONTROLLED TRIAL OF MINDFULNESS MEDITATION FOR CHRONIC INSOMNIA: LONG-TERM OUTCOMES**  
*Ong JC, Manber R, Segal Z, Xia Y, Shapiro S, Wyatt J*

**0489** 3:00pm - 3:15pm  
**DURABILITY OF TREATMENT RESPONSE TO ZOLPIDEM WITH THREE DIFFERENT MAINTENANCE REGIMENS: NIGHTLY, INTERMITTENT, AND PARTIAL REINFORCEMENT DOSING**  
*Perlis ML, Zee J, Bremer E, Whinnery J, Barilla H, Andalia PA, Gehrman PR, Morales KH, Grandner MA, Ader R*

**0490** 3:15pm - 3:30pm  
**COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA REDUCES NIGHT TO NIGHT VARIABILITY OF INSOMNIA SYMPTOMS**  
*Dawson SC, Pillon AJ, Cousins J, Sidani S, Epstein D, Moritz P, Bootzin RR*

**0491** 3:30pm - 3:45pm  
**CAN WE CIRCUMVENT THE TRANSITION FROM ACUTE TO CHRONIC INSOMNIA WITH A ‘SINGLE-SHOT’ CBT-I?**  
*Ellis JG*

**0492** 3:45pm - 4:00pm  
**EFFECTS OF GENDER ON ZOLPIDEM EFFICACY AND SAFETY**  
*Roehrs T, Roth T*

**0493** 4:00pm - 4:15pm  
**COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA IN OLDER VETERANS: FINAL RESULTS OF A RANDOMIZED TRIAL**  
*Alessi CA, Martin J, Fiorentino L, Fung C, Dzierzewski J, Rodriguez J, Josephson K, Jouldjian S, Mitchell M*

**0494** 4:15pm - 4:30pm  
**IMPACT OF THE WEB-BASED COGNITIVE BEHAVIORAL THERAPY PROGRAM ON INSOMNIA SYMPTOMS AND PERCEIVED STRESS: RESULTS OF A RANDOMIZED CONTROLLED TRIAL**  
*Drerup ML, Bernstein A, Allexandre D, Fay S, Doyle J, Gendy G, Roizen MF, Foldvary-Schaefer N, Mehra R, Moul D*

**0495** 4:30pm - 4:45pm  
**A RANDOMIZED, PARTIALLY BLINDED, NON-INFERIORITY TRIAL OF MINDFULNESS-BASED STRESS REDUCTION COMPARED TO COGNITIVE-BEHAVIORAL THERAPY FOR THE TREATMENT OF INSOMNIA IN CANCER SURVIVORS**  
*Garland SN, Carlson LE, Stephens AJ, Antle MC, Samuels C, Campbell TS*

## O21: Sleep Loss, Behavior and Physiology: Connecting the Dots

**2:45pm – 4:45pm**  
**Room L100J**

**Co-chairs:** Mark Opp, PhD; and Andrea Spaeth, MA

**Psychologist Level of Content:** Intermediate

**Objective:** Evaluate new insights into the complex interaction between loss of sleep, neuroendocrine health and behavior.

**0202** 2:45pm - 3:00pm  
**EFFECT OF PARTIAL SLEEP DEPRIVATION ON EMPATHY FOR PAIN IN AN FMRI EXPERIMENT: A RELATION TO SLEEPINESS**  
*Åkerstedt T, Nilsson G, Tamm S, d’Onofrio P, Schwarz J, Petrovic P, Fischer H, Kecklund G, Lekander M*

**0203** 3:00pm - 3:15pm  
**DOES IT MATTER IF YOU KNOW WHAT’S COMING? SLEEP DEPRIVATION AND ITS IMPACT ON PUPILLARY REACTIVITY TO EMOTIONAL STIMULI**  
*Dhaliwal S, Buysse DJ, Siegle GJ, Jones NP, Franzen PL*

**0204** 3:15pm - 3:30pm  
**LOSS ANTICIPATION AND OUTCOME FOLLOWING TOTAL SLEEP DEPRIVATION AND NORMAL SLEEP**  
*Conrad T, McNamee R, Banihashemi L, Forbes E, Germain A*

**0205** 3:30pm - 3:45pm  
**ACUTE SLEEP DEPRIVATION DECREASES**



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### INHIBITORY CAPACITY IN RELATION TO FOOD STIMULI IN HEALTHY YOUNG MEN

*Cedernaes J, Brandell J, Ros O, Nilsson VC, Broman J, Hogenkamp PS, Schiöth HB, Benedict C*

ablation strategies and genetically engineered receptor-channel systems for in vivo modulation of neuronal activities.

0206 3:45pm - 4:00pm

### LATE-NIGHT FAT INTAKE MODULATES NEXT DAY RESTING-STATE REWARD PATHWAY CONNECTIVITY DURING SLEEP DEPRIVATION

*Rao H, Fang Z, Spaeth AM, Zhu S, Goel N, Basner M, Detre JA, Dinges DF*

2:45pm – 3:15pm

### Sleep Restriction Leads to Long-term Alterations in Adenosine Homeostasis

*Philip Haydon, PhD*

3:15pm – 3:45pm

### Adenosine: When Local Goes Global

*Tarja Porkka-Heiskanen, MD, PhD*

0207 4:00pm - 4:15pm

### THE EFFECTS OF EXTENDED BEDTIMES ON SLEEP DURATION AND FOOD DESIRE IN OVERWEIGHT YOUNG ADULTS: A HOME-BASED INTERVENTION

*Tasali E, Chapotot F, Wroblewski K, Schoeller D*

3:45pm – 4:15pm

### Adenosine's Role as a Sleep-Need Mediator

*Robert Greene, MD, PhD*

4:15pm – 4:45pm

### Why Coffee Wakes Us Up: The Role of Adenosine A2A Receptors in the Nucleus Accumbens for Sleep-Wake Regulation

*Michael Lazarus, PhD*

0208 4:15pm - 4:30pm

### MONOCYTE SENSITIVITY TO GLUCOCORTICOIDS IN RESPONSE TO PATTERNS OF REPEATED SLEEP RESTRICTION AND RECOVERY

*DiIombi MS, Torrey J, Mullington J, Haack M*

0209 4:30pm - 4:45pm

### SLEEP DEPRIVATION RESULTS IN OXIDATIVE DNA DAMAGE: A DISEASE RISK FACTOR

*Everson CA, Henchen CJ, Szabo A, Hogg N*

## Poster Viewing

4:00pm – 6:00pm | Exhibit Hall B



See page 127-194 for a complete listing of posters.

On Monday and Tuesday evenings, the Poster Hall will feature cash bar receptions. This is your opportunity to review the posters, discuss the latest discoveries in the field and network with colleagues.

## S14: Differential Neural Mechanisms of Adenosine in Sleep-Wake Regulation

2:45pm – 4:45pm

Room 205A

**Chair:** Michael Lazarus, PhD

**Faculty:** Robert Greene, PhD; Philip Haydon, PhD; and Tarja Porkka-Heiskanen, MD, PhD

**Psychologist Level of Content:** Advanced

### Objectives:

1. Discuss molecular, cellular and anatomical mechanisms of adenosine in sleep-wake regulation;
2. Recognize that adenosine differentially regulates sleep homeostasis and behavioral states via multiple pathways and/or receptors; and
3. Review the development and application of cutting-edge molecular neuroscience tools, including gene



## AASM Membership Section Meetings

5:15pm – 6:15pm

All AASM members are invited to attend the AASM section meetings. Section meetings provide members with focused interests a means to share those interests, discuss ideas, develop methodologies, recommend programs, promote education through the AASM, stimulate research and express concerns.

**Narcolepsy Section Meeting**

Room 205C

**Movement Disorders Section Meeting**

Room 205D

**Insomnia Section Meeting**

Room 205A

**Circadian Rhythms Section Meeting**

Room 200I

REGISTER ONLINE AT: [WWW.SYMPOSIAREG.COM/21407](http://WWW.SYMPOSIAREG.COM/21407)

# Clinical Decision-Making in Narcolepsy Management:

S T A T E · O F · T H E · A R T

Monday, June 2, 2014

Registration and Dinner 6:15 pm – 6:45 pm

Symposium 6:45 pm – 8:45 pm



**Hyatt Regency Minneapolis**  
**Nicollet Ballroom, Lobby Level**  
1300 Nicollet Mall  
Minneapolis, Minnesota

## Agenda

**Registration and Dinner**

**Introduction**

*Chair: Michael Thorpy, MD*

**Pathophysiology and  
Diagnosis of Narcolepsy**

*Emmanuel Mignot, MD, PhD*

**Treatment of Narcolepsy**

*Michael Thorpy, MD*

**Case Presentation #1—**

**Adult Narcolepsy**

*A. Thomas Perkins, MD, PhD*

**Case Presentation #2—**

**Childhood through**

**Adult Narcolepsy**

*Rafael Pelayo, MD*

**Case Presentation #3 —**

**Adult Narcolepsy**

*Todd Swick, MD*

**Audience Question-and-Answer**

**Take-Home Messages**

## Faculty

**Michael Thorpy, MD (Chair)**

Professor of Neurology  
Albert Einstein College of Medicine  
Bronx, New York



**Emmanuel Mignot, MD, PhD**

Professor of Sleep Medicine  
Stanford University School of Medicine  
Palo Alto, California



**Rafael Pelayo, MD**

Clinical Professor,  
Psychiatry and Behavioral Sciences  
Stanford University School of Medicine  
Redwood City, California



**A. Thomas Perkins, MD, PhD**

Medical Director, Sleep Medicine Program  
Raleigh Neurology Associates, P.A.  
Raleigh, North Carolina



**Todd Swick, MD**

Assistant Clinical Professor of Neurology  
University of Texas School of Medicine  
Houston, Texas



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### Nurses Breakfast

7:00am – 8:00am | Room 200I

This breakfast will provide an opportunity for Nurses, Advanced Practice Registered Nurses and Physicians Assistants to network during SLEEP 2014.

#### Educational Opportunities:

**C:** Postgraduate Course

**B:** Bench to Bedside

**W:** Clinical Workshop

**D:** Discussion Group

**I:** Invited Lecturer

**L:** Lunch Debate

**M:** Meet the Professor

**O:** Oral Presentation

**P:** Poster Session

**R:** Brown Bag Case Report

**S:** Symposia



**BSM ICON** – Sessions with this icon focus on the behavioral therapies for sleep disorders.

See page 5 for a description of these session types.

### We Want Your Feedback



You are encouraged to evaluate each session you attend.

Visit the SLEEP 2014 mobile app or [www.sleepmeeting.org/evaluations](http://www.sleepmeeting.org/evaluations) at any time during the meeting to rate the sessions.

The evaluation site will close on July 1.

## Poster Set-Up

7:00am – 8:00am

**Exhibit Hall B**

Posters should be set-up for display during this time and should not be removed until 4:45pm.

## I09: Telehealth: Changing the Location of Care to Make the Home and Local Community into Preferred Sites of Care

8:00am – 9:00am

**Room 101E**

*Adam Darkins, MD, MPH (Bio on page 30)*

**Psychologist Level of Content:** Intermediate

#### Objectives:

1. Review what telehealth is and the key principles of using it;
2. Summarize the clinical, technology and business impacts on developing telehealth; and
3. Discuss the training need for developing telehealth services.

## D07: International Collaborations to Promote Discovery and Replication of Genetic Risk Factors for Sleep Disorders

8:00am – 10:00am

**Room L100H**

**Co-chairs:** Lyle Palmer, PhD; and Susan Redline, MD, MPH

**Faculty:** Sina Gharib, MD; Brendan Keating, DPhil; Sutapa Mukherjee, MBBS, PhD; Sanjay Patel, MD; Richa Saxena, PhD; and Mehdi Tafti, PhD

**Psychologist Level of Content:** Intermediate

#### Objectives:

1. Identify the attributes of successful collaborative models for sharing genetic data, coordinating in cross-study meta-analyses, and publishing novel genetic findings;

2. Describe the challenges and potential solutions for overcoming these in establishing international collaborations for discovering genetic variants for sleep disorders; and
3. Discuss large cohorts and datasets amenable for analysis of genetic variants for sleep disorders.

## O22: Sleep Deficiency and its Consequences

8:00am – 10:00am

Room 102A

**Chair:** Amanda McBean, MS; and Katherine Sharkey, MD, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Describe physiological, behavioral and clinical consequences of sleep deficiency.

- 0084** 8:00am - 8:15am  
**SEX DIFFERENCES IN INSULIN SENSITIVITY DURING INSUFFICIENT SLEEP AND ASSOCIATED CIRCADIAN MISALIGNMENT**  
*Depner CM, Eckel RH, Perreault L, Markwald R, Smith M, McHill AW, Higgins J, Melanson E, Wright KP*
- 0128** 8:15am - 8:30am  
**STABILITY OF ENERGY BALANCE RESPONSES TO SLEEP RESTRICTION OVER LONG TIME INTERVALS**  
*Spaeth AM, Wohl R, Dinges DF, Goel N*
- 0129** 8:30am - 8:45am  
**SLEEP PATTERNS DURING DUTY PERIODS AND RESTART BREAKS IN A FIELD STUDY OF COMMERCIAL MOTOR VEHICLE DRIVERS**  
*Sparrow AR, Bartels R, Kan K, Riedy SM, Unice A, Satterfield BC, Mollicone DJ, Van Dongen H*
- 0130** 8:45am - 9:00am  
**HOMEOSTATIC AND CIRCADIAN VARIATION IN THE MULTIPLE SLEEP LATENCY TEST IN YOUNGER AND OLDER ADOLESCENTS DURING 28H FORCED DESYNCHRONY**  
*Wu LJ, Acebo C, Carskadon MA*

- 0131** 9:00am - 9:15am  
**PER3 VNTR: SLEEP PATTERNS AND DEPRESSED MOOD IN COLLEGE STUDENTS**  
*Carskadon MA, Sharkey KM, Barker DH, Roane BM, Van Reen E, Knopik VS, McGeary JE*
- 0132** 9:15am - 9:30am  
**DNA METHYLATION ASSOCIATED WITH SLEEP DURATION: PRELIMINARY RESULTS**  
*Carskadon MA, McGeary JE, Jacobs D, Fu A, Sharkey KM, Knopik VS, Zhu Y*
- 0085** 9:30am - 9:45am  
**MAGNITUDE OF THE IMPACT OF OBJECTIVELY-RECORDED NOCTURNAL HOT FLASHES ON POLYSOMNOGRAPHIC SLEEP IN PERIMENOPAUSAL WOMEN**  
*de Zambotti M, Sasso S, Claudatos S, Greco J, Inkelis S, Sugarbaker D, Javitz H, Colrain I, Baker F*
- 0133** 9:45am - 10:00am  
**SLEEP-WAKE SYNCHRONY IN COUPLES IS ASSOCIATED WITH RELATIONSHIP FUNCTIONING**  
*Gunn HE, Buysse DJ, Troxel WM*

## O23: Assessments and Associations of Obstructive Sleep Apnea

8:00am – 10:00am

Room L100J

**Co-chairs:** Cathy Goldstein, MD; and Michael Yurcheshen, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Review the newest assessments of OSA and the diagnosis of co-morbid disorders.

- 0304** 8:00am - 8:15am  
**EFFECT OF CONTINUOUS POSITIVE AIRWAY PRESSURE ON BLOOD PRESSURE IN RESISTANT HYPERTENSION AND HYPERTENSION IN A LARGE CLINIC-BASED COHORT**  
*Walia HK, Griffith SD, Thomas G, Bravo EL, Moul DE, Foldvary-Schaefer N, Mehra R*

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**0305** 8:15am - 8:30am  
**ABNORMAL BRAIN BIOENERGETICS DURING RESTING WAKEFULNESS ARE RELATED TO NEUROBEHAVIOURAL DYSFUNCTION IN PATIENTS WITH SEVERE OBSTRUCTIVE SLEEP APNEA**  
*D'Rozario AL, Bartlett D, Rae C, Wong K, Grunstein RR*

**0306** 8:30am - 8:45am  
**COMMON VARIANT-BASED HERITABILITY ESTIMATES OF OBSTRUCTIVE SLEEP APNEA-RELATED TRAITS IN THE MESA AND MROS STUDIES**  
*Cade BE, Bjornnes A, Feng T, Wang C, Evans D, Johnson W, Tranah G, Saxena R, Redline S, Lin X*

**0307** 8:45am - 9:00am  
**SLEEP APNEA AND HEAVY VEHICLE CRASHES: A CASE-CONTROL STUDY**  
*Grunstein RR, Stevenson M, Wong K, Sharwood L, Elkington J*

**0308** 9:00am - 9:15am  
**A GENOME-WIDE ASSOCIATION STUDY OF OBSTRUCTIVE SLEEP APNEA-RELATED TRAITS IN MULTIETHNIC COHORTS**  
*Cade BE, Chen H, Bjornnes A, Below J, Evans D, Hanis C, Tranah G, Zhu X, Lin X, Redline S*

**0309** 9:15am - 9:30am  
**RELATIONSHIP OF AIR POLLUTION TO SLEEP DISORDERED BREATHING AND SLEEP DISRUPTION: THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS SLEEP AND AIR STUDIES**  
*Billings ME, Leary PJ, Gold D, Aaron CP, Kaufman J, Redline S*

**0310** 9:30am - 9:45am  
**THE EFFECT OF SNORING TIME AND THE APNEA/HYPOPNEA INDEX ON CHANGES IN CAROTID ATHEROSCLEROSIS OVER 6 YEARS**  
*Kim J, Pack AI, Riegel B, Tkacs N, Chirinos J, Hanlon A, Shin C*

**0311** 9:45am - 10:00am  
**ASSOCIATION BETWEEN SLEEP DISORDERED BREATHING AND THE SUBSEQUENT DIAGNOSIS OF DIABETES IN YOUNG VETERANS: A RETROSPECTIVE COHORT STUDY**  
*Ryden AM, Martin J, Mitchell M, Ponc R, Santiago S, Zeidler MR*

## **S15: Insomnia Subtypes: The Mind, the Brain and the Body**

**8:00am – 10:00am**  
**Room 102F**

**Chair:** Eus Van Someren, PhD

**Faculty:** Georgina Cano, PhD; Jack Edinger, PhD; and Alexandros Vgontzas, MD

**Psychologist Level of Content:** Intermediate

### **Objectives:**

1. Apply the most recent human findings on the application of subjective, EEG, physiological and MRI profiles to elucidate diverging causes and consequences of poor sleep in different insomnia phenotypes;
2. Describe the outlines of data-driven insomnia subtype profiles that can be used to target specific subgroups for more focused future research on causes and treatment of insomnia; and
3. Identify possible new targets for the treatment of insomnia subtypes and how they can be evaluated side-by-side in both clinical trials and animal models.

8:00am – 8:30am

**The Limitations of Previous Insomnia Nosologies**

*Jack Edinger, PhD*

8:30am – 9:00am

**Chronic Insomnia with Short Sleep Duration: The Most Severe Biological Phenotype of the Disorder**

*Alexandros Vgontzas, MD*

9:00am – 9:30am

**Brain Imaging and Large-scale Internet Studies Identify Insomnia Subtypes**

*Eus Van Someren, PhD*

9:30am – 10:00am **Animal Models Replicate Different Insomnia Phenotypes Observed in Humans**  
*Georgina Cano, PhD*

## S16: A Perfect Time for Chronomedicine

8:00am – 10:00am

Room L100F

**Co-chairs:** Sabra Abbott, MD, PhD; and Phyllis Zee, MD, PhD

**Faculty:** Sonia Ancoli-Israel, PhD; Brant Hasler, PhD; Till Roenneberg, PhD; and Fred Turek, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Review the broad role of circadian dysfunction in human health and disease;
2. Discuss new techniques for diagnosing and treating circadian disorders; and
3. Appreciate the potential role for chronomedicine in sleep medicine.

8:00am – 8:25am **Basic Circadian Science: Implications for Health**  
*Fred Turek, PhD*

8:25am – 8:50am **Defining Circadian and Sleep Health in Populations**  
*Till Roenneberg, PhD*

8:50am – 9:15am **Circadian Based Approaches to Improve Treatment Outcomes**  
*Sonia Ancoli-Israel, PhD*

9:15am – 9:40am **Circadian Rhythms in Psychiatric Disorders**  
*Brant Hasler, PhD*

9:40am – 10:00am **Conclusion: The Chronomedicine Clinic Model**  
*Sabra Abbott, MD, PhD; and Phyllis Zee, MD, PhD*

## S17: What is Cataplexy?

8:00am – 10:00am

Room 205A

**Chair:** Mehdi Tafti, PhD; and Anne Vassalli, DPhil  
**Faculty:** Luis de Lecea, PhD; Giuseppe Plazzi, MD; Thomas Scammell, MD; and Jerome Siegel, PhD

**Psychologist Level of Content:** Advanced

### Objectives:

1. Explain the conditions of high hypocretin/orexin release in healthy subjects and increased propensity of cataplexy in narcolepsy from both human and animal investigations;
2. Review the phenomenology of the hypocretin/orexin neural circuitry and its interactions with other wake-promoting pathways such as the noradrenergic pathway; and
3. Analyze clinical and polysomnographic observations of narcolepsy with cataplexy with developing knowledge in the brain circuits underlying behavior, and their alteration in absence of functional hypocretin/orexin signaling.

8:00am – 8:20am

### Introduction

*Mehdi Tafti, PhD; and Anne Vassalli, DPhil*

8:20am – 8:45am

### Neuronal Activity in Cataplexy

*Jerome Siegel, PhD*

8:45am – 9:10am

### Forebrain Control of Cataplexy

*Thomas Scammell, MD*

9:10am – 9:35am

### Human Cataplectic Behaviors

*Giuseppe Plazzi, MD*

9:35am – 10:00am

### Optogenetic Control of Monoaminergic Nuclei and Cataplexy

*Luis de Lecea, PhD*

## I10: Sleep and Pediatric Chronic Pain: Innovative Approaches to Assessment and Treatment

9:05am – 10:05am

Room 101E

*Tonya Palermo, PhD (Bio on page 32)*

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Summarize the evidence for sleep disturbances in

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children with painful conditions;

2. Identify sociodemographic, environmental and clinical factors associated with risk for sleep disturbances in children with painful conditions; and
3. Discuss recent advances in the use of technology to deliver behavioral interventions to children and families.

## Exhibit Hall Open

10:00am – 2:00pm

Exhibit Hall B



## Refreshment Break in the Exhibit Hall

10:00am – 10:20am

## W06: Critical Issues in the Evaluation, Diagnosis and Management of RBD Patients

10:20am – 12:20pm

Room L100H

**Co-chairs:** Birgit Högl, MD; and Carlos Schenck, MD  
**Faculty:** Alex Iranzo, MD, PhD; Jacques Montplaisir, MD, PhD; and Yun Kwok Wing, MBChB

**Psychologist Level of Content:** Advanced

### Objectives:

1. Discuss strengths and weaknesses of questionnaires for diagnosing REM sleep behavior disorder (RBD);
2. Identify different systems of vPSG analysis for detecting REM sleep without atonia and RBD, and discuss their specific advantages and disadvantages;
3. Review the long-term implications of the diagnosis of RBD; and
4. Describe different clinical profiles of RBD in different populations and the role of comorbidities.

10:20am – 10:40am

**Validated RBD Screening Questionnaires: Opportunities and Pitfalls**

10:40am – 11:00am

*Yun Kwok Wing, MBChB*

**Currently Used Systems to Quantify EMG Activity during REM Sleep Manually and Automatically, Optimal EMG Montages**

*Birgit Högl, MD*

11:20am – 11:40am

**PSG Characteristics and Clinical Outcome in Patients with “Secondary RBD”**

*Jacques Montplaisir, MD, PhD*

11:40am – 12:00pm

**How to Distinguish True RBD Behaviors during REM Sleep from Non-RBD Behaviors?**

*Alex Iranzo, MD, PhD*

12:00pm – 12:20pm

**Comorbidities and Complex RBD Cases and the Probability of Future Parkinsonism/ Dementia with High-risk Patients with Idiopathic RBD**

*Carlos Schenck, MD*

## D08: The American Sleep Medicine Foundation: Stimulating Innovation through Expanded Funding Opportunities

10:20am – 12:20pm

Room 205A

**Chair:** Merrill Wise, MD

**Faculty:** Ronald Chervin, MD; Clete Kushida, MD, PhD, RST, RPSGT; Timothy Morgenthaler, MD; Susan Redline, MD, MPH; and Nathaniel Watson, MD, MS

**Psychologist Level of Content:** Introductory

### Objectives:

1. Review the history, mission and vision of the American Sleep Medicine Foundation (ASMF), and recent changes in ASMF governance;
2. Describe recent changes in how the AASM supports the ASMF, and how the ASMF establishes funding priorities in the evolving healthcare landscape; and
3. Discuss the ASMF’s approach to supporting new investigators, funding strategic research including health services research relevant to sleep medicine, and encouraging collaborative approaches to scientifically and clinically relevant questions.

## O24: Insomnia: Co-morbid Associations

10:20am – 12:20pm  
Room 102A

**Co-chairs:** Ruth Benca, MD, PhD; and Constance Fung, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Identify co-morbid associations with insomnia.

**0496** 10:20am - 10:35am  
**COGNITIVE BEHAVIORAL INSOMNIA THERAPY LEADS TO PAIN REDUCTIONS THROUGH IMPROVING THE SLEEP OF FIBROMYALGIA PATIENTS**  
*Sanchez-Ortuno MM, Lineberger M, Leggett MK, Thakur M, Rice JR, Stechuchak K, Coffman C, Krystal A, Edinger JD*

**0497** 10:35am - 10:50am  
**PERSISTENT INSOMNIA AND ALL-CAUSE MORTALITY IN A COMMUNITY-BASED COHORT**  
*Parthasarathy S, Vasquez MM, Halonen M, Bootzin RR, Quan SF, Martinez FD, Guerra S*

**0498** 10:50am - 11:05am  
**INCREASED PHYSICAL ACTIVITY IMPROVES SLEEP AND MOOD OUTCOMES IN SEDENTARY PEOPLE WITH INSOMNIA: A RANDOMIZED CONTROLLED TRIAL**  
*Hartescu I, Morgan K, Stevinson CD*

**0499** 11:05am - 11:20am  
**TREATING INSOMNIA IN THOSE WITH DEPRESSION: A RANDOMIZED CONTROLLED TRIAL**  
*Carney C*

**0500** 11:20am - 11:35am  
**INSOMNIA WITH OBJECTIVE SHORT SLEEP DURATION AND ALL-CAUSE MORTALITY: GENDER EFFECTS**  
*Vgontzas AN, Fernandez-Mendoza J, Liao D, Pejovic S, Basta M, Calhoun SL, Bixler EO*

**0501** 11:35am - 11:50am  
**IMPROVED SLEEP QUALITY PREDICTS LONG-TERM IMPROVEMENTS IN SLEEP, PAIN, AND FATIGUE IN OLDER ADULTS WITH CO-MORBID OSTEOARTHRITIS AND INSOMNIA**  
*Vitiello MV, McCurry SM, Shortreed SM, Baker LD, Rybarczyk BD, Keefe FJ, Von Korff M*

**0502** 11:50am - 12:05pm  
**ASSOCIATIONS BETWEEN INSOMNIA PHENOTYPE AND CHRONICITY WITH WEEKLY TREATMENT RESPONSE DURING ONLINE CBT-I: OBSERVATIONS WITHIN A LARGE ONLINE TREATMENT COHORT**  
*Espie CA, Bostock S, Kyle S, Paluzzi B, Hames P*

**0503** 12:05pm - 12:20pm  
**INSOMNIA WITH OBJECTIVE SHORT SLEEP DURATION AND INCIDENT CANCER**  
*Fernandez-Mendoza J, Vgontzas AN, Liao D, Basta M, Pejovic S, Calhoun SL, Bixler EO*

## O25: Obstructive Sleep Apnea: Effects and Treatment

10:20am – 12:20pm  
Room L100F

**Co-chairs:** Maryann Deak, MD; and Sandra Horowitz, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Review the health and quality of life effects of OSA and its treatment.

**0312** 10:20am - 10:35am  
**EFFECT OF OBSTRUCTIVE SLEEP APNEA TREATMENT ON SYSTEMIC INFLAMMATION: RESULTS OF THE SLEEP APNEA STRESS STUDY (SASS) RANDOMIZED CONTROLLED TRIAL**  
*Ashraf F, Tracy R, Li H, Auckley D, Patel SR, Walia HK, Mehra R*

**0313** 10:35am - 10:50am  
**IMPACT OF SLEEP DISORDERED BREATHING TREATMENT ON SUBJECTIVE PATIENT REPORTED OUTCOMES IN A LARGE HYPERTENSION CLINIC-BASED COHORT ENRICHED WITH RESISTANT HYPERTENSION**  
*Walia HK, Griffith SD, Bae C, Moul DE, Foldvary-Schaefer N, Mehra R*



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**0314** 10:50am - 11:05am  
**THE ASSOCIATION BETWEEN CHANGE IN CLINICAL OUTCOME MEASURES AND APNEA HYPOPNEA INDEX CORRECTED FOR CPAP USE**

*Kirkham EM, Weaver EM*

**0315** 11:05am - 11:20am  
**THE EFFECT OF CPAP AND PDE-5 INHIBITOR ON ARTERIAL STIFFNESS AND ENDOTHELIAL FUNCTION IN MEN WITH OSA AND ERECTILE DYSFUNCTION: A RANDOMISED CONTROLLED STUDY**

*Melehan KL, Hoyos CM, Yee BY, Wong KK, O'Meagher S, Celermajer DS, Ng MK, Grunstein RR, Liu PY*

**0316** 11:20am - 11:35am  
**CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) REDUCES CENTRAL BLOOD PRESSURE AND ARTERIAL STIFFNESS: A RANDOMISED CONTROLLED STUDY**

*Hoyos CM, Yee BJ, Wong KK, Grunstein RR, Phillips CL*

**0317** 11:35am - 11:50am  
**CONTINUOUS POSITIVE AIRWAY PRESSURE RAPIDLY IMPROVES BLOOD PRESSURE AND ARTERIAL CONSTRICTION IN YOUNG ADULTS**

*Korcarz CE, Benca RM, Hansen K, Weber JM, Stein JH*

**0318** 11:50am - 12:05pm  
**PAP USE CRITERIA AND CHANGE OF HEMOGLOBIN A1C**

*Neikrug AB, Cvengros JA, Fogg LF, Crisostomo I, Snyder S, Smith MA, Baldwin D, Park M*

**0319** 12:05pm - 12:20pm  
**EFFECTS OF CONTINUOUS POSITIVE AIRWAY PRESSURE ON MEASURES OF ARTERIAL STIFFNESS IN OBSTRUCTIVE SLEEP APNEA: RESULTS OF THE SLEEP APNEA STRESS STUDY RANDOMIZED CONTROLLED TRIAL**

*Paz y Mar HL, Li H, Auckley D, Patel SR, Walia H, Strohl KP, Mehra R*

## **S18: Sleep in Children with Chronic Health Conditions: Challenges and Opportunities**

**10:20am – 12:20pm**  
**Room 102F**

**Chair:** Penny Corkum, PhD

**Faculty:** Valerie Crabtree, PhD; Lisa Meltzer, PhD; and Tonya Palermo, PhD

**Psychologist Level of Content:** Intermediate

### **Objectives:**

1. Explain the relationship between sleep and a range of chronic health disorders in children and adolescents;
2. Describe how sleep problems/disorders can affect symptom presentation and functional consequences; and
3. Discuss how sleep problems/disorders can affect treatment response and identify methods of tailoring sleep interventions for children with chronic health conditions.

10:20am – 10:45am

**Sleep Disturbances in Children with Mental Health Disorders**

*Penny Corkum, PhD*

10:45am – 11:10am

**Sleep Disturbances in Children and Adolescents with Chronic Pain**

*Tonya Palermo, PhD*

11:10am – 11:35am

**Sleep Disturbances in Children with Asthma**

*Lisa Meltzer, PhD*

11:35am – 12:00pm

**Sleep Disturbances in Children with Cancer**

*Valerie Crabtree, PhD*

12:00pm – 12:20pm

**Discussion**

## **S19: Metabolomics and Sleep: Translational Approaches from Animals to Humans**

**10:20am – 12:20pm**  
**Room L100J**

**Chair:** Namni Goel, PhD

**Faculty:** Tarja Porkka-Heiskanen, MD, PhD; Debra Skene, PhD; and Aalim Weljie, PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Recognize how various metabolomic technologies can be used in a systems approach to examine the well-established and important links between sleep loss and metabolism
2. Describe the usefulness of metabolomic profiling for determining biomarkers in response to different degrees of sleep deprivation;
3. Describe the metabolomic effects of sleep loss and discuss how the contributions of these responses might vary under different types of sleep loss protocols (acute total vs. partial sleep deprivation); and
4. Evaluate metabolomic approaches and effects translationally – from rodents to humans – in similar experimental procedures.

|                   |   |
|-------------------|---|
| 10:20am – 10:50am | <b>Metabolic Consequences of Chronic Sleep Restriction in Rats</b><br><i>Aalim Weljie, PhD</i>  |
| 10:50am – 11:20am | <b>Chronic Sleep Restriction Alters Metabolomic Profiles in Healthy Humans</b><br><i>Namni Goel, PhD</i>  |
| 11:20am – 11:50am | <b>Effect of Total Sleep Deprivation on Human Plasma Metabolome Rhythms</b><br><i>Debra Skene, PhD</i>  |
| 11:50am – 12:20pm | <b>Lipid Profiles after Experimental Restriction of Sleep and in an Epidemiological Cohort Reporting Insufficient Sleep</b><br><i>Tarja Porkka-Heiskanen, MD, PhD</i> |

**Faculty:** Charles Atwood, MD; Samuel Kuna, MD; Jennifer Martin, PhD; and Carl Stepnowsky Jr., PhD

**Psychologist Level of Content:** Introductory

**Objectives:**

1. Review the staffing and clinical challenges posed by health care systems with increasing demand and finite resources;
2. Discuss ambulatory models that can improve access to care including shared medical appointments, web-based portals, primary-care collaborations, and telehealth;
3. Describe the role of technology in making OSA management more patient-centric; and
4. Identify what models exist for integrating CBT-I treatment into sleep disorders centers.

|                   |  |
|-------------------|--|
| 10:20am – 10:25am | <b>Introduction</b><br><i>Kathleen Sarmiento, MD</i>   |
| 10:25am – 10:50am | <b>Ambulatory Models of Sleep Care: Diagnosis and Therapy, Shared Medical Appointments, Primary Care Alliances and Telehealth</b><br><i>Charles Atwood, MD</i> |
| 10:50am – 11:15am | <b>Using Information Technology to Improve CPAP Compliance</b><br><i>Carl Stepnowsky Jr., PhD</i>  |
| 11:15am – 11:40am | <b>Web-based Sleep Apnea Management Programs</b><br><i>Samuel Kuna, MD</i>   |
| 11:40am – 12:05pm | <b>Integrating CBT-I into Comprehensive Care for Sleep Disorders</b><br><i>Jennifer Martin, PhD</i>  |
| 12:05pm – 12:20pm | <b>Discussion</b>  |

### S20: Future Models of Care: The Veterans Health Administration Experience

**10:20am – 12:20pm**  
**Room 101E**

**Chair:** Kathleen Sarmiento, MD

### Poster Viewing

**10:20am – 12:20pm | Exhibit Hall B**



See page 127-194 for a complete listing of posters.

On Wednesday, the Poster Hall will be open during exhibit hall hours. This is your final opportunity to review the posters, discuss the latest discoveries in the field and network with colleagues.

Saturday  
May 31

Sunday  
June 1

Monday  
June 2

Tuesday  
June 3

Wednesday  
June 4



## Lunch Break

12:20pm – 1:30pm

## L03: Does Objective Measuring of Compliance Improve Outcome?

12:30pm – 1:30pm

Room 200I

All Lunch Debate sessions require additional registration fees. *CE credits for psychologists are not provided for this session.*

**Faculty:** Najib Ayas, MD; and Richard Schwab, MD

### Objectives:

1. Determine how to measure compliance effectively;
2. Evaluate patients for a compliance plan;
3. Discuss compliance measures to improve patients outcomes.

## Meet the Professors

12:30pm – 1:30pm

All Meet the Professors sessions require additional registration fees. *CE credits for psychologists are not provided for these sessions.*

### M17: Treatment Updates on Insomnia

Room M100B

Andrew Krystal, MD

### M18: Exercise and Sleep

Room M100C

Shawn Youngstedt, PhD

### M19: Home Sleep Testing

Room M100D

Max Hirshkowitz, PhD

### M20: The Expanding Role of APRNs and PAs in Sleep Medicine

Room M100E

Loretta Colvin, APRN-BC

### M21: How to Evaluate and Manage Excessive Daytime Sleepiness in Childhood

Room M100F

Suresh Kotagal, MBBS

### M22: Increasing Public Awareness of Sleep through Employers

Room M100G

Charles Czeisler, MD, PhD

### M23: Tired Cops and First Responders: Sleep, Justice and Public Safety

Room M100H

Hans Van Dongen, PhD

### M24: Sleep, Memory and Emotion

Room M100I

Jessica Payne, PhD

## I11: The Future of Sleep Apnea Therapy

1:30pm – 2:30pm

Room 101E

Atul Malhotra, MD (Bio on page 31)

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Recognize the multifactorial nature of OSA;
2. Define loop gain; and
3. Identify subsets of OSA amenable to therapy.

## O26: Sleep Quality in Older Adults

1:30pm – 2:30pm

Room 102A

**Co-chairs:** Sonia Ancoli-Israel, PhD; and Nalaka Gooneratne, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Identify circadian and EEG factors that may be associated with insomnia and cognitive decline in older adults and interventions to improve sleep quality in this population.

- 0968** 1:30pm - 1:45pm  
**UNMASKED CIRCADIAN RHYTHMS IN OLDER ADULTS WITH AND WITHOUT INSOMNIA**  
*Monk TH, Buysse DJ, Billy BD, Fletcher ME*
- 0969** 1:45pm - 2:00pm  
**ASSOCIATIONS BETWEEN QUANTITATIVE SLEEP EEG DATA AND SUBSEQUENT COGNITIVE DECLINE IN COMMUNITY-DWELLING OLDER WOMEN**  
*Djonlagic I, Aeschbach D, Litwack Harrison S, Dean D, Ancoli-Israel S, Yaffe K, Stone K, Redline S*
- 0970** 2:00pm - 2:15pm  
**A BEHAVIORAL INTERVENTION IMPROVES SLEEP QUALITY AMONG ADULT DAY HEALTH CARE PARTICIPANTS: RESULTS OF A RANDOMIZED CONTROLLED TRIAL**  
*Martin JL, Hughes J, Jouldjian S, Vandenberg T, Dzierzewski J, Fung C, Rodriguez Tapia J, Alessi C*
- 0971** 2:15pm - 2:30pm  
**WHY ARE PEOPLE WITH INSOMNIA SYMPTOMS RETIRING EARLIER THAN PEOPLE WITHOUT INSOMNIA SYMPTOMS? AN ANALYSIS OF THE RETIREMENT AND SLEEP TRAJECTORIES STUDY (REST)**  
*Hale L, Hagen E, Barnet J, Steidl R, Salzieder N, Peppard PE*

## O27: Narcolepsy and Hypersomnias Related Psychiatric Disease

**1:30pm – 2:30pm**  
**Room 205A**

**Chair:** Cathy Goldstein, MD

**Psychologist Level of Content:** Intermediate

**Objective:** Identify the relationships of HLA-DQB1 and T-Cell autoimmunity to narcolepsy, and list associations of hypersomnia with depression and bipolar disease.

- 0652** 1:30pm - 1:45pm  
**QB1 LOCUS ALONE EXPLAINS MOST OF THE RISK AND PROTECTION IN NARCOLEPSY WITH CATAPLEXY IN EUROPE**  
*Tafti M, Hor H, Dauvilliers Y, Lammers G, Overeem S, Mayer G, Iranzo A, Santamaria J, Peraita-Adrados R, Kutalik Z*
- 0653** 1:45pm - 2:00pm  
**CD4+ T-CELL AUTOIMMUNITY TO HYPOCRETIN/OREXIN IN NARCOLEPSY**  
*Kornum BR, De la Herrán-Arita AK, Mahlios J, Lin L, Jiang W, Einen M, Plazzi G, Crowe C, Mellins ED, Mignot E*
- 0654** 2:00pm - 2:15pm  
**PHYSIOLOGICAL SLEEP PROPENSITY AND DEPRESSION AS PREDICTORS OF INCIDENT EXCESSIVE DAYTIME SLEEPINESS**  
*Kritikou I, Fernandez-Mendoza J, Vgontzas AN, Calhoun SL, Bixler EO*
- 0655** 2:15pm - 2:30pm  
**HYPERSOMNIA IN BIPOLAR DISORDER: CLARIFYING A DIAGNOSTIC DILEMMA**  
*Kaplan K, Eidelman P, Soehner A, Gruber J, Talbot L, Gershon A, McGlinchey E, Harvey A*

## O28: Sleep State Analysis: New Methods and Models

**1:30pm – 2:30pm**  
**Room L100J**

**Co-chairs:** Robert Stansbury, MD; and Hans Van Dongen, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Discuss new methods of analyzing sleep.

- 0263** 1:30pm - 1:45pm  
**VALIDATION OF A WORKLOAD-SENSITIVE MATHEMATICAL MODEL OF THE TEMPORAL DYNAMICS OF PERFORMANCE**  
*Van Dongen H, McCauley P*

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**0264** 1:45pm - 2:00pm  
**VALIDATION OF SMARTPHONE-BASED AND IPAD-BASED PSYCHOMOTOR VIGILANCE TESTS**  
*Grant DA, Honn KA, Kogan CJ, Layton ME, Van Dongen H*

**0265** 2:00pm - 2:15pm  
**AN IMPROVED METHOD FOR THE DETECTION OF DROWSY DRIVERS USING LANE HEADING DIFFERENCE**  
*Morris DM, Pilcher JJ, Switzer FS*

**0266** 2:15pm - 2:30pm  
**UPPER AIRWAY OBSTRUCTION INDUCES ABNORMAL SLEEP DYNAMICS IN JUVENILE RATS**  
*Tarasiuk A, Berdugo-Boura N, Segev Y, Gradwohl G*

## O29: Circadian Misalignment and Circadian Sleep-Wake Disorders

**1:30pm – 2:30pm**  
**Room L100H**

**Co-chairs:** Sabra Abbott, MD, PhD; and Jamie Zeitzer, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Describe the consequences of circadian disruption in healthy adults and in circadian rhythm sleep-wake disorders.

**0467** 1:30pm - 1:45pm  
**CIRCADIAN MISALIGNMENT INCREASES CARDIOVASCULAR RISK INDEPENDENTLY OF SLEEP LOSS**  
*Grimaldi D, Holmbäck U, Van Cauter E, Leproult R*

**0468** 1:45pm - 2:00pm  
**DIFFERENTIAL SLEEP DISTURBANCES IN TWO PHENOTYPES OF SHIFT WORK DISORDER**  
*Roth T, Belcher R, Drake CL, Mengel HJ, Koshorek GL, Gable M, Gumenyuk V*

**0469** 2:00pm - 2:15pm  
**UNEXPECTED PHASE DELAYS DURING NIGHT SHIFTS IN A NATURALISTIC PILOT STUDY IN PATROL OFFICERS**  
*Martin J, Sasseville A, Lavoie J, Houle J, Laberge L, Hébert M*

**0470** 2:15pm - 2:30pm  
**ASSESSMENT OF CLINICAL MEASURES IN NON-24-HOUR DISORDER (NON-24) PATIENTS ENTRAINED BY TASIMELTEON**  
*Lockley S, Dressman MA, Xiao C, Licamele L, Polymeropoulos MH*

## O30: Sleep Timing, Duration and Napping: New Insights

**1:30pm – 2:30pm**  
**Room L100F**

**Co-chairs:** Michael Grandner, PhD; and Sara Mednick, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Review recent developments in understanding napping and sleep duration.

**0840** 1:30pm - 1:45pm  
**ASSOCIATIONS BETWEEN RACE/ETHNICITY, TIMING OF SLEEP AND HYPERTENSION IN A POPULATION-BASED SAMPLE: CHICAGO AREA SLEEP STUDY (CASS)**  
*Knutson KL, de Chavez P, Zee PC, Carnethon MR*

**0841** 1:45pm - 2:00pm  
**THE RELATIONSHIP BETWEEN RACE/ETHNICITY AND SLEEP DURATION DEPENDS ON GEOGRAPHIC LOCATION**  
*Schuschu J, Pigeon W, Grandner MA*

**0842** 2:00pm - 2:15pm  
**WHY DO PEOPLE NAP? A FACTOR ANALYSIS OF SELF-REPORTED SLEEP HABITS**  
*Duggan KA, McDevitt EA, Whitehurst LN, Mednick SC*

**0843** 2:15pm - 2:30pm  
**PREDICTORS OF PERCEIVED INSUFFICIENT SLEEP AMONG HABITUAL SHORT SLEEPERS**  
*Huang S, Grandner MA*



## Refreshment Break

2:30pm – 2:45pm

## B04: Shining a Light on Sleep, Metabolism and Body Weight

2:45pm – 4:45pm

Room L100H

**Chair:** Kathryn Reid, PhD

**Faculty:** Mariana Figueiro, PhD; Laura Fonken, PhD; and Jamie Zeitzer, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Describe how manipulating light exposure impacts sleep, metabolic function and weight control in animal and human models; and
2. Discuss data from animal models following the manipulation of the light-dark cycle and feeding patterns on metabolic and molecular function.

2:45pm – 2:50pm

### Introduction

*Kathryn Reid, PhD*

2:50pm – 3:20pm

### Exposure to Light at Night Disrupts the Circadian System and Leads to Weight Gain

*Laura Fonken, PhD*

3:20pm – 3:45pm

### The Impact of Light Exposure on Metabolic Function and Body Weight in Normal Adults

*Kathryn Reid, PhD*

3:45pm – 4:15pm

### Effects of Light on Sleep and Use of Light to Improve Sleep

*Jamie Zeitzer, PhD*

4:15pm – 4:45pm

### Light, Sleep and Biomarkers

*Mariana Figueiro, PhD*

## W07: Hypersomnia and Narcolepsy in the Pediatric Population

2:45pm – 4:45pm

Room L100F

**Co-chairs:** Sejal Jain, MD; and Narong Simakajornboon, MD

**Faculty:** Suresh Kotagal, MBBS; and Emmanuel Mignot, MD, PhD

**Psychologist Level of Content:** Intermediate

### Objectives:

1. Describe common presentations for narcolepsy in children;
2. Review management strategies for hypersomnia and narcolepsy in children; and
3. Discuss hypersomnia associated with childhood neurological disorders.

2:45pm – 3:15pm

### Clinical Presentations of Childhood Hypersomnia

*Suresh Kotagal, MBBS*

3:15pm – 3:45pm

### Diagnosis of Narcolepsy and Hypersomnia in Children

*Emmanuel Mignot, MD, PhD*

3:45pm – 4:15pm

### Hypersomnia in Neurological Disorders

*Sejal Jain, MD*

4:15pm – 4:45pm

### Medical Treatment of Hypersomnia and Updates from Sleep Research Network (SRN)

*Narong Simakajornboon, MD*

## O31: Insomnia: Modifying Factors

2:45pm – 4:45pm

Room 102A

**Chair:** Jennifer Martin, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Evaluate factors modifying insomnia.

- 0504** 2:45pm - 3:00pm  
**NEUROPLASTICITY IN COMORBID CHRONIC PAIN AND CHRONIC INSOMNIA: IMPACT OF IMPROVED SLEEP ON CENTRAL SENSITIZATION**  
*McCrae CS, Craggs J, Vathauer K, Mundt J, O'Shea A, Staud R, Berry RB, Perlstein W, Waxenberg L, Robinson M*
- 0505** 3:00pm - 3:15pm  
**THE INTERACTION BETWEEN STRESS AND SLEEP-REACTIVITY: A PROSPECTIVE INVESTIGATION OF THE STRESS-DIATHESIS MODEL OF INSOMNIA**  
*Pillai V, Roth T, Mengel HJ, Drake CL*
- 0506** 3:15pm - 3:30pm  
**MISPERCEPTION OF TIREDNESS IN INDIVIDUALS WITH INSOMNIA**  
*Akram U, Ellis J, Myachykov A, Barclay N*
- 0507** 3:30pm - 3:45pm  
**IS THERE HABITUATION DURING SLEEP IN INSOMNIA INDIVIDUALS?**  
*Bastien C, Perlis ML, Ceklic T*
- 0508** 3:45pm - 4:00pm  
**CORTICAL AROUSAL IS PRESENT IN ALERT INSOMNIACS BUT ABSENT IN SLEEPY INSOMNIACS WITHIN SHIFT WORK DISORDER: AN ERP STUDY**  
*Gumenyuk V, Belcher R, Drake CL, Spear L, Roth T*
- 0509** 4:00pm - 4:15pm  
**TIME MONITORING BEHAVIOR: FACTOR ANALYSIS AND RELATIONSHIP TO SLEEP MEDICATION USE**  
*Dawson SC, Krakow B, Mclver ND, Ulibarri VA*
- 0510** 4:15pm - 4:30pm  
**NIGHT TO NIGHT VARIABILITY AMONG OLDER ADULTS WITH INSOMNIA: ASSOCIATIONS WITH SLEEP QUALITY AND DIABETES RISK**  
*Baron KG, Reid KJ, Malkani RG, Zee PC*
- 0511** 4:30pm - 4:45pm  
**MODERATORS AND MEDIATORS OF THE RELATIONSHIP BETWEEN STRESS AND INSOMNIA: STRESSOR CHRONICITY, COGNITIVE INTRUSION, AND COPING BEHAVIORS**  
*Mengel HJ, Pillai V, Roth T, Belcher R, Drake CL*

## O32: Biobehavioral Impact of Short Sleep Duration and Shift Work

2:45pm – 4:45pm  
 Room L100J

**Co-chairs:** Jeanne Duffy, PhD; and Gemma Paech, PhD

**Psychologist Level of Content:** Intermediate

**Objective:** Describe the adverse consequences of short sleep duration, whether natural or induced by work schedule, on behavior, performance and health.

- 0210** 2:45pm - 3:00pm  
**EARLY BEDTIMES REDUCE 24-HR INTAKE FOR ADOLESCENTS WITH EARLY CHRONOTYPES, BUT NOT THOSE WITH LATE CHRONOTYPES**  
*Beebe DW, Rausch J, Zhou A, Noe O, Simon S*
- 0211** 3:00pm - 3:15pm  
**THE RELATIONSHIP BETWEEN SLEEP DURATION AND CARDIOMETABOLIC RISK FACTORS DEPENDS ON RACE/ETHNICITY AND WHETHER RISK FACTORS WERE SELF-REPORTED OR OBJECTIVELY-DETERMINED**  
*Grandner MA, Chakravorty S, Perlis M, Oliver L, Gurubhagavatula I*
- 0212** 3:15pm - 3:30pm  
**SLEEP DURATION AND SOCIAL DEPRIVATION IN TWINS**  
*Watson NF, Horn E, Buchwald D, Turkheimer E, Vitiello MV, Pack AI, Duncan GE*
- 0213** 3:30pm - 3:45pm  
**MITOCHONDRIAL DNA COPY NUMBER IN SLEEP DURATION DISCORDANT MONOZYGOTIC TWINS**  
*Wrede JE, Mengel-From J, Buchwald D, Vitiello MV, Pack AI, Bamshad M, Noonan C, Christiansen L, Christensen K, Watson NF*
- 0214** 3:45pm - 4:00pm  
**SEASONAL CHANGES OF PERFORMANCE IN DIFFERENT NATURAL DAYLIGHT CONDITIONS AMONG SHIFT WORKERS LIVING IN NORTHERN REGION**  
*Bochkarev M, Ragozin O, Sirusina AV*

**0215** 4:00pm - 4:15pm  
**SHIFTWORK PRACTICES IN THE UNITED STATES NAVY: A STUDY OF SLEEP AND PERFORMANCE IN WATCHSTANDERS ABOARD THE USS JASON DUNHAM**  
*Shattuck NL, Waggoner LB, Young RL, Smith CS, Matsangas P*

**0216** 4:15pm - 4:30pm  
**FIGHTING FIRES AND FATIGUE: EFFECT OF 4-HOURS SLEEP DEPRIVATION ON FIREFIGHTER PHYSICAL PERFORMANCE DURING SIMULATED BUSHFIRE SUPPRESSION**  
*Vincent G, Ferguson S, Tran J, Aisbett B*

**0217** 4:30pm - 4:45pm  
**IMPACT OF HIGH DOSE CAFFEINE ON DAYTIME RECOVERY SLEEP FOLLOWING SLEEP DEPRIVATION**  
*Paech GM, Della Vedova C, Pajcin M, Grant C, Kamimori GH, Banks S*

 **S21: The Importance of Sleep Disturbance in Mood Disorders: Evidence from Clinical Interventions and Scientific Experiments**

**2:45pm – 4:45pm**  
**Room 102F**

**Chair:** Jared Minkel, PhD  
**Faculty:** Ruth Benca, MD, PhD; Andrew Krystal, MD; and Rachel Manber, PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Discuss the nature of sleep abnormalities in patients with major depression;
2. Describe the beneficial effects of treating sleep problems in patients with major depression; and
3. Identify behavioral and biological consequences of experimental sleep deprivation on emotional function.

2:45pm – 3:15pm **Sleep Disturbances in Major Depression**  
*Ruth Benca, MD, PhD*

3:15pm – 3:45pm **Cognitive-Behavioral Treatments for Insomnia and Major Depression**

*Rachel Manber, PhD*

3:45pm – 4:15pm **Pharmacotherapy for Insomnia and Major Depression**

*Andrew Krystal, MD*

4:15pm – 4:45pm **Affective Consequences of Experimental Sleep Deprivation**

*Jared Minkel, PhD*

**S22: Autonomic Consequences of Sleep Loss and Risk of Hypertension**

**2:45pm – 4:45pm**  
**Room 205A**

**Chair:** Huan Yang, PhD  
**Faculty:** Jason Carter, PhD; Julio Fernandez-Mendoza, PhD; and Monika Haack, PhD

**Psychologist Level of Content:** Intermediate

**Objectives:**

1. Review the autonomic consequences of sleep loss which could contribute to increased risk of hypertension;
2. Recognize the sex differences in autonomic and hemodynamic responses to sleep loss; and
3. Discuss a novel behavioral approach to lowering blood pressure.

2:45pm – 3:15pm **Influences of Acute Total Sleep Deprivation and Repetitive Sleep Restriction on Baroreflex Sensitivity and Blood Pressure Regulation**

*Huan Yang, PhD*

3:15pm – 3:45pm **Sleep Deprivation and Neural Control in Humans: Does Sex Matter?**

*Jason Carter, PhD*

3:45pm – 4:15pm **Insomnia with Objective Short Sleep Duration and Risk of Hypertension**

*Julio Fernandez-Mendoza, PhD*

4:15pm – 4:45pm **Can We Lower High Blood Pressure and Vascular/Inflammatory Markers by Improving Sleep?**

*Monika Haack, PhD*



## S23: Does OSA Cause Metabolic Consequences: Summary of the Existing Evidence and Presentation of New Data

2:45pm – 4:45pm

Room 101E

**Co-chairs:** Ronald Grunstein, MD, PhD; and Camilla Hoyos, PhD

**Faculty:** Vsevolod Polotsky, MD, PhD; Naresh Punjabi, MD; and Esra Tasali, MD

**Psychologist Level of Content:** Introductory

### Objectives:

1. Describe the physiological mechanisms for why OSA may cause metabolic consequence;
2. Discuss evidence from randomized CPAP treatment studies investigating markers of metabolic health;
3. Review the most recent data, some unpublished, from randomized CPAP sham-controlled studies regarding metabolic health in both non-diabetic and diabetic patients; and
4. Identify the best direction to be taken for new research in the area of metabolic health.

|                 |   |
|-----------------|---|
| 2:45pm – 2:50pm | <b>Introduction</b><br><i>Ronald Grunstein, MD, PhD</i>   |
| 2:50pm – 3:10pm | <b>Potential Mechanisms Linking OSA with Metabolic Dysfunction</b><br><i>Vsevolod Polotsky, MD, PhD</i>   |
| 3:10pm – 3:30pm | <b>The Effect of CPAP Treatment on Metabolic Health: Summary of the Evidence from Randomized Controlled Studies</b><br><i>Camilla Hoyos, PhD</i>  |
| 3:30pm – 3:50pm | <b>Effects of CPAP therapy on Insulin Sensitivity and Glycemia in Non-Diabetics and Diabetics: Results from Two Randomized Control Trials in Sleep Apnea</b><br><i>Naresh Punjabi, MD</i> |
| 3:50pm – 4:10pm | <b>Optimal CPAP Treatment: Effects on Glucose Metabolism</b><br><i>Esra Tasali, MD</i>  |
| 4:10pm – 4:45pm | <b>Discussion</b>   |

### LBA 1

12:40pm – 12:55pm

#### Home Sleep Duration and Glycemia in Lean and Obese Adolescents

Koren D<sup>1</sup>, O'Sullivan K<sup>1</sup>, Gozal L<sup>2</sup>, Bhattacharjee R<sup>2</sup>, Gozal D<sup>2</sup>

<sup>1</sup>Departments of Pediatrics and Medicine, Section of Adult and Pediatric Endocrinology, Diabetes and Metabolism, University of Chicago, Chicago, IL, USA, <sup>2</sup>Department of Pediatrics, Section of Pediatric Sleep Medicine, University of Chicago, Chicago, IL, USA

**Introduction:** Self-inflicted behaviorally mediated sleep restriction is rampant among adolescents, who may sleep as little as 6.4 hours on weeknights. In adults, chronic sleep restriction increases type 2 diabetes risk and experimental sleep restriction causes acute insulin resistance and glucose intolerance. Pediatric studies have associated short sleep with insulin resistance, but have not examined *home* sleep duration's influence on post-prandial glucose metabolism. We report on a pilot study examining relationships between home sleep and dynamic glucose and insulin homeostasis in adolescents.

**Methods:** 10 adolescents (age 13-18 years, Tanner 2-5) underwent oral glucose tolerance test (OGTT), anthropometrics, overnight polysomnogram, and home sleep assessment via actigraphy and sleep diaries. Continuous variables were analyzed by correlation analysis. Linear regressions examined associations between home sleep duration and metabolic outcomes, controlling for weight.

**Results:** We found significant negative associations between home sleep duration (actigraphy) and weight ( $r=-0.63$ ,  $p=0.049$ ) and OGTT 90-minute glucose ( $r=-0.66$ ,  $p=0.036$ ). Trends emerged towards associations between sleep duration and waist circumference ( $r=-0.60$ ,  $p=0.086$ ), fasting insulin ( $r=-0.59$ ,  $p=0.074$ ) and insulin resistance measures, i.e. homeostasis model assessment of insulin resistance (HOMA-IR:  $r=-0.56$ ,  $p=0.091$ ), and whole-body insulin sensitivity index (higher values denote greater insulin sensitivity:  $r=+0.56$ ,  $p=0.091$ ). Linear regression analysis revealed that sleep duration was the primary predictor of 90-minute glucose ( $R^2$  change=0.44,  $p=0.036$ ) and that body weight was not a significant predictor.

**Conclusions:** In this pilot study, the first to our knowledge to examine potential interrelationships between home sleep duration and dynamic insulin and glucose homeostasis in

adolescents, significant negative relationships between home sleep duration and both weight and post-challenge glucose levels were identified, and trends towards negative associations between home sleep duration and both central obesity and insulin resistance were present. Our early results point towards an association between sleep and glucose/insulin homeostasis in adolescents that may be independent of body weight.

**Support:** This study was supported by a CTSA UL1 TR000430 award.

### LBA 2

12:55pm – 1:10pm

#### Optogenetic Inhibition of Basal Forebrain Parvalbumin GABA Neurons Suppresses Cortical Activation from Both Gamma Band Auditory Stimulation and Hypercarbia-induced Arousals from Sleep

Thankachan S, Cordeira JW, Kim T, McNally JM, McKenna JT, Basheer R, Strecker RE, Brown RE, McCarley RW  
VA Boston Healthcare System & Harvard Medical School, Brockton, MA, USA

**Introduction:** We hypothesized that basal forebrain (BF) parvalbumin GABA (pvGABA) neurons form a key final common pathway for cortical activation from both sensory and visceral stimuli. We used the 40 Hz auditory steady state response (ASSR) as sensory stimuli and measured the resulting activation of cortical gamma band oscillations (GBO, ~40 Hz). Visceral stimuli were hypercarbia (10% CO<sub>2</sub>), to model obstructive sleep apnea and its cortical activation and arousal from sleep.

**Methods:** For optogenetic inhibition, we bilaterally injected a viral vector (AAV-FLEX-ArchT-GFP) with the proton pump ArchT and a green fluorescent protein marker (GFP) into the BF of parvalbumin (PV)-Cre mice (n=12), and histologically verified transduction. Inhibition was induced by 532 nM bilateral laser illumination preceding and during the 500ms ASSR or 30s hypercarbia stimuli and was compared with no illumination in the same animal.

**Results:** Projections of BF pvGABA neurons to frontal cortex was confirmed by GFP-labeled fiber tracing. Auditory Stimuli: In each of 8 successfully transduced mice, ArchT inhibition during wakefulness of BF PV cells attenuated ASSR-elicited GBO (binomial  $p<0.01$ ). Overall,

ArchT inhibition reduced FFT power near 40 Hz from no-inhibition mean of  $1.88 \pm 0.4$  to  $1.22 \pm 0.2$  microvolts-squared. Moreover, preliminary data indicated a 23% reduction in arousals from NREM by loud white noise sounds (30 dB>background). Hypercarbia: With bilateral ArchT BF PV inhibition, NREM EEG arousal latencies with hypercarbia in 5 mice were significantly increased ( $6.5 \pm 0.8$ s without ArchT,  $13.1 \pm 1.7$ s with ArchT, paired t-test,  $p=0.002$ ), an increase of 101.5%. Additionally, under control conditions, arousals occurred at a mean ambient CO<sub>2</sub> level of  $6.3 \pm 0.6\%$ , but when bilateral ArchT BF PV inhibition was applied, the CO<sub>2</sub> level for arousal was significantly increased to  $8.2 \pm 0.8\%$  (paired t-test,  $p=0.025$ ).

**Conclusion:** Inhibition of BF pvGABA neurons confirms their key role in cortical activation from both sensory (auditory) and visceral (respiratory) stimuli.

**Support:** Dept. of Veterans Affairs (VA merit), MH039683, HL095491 (Proj.3), MH094803, NS079866.

## LBA 3

1:10pm – 1:25pm

### Non-visual Effects of Light on Mood Through the Melanopsin Pathway in Seasonal Depression

Roecklein KA<sup>1,2</sup>, Miller MA<sup>1</sup>, Donofry SD<sup>1</sup>, Hasler BP<sup>3</sup>, Franzen PL<sup>3</sup>, Gamlin PD<sup>4</sup>

<sup>1</sup>Department of Psychology, University of Pittsburgh, Pittsburgh, PA, USA, <sup>2</sup>The Center for the Neural Basis of Cognition, Pittsburgh, PA, USA, <sup>3</sup>Department of Psychiatry, University of Pittsburgh School of Medicine, University of Pittsburgh, Pittsburgh, PA, USA, <sup>4</sup>Department of Ophthalmology, School of Medicine, University of Alabama, Birmingham, AL, USA

**Introduction:** Individual differences in the effect of light on mood, mediated by retinal subsensitivity, may explain seasonal affective disorder (SAD). Previously we found reduced retinal melanopsin cell responding in SAD (post-illumination pupil response, PIPR). However, the effect of light exposure prior to testing the PIPR could be significant given differential light exposure in SAD, and has not yet been studied.

**Methods:** Participants include 33 individuals with SAD (84% Female; age  $M=38.4$ ,  $SD=13.6$ ), and 17 controls (73% Female; age  $M=34.1$ ,  $SD=12.8$ ). The PIPR was assessed in summer and winter. Light exposures (1 sec)

were 15.78nm full width half-maximum (FWHM 632.9nm) and 22.68nm FWHM (467.7nm) and 13.5 log Photons/cm<sup>2</sup>/s retinal irradiance accounting for age-related blue light absorption. Light exposure in the days prior to testing was measured using actigraphy.

**Results:** Total photons on the day of PIPR testing accounted for significant variation in PIPR values in SAD but not controls. Blue total photons accounted for the greatest proportion of variance in PIPR ( $R^2=0.318$ ,  $\beta=0.39$ ,  $p=0.013$ ), and remained a predictor ( $R^2$  change=0.14,  $p=0.013$ ) when controlling for gender, chronotype, and time since wake. Furthermore, the PIPR was lower in SAD compared to controls ( $F(1,50.5)=6.34$ ,  $p<0.05$ ) and lower in evening chronotypes ( $F(1,53.2)=13.7$ ,  $p<0.001$ ) even when including group, season, gender, age, testing time, and wake time.

**Conclusion:** These data are the first to link light exposure and the PIPR in SAD. We speculate that low light levels in SAD trigger downstream changes in mood and behavior, and that the link between light and SAD may be mediated by the PIPR.

**Support:** The study was supported by MH096119.

## LBA 4

1:25pm – 1:40pm

### Efficacy and Safety of Oral ADX-N05 for the Treatment of Excessive Daytime Sleepiness in Adults with Narcolepsy: Results of a Randomized, Double-Blind, Placebo-Controlled Trial

Black J<sup>1,6</sup>, Swick T<sup>2</sup>, Feldman N<sup>3</sup>, Doekel R<sup>4</sup>, Khayrallah M<sup>5</sup>, Bream G<sup>5</sup>, Ruoff C<sup>6</sup>

<sup>1</sup>Jazz Pharmaceuticals, Inc., Palo Alto, CA, USA, <sup>2</sup>Neurology and Sleep Medicine Consultants of Houston, University of Texas-Houston School of Medicine, Houston, TX, USA, <sup>3</sup>St. Petersburg Sleep Disorders Center at Palms of Pasadena Hospital, St. Petersburg, FL, USA, <sup>4</sup>Sleep Disorders Center of Alabama, Birmingham, AL, USA, <sup>5</sup>Aerial BioPharma, Morrisville, NC, USA, <sup>6</sup>Stanford Sleep Medicine Center, Redwood City, CA, USA

**Introduction:** ADX-N05 (N05) is a unique wake-promoting agent with dopaminergic and noradrenergic activity that is being evaluated for the treatment of excessive daytime sleepiness (EDS) in adults with narcolepsy. >>>>

## Late Breaking Abstracts

**Methods:** This double-blind, placebo-controlled, parallel-group, multicenter study evaluated safety and efficacy of N05 over 12 weeks in subjects aged 18-70 years with an ICSD-2 diagnosis of narcolepsy. Subjects were randomized to once-daily placebo (n=49) or N05 (n=44). Doses of N05 were 150 mg/day weeks 1-4 and 300 mg/day weeks 5-12. Co-primary efficacy endpoints were change from baseline to last assessment in average sleep onset latency (SOL) on the Maintenance of Wakefulness Test (MWT) and Clinical Global Impression-Change (CGIC). Secondary endpoints included change from baseline at weeks 4 and 12 on the Epworth Sleepiness Scale (ESS).

**Results:** Week 4 changes from baseline were significantly greater with N05 150 mg relative to placebo: increased MWT SOL (9.5 minutes vs 1.4 minutes;  $P<0.0001$ ), CGIC improvement (80% vs 51%;  $P=0.0066$ ) and decreased ESS scores (5.6 points vs 2.4 points;  $P=0.0038$ ). At week 12, following 8 weeks of 300 mg, N05 resulted in greater improvement from baseline than placebo on MWT SOL (12.8 minutes vs 2.1 minutes;  $P<0.0001$ ), ESS (8.5 points vs 2.5 points;  $P<0.0001$ ), and proportion of patients with CGIC improvement (86% vs 38%;  $P<0.0001$ ). Three subjects (6.8%) in the N05 group discontinued due to adverse events (AEs). The most common AEs with N05 vs placebo were headache (16% vs 10%), nausea (14% vs 6%), diarrhea (11% vs 6%), insomnia (14% vs 2%), decreased appetite (14% vs 0%) and anxiety (11% vs 0%). Two serious AEs (conversion disorder, acute cholecystitis) in the N05 group were considered probably unrelated to N05.

**Conclusion:** At doses of 150-300 mg/day, N05 was well-tolerated and significantly improved objective and subjective symptoms of EDS in adults with narcolepsy.

**Support:** This study was supported by Aerial BioPharma.

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Tuesday, June 3  
12:20 p.m. - 1:20 p.m.  
Minneapolis Convention Center  
Room 101E

- 3 After June 1, visit [www.welltrinsic.com](http://www.welltrinsic.com) to join online. Network membership is **FREE** for up to one year for board certified sleep medicine physicians. Network membership enrollment for accredited sleep centers is coming soon.

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## Industry Supported Activities

Industry Supported Activities are supported by SLEEP 2014 exhibitors. While held in conjunction with SLEEP 2014, these events are not part of the scientific program that is coordinated by the APSS Program Committee.

### Industry Product Theaters

The Industry Product Theaters, located in the back of the exhibit hall, will feature lunch time presentations. Boxed lunches will be provided; CME is not provided for these presentations. Please visit the exhibitors' booths for additional information and to register.

#### Monday, June 2

12:30pm-1:30pm

ResMed – Industry Product Theater #1  
Xenoport – Industry Product Theater #2

#### Tuesday, June 3

12:30pm-1:30pm

Philips Respironics – Industry Product Theater #1

### Industry Supported Events

#### Clinical Decision-Making in Narcolepsy Management

*presented by Voxmedia, LLC and supported by Jazz Pharmaceuticals*

Monday, June 2, 6:15pm – 8:45pm

Hyatt Regency Minneapolis, Nicollet Ballroom

#### Light is Medicine

*presented and supported by Lighting Science*

Monday, June 2, 6:15pm – 9:00pm

Hyatt Regency Minneapolis, Regency Room

#### 4 Concepts to Practice in RLS

*presented by L&M Healthcare Communications and supported by UCB, Inc.*

Monday, June 2, 6:15pm – 9:30pm

Hilton Minneapolis, Symphony II/III

**Booth  
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## Clinical Decision-Making in Narcolepsy Management:

STATE · OF · THE · ART



Monday, June 2, 2014

Registration and Dinner

6:15 pm – 6:45 pm

Symposium

6:45 pm – 8:45 pm

Hyatt Regency Minneapolis  
Nicollet Ballroom, Lobby Level

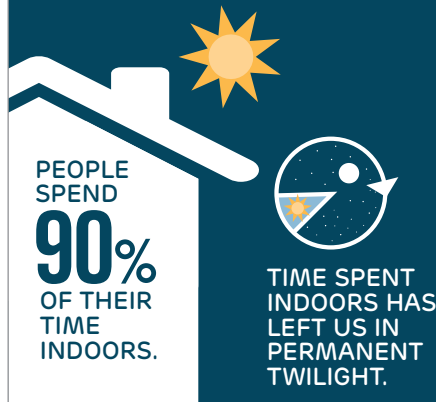
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## 4 Concepts to Practice in RLS:

An interactive educational  
symposium held during  
SLEEP 2014



Monday, June 2, 2014

The Hilton Minneapolis  
1001 Marquette Avenue South  
Minneapolis, MN 55403

Time: 6:15 PM – 9:30 PM

Room: Symphony Ballrooms II & III,  
2nd Floor

### Dopaminergic Role in Pathophysiology

Stefan Clemens, PhD  
East Carolina University

### Symptoms Pathophysiology

David Rye, MD, PhD  
Emory University

### Treatment Guidelines & Recommendations

John Winkelman, MD, PhD  
Massachusetts General Hospital

### Long-Term Safety

Richard Allen, PhD  
Johns Hopkins University

Wrap-Up, Summary,  
Questions, and Comments



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### Speakers:

Cary B Shames,  
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Patrick J Strollo, Jr.,  
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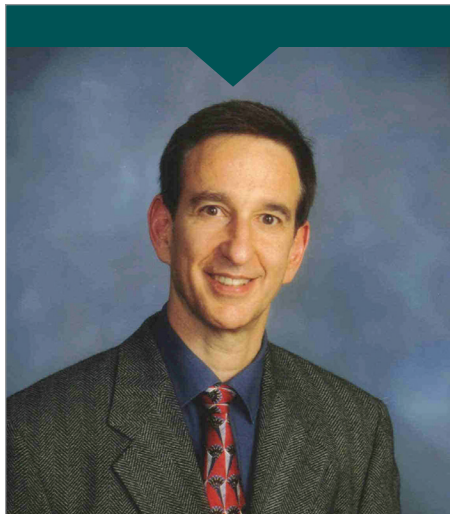
### Date:

Monday, June 2nd  
12:30-1:30 pm  
Industry Product Theater #1



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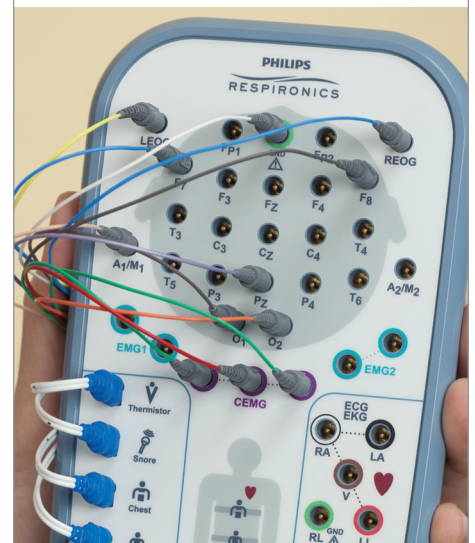
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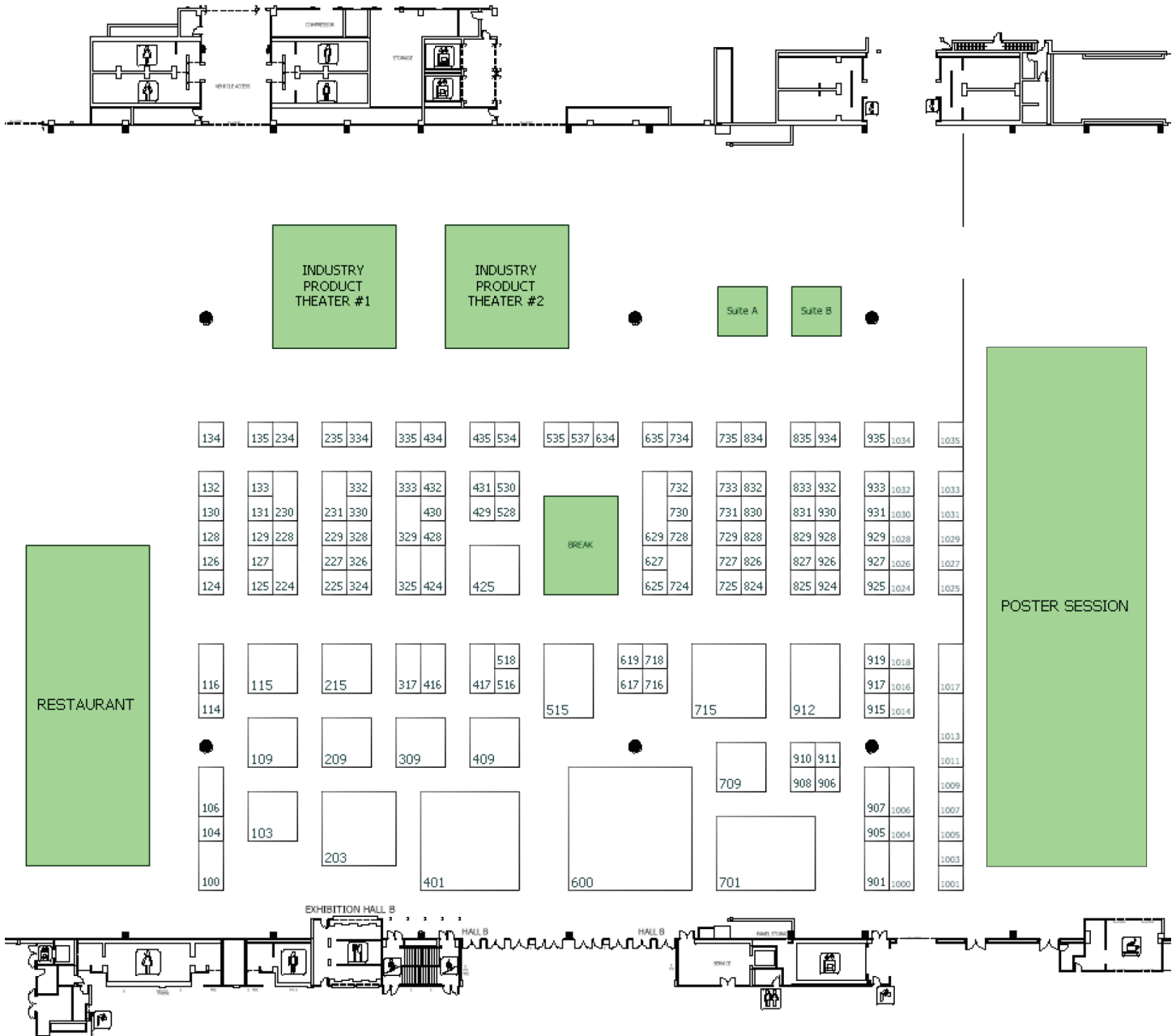


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# Exhibit Hall Floor Plan

Minneapolis Convention Center

as of 4/28/2014



| Company Name  | Booth # | Company Name                           | Booth # |
|---|---------|--|---------|
| ActiGraph   | 724     | DeVilbiss Healthcare                   | 100     |
| Advanced Brain Monitoring                                 | 619     | DME Data Solutions, Inc.               | 330     |
| Airway Management, Inc.                                   | 227     | Dream Water                            | 333     |
| Ambu Inc.   | 530     | Dymedix Diagnostics, Inc.              | 1006    |
| Ambulatory Monitoring, Inc.                               | 224     | Edia, Inc.                             | 231     |
| Apex Medical Corp.  | 906     | Elsevier Inc.                          | 114     |
| ApniCure, Inc.  | 215     | E-Top Union Inc.                       | 1001    |
| Battery Power Solutions                                   | 428     | Ez Sleep In-Home Testing               | 317     |
| Beaumont Products, Inc.                                   | 832     | Fisher & Paykel Healthcare             | 715     |
| BeHealth Solutions, LLC                                   | 537     | Frantz Design Inc. - Myerson Tooth Co. | 1000    |
| Better Rest Solutions                                     | 731     | Gensavis Pharmaceuticals, LLC          | 924     |
| BIOPAC Systems, Inc.                                      | 910     | Great Lakes Orthodontics, Ltd.         | 727     |
| Board of Registered Polysomnographic Technologists (BRPT) | 1004    | HoZer, Inc.                            | 730     |
| BRAEBON Home Apnea Testing                                | 629     | Hsiner Co., Ltd.                       | 735     |
| Brain Vision, LLC   | 635     | Human Design Medical                   | 115     |
| Cadwell Laboratories, Inc.                                | 709     | iDAPT Somno, Inc.                      | 732     |
| CamNtech, Inc.  | 824     | Indigo Arc, LLC                        | 625     |
| CareCredit  | 535     | Infinite Therapeutics                  | 919     |
| CareFusion  | 109     | Inspire Medical Systems, Inc.          | 106     |
| Cell Power, LLC   | 834     | iSideSleep                             | 432     |
| Chase Dental SleepCare                                    | 828     | Itamar Medical                         | 907     |
| Choice Laboratory Services                                | 1005    | Jazz Pharmaceuticals, Inc.             | 401     |
| Circadiance   | 718     | Jazz Pharmaceuticals, Inc.             | 627     |
| Cleveland Clinic Wellness Enterprise                      | 733     | Jones & Bartlett Learning              | 332     |
| CleveMed  | 435     | KEGO FMI Diagnostic Solutions          | 725     |
| Compumedics USA, Inc.                                     | 309     | LifeWatch Services, Inc.               | 116     |

| Company Name                              | Booth # | Company Name                               | Booth # |
|---|---------|--|---------|
| Lighting Science                          | 1013    | Seven Dreamers Laboratories, Inc.          | 103     |
| Lippincott, Williams & Wilkins            | 534     | Sleep Multimedia, Inc.                     | 430     |
| Magic Massage Therapy                     | 334     | Sleep Services of America, Inc.            | 1014    |
| Medtronic Surgical Technologies           | 228     | Sleep Source Alliance ENT                  | 225     |
| MGC Diagnostics                           | 230     | Sleep Strategies, Inc.                     | 434     |
| MVAP Medical Supplies, Inc.               | 416     | SleepCEU                                   | 431     |
| Narcolepsy Network, Inc.                  | 328     | SleepEx Acquisition, LLC                   | 329     |
| Natus Neurology Incorporated              | 515     | Sleepio                                    | 1017    |
| NeilMed Pharmaceuticals, Inc.             | 424     | SleepMed Inc.                              | 634     |
| Nihon Kohden America, Inc.                | 912     | SleepSense                                 | 915     |
| Nonin Medical, Inc.                       | 901     | SleepWorks/PDS                             | 908     |
| NovaSom Inc.                              | 528     | SomnoMed                                   | 425     |
| PAD A CHEEK, LLC                          | 429     | SOMNOmedics                                | 417     |
| Philips Respironics                       | 600     | Somnoware Healthcare Systems, Inc          | 409     |
| Pillar Palatal, LLC                       | 1016    | Theravent Inc.                             | 617     |
| Pinnacle Technology, Inc.                 | 825     | Transcend                                  | 325     |
| Pulsar Informatics, Inc.                  | 518     | Tri-State Adjustments, Inc.                | 830     |
| Radiometer America Inc.                   | 335     | TSI Healthcare                             | 324     |
| RemZzzs                                   | 734     | Vanda Pharmaceuticals, Inc.                | 701     |
| ResMed                                    | 203     | VGM Sleep Center Network                   | 833     |
| Re-Timer Sleep Glasses                    | 911     | Visit Seattle                              | 1003    |
| RT/Sleep Review                           | 326     | Wake Up Narcolepsy, Inc.                   | 728     |
| Salimetrics                               | 826     | Welltrinsic Sleep Network                  | 516     |
| SANOSTEC Corp.                            | 917     | World Association of Sleep Medicine (WASM) | 729     |
| Sensory Medical, Inc.                     | 1018    | XenoPort, Inc.                             | 209     |
| Sentec, by Master Distributor Bemes, Inc. | 716     | Zephyr Sleep Technologies                  | 905     |



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830-755-8036

[www.CamNtech.com](http://www.CamNtech.com)

CamNtech Ltd. is a leader in designing, manufacturing & supporting Ambulatory Devices used in Sleep Research. Our product line consist of: Actiheart, Cardio, Actiwave, PRO-Diary, MotionWatch 8, and Actiwatch Mini. By combining ECG and three axis of accelerometry CamNtech set a new standard in Sleep & Circadian measurement and monitoring.

**Booth Number: 535**

**CareCredit**

Costa Mesa, CA

800-300-3046

[www.carecredit.com](http://www.carecredit.com)

Help more of your patients improve their quality of life by offering them CareCredit's Payment Option. Grow your practice, reduce A/R and increase cash flow. For patients facing higher deductibles or for those that don't have insurance CareCredit can help them start treatment immediately with a convenient monthly payment plan. Your practice gets paid in 2 business days.

**Booth Number: 109**

**CareFusion**

San Diego, CA

[www.carefusion.com](http://www.carefusion.com)

CareFusion combines technology and intelligence to measurably improve patient care. Our clinically proven products are designed to help improve the safety and cost of healthcare for generations to come. Some of our most trusted brands include Alaris®, ChloroPrep®, Pyxis®, PleurX®, V. Mueller® and VIASYS.

**Booth Number: 834**

**Cell Power, LLC**

Pleasanton, CA

[www.4longlife.com](http://www.4longlife.com)

Vitamin E: delta-tocotrienol is the smallest natural vitamin E molecule with potent anti-oxidant activity that can reach the inner cellular membranes to reduce oxidative stress, thereby increasing oxygen utilization within the mitochondrial electron transport system and increasing the efficiency of oxidative phosphorylation to produce Adenosine Triphosphate (ATP) – one of the ultimate foals of sleep apnea patients.

**Booth Number: 828**

**Chase Dental SleepCare**

Hauppauge, NY

[www.chasedentalsleepcare.com](http://www.chasedentalsleepcare.com)

Our system was developed in collaboration with dentists to provide a comprehensive dental sleep medicine program within an existing practice. We provide training for dentists and their staff on sleep apnea and treatment with oral appliance therapy. As well as billing services.

**Booth Number: 1005**

**Choice Laboratory Services**

Dallas, TX

888-595-8477

[www.yourchoicelab.com](http://www.yourchoicelab.com)

**Choice Lab is a National provider**

**of clinical toxicology services whose testing enable providers to adhere to Federal and State regulations. Our compliance algorithm is a precise, efficient and effective clinical tool that, on a daily basis, helps our clients mitigate the risk of prescribing scheduled medications to their patients.**

**Booth Number: 718**

**Circadiance**

Export, PA

888-825-9640

[www.circadiance.com](http://www.circadiance.com)

Circadiance creates and markets high-performance products to give people the freedom to sleep and breathe in comfort. Our designs have revolutionized the future of positive airway pressure (PAP), and we're continuing to develop new ways to help our customers.

**Booth Number: 733**

**Cleveland Clinic Wellness Enterprise**

Cleveland, OH

[www.ClevelandClinicWellness.com](http://www.ClevelandClinicWellness.com)

A driving force in health & prevention, Cleveland Clinic Wellness Enterprise partners with organizations to create a culture of good health & high performance. Focused on changing behavior which improves performance and quality of life, CCWE combines science and proven engagement strategies to improve participant health.

**Booth Number: 435**

**CleveMed**

Cleveland, OH

877-253-8363

[www.CleveMed.com](http://www.CleveMed.com)

CleveMed is a leader in medical services and devices for portable sleep testing. The SleepView® and CleveMedSleepview.com Web Portal allow providers to conduct home sleep testing for their patients with the support of sleep professionals. The SleepView solution is easy for patients, streamlines operations, and cost efficient for healthcare providers.

**Booth Number: 309**  
**Compumedics USA, Inc.**

Charlotte, NC  
877-717-3975  
www.compumedics.com

See More and Do More™ with Compumedics Sleep Systems. From research level recordings to home testing, Compumedics Sleep Systems perform. See our latest innovations including the GRAEL HD-PSG, SomtePSG and Somte HST Systems. See how to maximize the productivity of your enterprise with the ProFusion Nexus Lab Management Software.

**Booth Number: 100**  
**DeVilbiss Healthcare**

Somerset, PA  
800-338-1988  
www.DevilbissHealthcare.com

Celebrating 125 years of business, DeVilbiss Healthcare is a leader in the design, manufacture, and marketing of medical products that address the respiratory needs of patients in institutional and homecare settings. DeVilbiss products are manufactured primarily in the United States and are distributed in more than 100 countries around the world.

**Booth Number: 330**  
**DME Data Solutions, Inc.**

San Diego, CA  
855-723-7700  
www.dmedatasolutions.com

CPAP Inventory Management System. HST device Check-out/Check-in System. Patient Data Analyzer System.

**Booth Number: 333**  
**Dream Water**

Hollywood, FL  
305-792-7900  
www.drinkdreamwater.com

Dream Water is a natural, fast acting, 2.5 oz. shot with zero calories designed to help you relax, fall asleep and improve sleep quality. Dream Water is a natural alternative to prescription and OTC sleep aids for the 1 in 3 Americans with sleep problems.

**Booth Number: 1006**  
**Dymedix Diagnostics, Inc.**

Shoreview, MN  
888-212-1100  
www.dymedix.com

Dymedix offers a line of diagnostic sensors for your sleep lab needs. NEW: Disposable effort belts!

**Booth Number: 231**  
**Edia, Inc.**

Minneapolis, MN  
www.ediainc.com

**Booth Number: 114**  
**Elsevier Inc.**

Philadelphia, PA  
215-239-3400  
www.us.elsevierhealth.com

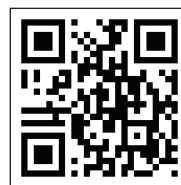
Elsevier is a leading publisher of health science publications, advancing medicine by delivering superior reference information and decision support tools to doctors, nurses, health practitioners and students. With an extensive media spectrum - print, online and handheld, we are able to supply the information you need in the most convenient format.



**Booth Number: 1001**  
**E-Top Union Inc.**

New Taipei City, Taiwan  
www.u-wish.com.tw

E-Top Union Inc. was established in 2006; our goal is to focus on the development and sale of CPAP and the related products. We expect to provide handy medical equipment with high quality to our customers and furthermore to benefit the global society.



**Booth Number: 317**  
**Ez Sleep In-Home Testing**

Westlake Village, CA  
888-240-7735  
www.EzSleepTest.com

Ez Sleep is an innovative national provider of diagnostic home sleep tests serving the needs of the medical and dental community.

**Booth Number: 715**  
**Fisher & Paykel Healthcare**

Irvine, CA  
800-446-3908  
www.fphcare.com

Fisher & Paykel is a leading innovator that excels in the treatment of Obstructive Sleep Apnea (OSA). We offer a comprehensive range of CPAP devices, masks and humidifiers that deliver sleep performance for an energized lifestyle.



**Booth Number: 1000**

**Frantz Design Inc. - Myerson Tooth Co.**

Chicago, IL  
800-423-2683  
myersonstooth.com

The EMA Oral Appliance from Myerson increases airway space by advancing the mandible using interchangeable straps. FDA cleared for the treatment of snoring and Obstructive Sleep Apnea, EMA's patient friendly design offers advantages not found in other oral appliances.

**Booth Number: 924**

**Gensavis Pharmaceuticals, LLC**

Greenville, SC  
www.NovaFerrum.com

NovaFerrum Liquid Iron Supplements TASTE GREAT. Come by our booth and we will provide you with a sample taste so you can see for yourself. NovaFerrum's main ingredient is of a polysaccharide-iron complex; free of iron salts, sugar free, and alcohol free. Naturally sweetened.

**Booth Number: 727**

**Great Lakes Orthodontics, Ltd.**

Tonawanda, NY  
800-828-7626  
www.greatlakesortho.com

For over 20 years, Great Lakes has been providing effective, clinically proven sleep appliances, diagnostic tools, and technical support to dentists for their patients with snoring and OSA. Stop by our booth to see the new Narval CC™ - the first and only CAD/CAM custom made MRD.

**Booth Number: 730**

**HoZer, Inc.**

Fort Atkinson, WI  
www.thehozerusa.com

Finally, CPAP without hose struggles! The HoZer significantly improves comfort and increases patient compliance. The HoZer improves mask performance and reduces mask exchanges. The HoZer eliminates ALL hose related sleep interruptions. The HoZer is 100% guaranteed. Stop making patients sleep with a hose in their bed! Distributorships are now available.

**Booth Number: 735**

**Hsiner Co., Ltd.**

Taichung City, Taiwan  
www.hsiner.com

HSINER is a leading manufacturer and exporter in Taiwan, specializing in the Respiratory, Emergency care, Anesthesia and Sleep Apnea products. Our company is certified with ISO 13485, CMDCAS ISO13485, CE and Taiwan GMP quality standards. We manufacture completely in house to allow us to be more in control of all the processes in the manufacturing and to provide products with consistent quality.



**Booth Number: 115**

**Human Design Medical**

Charlottesville, VA  
855-HDMUSA9 (855-436-8729)  
www.hdmusa.com

Human Design Medical (HDM) focuses on delivering lifestyle medical devices that fit the way users live their lives. We believe that if we can deliver devices that are more lifestyle-friendly we can encourage usage and increase everyday compliance.

Please visit us at Booth 115.

**Booth Number: 732**

**iDAPT Somno Inc.**

Toronto, ON  
844-APNEADX  
www.idaptsomno.com

Founded and incubated by the University Health Network and MaRS Innovation in Canada, iDAPT Somno offers a disruptive home-based sleep apnea diagnostic device called ApneaDx that is highly accurate, easy-to-use and cost-effective compared to traditional gold-standard PSG and other portable devices on the market.

**Booth Number: 625**

**Indigo Arc, LLC**

Rockville, MD  
866-800-1744

www.indigoarcmedical.com  
Indigo Arc Medical Systems has been offering robust, cloud-

based Sleep Practice Management and Workflow solutions since 2004. The Sleep Lab Management (SLaM) platform is a cloud based, pay as you go platform rich in features. These include patient health records, patient portal, staff/lab scheduling, clinic scheduling/records, scoring support, online interpretations, data/records management and archiving, practice performance dashboard and reports, integrated portals (patient, referring physician, lab partner, scoring partner), and referral tracking capabilities.

**Booth Number: 919**

**Infinite Therapeutics**

Kingston, NH  
www.infinitymassagechairs.com

The Infinity IT 8800 offers state of the art roller foot technology, thigh & hip massage, an amazing spinal decompression stretch, customized targeted massage, lumbar heat and music. Endless luxury, Ultimate Massage.



**Booth Number: 106**  
**Inspire Medical Systems, Inc.**  
Maple Grove, MN  
[www.inspiresleep.com](http://www.inspiresleep.com)  
Inspire Medical Systems, Inc. is a leading developer of implantable neurostimulation

systems to treat Obstructive Sleep Apnea (OSA). Utilizing well-established technologies from cardiac pacing and neurostimulation, Inspire developed a proprietary Upper Airway Stimulation (UAS) therapy designed to improve sleep and enrich the lives of people suffering from this challenging condition.



**Booth Number: 432**  
**iSideSleep**  
Seattle, WA  
855-777-5857  
[www.squiresleep.com](http://www.squiresleep.com)

iSideSleep delivers a superior night's sleep using a revolutionary sleep surface shaped to fit the human body. We reinvented the bed to optimally reposition the body into an inclined side-sleep position that eliminates pressure points and delivers natural therapy. Please join us at our booth for a test rest.

**Booth Number: 907**  
**Itamar Medical**

Franklin, MA  
888-748-2627  
[www.itamar-medical.com](http://www.itamar-medical.com)

Itamar Medical's medical devices are based on its proprietary non-invasive PAT® technology: WatchPAT™ device for the diagnosis and follow-up on treatment of obstructive sleep apnea, and EndoPAT™ for CVD diagnosis. WatchPAT™ is a portable home-based sleep test offering unparalleled ease-of-use and comfort while generating accurate validated clinical data at lowest fail rates.

**Booth Number: 401**  
**Jazz Pharmaceuticals, Inc.**

Palo Alto, CA  
[www.jazzpharma.com](http://www.jazzpharma.com)  
Jazz Pharmaceuticals is a specialty biopharmaceutical company that identifies, develops and commercializes products to meet unmet patient needs in narcolepsy, oncology, pain and psychiatry. Our US products in these areas include: Xyrem® (sodium oxybate), Erwinaze® (asparaginase Erwinia chrysanthemi), Prialt® (ziconotide), Luvox CR® (fluvoxamine maleate), and FazaClo® (clozapine, USP).

**Booth Number: 627**  
**Jazz Pharmaceuticals, Inc.**

Philadelphia, PA  
[www.jazzpharma.com](http://www.jazzpharma.com)  
Jazz Pharmaceuticals is a specialty biopharmaceutical company that identifies, develops and commercializes products to meet unmet patient needs in narcolepsy, oncology, pain and psychiatry. Our US products in these areas include: Xyrem® (sodium oxybate), Erwinaze® (asparaginase Erwinia chrysanthemi), Prialt® (ziconotide), Luvox CR® (fluvoxamine maleate), and FazaClo® (clozapine, USP).



**Booth Number: 332**  
**Jones & Bartlett Learning**  
Burlington, MA  
800-832-0034

[www.jblearning.com](http://www.jblearning.com)  
Jones & Bartlett Learning is a world-leading provider of instructional, assessment, and learning-performance management solutions for the secondary education, post-secondary education, and professional markets.



Our educational programs and services improve learning outcomes and enhance student achievement by combining authoritative content with innovative, proven, and engaging technology applications.

**Booth Number: 725**  
**KEGO FMI Diagnostic Solutions**

Steedman, MO  
800-600-1390  
[www.kegofmi.com](http://www.kegofmi.com)  
KEGO FMI Diagnostics Solutions is an international distributor of sleep and neurodiagnostic supplies. With locations in the USA and Canada, KEGO FMI is your national "One Stop Shop", representing major manufacturers of sleep and neurodiagnostic products. We look forward to becoming your favorite supplier.

**Booth Number: 116**  
**LifeWatch Services, Inc.**

Rosemont, IL  
877-774-9846  
[www.lifewatch.com](http://www.lifewatch.com)  
LifeWatch provides the NiteWatch home sleep service for unattended sleep testing of patients with suspected Obstructive Sleep Apnea (OSA). Our service utilizes the NOX T-3 monitor which provides 9 channels of data enabling an accurate diagnosis, which mirror those of a sleep lab for the diagnosis of OSA.



**Booth Number: 1013**

**Lighting Science**

**Satellite Beach, FL**

**www.lsgc.com**

**At Lighting Science, we unleash the science of light to make people and our planet look, feel**

**and heal better. We believe that lighting goes beyond simple illumination and our scientists have engineered a way to make lighting work with your body and the environment, not against it.**

**Booth Number: 534**

**Lippincott, Williams & Wilkins**

St. Louis, MO

www.lww.com

Books for sleep doctors, sleep techs, EEG, pediatric sleep, etc. Free shipping available at our booth.

**Booth Number: 334**

**Magic Massage Therapy**

Ocean City, MD

800-980-8579

www.magicmassagetherapy.com

Magic Massage Therapy specializes in the marketing & sales of high quality magic massagers. Using TENS (unit) technology our portable massagers are built with three main benefits: treat pain, massage & relaxation, and workout/tone muscles.

**Booth Number: 228**

**Medtronic Surgical Technologies**

Jacksonville, FL

www.medtronicENT.com

Medtronic ENT is a leading developer, manufacturer and marketer of surgical products for use by ENT specialists. Medtronic ENT markets over 5,000 surgical products worldwide addressing the major ENT subspecialties - Sleep, Sinus, Rhinology, Laryngology, Otolaryngology, Pediatric ENT and Image Guide Surgery.

**Booth Number: 230**

**MGC Diagnostics**

St. Paul, MN

800-950-5597

www.mgcdiagnostics.com

MGC Diagnostics® - a global medical technology company that is dedicated to diagnostic solutions for detecting, classifying, and managing cardiorespiratory disease. As the exclusive US and Canadian distributor of Sleep Virtual® BWII PSG and BW3 PSG/EEG systems, MGC Diagnostics offers comprehensive diagnostic systems for your COPD, asthma and sleep apnea patients.

**Booth Number: 416**

**MVAP Medical Supplies, Inc.**

Newbury Park, CA

877-735-6827

www.mvapmed.com

MVAP Medical Supplies, Inc. offers a large selection of supplies for sleep disorders testing. By providing superior customer service and technical service combined with unbeatable pricing, we are able to give 100% satisfaction to our customers. Order online or call toll free.

**Booth Number: 328**

**Narcolepsy Network, Inc.**

North Kingstown, RI

888-292-6522

www.narcolepsynetwork.org

Narcolepsy Network is a patient support organization. We advocate for people with narcolepsy; raise awareness; educate the medical and lay community; support research. We offer an annual conference, walks, support groups, on-line groups and more.

**Booth Number: 515**

**Natus Neurology Incorporated**

Middleton, WI

800-356-0007

www.natus.com

Natus presents a comprehensive line of laboratory and home Sleep Diagnostic and High-level Disinfection Systems. Our REMbrandt™, RemLogic™, Sandman®, SleepWorks™, Nicolet and Grass PSG applications, along with our family of PSG/EEG amplifiers and Enterprise Data Management, provide exceptional diagnostic options. Ask about our latest family of scalable amplifiers...Embletta MPR.

**Booth Number: 424**

**NeilMed Pharmaceuticals, Inc.**

Santa Rosa, CA

877-477-8633

www.neilmed.com

The mission of the company is to create and maintain safe, affordable and effective products to sustain long-term growth and create drug free and effective nasal/sinus care devices for millions of consumers worldwide.



**Booth Number: 912**  
**Nihon Kohden America, Inc.**  
 Irvine, CA  
 800-325-0283  
 www.nkusa.com



**Nihon Kohden's Neurology and Sleep product portfolio includes instrumentation for Polysomnography, Out of Center Sleep Testing, Epilepsy Monitoring, Electroencephalography, EEG & PSG Ambulatory Recording,**

**Wireless EEG & PSG, Electromyography, Evoked Potentials, Intra-operative and cEEG ICU monitoring. Nihon Kohden's instrumentation offers the flexibility and expandability needed to meet the changing demands of today's neurodiagnostic field.**

**Booth Number: 901**  
**Nonin Medical, Inc.**  
 Plymouth, MN  
 800-356-8874  
 www.nonin.com



**Nonin Medical, the inventor of finger pulse oximetry,**

**specializes in the design and manufacturing of noninvasive physiological monitoring solutions. Nonin distributes its pulse and regional oximeters, capnographs, sensors and software to healthcare professionals and consumers in more than 125 countries and has more than 200 OEM partners worldwide.**

**Booth Number: 528**  
**NovaSom Inc.**  
 Glen Burnie, MD  
 877-753-3775  
 www.novasom.com



**NovaSom, the first AASM-approved OCST supplier, offers the AccuSom home sleep test with wireless transmission of test results, reducing the time between diagnosis and therapy initiation. Our service models allow you to maintain**

**clinical control of patients, while avoiding capital expenditures, additional staff burden, and the hassle of managing devices.**

**Booth Number: 429**  
**PAD A CHEEK, LLC**  
 Stanardsville, VA  
 434-985-4003  
 www.padacheek.com

**The PAD A CHEEK mission is to help people with sleep apnea sleep more comfortably. By padding key areas of the interface, patients can use their CPAP with more comfort. Our products prevent irritation and marks keeping the therapy private and improving the likelihood that the patient will be adherent.**



**Booth Number: 600**  
**Philips Respironics**  
 Murrysville, PA  
 724-387-5200  
 www.philips.com/healthcare  
**Philips Respironics, a global leader in the sleep and**

**respiratory markets, is passionate about providing solutions that lead to healthier patients, healthier practices, and healthier businesses. For us, innovation is driven by gaining insight into the needs of the people who use our products in the areas of sleep apnea management, oxygen therapy, noninvasive ventilation and respiratory drug delivery.**

**Booth Number: 1016**  
**Pillar Palatal LLC**

Dallas, TX  
 www.pillarprocedure.com

**The Pillar Palatal Implant Procedure has been used to treat snoring and mild to moderate OSA in over 45,000 patients. It is done under local anesthetic in the doctor's office in less than 20 minutes. Patients return to normal activity immediately.**

**Booth Number: 825**  
**Pinnacle Technology, Inc.**

Lawrence, KS  
 785-832-8866  
 www.pinnaclelet.com

**Pinnacle Technology provides turn-key EEG/EMG systems for preclinical studies. Biosensors can be easily incorporated for simultaneous neurochemical measurements. Our innovative software scores and analyzes your sleep data. Sleep deprivation and fragmentation systems can operate in stand-alone mode or based on real-time biopotential feedback. Synchronized video can be added.**



**Booth Number: 518**  
**Pulsar Informatics, Inc.**  
 Philadelphia, PA  
 215-220-4250  
[www.pulsarinformatics.com](http://www.pulsarinformatics.com)  
 We specialize in  
 neurobehavioral performance

measurement. Our gold-standard PVT has been validated in laboratory research, clinical drug trials, and occupational settings, including NASA astronauts. The Joggle® Research platform delivers accurate cognitive testing on the iPad. STARwatch streamlines accurate actigraphy data collection to support remote studies and insomnia treatment.

**Booth Number: 335**  
**Radiometer America Inc.**

Westlake, OH  
 800-736-0600  
[www.radiometeramerica.com](http://www.radiometeramerica.com)

Radiometer's TCM TOSCA monitor helps clinicians assess the status of patients suffering from CO<sub>2</sub> retention during sleep, chronic hypercapnia and terminal respiratory insufficiency. Lightweight, portable and simple to maintain, the TCM TOSCA provides patient status and trends at a glance and other noninvasive measurements at the touch of a screen.



**Booth Number: 734**  
**RemZzzs**  
 Jackson, MI  
 877-473-6999  
[www.RemZzzs.com](http://www.RemZzzs.com)  
**Natus Design, Inc. owns the Patent, FDA exempt medical**

**product, RemZzzs CPAP Mask Liners. RemZzzs is a disposable cotton liner worn with a PAP (Positive Air Pressure) mask and provides the following benefits to its users: Eliminates and/or reduces noisy air leaks and skin irritations, absorbs facial moisture and oil, promotes a comfortable full night of sleep... for patient and partner. (Ask about our new products)**

**Booth Number: 203**  
**ResMed**

San Diego, CA  
 800-424-0737  
[www.resmed.com](http://www.resmed.com)

ResMed is a global leader in medical equipment for the screening, treatment, and management of sleep disordered breathing and other respiratory disorders. Our product line includes automatic positive airway pressure devices, bilevel devices, continuous positive airway pressure devices, nasal pillows systems, nasal mask systems, full face mask systems, humidifiers, and software/clinical systems.

**Booth Number: 911**  
**Re-Timer Sleep Glasses**  
 Bedford Park, Australia  
[re-timer.com](http://re-timer.com)



**Re-Timer Sleep Glasses:**  
 Portable green light device for  
 the adjustment of circadian

rhythm conditions including shift work sleep disorder, delayed phase syndrome, jet lag and winter blues. Developed from 25 years of university research by leading sleep psychologists.

**Booth Number: 326**  
**RT/ Sleep Review**

Overland Park, KS  
 913-894-6923  
[www.sleepreviewmag.com](http://www.sleepreviewmag.com)

RT: For Decision Makers in Respiratory Care connects respiratory care professionals to respiratory and critical care device manufacturers featuring respiratory care best practices that readers can use-right now. Sleep Review: The Journal for Sleep Specialists connects professionals specializing in sleep related disorder to sleep medicine device and service companies featuring clinical, regulatory, and business-management expertise needed to thrive in today's sleep medicine market.

**Booth Number: 826**  
**Salimetrics**

Carlsbad, CA  
 800-790-2258  
[www.salimetrics.com](http://www.salimetrics.com)

Salimetrics provides innovative salivary tools, testing services for researchers studying health, behavior and development across lifespan. Study design consultation and collaborative services are available.

**Booth Number: 917**  
**SANOSTEC Corp.**

Beverly Farms, MA  
[www.maxairnosecones.com](http://www.maxairnosecones.com)

SANOSTEC's Sinus Cones® I Max-Air Cones® are soft, nasal airway relief aids that are patented, latex free, hypoallergenic and reusable. The Cones steno opens the nasal airway to maximize inspiratory flow for snoring relief, and as adjunct therapy to aid CPAP and OA compliance for OSA.

**Booth Number: 1018**  
**Sensory Medical, Inc.**

San Clemente, CA  
888-721-1117  
www.sensorymedical.com

Sensory Medical focuses on improving quality-of-sleep for those suffering from Restless Legs Syndrome. We've developed the only FDA-cleared device for treating quality-of-sleep in primary RLS. Our devices are a clinically proven alternative to drug therapy providing in-bed symptom relief, allowing patients an expedited return to sleep.

**Booth Number: 716**  
**Sentec, by Master Distributor Bemes, Inc.**

Fenton, MO  
800-969-2363  
www.sentec.ch

The Sentec Monitor provides ACCURATE, continuous, non-invasive "real time" monitoring of patient PCO<sub>2</sub>, where studies correlate closely to PACO<sub>2</sub>; utilizing the "V-Sign II Sensor", the world's only DIGITAL Transcutaneous sensor. Through accurate real time monitoring and patient trend memory, we can better assess patient ventilation and oxygenation in all clinical settings.

**Booth Number: 103**  
**Seven Dreamers Laboratories, Inc.**

Redwood, CA  
www.sevendreamers.com

Seven Dreamers Laboratories is a "motion analysis company" which develops innovative technologies and products aimed at improving people's lifestyle. Nاستent, one of our products, is a medical device designed for the treatment of sleep apnea syndrome and snoring. Nاستent alleviates breathing difficulty during sleep by preventing obstruction of nasal airways.

**Booth Number: 430**  
**Sleep Multimedia, Inc.**

Scarsdale, NY  
www.sleepmultimedia.com

SleepMultiMedia version 8.5 is a computerized textbook of sleep medicine with text, sound, graphics, animation, and video. Updated annually, the program covers sleep research, sleep physiology, and clinical sleep medicine, including orofacial management of sleep apnea. SleepMultiMedia features over 5,000 Abstracts, 135 CME credits, extensive information on polysomnography, and an updated sleep center policy and procedure manual.

**Booth Number: 1014**  
**Sleep Services of America, Inc.**

Glen Burnie, MD  
800-340-9978  
www.sleepservices.net

Since 1983, Sleep Services of America Inc. has been providing comprehensive sleep diagnostic services performing over 28,000 procedures annually to our contractual partners in the eastern United States. We have a wide array of innovative programs and business tools developed specifically to help sleep centers succeed.

**Booth Number: 225**  
**Sleep Source Alliance ENT**

Holderness, NH  
866-720-8080  
www.sleepsource.us

Products and services for the Sleep Physician:

- SomnoGuard Oral Appliances: Turn-key Oral Appliance Solutions. TITRATABLE IN YOUR LAB!
- Surgical Solutions for OSA: Encore Adjustable Tongue Suspension
- HSTServices: IDTF with Watch-pat

**Booth Number: 434**  
**Sleep Strategies, Inc.**

Gloucester, ON  
800-905-0348  
www.sleepstrategies.com

Sleep Strategies is a leading provider of professional sleep scoring and training services for sleep disorder facilities worldwide. Sleep Strategies plays a key role in the successful growth of leading hospitals and private sleep disorder laboratories which is achieved through their ongoing commitment to quality, affordability and exceeding customer expectations.

**Booth Number: 431**  
**SleepCEU**

West Springfield, MA  
877-463-2899

www.sleepceu.com

**SleepCEU provides a simple,**

**quick interface for sleep professionals to earn CE credit through approved internet-based courses. Complete your education requirements from the comforts of your own home, on your own time. Created by sleep professionals who understand the requirements of maintaining your license.**



**Booth Number: 329**  
**SleepEx Acquisition, LLC**

Norristown, PA  
800-235-9830  
www.MyLabRetriever.com

“LabRetriever” is the web-based sleep practice management platform by SleepEx. Designed for single-site to enterprise class laboratory networks, LabRetriever provides the most interoperable solution in the sleep industry. Users can efficiently manage patient scheduling, referrals, physician review, reporting, messaging, HST and DME fulfillment to deliver high quality patient care.

**Booth Number: 1017**  
**Sleepio**

London, United Kingdom  
www.sleepio.com

Sleepio is a digital sleep improvement program, clinically proven to help overcome insomnia without pills or potions. Co-created by ex-insomnia-sufferer Peter Hames and sleep expert Prof Colin Espie (University of Oxford), it teaches you proven cognitive and behavioral techniques to overcome even long term poor sleep.

**Booth Number: 634**  
**SleepMed Inc.**

Columbia, SC  
800-373-7326  
www.sleepmedinc.com

A leader in the field of sleep medicine, SleepMed operates labs for hospitals and practices as well as at free-standing facilities. By emphasizing high quality patient care and customer service, we have earned the support of thousands of primary care physicians and hundreds of sleep specialists who rely on our services.

**Booth Number: 915**  
**SleepSense**

Elgin, IL  
888-757-7367  
www.sleepsense.com

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www.SleepWorksInc.com

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**Booth Number: 425**  
**SomnoMed**

Frisco, TX  
888-447-0073  
www.somnomed.com

SomnoMed is a public company providing diagnostic and treatment solutions for sleep-related breathing disorders. SomnoMed has over 2,500 North American dentists actively providing SomnoDent® treatment and a medical initiative to build broader medical acceptance. Visit our booth to see our latest innovations.

**Booth Number: 417**  
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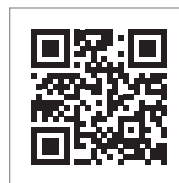
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**Booth Number: 409**  
**Somnoware Healthcare Systems, Inc.**

Charlotte, NC  
888-503-5688  
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Somnoware is a centralized data management platform for sleep medicine and the sleep wellness industry. As the exclusive web-based patient management software for the Welltrinsic Sleep Network, Somnoware streamlines

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**Theravent Inc.**

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[www.tsihealthcare.com/pulmonary](http://www.tsihealthcare.com/pulmonary)

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**Booth Number: 701**

**Vanda Pharmaceuticals, Inc.**

Washington, DC  
240-599-4500

[www.vandapharma.com](http://www.vandapharma.com)

Vanda Pharmaceuticals Inc. is a biopharmaceutical company focused on the development and commercialization of medicines to address unmet medical needs. Vanda is committed to providing education and awareness for Non-24-Hour Sleep-Wake Disorder (Non-24), a chronic circadian rhythm disorder affecting the majority of totally blind individuals.

**Booth Number: 833**

**VGM Sleep Center Network**

Waterloo, IA  
800-642-6065

[www.vgm.com](http://www.vgm.com)

VGM offers National Sleep Services which is a comprehensive program that offers a cost-effective and time-sensitive solutions for diagnosing and treating OSA. In addition the VGM Sleep Center Network provides the experience and resources necessary to help the independent sleep center succeed.

**Booth Number: 1003**

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Seattle, WA  
[www.visitseattle.org](http://www.visitseattle.org)

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**Booth Number: 728**

**Wake Up Narcolepsy, Inc.**

**Worcester, MA**

[www.wakeupnarcolepsy.org](http://www.wakeupnarcolepsy.org)

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**Booth Number: 516**  
**Welltrinsic Sleep Network**

Darien, IL  
331-481-4700  
[www.welltrinsic.com](http://www.welltrinsic.com)

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**Booth Number: 729**  
**World Association of Sleep Medicine (WASM)**

Rochester, MN  
[www.wasmcongress.com](http://www.wasmcongress.com)

WASM's mission is to advance sleep health worldwide. WASM fulfills this mission by promoting and encouraging education, research and patient care. The 6th World Congress on Sleep Medicine in Seoul, Korea (March 2015) will bring together sleep



clinicians and researchers to discuss advances made in sleep research and clinical knowledge.

**Booth Number: 209**  
**XenoPort, Inc.**

Santa Clara, CA  
[www.xenoport.com](http://www.xenoport.com)

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**Booth Number: 905**  
**Zephyr Sleep Technologies**

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Exhibit Hall B | Minneapolis Convention Center

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| <input type="checkbox"/> | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 |
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## P01: Pharmacological Manipulation of Breathing and Sleep

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GAL-160, A NOVEL ORALLY BIOAVAILABLE MODULATOR OF BREATHING CONTROL, ATTENUATES CENTRAL SLEEP APNEA IN RATS RECEIVING CHRONIC MORPHINE  
*Gruber RB, Golder FJ, Ideo C, Mardirosian S, Peng S, MacIntyre E*

### 0006 POSTER BOARD 2

INTERMITTENT-HYPOXIA-INDUCED EXPRESSION OF AUTOPHAGY ACCELERATES BNIP3 IN THE GENIOHYOID MUSCLE IN CONTRAST TO GASTROCNEMIUS MUSCLE IN RATS  
*Hosomichi J, Oishi S, Kuma Y, Maeda H, Nagai H, Kaneko S, Shitano C, Suzuki J, Yoshida K, Ono T*

### 0007 POSTER BOARD 3

OREXIN-1 RECEPTOR BLOCKADE DYSREGULATES REM SLEEP IN PHARMACOLOGICAL OR GENETIC MODELS OF OREXIN-2 RECEPTOR INHIBITION  
*Dugovic C, Yun S, Shelton J, Bonaventure P, Shireman B, Lovenberg T*

### 0008 POSTER BOARD 4

OREXIN RECEPTOR ANTAGONISTS PROMOTE BOTH NON-REM AND REM SLEEP SIMILAR TO PHYSIOLOGICAL SLEEP ONSET IN PRE-CLINICAL SPECIES  
*Fox S, Tannenbaum P, Gotter A, Garson S, Savitz A, Stevens J, Kuduk S, Coleman P, Winrow C, Renger J*

### 0009 POSTER BOARD 5

PHARMACOLOGICAL AND GENETIC EVALUATION OF OREXIN RECEPTOR ANTAGONISTS IN PRECLINICAL ANIMAL MODELS OF PAIN  
*McDonald TP, Liang A, Sanoja R, Gotter A, Kuduk SD, Coleman P, Winrow CJ, Renger J*

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ALTERATIONS IN SLEEP EEG WAVEFORMS INDUCED BY TEMAZEPAM: A HIGH-DENSITY EEG INVESTIGATION  
*Plante DT, Goldstein MR, Cook JD, Smith R, Riedner BA, Rumble ME, Jelenchick L, Tononi G, Benca RM, Peterson MJ*

### 0011 POSTER BOARD 7

POTENTIATING PENTOBARBITAL-INDUCED SLEEP IN OVARECTOMIZED MICE OF CHAIHUJIALONGGUMULI DECOCTION, A TRADITIONAL CHINESE MEDICINE  
*Huang L, Du N, Yu S, Li T*

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ORIGINAL RESEARCH: EFFECTS OF QUETIAPINE ON SLEEP PARAMETERS AND ARCHITECTURE  
*Vyas UK*

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INTRASTRIATAL ADMINISTRATION OF THE D2 AGONIST QUINPIROLE MODULATES SLEEP IN A DOSE-DEPENDENT FASHION  
*Albers JA, Khan N, Varade N, Anch M*

### 0014 POSTER BOARD 10

CHRONIC PHARMACOLOGICAL STIMULATION OF BROWN FAT PROMOTES SLEEP IN MICE  
*Kapás L, Szentirmai É*

## P02: Learning and Memory

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*Perera CA*

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SLEEP FACILITATES MEMORY BY PROVIDING 'TEMPORAL SCAFFOLDING' OF EXPERIENCE: A NETWORK MODEL

*Lerner I, Gluck MA*

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### **POSTER BOARD 13**

OSCILLATING SQUARE WAVE TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) DELIVERED DURING SLOW WAVE SLEEP DOES NOT IMPROVE DECLARATIVE MEMORY MORE THAN SHAM: A RANDOMIZED SHAM CONTROLLED CROSSOVER STUDY

*Sahlem GL, Badran B, Williams NR, Chicoree A, Strachan M, Bachman DL, Halford JJ, Uhde TW, Borckardt JJ, George MS*

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### **POSTER BOARD 14**

OSCILLATING AUDITORY STIMULATION DURING SLEEP CAN FACILITATE SLEEP SPINDLES

*Antony J, Bae J, Paller K*

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### **POSTER BOARD 15**

ENHANCED SIGMA ACTIVITY IN EARLY VISUAL AREA DURING SLEEP ASSOCIATED WITH VISUAL PERCEPTUAL LEARNING

*Tamaki M, Berard AV, Watanabe T, Sasaki Y*

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SLEEP-DEPENDENT MOTOR LEARNING USING A COMPLEX MOTOR TASK

*Mark BJ, Burke TM, Sherwood DE, Wright KP*

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INDIVIDUAL DIFFERENCES IN SLEEP SPINDLES AND SLEEP-DEPENDENT MEMORY: THE IMPACT OF HABITUAL NAPPING

*McDevitt EA, Whitehurst LN, Duggan KA, Mednick SC*

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### **POSTER BOARD 18**

A NAP RICH IN SLOW WAVE SLEEP SELECTIVELY PRESERVES EMOTIONAL SCENE COMPONENTS

*Alger SE, Chambers A, Payne JD*

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SLEEP AND THE FUTURE RELEVANCE OF EMOTIONAL MEMORIES

*Cunningham TJ, Chambers AE, Payne JD*

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REM SLEEP AND RESTING CORTISOL INFLUENCE NEURAL ACTIVITY DURING EMOTIONAL MEMORY RETRIEVAL

*Bennion KA, Payne JD, Kensinger EA*

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*Campanella C, Hamann S*

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*Jones BJ, Baran B, Schultz KS, Spencer RM*

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*Mattingly SM, Payne JD, Kensinger E, Algier S, Cunningham T, Wirth M*

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SLEEP AFTER REACTIVATION PREDICTS EPISODIC MEMORY UPDATING

*Bryant N, Nadel L, Gomez R*

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SLEEP BENEFITS TO MEMORY TRAINING DECREASE OVER TIME IN RHESUS MONKEYS (MACACA MULATTA)

*Templer V, Scullin MK*



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SLEEP-INDUCING DOSES OF GABA MODULATORS BUT NOT DUAL OREXIN ANTAGONISTS IMPAIR RHESUS NIGHTTIME AROUSAL AND COGNITION

*Tye SJ, Tannenbaum PL, Stevens J, Binns J, Savitz AT, Gotter A, Coleman PJ, Winrow CJ, Uslaner JM, Renger JJ*

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NO EFFECT OF TOTAL SLEEP DEPRIVATION ON RECALL OR GENERALIZATION OF EXTINGUISHED FEAR

*Straus LD, Drummond SP, Acheson D, Risbrough VB*

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VISUAL DEPRIVATION HAS LOCAL EFFECTS ON EEG SPECTRAL POWER DENSITY DURING SLEEP

*Rångtjell FH, Rupprecht Scherff R, Nguyen J, Rose D, Wamsley E, Stickgold R*

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*Cheung G, Wong M, Lau E*

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EFFECT OF REM-SPECIFIC OBSTRUCTIVE SLEEP APNEA ON SPATIAL NAVIGATIONAL LEARNING AND MEMORY

*Varga AW, Lim J, Mantua J, Koushyk V, Kishi A, Leibert D, Rapoport DM, Ayappa I*

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THE EFFECT OF OBSTRUCTIVE SLEEP APNEA ON DECLARATIVE MEMORY CONSOLIDATION

*Djonlagic I, Guo M, Igue M, Malhotra A, Stickgold R*

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*Sadagopan N, Wright KP, Stickgold R, Feider ME*

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SLEEP FRAGMENTATION AND LANGUAGE IN TODDLERS WITH DOWN SYNDROME

*Spanò G, Demara B, Tooley U, Anand P, Edgin J*

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A NAP AND ITS RELATIONSHIP TO CONSOLIDATION AND RETENTION OF NEW LEARNING IN 6.5 MONTH OLDS

*Newman-Smith KC, Werchan D, Goldstein M, Gomez RL*

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*Gruber R, Somerville G, Enros P, Kestler M, Gillies-Poitras E*

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*Mosti C, Zamzow J, Culnan E, Kloss JD, Spiers M*

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A COMPARISON OF CHRONOTYPE ON NEUROCOGNITIVE AND TRAIT INDICES OF IMPULSIVITY

*Zamzow J, Culnan E, Kloss JD, Spiers M, Swirsky-Sacchetti T*

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THE ROLE OF SLEEP QUALITY IN THE RELATIONSHIP BETWEEN GENDER AND RISKY DECISION-MAKING

*Hung P, Wong M, Lau E*

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*Wager E, Scalf PE*

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THE EFFECT OF CAFFEINE GUM ON PSYCHOMOTOR VIGILANCE TASK AND SIMULATED DRIVING PERFORMANCE DURING SLEEP INERTIA

*Markwald RR, Bessman SC, Drummond SP, Sessoms PH, Reini LA*

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*Cooke C, Hartmann M, Hall MK, Dyche J*

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LONG LECTURES LEAD TO STUDENT SLEEPINESS AND DISENGAGEMENT: DOES AN INTERVENTION HELP?

*Snyder M, Artis JT, Surber T, Harsh J, Han G*

## P03: Sleep Regulation Across the Lifespan

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*Gaines J, Fernandez-Mendoza J, Vgontzas AN, Liao D, Bixler EO*

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AGE-RELATED CHANGES IN SLEEP SPINDLE CHARACTERISTICS DURING DAYTIME RECOVERY FOLLOWING 25 HOURS OF SLEEP DEPRIVATION

*Rosinvil T, Latulipe-Loiselle A, Sekerovic Z, Bouchard M, Dubé J, Larfortune M, Martin N, Carrier J*

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ARE LATE ADOLESCENTS GETTING ADEQUATE SLEEP? AN ANALYSIS OF SLEEP QUALITY AND CHARACTERISTICS OF COLLEGE FRESHMEN

*Burnham MM, Owens SK*

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*Tarokh L, Achermann P, Van Reen E, Carskadon MA*

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*Tribble R, Dmitrieva J, Watamura SE, LeBourgeois MK*

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WHITE MATTER INTEGRITY OF THE CORPUS CALLOSUM IS LINKED TO NREM INTERHEMISPHERIC EEG COHERENCE IN OLDER SUBJECTS

*Bouchard M, Larfortune M, Bedetti C, Rosinvil T, Martin N, Dubé J, Gaudreault P, Godbout J, Lina J, Carrier J*

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*Goldstone A, Mayhew SD, Wilson RS, Bagshaw AP*

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*Chinoy ED, Frey DJ, Kaslovsky DN, Meyer FG, Wright KP*

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*Chinoy ED, Frey DJ, Kaslovsky DN, Meyer FG, Wright KP*

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*Havens C, Dean L, Goldstein M, Irwin M, Jean-Louis G, Youngstedt S, Bootzin R*

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DIFFERENCES IN EEG POWER SPECTRUM DURING NORMAL SLEEP IN CHILDREN AGES 6 TO 12 YEARS: FINDINGS FROM THE TUCASA STUDY

*Kudchadkar SR, Ellenbogen JM, Quan SF, Goodwin JL, Punjabi A, Jastaniah EA, Murphy S, Punjabi NM*

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DIFFERENTIAL PROCESSING OF SENSORY FEEDBACK FROM SLEEP-RELATED TWITCHES AND WAKE MOVEMENTS IN THE MOTOR CORTEX OF INFANT RATS

*Tiriac A, Del Rio-Bermudez C, Blumberg MS*

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*Del Rio-Bermudez C, Tiriac A, Blumberg MS*

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*Plumeau AM, Sokoloff G, Mukherjee D, Blumberg MS*

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*Bach V, Decima P, Bodin E, Stephan-Blanchard E, Pelletier A, Delanaud S, Telliez F, Tourneux P, Libert J, Leke A*

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*Schade M, Montgomery-Downs HE*

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*Decima P, Tourneux P, Pelletier A, Degrugilliers L, Delanaud S, Leke A, Bach V, Libert J, Stephan-Blanchard E*

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*Walters R, Lee C, Composto J, Bhullar B, Mindell J*

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*Ellenbogen JM, Kudchadkar SR, Punjabi A, Jastaniah EA, Murphy SP, Goodwin J, Quan SF, Punjabi NM*

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*Harsh J, Harville K, Hooper A, Han G, Karnes F, Harville K*

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PHYSIOLOGICAL FEEDING SCHEDULE RESTORED 24-HOUR ACTIVITY RHYTHM BUT NOT FRACTAL ACTIVITY IN ANIMALS WITHOUT THE SUPRACHIASMATIC NUCLEI

*Chiang W, Lo M, Hsieh W, Sabath E, Escobar C, Buijs R, Hu K*

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EXPOSURE TO EVENING LIGHT, SLEEP INITIATION, AND OBESITY IN ELDERLY INDIVIDUALS: A CROSS-SECTIONAL STUDY IN THE HEIJO-KYO COHORT

*Obayashi K, Saeki K, Tone N, Nishi T, Miyata K, Otaki N, Kitagawa M, Noguchi T, Mochida N, Kurumatani N*

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*Lee JH, Kim SJ, Lee J, Lee SY, Suh IB*

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*Lee J, Kim J, Shin H*
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*Weber M, Killgore WD*

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*Zitting K, Cain SW, Münch M, Silva EJ, Wang W, Czeisler CA, Duffy JF*

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*Honn KA, Van Dongen H, Grant DA, Mollicone DJ*

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*Killick R, Hoyos CM, Melehan K, Barlett D, Wong KK, Sletten TL, Rajaratnam SM, Grunstein RR, Liu PY*

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*Rüger M, St. Hilaire MA, Fratelli F, Hull JT, Lockley SW*

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*Cohen D, Wang W, Wyatt JK, Czeisler CA, Klerman EB*

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*Hughes JM, Jouldjian S, Mitchell M, Dzierzewski JM, Fung CH, Alessi CA, Martin JL*

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*Tighe CA, Shoji KD, Dautovich ND, Lichstein KL, Scogin F*

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*Salzieder N, Hagen EW, Hale L, Barnet J, Steidl R, Peppard PE*

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*Changchit S, Moul DE, Urchek J, Hariadi N, Mehra R, Walia H*

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*Paudel ML, Taylor BC, Schousboe J, Ancoli-Israel S, Stone KL, Redline S, Yaffe K, Ensrud KE*

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*Insana SP, Hall MH, Buysse DJ, Monk TH, Miewald JM, Germain A*

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*Crew EC, Sears SF, Roth AJ, Dzierzewski JM, Conti JB, Berry RB, McCrae CS*

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*Mansano-Schlosser TC, Ceolim MF*

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*Borden C, Petros T, Ferraro F*

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*Insana SP, Stahl ST, Hall MH, Buysse DJ, Monk TH, Miewald JM, Germain A*

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*Hagen EW, Hale L, Salzieder N, Chatterjee D, Barnet JH, Peppard PE*

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DECREASED SLEEP DISCREPANCY IS ASSOCIATED WITH AMOUNT OF IMPROVEMENT IN INSOMNIA SEVERITY FOLLOWING COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA IN OLDER ADULTS

*Kay DB, Buysse DJ, Germain A, Hall M, Monk TH*

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*Chen-Edinboro LP, Kaufmann CN, Augustinavicius JL, Parisi JM, Wennberg AM, Smith MT, Spira AP*

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*Bourgeois J, Elseviers M, Van Bortel L, Petrovic M, Vander Stichele R*

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*Bin Y, Marshall N, Christensen H, Glozier N*

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*Tom SE, Brandt N, Scharf SM, Geiger-Brown J, Guralnik JM, Hale LE, Stone K, Shah NA, LaCroix AZ*

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*Tom SE, Scharf SM, Brandt N, Geiger-Brown J, Guralnik JM, Hale LE, Li W, Womak CR, Zaslavsky O, LaCroix AZ*

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*Figueiro MG, Plitnick B, Lok A, Rea MS*

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*Malkani R, Papalambros P, Santostasi G, Reid K, Westerberg C, Weintraub S, Zee PC*

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*Li J, Chang Y, Jungquist C, Porock D*

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*Woolsey JA, Lichstein KL, Taylor DJ, Riedel BW, Bush AJ*

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*Jarrin DC, Chen IY, Ivers H, Morin CM*

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*Beattie L, Kyle SD, Rehman A, Holm M, Biello S*

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*Drake CL, Mengel HJ, Roth T, Belcher R, Pillai V*

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*Bramoweth AD, Gregory MP, Walker JD, Germain A, Atwood CW*
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*Kim J, Lee Y, Lee YG, Jeong D*
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*Kelly MR, O'Hara KL, Grinberg AM, Beals K, Bell IR, Eichling P, Wright KP, Bootzin RR*
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*Li Y, Sun Y, Wu C, Zhou J, Tang X*

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*Taylor HL, Rybarczyk B, Nay WT, Leszczyszyn D, Perrin PB, Auerbach SM*

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*Kalinka C, Sbarra D, Mehl M, Bootzin RR*

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*Simpson NS, Siebern A, Fairholme CP, Kaplan K, Elisha H, Manber R*

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*Ellis JG, Perlis ML, Bastien CH, Espie CA, Gardani M*

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*Cetel M, Rosenberg RS, Hirst M, Levendowski DJ, Westbrook PR*

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*Li Z, Huang L, Zhou J, Zhou G, Tang X*

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*Levendowski DJ, Westbrook PR, Cetel M, Rosenberg RS, Hirst M, Matic Z, Cifelli A*

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*Sato T, Ambo H, Fukuda K*

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*Duthuluru S, Stevens D, Stevens S*

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*Steffen A, Lai C, Weaver TE*

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*Rosenberg RS, Van Hout S*
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*Nguyen AH, Sebastiao Y, Schwartz SW, Rosas J, Parr MS, Anderson W, Foulis PR*

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*Gupta MA, Gupta AK*

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*Goldstein MR, Smith EE, Cavanagh JF, Bootzin RR, Allen JJ*

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*Ulmer CS, Swinkels CM, Rissling MB, Hughes JM, O'Brien JL, Beckham JC*

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*Rissling MB, Swinkels CM, Elbogen EB, O'Brien JL, Hughes JM, Calhoun PS*

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*Emert S, Epstein D, Parthasarathy S, Wilcox J, Perkins S, Haynes P*

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*Germain A, Stocker R, Ebdlahad S, Suter D, Mammen O, Sims B, Nofzinger E*

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*Seda G, Sanchez-Ortuno MM, Welsh CH, Ann HC, Edinger JD*

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*Harb GC, Waldron EA, Ross RJ*

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*Haynes P, Epstein D, Parthasarathy S, Wilcox J, Emert S, Perkins S*

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*Tamanna S, Lyons J, Parker J, Ullah MI*

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*Cheng CK, Chiang V, Bernbaum ML, Koziorynska E, Rodriguez AJ*

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*Jin K, Nakamura M, Kato K, Itabashi H, Kakisaka Y, Iwasaki M, Nakasato N*

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*Kato K, Jin K, Nakamura M, Yokota E, Iwasaki M, Kakisaka Y, Aoki M, Nakasato N*

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*Hoque S, Economou N, Moul D, Andrew N, Foldvary-Schaefer N*

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*Bollu P, Lim A, Manjamalai S, Goyal M, Sahota P*

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*Takahashi Y, Imanishi A, Tokunaga J, Sagawa Y, Takanashi M, Aburakawa Y, Hattori Y, Kanbayashi T, Shimizu T*

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*Braley TJ, Kratz AL, Kaplish N, Chervin RD*

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*Walsh CM, Varbel J, Ruoff L, Boxer AL, Kramer JH, Miller BL, Neylan TC*

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*Braley TJ, Chervin RD*

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*Fogelberg DJ, Vitiello MV, Hoffman JM, Bamer AM, Amtmann D*

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*Im H, Lee H, Lee S, Cho S, Bang S, Kim S, Park S, Thomas RJ, Shin C, Yun C*

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*Mandrell B, Hammarback T, West N, Coan A, Yuan Y, Crabtree VM, Indelicato DJ, Merchant T*

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*Vatthauer KE, O'Shea A, Boissoneault J, Craggs JG, Robinson ME, Staud R, Berry RB, Perlstein W, Waxenberg L, McCrae CS*

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*Embabi A, Daoud Y, Beard J, Herzog S, El-Feky WH*

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*Go J, Geck R, Modarres M, Nakase-Richardson R, Schwartz D, Chesson A, Anderson WM*

## Trainee Abstracts

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*Yelisetty V, Bagai K*

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*Jablonski K, Grewal R, Punati R, Saxena S, Doghramji K, Beekley A, Tichansky D*

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*Phillips JM, Norins N, D'Andrea L, Amos L*

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*Nguyen O, Kaplish N, Angell K, Fetterolf J*

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*Mieczowski B, Gustave J, Mindel J, Khan M, Magalang UJ*

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*Gupta L, Grant G, Morgan K, Gilchrist S*

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*Skiba V, Goldstein C, Schotland H*

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*Balasubramanian V, Saedi BB, Martin J, Santiago S, De Cruz S, Ryden AM, Zeidler MR*

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*Kuppuswamy PS, O'Brien LM*

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*Stansbury RC, Atwood C*

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*Xavier SD, Scapuccin M, Scapuccin F, Moraes JP, Eckley CA*

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*Reiter J, Maski K*

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*Jung CM, Huske PP, Talome D, Redwood DG, Dean C, Hackett PH, Lowery S, Buck CL*

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*Warby SC, Wendt SL, Welinder P, Munk EG, Carrillo O, Sorensen HB, Jennum P, Peppard PE, Perona P, Mignot E*

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*Reihanabad NA, Whitehurst LN, McDevitt EA, Duggan KA, Dela Cruz AL, Perera CA, Mednick SC*

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*Cellini N, Whitehurst LN, McDevitt EA, Mednick SC*

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*Whitehurst LN, Cellini N, McDevitt EA, Duggan KA, Mednick SC*

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*Khalsa S, Mayhew SD, Bagary M, Bagshaw AP*

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*Topchiy I, Radulovacki M, Carley DW*

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*Long X, Haakma R, Goelema MS, Weysen T, Fonseca P, Foussier J, Aarts RM*

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*Pelletier A, Decima P, de Seze R, Delanaud S, Libert J, Bach V*

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*Corbitt CB, Nesom GL, Gehrman PR, Grandner MA, Perlis ML*

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*Ahmed M, Scharf MB, Jishi Z, Younes M, Aamir R*

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*Brunet J, Therrien M, Gartenberg D, Forest G*

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*Pinnola GC, Bastos PS*



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*Goelema MS, Haakma R, Markopoulos P*

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*Kogan CJ, Kalachev LV, Van Dongen H*

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*Pender JJ, Mund JL, Klingman KJ, Aghaie CI, Jungquist CR*

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*Francetich J, Taylor DJ, Kelly K, Crew EC, Estevez R, Dietch J, Chu C, Marczyk K*

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EFFECTIVENESS OF CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) AND ORAL APPLIANCE (OA) OVER MILD OBSTRUCTIVE SLEEP APNEA SYNDROME (OSAS): A RANDOMISED, PARALLEL, SIMPLE, BLIND, CONTROLLED STUDY

*e Silva LO, Luz GP, Guimarães TD, Millani A, Garbuio S, Dal Fabbro C, Tufik S, Poyares D, Togeiro S, Bittencourt L*

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QUALITY OF LIFE CHANGES IN BED PARTNERS OF OBSTRUCTIVE SLEEP APNEA PATIENTS AFTER TREATMENT WITH ORAL APPLIANCES

*Tsuda H, Almeida FR, Lowe AA*

0424

**POSTER BOARD 250**

COMPARISON OF CLINICAL AND POLYSOMNOGRAPHIC OUTCOMES BETWEEN MANDIBULAR ADVANCEMENT DEVICE (MAD) WITH NEUTRAL POSITIONING, POSITIVE AIRWAY PRESSURE THERAPY (PAP) AND A COMBINATION OF MANDIBULAR ADVANCEMENT DEVICE (MAD) AND POSITIVE AIRWAY PRESSURE THERAPY

*Ghuge R*

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*Sowho M*

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MANDIBULAR ADVANCEMENT DEVICE TITRATION USING A REMOTELY CONTROLLED MANDIBULAR POSITIONER  
*Burschtin O, Binder DS, Lim JW, Malis S, Marsiliani R, Ayappa I, Rapoport DM*

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DETERMINANTS OF OBJECTIVELY MEASURED ADHERENCE TO ORAL APPLIANCE THERAPY IN PATIENTS WITH SLEEP-DISORDERED BREATHING  
*Dieltjens M, Braem MJ, Wouters K, Verbraecken JA, De Backer WA, Van de Heyning PH, Vanderveken OM*

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CHANGES IN 3D NASAL VOLUME AFTER BIOMIMETIC ORAL APPLIANCE THERAPY IN ADULTS  
*Singh GD, Heit T, Preble D, Chandrashekhar R*

## P24: Narcolepsy Diagnosis and Management and Other Hypersomnias of Central Origin

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CSF NEUROENDOCRINE REGULATORY PEPTIDE (NERP)-2 LEVELS ARE POSITIVELY CORRELATED WITH OREXIN (HYPOCRETIN) LEVELS  
*Kanbayashi T, Imanishi A, Sagawa Y, Inomata Y, Uemura-Ito S, Sato M, Takeshima M, Suzuki R, Nishino S, Shimizu T*

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INVESTIGATING THE HYPOCRETIN/OREXIN SPECIFIC T CELL RESPONSE IN PATIENTS WITH NARCOLEPSY WITH CATAPLEXY  
*Ramberger M, Högl B, Mitterling T, Frauscher B, Reindl M, Lutterotti A*

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THE DIAGNOSTIC VALUE OF POLYSOMNOGRAPHIC EEG IN NARCOLEPTICS  
*Christensen JA, Munk E, Carrillo O, Moore HE, Peppard PE, Young T, Sorensen HB, Mignot E, Jennum P*

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CHARACTERISTICS OF NARCOLEPSY ACCORDING TO THE AGE OF DIAGNOSIS  
*Inocente CO, Lecendreux M, Dauvilliers Y, Drouot X, Arnulf I, Franco P*

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NARCOLEPTIC FAMILY MEMBERS: EVOLUTION OF NARCOLEPSY SYMPTOMS, DIAGNOSIS AND MORTALITY IN A LONGITUDINAL STUDY  
*Ohayon MM*

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*Kawai M, Mignot E, Einen M*

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*Honda M, Doi Y, Hazumi M, Honda Y*

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*Imanishi A, Kanbayashi T, Shimohata T, Sagawa Y, Takahashi Y, Suda H, Takahashi J, Kubota H, Kikuchi Y, Shimizu T*

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PET STUDY OF PEDIATRIC NARCOLEPSY: A PRELIMINARY STUDY  
*Chen Y, Huang Y, Hsu T, Guilleminault C*

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*Maski KP, Steinhart E, Flygare J, McCleary K, Gow M*



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A 12-WEEK OPEN-LABEL, MULTICENTER STUDY EVALUATING THE SAFETY OF SODIUM OXYBATE (SXB) IN PATIENTS WITH NARCOLEPSY

*Mamelak M, Swick T, Emsellem H, Montplaisir J, Lai C, Black J*

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TIME TO RESPONSE WITH SODIUM OXYBATE FOR THE TREATMENT OF EXCESSIVE DAYTIME SLEEPINESS (EDS) AND CATAPLEXY IN PATIENTS WITH NARCOLEPSY

*Bogan RK, Roth T, Schwartz J, Miloslavsky M, Scharf M*

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INTRAVENOUS IMMUNOGLOBULINS: A TREATMENT FOR NARCOLEPSY-CATAPLEXY IN PEDIATRICS?

*Corny J, Andrieux A, Papon A, Bourdon O, Lecendreux M*

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THE UTILITY OF THE SUSTAINED SLEEP LATENCY ON POLYSOMNOGRAPHY (PSG) AND THE MULTIPLE SLEEP LATENCY TEST (MSLT) IN THE DIAGNOSIS OF PATIENTS WITH HYPERSOMNOLENCE OF CENTRAL ORIGIN

*Gonzales CG, Waters KA, Strohl KP, Loplumlert J*

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MSLT: EXAMINING THE DIAGNOSTIC UTILITY OF A 4 NAP VERSUS 5 NAP PROTOCOL

*Dupre C, Kotagal S*

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"WAKING UP IS THE HARDEST THING I DO ALL DAY": CAPTURING SLEEP DRUNKENNESS WITH THE PSYCHOMOTOR VIGILANCE TASK (PVT) DURING THE MULTIPLE SLEEP LATENCY TEST (MSLT)

*Trotti LM, Saini P, Scullin M, Rye DB, Bliwise DL*

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HABITUAL SLEEP DURATION, UNMET SLEEP DURATION, AND EXCESSIVE DAYTIME SLEEPINESS IN KOREAN ADULTS

*Yang K, Hwangbo Y, Chu M, Yun C, Kim W*

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*Kanbayashi T, Imanishi A, Hanaoka Y, Tanaka K, Tsutsui K, Narita E, Ohmori Y, Omokawa M, Nishino S, Shimizu T*

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**POSTER BOARD 273**

COMORBIDITY AND HEALTHCARE UTILIZATION IN NARCOLEPSY: AGE-RELATED FINDINGS FROM THE BURDEN OF NARCOLEPSY DISEASE (BOND) DATABASE

*Black J, Reaven NL, Funk SE, McGaughey K, Ohayon M, Guilleminault C, Ruoff CM*

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## P25: RLS Treatment, Course and Comorbidities

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RESTLESS LEGS SYNDROME IN NEUROLOGICAL WILSON'S DISEASE

*Tribl GG, Trindade MC, Bittencourt T, Cardoso RA, Ciampi de Andrade D, Fonoff ET, Machado AA, Lorenzi-Filho G, Teixeira MJ, Barbosa ER*

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RESTLESS LEGS SYNDROME AND HIV: IMPLICATIONS FOR THE MANAGEMENT OF INSOMNIA

*Preud'homme XA, Bridgers J, Krystal AD*

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A NEUROPHYSIOLOGICAL STUDY OF SLEEP LEG MOVEMENTS IN ACUTE SPINAL CORD INJURY

*Ferri R, Proserpio P, Rundo F, Lanza A, Sambusida K, Redaelli T, De Carli F, Nobili L*

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OBSTRUCTIVE SLEEP APNEA (OSA) IS AFFECTED BY LEVODOPA EVENING DOSE IN PARKINSON'S DISEASE (PD)

*Gros P, Mery V, Lafontaine A, Robinson A, Benetti A, Kimoff J, Kaminska M*

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*Lee C, Kim T, Yoon I*
- 0626**  
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*Pires AT, Silveira EA, Gomes MM, Éckeli ÁL, Gitai LL*
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*Tachibana N, Taniguchi K, Hamano T*
- 0628**  
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*Oka Y, Tokui Y, Horiuchi F*
- 0629**  
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DO PERIODIC ARM MOVEMENTS DURING SLEEP EXIST IN HEALTHY SUBJECTS? A PROSPECTIVE POLYSOMNOGRAPHIC STUDY  
*Gabelia D, Mitterling T, Högl B, Frauscher B*
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*Huang G, Ren R, Li Y, Du L, Sun Y, Tang X*
- 0631**  
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*Im K, Dyken ME*
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*Buchfuhrer MJ, Ahmed M, Hays R, García-Borreguero D, Jaros M, Kim R, Shang G*
- 0634**  
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*Ahmed M, Hays R, Poceta J, Jaros M, Kim R, Shang G*
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*Lee DO, Swick T, Poceta J, Jaros M, Kim R, Shang G*
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*Cho Y, Lee Y, Moon H, Chang H, Ku J, Earley CJ, Allen RP*
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*Carlos K, Carvalho LC, Teixeira CM, Conti CF, Oliveira MM, Prado LF, Prado GF*
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*Prado GF, Carlos K, Oliveira C, Teixeira CM, Carvalho LC, Prado LB*

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WILLIS-EKBOM DISEASE/RESTLESS LEGS SYNDROME SIGNIFICANTLY IMPACTS PATIENTS' SLEEP, ACTIVITIES, AND EMOTIONAL HEALTH: RESULTS OF THE "PATIENT ODYSSEY" SURVEY

*Ondo WG, Becker PM*

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**POSTER BOARD 293**

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*Ondo WG, Becker PM*

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**POSTER BOARD 294**

PATIENT REPORTED RESPONSE TO TREATMENTS FOR WILLIS EKBOM DISEASE/RESTLESS LEGS SYNDROME: RESULTS OF THE "PATIENT ODYSSEY" SURVEY

*Ondo WG, Becker PM*

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**POSTER BOARD 295**

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*Muresan C, Bertisch S, Schoernig L, Taylor J, Winkelman J*

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*Inoue Y, Sasai T*

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*Barone DA, Ebben MR, Samie A, Mortara D, Krieger AC*

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*Mitchell UH, Johnson PK*

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*Khan Z, Rahman MF, Saini P, Rye D*

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*Moran K, Bauer L, Grieger F, Joeres L, Schollmayer E*

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*Ussavarungsi K, Arunthari V*

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*Tallavajhula S, Phelps K, Ondo WG*

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*Jaimchariyatam N, Chaovavanich A*

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GENETIC ASSOCIATION ANALYSIS BETWEEN MEIS1, BTBD9 AND MAP2K5/LBXCOR1 POLYMORPHISMS AND RESTLESS LEGS SYNDROME SYMPTOMS IN A POPULATION BASED SAMPLE FROM SÃO PAULO, BRAZIL

*Mazzotti DR, Guindalini C, Castro LS, de Mello M, Bittencourt L, Tufik S*

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*Meraj A, Wombles C, Petrey C, Riutcel T, Yamada K*
- 1098**  
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*Siddiqui F*
- 1099**  
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*Drane KS, McCarty DE, Munir S, Gonzalez-Toledo EC*
- 1100**  
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*Nguyen O, Kaplish N, Binns L*
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*Petrey C, Meraj A, Wombles C, Darken RS*
- 1102**  
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*Adavadkar P*
- 1103**  
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*Bhatia S, Mathur S, Ralls F*
- 1104**  
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*Mathur S, Bhatia S, Ralls F*
- 1105**  
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*Roth AJ, McCrae CS*
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*Voddi S, Shelgikar AV*
- 1107**  
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*Roberts S, Weir I*
- 1108**  
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*Sivaswami S, Drane K, McCarty DE, Liendo A, Liendo C*
- 1109**  
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*Raju P, Nimma A, Gupta D*
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*Newton KM, Tsai S*
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*Carter M, Aziz S*

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A SOBERING CURE FOR SEVERE CENTRAL SLEEP APNEA

*Lenet A, Manchanda S, Bodkin CL, Sigua NL*

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*Sharma S, Goldstein C, Shelgikar AV*

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*Siddiqui F, Goldstein C, Stanley JJ*

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PHARYNGEAL FLAP SURGERY AND OBSTRUCTIVE SLEEP APNEA

*Siddiqui F, Goldstein C, Stanley JJ*

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*Young D, Phan H*

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IT'S ALL IN YOUR HEAD

*Bola SS, Zweerink A, Baker A, Propst EJ, Cushing SL, Dirks PB, Bhattacharjee R, Narang I, Amin R*

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86 DAY OLD BABY WITH TRISOMY 21, ESOPHAGEAL ATRESIA WITH TRACHEOESOPHAGEAL FISTULA AND SEVERE OBSTRUCTIVE SLEEP APNEA: A CASE REPORT

*Jinnur P, Baughn JM, Lloyd R*

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NOCTURNAL HEADACHES, IDIOPATHIC INTRACRANIAL HYPERTENSION, AND RETINAL VEIN OCCLUSIONS AS PRESENTING SIGNS OF OBSTRUCTIVE SLEEP APNEA

*Medina-Smester JG, Abreu AR, Ramos AR*

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A 54 YEAR OLD MAN WITH ACUTE ONSET ORTHOPNEA AND SLEEP-RELATED HYPOXIA

*Jinnur P, St. Louis EK, Kumar N, Vassallo R*

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*Heavner JJ, Tobias L, Yaggi HK*

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*Reiter J, Khatwa U*

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*Gomes O, Leu R*

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ADENOTONSILLECTOMY: NOT A "HAPPILY EVER AFTER" STORY

*Go D, Ralls F*

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**POSTER BOARD 334**

RESISTANT UNILATERAL RESTLESS LEG SYNDROME ASSOCIATED WITH UNTREATED SLEEP APNEA

*Corrales C*

## Poster Viewing

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Exhibit Hall B

Authors will be at their posters from 10:20am – 12:20pm. The four-digit abstract ID number coordinates to the SLEEP abstract supplement. Please refer to the poster board ID number to locate a specific abstract within the poster hall. The map of the poster hall is on page 125.

## P26: The Brain Wired for Sleep: Where and How

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BASAL FOREBRAIN AND THALAMIC RETICULAR NUCLEUS PARVALBUMIN PROJECTIONS STUDIED WITH ANTEROGRADE VIRAL TRANSPORT OF CHANNELRHODOPSIN2-ENHANCED YELLOW FLUORESCENT PROTEIN (CHR2-EYFP) CONJUGATES  
*McKenna JT, Thankachan S, Kim T, Cordeira JW, McNally JM, Winston S, Basheer R, Strecker RE, Brown RE, McCarley RW*

### 0061 POSTER BOARD 2

EXTRACELLULAR ADENOSINE TRIPHOSPHATE INHIBITION OF MOUSE BASAL FOREBRAIN CHOLINERGIC AND GABAERGIC NEURONS VIA BREAKDOWN TO ADENOSINE  
*Yang C, McCarley RW, Basheer R, Brown RE*

### 0017 POSTER BOARD 3

SLEEP/WAKE CHANGES IN SPONTANEOUS AND EVOKED NEURONAL ACTIVITY MEASURED IN THE DROSOPHILA BRAIN USING CALCIUM IMAGING  
*Bushey D, Tononi G, Cirelli C*

### 0062 POSTER BOARD 4

NEURONAL ACTIVITY DURING SLEEP IN THE CHICKEN  
*Lyamin OI, Bhagwandin A, Kosenko PO, Romanenko K, Mukhametov LM, Siegel JM*

### 0018 POSTER BOARD 5

SLEEP IS ASSOCIATED WITH NUCLEAR ACCUMULATION OF ARC/ARG3.1 IN LAYERS II-III OF MOUSE MOTOR CORTEX  
*Honjoh S, de Vivo L, Okuno H, Bito H, Tononi G, Cirelli C*

### 0063 POSTER BOARD 6

UNILATERAL DEPLETION OF DOPAMINE IN THE DORSOLATERAL STRIATUM INDUCES SLEEP DEFICITS IN THE ABSENCE OF GROSS MOTOR IMPAIRMENT  
*Albers JA, Catich E, Larsen N, Anch M*

### 0019 POSTER BOARD 7

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*Duenwald E, Ames C, Szentirmai É*

### 0064 POSTER BOARD 8

TRK B RECEPTOR AGONIST, 7,8-DIHYDROXYFLAVONE, SUPPRESSES SLEEP AND OREXIN LEVELS  
*Feng P, Akladios A, Hu Y, Smith PJ*

### 0020 POSTER BOARD 9

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*De la Herrán-Arita AK, Kornum BR, Mahlios J, Lin L, Jiang W, Macaubas C, Mellins ED, Mignot E*

### 0021 POSTER BOARD 10

TRANSETHNIC HLA COMPARISON IN NARCOLEPSY  
*Ollila HM, Faraco J, Han F, Lin L, Mignot E*

### 0022 POSTER BOARD 11

DISTURBANCE OF MAXILLOFACIAL BONE GROWTH INDUCED BY INTERMITTENT HYPOXIA IN GROWING RATS  
*Oishi S, Shimizu Y, Hosomichi J, Kuma Y, Maeda H, Nagai H, Kaneko S, Suzuki J, Yoshida K, Ono T*

### 0065 POSTER BOARD 12

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*Kaur S, Scammell T, Chamberlin NL, Saper CB*

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CHRONIC INTERMITTENT HYPOXIA AND HYPERCAPNIA, AN ANIMAL MODEL FOR OBSTRUCTIVE SLEEP APNEA, ALTERS A PATHWAY FROM THE HYPOTHALAMIC PARAVENTRICULAR NUCLEUS TO PARASYMPATHETIC CARDIAC NEURONS IN THE BRAINSTEM

*Dergacheva O, Mendelowitz D*

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**POSTER BOARD 14**

CHRONIC INTERMITTENT HYPOXIA/ HYPERCAPNIA DIMINISHES EXCITATORY GLUTAMATERGIC AND INCREASES INHIBITORY GABA NEUROTRANSMISSION TO PRE-MOTOR CARDIAC VAGAL NEURONS

*Dyavanapalli JR, Dergacheva O, Mendelowitz D*

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Kim SJ, Reid KJ, Benloucif S, Abbott SM, Zee PC

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Sliman JA, Dressman MA, Xiao C, Licamele L, Baroldi P, Polymeropoulos M

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Licamele L, Xiao C, Lockley S, Dressman MM, Polymeropoulos MH

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*Goldman SE, Burgess HJ, Corbett BA, Laudenslager ML, Wofford D, Fawkes DB, Wyatt A, Malow BA*

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*Thomas SJ, Lichstein KL*

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*Belcher R, Roth T, Gumenyuk V, Mengel HJ, Philport J, Drake CL*

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*Gumenyuk V, Belcher R, Roth T, Bazan L, Larose C, Drake CL*

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*Tsai H, Kuo TB, Lee G, Yang CC*

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*Ensrud KE, Guthrie KA, Hohensee C, Joffe H, LaCroix AZ, Landis CA, Woods NF, Newton KM*

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*Kyle SD, Barilla H, MacMahon K, Gehrman P, Corbitt C, Henry A, Perlis ML, Espie CA*

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*Evans JL, Nadler J, Fang E, Preud'Homme X, Chapman J, Daughtry L, Bolognesi M, Attarian D, Wellman S, Krystal A*

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*Fang E, Nadler J, Evans J, Preud'Homme X, Daughtry L, Chapman J, Bolognesi M, Attarian D, Wellman S, Krystal A*

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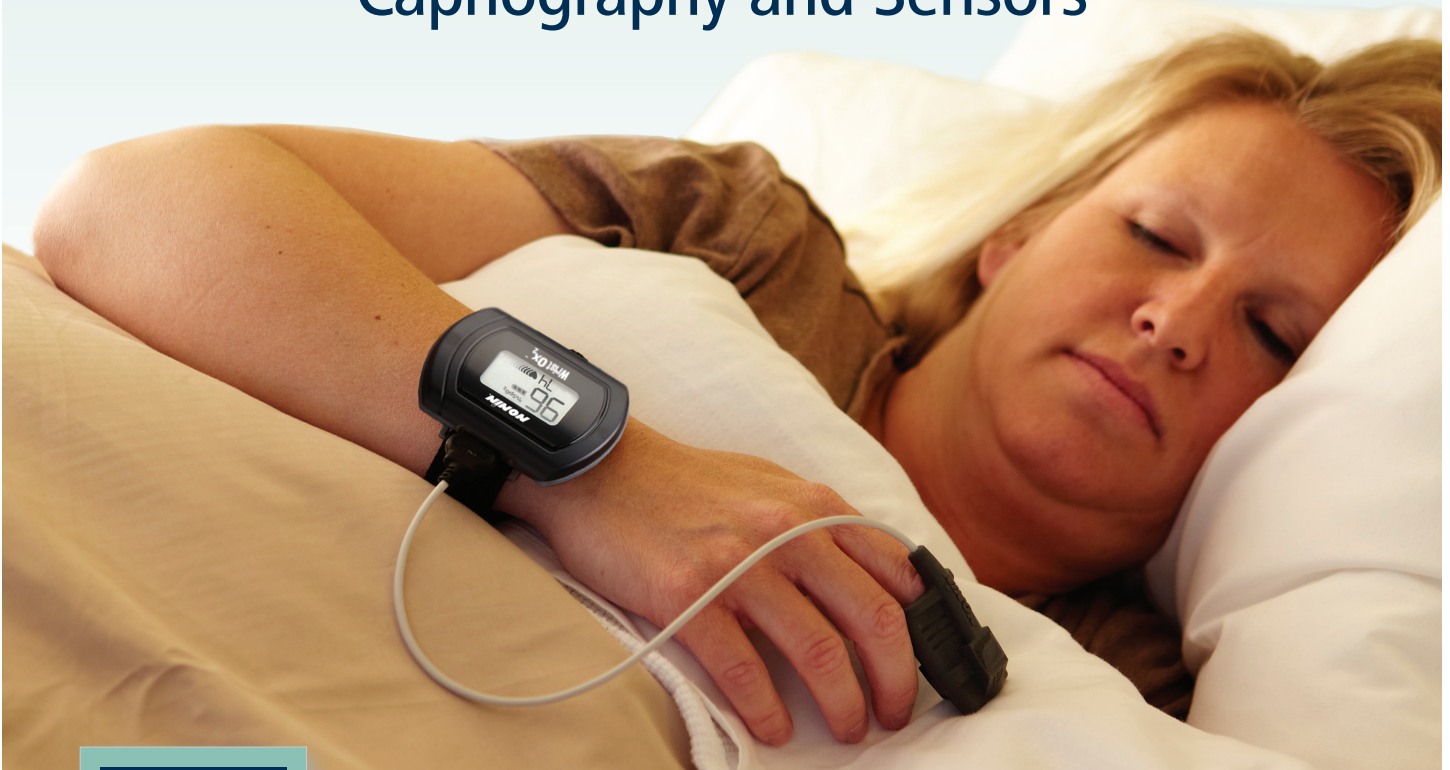
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