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© 2005 by the Sleep Research Society.
It is a very exciting time in the field of sleep research, and I am honored to have the privilege to serve as the President of SRS during this time. Our membership has grown by more than ten percent in the past year to 1,114 members. The APSS meeting in Colorado was a great success, thanks to the efforts of the APSS Program Committee and the organizational skills of our Executive Director Jerry Barrett and his great staff. The financial resources of the Society have grown by nearly twenty percent in the past year, even after accounting for the funding of the new SRS Foundation and the issuance of our new grant program. Thanks to the hard work of many Society members and to our ongoing commitment to work together with our colleagues in other organizations in the sleep field, sleep research is flourishing and many benefits are accruing to our members.

**Institute of Medicine Project — The Institute of Medicine Committee on Sleep Medicine and Research, which is co-sponsored by SRS and chaired by Harvey R. Colten, M.D. from Columbia, has already held three out of its planned seven meetings, and is making excellent progress in accomplishing its goals to identify: 1) the public health significance of sleep, sleep loss, and sleep disorders; 2) barriers and opportunities for improving interdisciplinary research and medical education and training in the area of sleep and sleep medicine; and 3) strategies for developing increased support for sleep medicine and sleep research in academic health centers. The IOM Committee, which includes former SRS President Emmanuel Mignot, M.D., Ph.D. among its members, wants your input on its goals, which are described in greater detail on the IOM website (http://www.iom.edu/project.asp?id=23160). Please submit comments to the project's staff officer, Bruce Altevogt, at baltevogt@nas.edu. Your comments will be considered by the committee during the study period.**

J. Christian Gillin, M.D. and Elliott D. Weitzman, M.D. Research Grant Programs — Over the past year, the SRS has successfully launched the SRS Foundation, which is directed by SRS Past President Sonia Ancoli-Israel, Ph.D. The SRS Board has provided a grant in the amount of $100,000 to the foundation to support a new grant awards program. This has been made possible because of the strong support from the membership in renewing their membership commitment and through their participation in the APSS meeting. As we continue to grow in membership numbers and in meeting attendance we will be able to provide even greater support to the foundation. Congratulations to SRS members Dmitry Gerashchenko, M.D., Ph.D., Lisa Meltzer, Ph.D., Natalia Santsova, Ph.D., and Kenneth P. Wright, Jr., Ph.D. on your selection to receive 2005 J. Christian Gillin, M.D. Research Grants and to Michael Terman, Ph.D. on your selection to receive a 2005 Elliott D. Weitzman, M.D. Research Grant! These five SRS-member grant awardees will each receive $20,000. This was possible because, in addition to the direct monetary support provided to the foundation, the SRS provides all the management and administration support to the foundation without cost. Thus, the SRS Foundation is able to pass on all of the funds it receives from the SRS to grant awardees, without any administrative overhead expenses. All SRS members should consider taking advantage of this new member benefit. The 2006 research grant award winners will be announced at the 2006 Research Dinner at the 20th Anniversary Sleep Meeting of APSS.

**Primer of Sleep Research Course —** Given the success of the 2005 Primer of Sleep Research Course, Michael V. Vitiello, Ph.D. and Eric A. Nofzinger, M.D. are directing the Second Annual Primer of Sleep Research Course on February 10-12, 2006 at the Hilton La Jolla Torrey Pines in La Jolla, California.

**SRS Basics Of Sleep Guide —** The SLEEP Research Society's Basics of Sleep Guide, edited by SRS President-Elect Mark Opp, Ph.D., has clearly fulfilled an unmet need in the field, as it is already in multiple printings. I wish to thank all of the SRS members who contributed to this important reference work.

**Membership Drive —** As I indicated at the APSS meeting in Denver, one of my goals over the coming year is to ensure that all scientists conducting research on sleep or its disorders—as broadly defined—are welcome to join the Sleep Research Society. This includes a full range of scientists, from those conducting the most basic fundamental research or theoretical mathematical modeling to those conducting applied research or patient-oriented research on sleep disorders. Please invite those who you think may benefit from SRS membership to join our Society, as we all gain from the strength of our working together.

**SLEEP —** Our Journal has never been more successful. It is publishing top quality papers every month. Under the leadership of David F. White, M.D. and the able staff of deputy and associate editors he has assembled, the impact factor of the journal is at an all time high of nearly 5—excluding that of most specialty journals and many highly respected journals of more general circulation. Moreover, the Journal is financially sound. Please continue to submit your high quality research to the Journal!

**SRS Task Force on Sleep & Public Policy —** As I discussed at the APSS meeting in Denver, in response to a request for advice by State Senator Richard Moore of Massachusetts, in 2004 the SRS formed a Presidential Task Force on Sleep and Public Policy. SRS members on the Task Force, which I have chaired, include David F. Dinges, Ph.D., Christopher Landrigan, M.D., M.P.H., James K. Walsh, Ph.D.; Larry Epstein, M.D., President of the American Academy of Sleep Medicine, also serves as a member of the Task Force. We were requested to develop model legislation in two areas: drowsy driving and limits on resident work hours.

**Drowsy Driving Legislation —** The scope of the drowsy driving problem in the U.S. is staggering. Data collected by the National Highway Transportation Safety Administration indicate that at least 15 million drivers nationwide have nodded off or fallen asleep while driving in the past six months. That equates to more than eighty thousand drivers in the nation falling asleep at the wheel every day, or about one every second throughout day and night, endangering themselves, their families, and their fellow citizens. The outcome of these fall-asleep episodes is sobering. More than half of these drowsy drivers wandered onto another lane, drifted onto the shoulder, or drove across the centerline during the incident. In another 10 percent of these incidents, the driver ran off the road. In fact, an estimated 1,350,000 drivers nationwide were involved in a drowsy-driving-related crash in the past five years—that is 30 drowsy driver crashes per hour or one every 2 minutes. Yet this nation, which has laws in all 50 states and spends over $300 million annually on education regarding the hazards of drinking and driving, has only 1 very limited drowsy driver law (in New Jersey against driving after more than 24 hours of wakefulness) and spends about 0.1 percent of that amount on education related to drowsy driving. Based on the recommendations of the Task Force, the SRS Board has decided that it is time for change. The SRS Board has endorsed model Drowsy Driving legislation that is sponsored by Senator Richard Moore in Massachusetts. This past September, I testified in support of the pending legislation together with Senator Richard Moore in hearings before the Transportation Committee of the Massachusetts Senate at the Massachusetts State House in Boston. Major Amy Huter delivered very moving testimony at the hearings about her fiancé, Major Robert Raneri, who was killed by a drowsy driver only eight days before they were to have been married. I am very pleased to report that the National Sleep Foundation and the American Academy of Sleep Medicine have joined the Sleep Research Society in endorsing this pending legislation. This legislation is just as important to raising societal awareness of this issue as drunk driving legislation was to that hazard 50 years ago.

**Patient and Resident-Physician Safety Protection Legislation —** The Board of the Sleep Research Society has also developed model legislation to limit resident work hours that has been endorsed by the Sleep Research Society and the National Sleep Foundation. Dr. Christopher Landrigan and I testified earlier this year at hearings on legislation limiting resident work hours, which is currently pending in the Massachusetts legislature. We have provided Senator Richard Moore with the suggested modifications to the pending legislation that have been recommended by the SRS Board.

Finally, I would like to thank Mr. Jerry Barrett, our Executive Director, Mr. John Slater, the new Sleep Research Society Coordinator, and Ms. Jill Harmeling, the new Assistant Sleep Research Society Coordinator, for all of their efforts on our behalf. Our central office has responded well to all of the additional responsibilities required to take on and maintain these many new initiatives as we prepare for the upcoming annual meeting—Sleep 2006—to be held in Salt Lake City this coming June. I look forward to seeing you all there!

Sincerely,

Charles A. Czeisler, Ph.D., M.D.
Distinguished Scientist

This is the Society's highest award for scientific advances in the field of sleep research. The award is given for significant, original and sustained contributions of a basic, clinical or theoretical nature. The award winners for 2005 were:

Christian Guilleminault, MD, PhD (photo a left)
Jacques Montplaisir, MD, PhD (photo a right)

Outstanding Educator

This award is given to an investigator to honor his/her outstanding effort in disseminating basic and/or clinical sleep research as a mentor, teacher, or through public education. The award winner for 2005 was

Mary A. Carskadon, PhD. (photo a center)

Young Investigator Awards

This award recognizes an outstanding research effort by a new investigator in the field of sleep research. The basis for evaluation of candidates is a single publication in a refereed journal.

Apoor Gami, MD for “Altered Day-Night Pattern of Sudden Death Due to Cardiac Causes In Patients with Obstructive Sleep Apnea” (photo d)
Reto Huber, PhD for “Local Sleep and Learning” (photo c)
Joshi John, PhD for “Cataplexy-active Neurons in the Posterior Hypothalamus: Implications for the Role of Histamine in Sleep and Waking Behavior” (photo b)

William Gruen Award

This award is given to a young investigator who submits the best abstract within the instrumentation category regardless of their member status for innovation in sleep research.
The award winner for 2005 was:

Walter Carr, PhD (photo e)

Excellence Travel Awards

Lichao Chen
Melanie LeBlanc
Ruben Guzman-Marin, MD, PhD
In the 1970’s, it became apparent that, for some individuals, sleep had a profound and deleterious impact on their breathing. This sleep-induced impairment in breathing was manifest as recurrent cessation of breathing, so-called apnea. The apneas were found to be obstructive in nature, and the site of obstruction was identified to be the pharynx. Obstructive sleep apnea was found, at times, to be severe, even fatal. However, the recognition that sleep-disordered breathing was as common as diabetes, hypertension and asthma was a shocking and disquieting revelation. Since then, the implication of sleep-disordered breathing for safety and cardiovascular disease have spurred the development of a field of clinical care and clinical investigation. The present communication reviews the pathophysiology of sleep disordered breathing and discusses factors that make it a common and uniquely human disorder.

Since its discovery, sleep disordered breathing has been classified into two causal categories, obstructive or non-obstructive, so-called central. While this classification is logically sound and can be documented using the polysomnogram, it is, in some sense, a straw man; the distinction is a fuzzy one from a functional point of view. Nonetheless, a fundamental reality is apparent, namely: obstructive sleep apnea results from closure of the pharynx and central sleep apnea, at least in the setting of heart failure, results from high gain of chemoreflexes controlling breathing. Confusion arises because the distinction, at a causal level, is somewhat muddied by the fact that both disorders share causal factors. Specifically, obstructive sleep disordered breathing entails oscillation of a chemical feedback control system with primary reflex elements involving the pharyngeal dilators. On the other hand, central sleep apnea involves pharyngeal obstructive elements which play a role in maintaining the oscillation of the negative feedback system. Thus, the obstructive versus central sleep apnea dichotomy from a pathophysiological point of view, represents a somewhat contrived distinction and a unified view appears to have more validity. Specifically, the expression of obstructive sleep-disordered breathing as apneas, hypopneas or stable high upper airway resistance is attributable, in large part, to the operation of chemoreflexes that control upper airway muscles, and stability or instability in central sleep apnea relates in part to factors that determine pharyngeal mechanics.

The root cause of obstructive sleep disordered breathing can be viewed as structural narrowing of the pharynx at one or more of its three segments. Pharyngeal structure can be evaluated mechanically only after eliminating neuromuscular factors that strongly influence, its size and shape. In other words, understanding factors contributing to obstructive sleep-disordered breathing requires a separate evaluation of anatomic factors and neuromuscular factors. This is key because sleep/wakefulness states and chemoreflexes influence the activity of pharyngeal dilators which operate against a background of anatomic features. A comparison of the structural features of the pharynx in apneics with matched controls reveals little difference during wakefulness. But when both groups received general anesthesia and paralysis, the structural differences become readily apparent; apneics have a lower maximum area and a higher closing pressure than normals. In other words, once neuromuscular factors have been eliminated, the underlying structural abnormality of the apnic is readily apparent.

When humans are awake, proprioceptive reflexes arising from the pharynx and larynx act on pharyngeal dilator muscles to maintain a patent pharynx except during swallowing, no matter how structurally narrowed the pharynx. Thus, while awake the apneic exhibits a heightened genioglossal activity in patients which is driven by these reflexes in order to compensate for the structural narrowing of the pharynx. Upon going to sleep, the proprioceptive reflexes that jealous guard the airway during wakefulness are lost. This profound alteration in neurocontrol of the pharyngeal airway plays a pivotal role in the genesis of all sleep disordered breathing. The key pathophysiological features underlying obstructive sleep disordered breathing can be summarized as a sleep induced loss of proprioceptive reflexes that occurs in the setting of a structurally narrowed pharynx. This interaction is expressed as recurrent apneas, hypopneas or high upper airway resistance depending upon the gain and delay of chemoreflexes involving the pharyngeal dilator muscles.

Central sleep apnea in the setting of heart failure, so called Cheyne Stokes Breathing, has been shown to result from increased delay and gain of reflexes generated by the peripheral and central chemoreflexes. An additional factor relates to pharyngeal instability. During the waxing and waning of chemical drive, there is a corresponding increase and decrease in pharyngeal dilator activity causing changes in pharyngeal resistance which further increases the tendency of the system to oscillate. Recent evidence indicates that a key factor promoting stability of the respiratory control system during sleep is not the overall chemoreflex gain but, rather, the relative gains of the peripheral and central chemoreflex. In other words, situations associated with increase sensitivity of peripheral chemoreflex or the central chemoreflex appear to result in ventilatory instability and sustained oscillations during sleep. However, parallel increases in the effectiveness of both chemoreflexes do not destabilize the system to the same extent.

Our current state of knowledge provides a reasonable basis to speculate about the evolutionary significance of sleep disordered breathing. Obstructive sleep disordered breathing appears to be a uniquely human phenomenon, apparently related to the highly compliant human pharynx. For example, obese pigs do not develop obstructive sleep apnea even though they have substantial mechanical impairments. This would appear to relate to a much more compliant pharynx with a closing pressure which is substantially lower than humans. One might speculate that the mammalian pharynx only recently became highly compliant in the evolution of Homo sapiens, and this increase in compliance is related to linguistic advances. This might have been associated with development of pharyngeal stabilizing reflexes related to speech itself and, hence, present only during wakefulness. The pressures to develop such reflexes during sleep have presumably have not had time to fully act in human development.
EDITOR’S Column
by Kenneth P. Wright Jr., PhD.

This issue of the Bulletin highlights society activities and awards. Included is the announcement of a number of new initiatives and awards, reports from section heads and one from the secretary/treasurer. This issue continues with the tradition of providing a summary of the APSS keynote address. A piece is also provided by the Trainee Member at Large on examples of career paths into the field of sleep. I encourage the membership to look at the latest SRS webpage www.sleepresearchsociety.org as there are a number of available resources.
Primer of Sleep Research Course

Date: February 10, 2006 - February 12, 2006
Location: Hilton La Jolla Torrey Pines in La Jolla, California.

Event Description: Interested in the techniques and content areas of sleep research? Are you also interested in learning the basic concepts of the advantages and limitations of non-laboratory techniques as well as better interpretation of sleep research and literature? Then the Primer Sleep Research Course, February 10-12, 2006 at the Hilton La Jolla Torrey Pines in La Jolla, California, is for you! You may register online through a link available on the SRS web page or download the registration form at www.sleepresearchsociety.org/PDFs/primer_of_sleep_brochure_.pdf.

You can also contact the Meeting Department at (708) 492-1093 for more information.

Webpage Resources

The communications committee invites SRS members to join the SRS discussion forum.

This announcement is designed to inform the SRS membership about the SRS Online Community located on the SRS webpage, www.sleepresearchsociety.org. After logging in as a member, you will see the following link that will take you to the discussion forum.

Currently, there are forums activated on the following topics: General Discussion, Circadian Rhythm Disorders, Government Affairs, Insomnia, Narcolepsy, Other Sleep Disorders, Parasomnias, RLS & PLMS, Snoring & Sleep Apnea. Members can read posts from other members on the topic and post a message themselves. Members can also create a new discussion topic. The purpose of this discussion board is to allow SRS members to communicate with one another in an open forum.

Summary Statements available only online:

Beginning October 1, 2005, NIH will no longer send hard copies of the Summary Statements to Principal Investigators (PIs) and Individual Fellows Applicants. Summary Statements are accessible electronically to PIs and Fellows in the eRA Commons within approximately 8 weeks of the Scientific Review Group (SRG) meeting.

NIH Announces plans to transition from paper to electronic submissions for all grants in 2006:


Did you know?

Did you know that you can renew your SRS membership online? Simply logon to the SRS webpage www.sleepresearchsociety.org using your membership login and password. You can use a credit card to pay for your membership. Members can also update their personal information, change their password, and choose to receive SRS Updates via email.
Target Audience & Topics
This will be a two and a half day interactive course for those wanting to develop a better understanding of a number of the important techniques and content areas of sleep research. Topics will include: reviews of the basic concepts of genetics, physiology, immunology, circadian rhythms, neuroimaging, and epidemiology as they relate to sleep and the sleep literature; reviews of the unique challenges of studying sleep in animal models and in special populations across the human lifespan; and, reviews of the advantages and limitations of non-polysomnographic techniques to evaluate sleep quality, including evoked potentials, actigraphy, performance measures and field studies.

Course Objectives
Upon completion of the course, participants should be able to:

• Recall potential contributions a variety of scientific disciplines, including: genetics, physiology, immunology, circadian rhythms, neuroimaging and epidemiology, can make to our understanding of sleep and its disorders.

• Integrate the challenges specific to studying sleep in various stages of the human lifespan from infancy to old age and in certain medical conditions.

• Distinguish the advantages and limitations of various non-laboratory-based objectives sleep quality recording techniques.

• Interpret sleep research and sleep medicine literatures.

All course material will be presented by recognized experts in the content area and will consist of 60 minutes of formal presentation with an additional 15 minutes reserved for audience questions and general discussion.

www.sleepresearchsociety.org
Scientists and physicians know how important research is and they know how difficult it is to secure funding. The Sleep Research Society understands this as well. Therefore, earlier this year, the Sleep Research Society board of directors created the Sleep Research Society Foundation to spur new research in sleep and to provide meaningful funding opportunities for SRS members. This is an exciting and important initiative for our membership and the sleep field as well as a critical step in advancing the society’s mission to foster scientific investigation of all aspects of sleep and to provide forums for the exchange of knowledge.

To show its commitment to the foundation, the board of directors contributed $100,000 of seed money to the SRSF to support the inaugural round of research grants. The board of directors also created two award categories, honoring pioneers in sleep research.

The J. Christian Gillin, M.D. Research Grant supports beginning investigators in sleep research for the purpose of gathering pilot data for use in future grant applications. Each year, the SRSF will fund up to three, one-year grants with each in the amount of up to $20,000.

The award is in honor of Dr. Gillin, who established the nation’s first time isolation laboratory at Montefiore Medical Center, part of the Albert Einstein College of Medicine in the Bronx, N.Y., where he also served as chairman of the department of neurology. He conducted pioneering investigation of various circadian rhythm sleep disorders and he developed chronotherapy.

With initial funding in place Dr. Joel Dimsdale, with the assistance of members of the Research Committee and other SRS members, developed procedures for proposals and rating criteria for evaluations modeled on the National Institutes of Health grant review process.

Dr. Dimsdale and his committee implemented the following review and scoring process: Primary, secondary and reader reviewers were assigned to each proposal and each submitted a summary of the proposal. Next, a conference call was held to discuss the proposals and following the call, each reviewer submitted his/her scores, which were based on a 1-5 rating scale, for the grant proposal. The national office tabulated and averaged the scores to determine the priority of funding.

I thank Dr. Dimsdale and each volunteer for the thoughtful input they provided and their contribution to the SRSF. Each spent countless hours, first developing the review and scoring process and then reviewing and scoring the proposals. It is through the spirit of volunteers such as these that the SRSF will continue to be successful in funding research of SRS members.

The first round of submissions and reviews took place in the fall of 2005 and resulted in six grants being awarded. I congratulate the inaugural recipients of the J. Christian Gillin M.D. Research Grant:

**Elliott D. Weitzman, M.D.**

Elliott D. Weitzman, M.D.

**J. Christian Gillin, M.D.**

J. Christian Gillin, M.D.

**Dmitry Gerashchenko, M.D., Ph.D.**

Staff scientist in the Molecular Neurobiology Laboratory Biosciences Division of SRI International in Menlo Park, Ca. “Identification of neurons in the lateral hypothalamus playing critical role in arousal”

**Lisa Meltzer, Ph.D.**

Assistant professor in the department of pediatrics and division of psychiatry at the University of Pennsylvania School of Medicine, Philadelphia, Pa. Clinical psychologist in the Children’s Hospital of Philadelphia Sleep Center, Philadelphia, Pa. “Sleep Patterns in Children with Autism and their Caregivers”

**Natalia Suntsova, Ph.D.**

Assistant research psychologist in the department of psychology at the University of California, Los Angeles and VA Greater Los Angeles Healthcare System. “Absence epilepsy and the hypothalamic/basal forebrain sleep-promoting and arousals systems”

**Kenneth P. Wright Jr., Ph.D.**

Assistant professor in the department of Integrative Physiology, Centers for Neuroscience and the Integrative Study of Work at the University of Colorado at Boulder. “The Metabolic Costs of Extended Wakefulness”

I also congratulate the recipient of the 2005 Elliott D. Weitzman, M.D. Research Grant:

**Michael Terman, Ph.D.**

Professor of clinical psychology in psychiatry in the department of psychiatry at Columbia University and a research scientist at the New York State Psychiatric Institute in New York, N.Y. “Pharmacokinetics of a New Controlled Release Melatonin Formulation”

More information about the grants, including the process and application, is available at www.sleepresearchsociety.org.

Congratulations again to all the grant recipients and Happy Holidays to all our members. May the New Year bring you lots of research funding and lots of good sleep.

**Sonia Ancoli-Israel, Ph.D.**

President
Sleep Research Society Foundation
Your Support is Needed!

Your contribution allows the Sleep Research Society Foundation to extend its reach and influence, training more investigators and funding even more research in the years to come. By supporting sleep research, you are playing a vital role in advancing a comprehensive understanding of sleep. This leads to more effective medical care and improved health and quality of life for both sleep disorders patients and the general public.

The Sleep Research Society Foundation is a not-for-profit 501(c)(3) charitable/scientific organization and, as such, your contribution should be fully tax deductible. Please consult your tax advisor for additional information.

You can also contribute to the Foundation by purchasing SRS apparel and merchandise at www.sleepresearchsociety.org. All proceeds from the sale of these items benefit the Foundation.

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Please send your contribution to the attention of SRS Coordinator at:

One Westbrook Corporate Center, Suite 920, Westchester, IL 60154

Phone: (708) 492-1093 Fax: (708) 492-0943
Research Focus of the Laboratory
The current research interests of the Lab cover several areas:

**Sleep Regulation**
The effects of sleep deprivation (both selective and total) on sleep, sleepiness and performance have been studied. Sleep regulation in monozygotic and dizygotic twins is currently under investigation.

With the growing interest and use of quantitative analysis of the EEG, also local processes were studied, showing that SWS deprivation differentially affect different cortical areas.

The issue of sleep loss-induced alterations was also investigated by using different measures of sleep microstructure as Cyclic Alternating Pattern (CAP) and ASDA arousals: pros and cons were also considered.

Moreover, the phasic events of REM and NREM sleep were studied. These experimental contributions showed a substantial independence of different phasic events of REM sleep (MEMAs -middle-ear motor activity- and REMs -rapid eye movements). A complementary relationship between wake and REM sleep was also shown with respect to oculomotor and middle-ear muscle phasic activity. With respect to the NREM phasic activity, particular attention was dedicated to the landmarks of stage 2 (sleep spindles and K-complexes), showing that the former are in reciprocal relationship with SWS (and present a specific topographical distribution) and the latter can be considered as the forerunner of delta waves.

**Sleep Transitions**
The transition states, in particular sleep onset (SO) and offset, have been extensively studied. According to our results, the “boundary” between wake and sleep should be shifted toward the onset of stage 2, and the functional meaning of the classical EEG bands, at least during the SO, should be reconsidered. The observed quantitative changes of EEG are: (1) an anterior spreading of the alpha rhythm as the transition progresses; (2) an early EEG synchronization of several anterior areas. Recent findings show that an opposite phenomenon can be seen at the sleep offset. These data were recently confirmed by means of a new EEG analysis techniques, the Direct Transfer Function (DTF), which is able to show the directional features of functional coupling of different cortical regions. DTF data indicated a prevalence of occipital-to-frontal flow of EEG activity at sleep onset; interestingly, these effects are strengthened by the increase of sleep pressure. Finally, significant correlations were observed between slow eye movements and EEG changes at SO, suggesting that sigma activity could trigger the reduction and the final disappearance of SEMs in the late part of the wake-sleep transition.

We also showed that REM sleep onset is characterized by a general change of EEG activity toward a relative occipital diffusion of power, specifically distinguished by a posterior dominance of middle and high frequencies.

This laboratory has been also deeply involved in the applied research field related to the phenomenon of sleep inertia, using both physiological (EEG, evoked potentials) and behavioral-cognitive measures. Several studies were carried out to show how cognitive and behavioral abilities drastically drop when people are awakened, and how this can be explained on the basis of a reduced cortical activation upon awakening. With the aid of selective and total sleep deprivation these results were further deepened, showing that sleep inertia is strongly affected by slow wave sleep amount and sleep depth.

**Individual Differences/Stability/Genetics**
We recently reported the existence of an EEG fingerprint of human sleep in the spindle frequency range. With the extent to study the biological foundations of the individual differences and using an approach which emphasizes the within-subject similarities, the 8.0-15.5 Hz range of EEG spectral power during NREM sleep was studied. We showed that each individual is characterized by a kind of EEG “spectral signature”, i.e. a peculiar topographic distribution of the EEG power along the antero-posterior cortical axis in the above-mentioned frequency range. Such EEG power distribution remains stable across six consecutive nights (adaptation, 2 baseline, 2 SWS deprivation, recovery) characterized by large differences in sleep architecture and homeostasis. It was suggested that this EEG “fingerprint” could be related to individual differences in genetically determined functional brain anatomy, rather than to sleep-dependent mechanisms. We are currently running an experiment investigating sleep characteristics in monozygotic and dizygotic twins.
Technical Capabilities of the Laboratory

1. Polysomnographic sleep recordings: 2 shielded, sound-proof, temperature controlled room, connected to a polygraph Galileo Vega 24 (ESAOTE Biomedica)
2. Polysomnographic sleep analysis and event-related potential recording, with customized softwares.
3. Ambulatory sleep recordings: 32 ch portable polygraph HandyEEG (Micromed)
5. Actigraphy: 5 AMI Minimotionlogger.
6. Transcranial Magnetic Stimulation: 2 Magstim 200 stimulators (with figure-of-eight coils), 1 BitStim Module (MAGSTIM Comp. Ltd.)
7. Electromyography: a digital hand-held MYTO system (EBNeuro)

Training Opportunities in the Laboratory

The Laboratory is open to collaboration with foreign research groups, and national and international students are welcome. At the moment the research funds are limited, but it is possible to apply for undergraduate, graduate and post-doctoral grants thanks to the Italian Ministry of Foreign Affairs. Moreover, Italy is an eligible country for collaborative grants as Marie Curie, Human Frontier Science Program, IBRO, etc. Our research funds are currently granted by the University and the Italian Ministry of University and Research.

Representative Publications

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<td>Reviews and theoretical papers</td>
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Laboratory Spotlight

**About the Lab:**
Basic sleep research using flies, mice and rats is being conducted by Chiara Cirelli, M.D. Ph.D., who is an Assistant Professor of Psychiatry at the University of Wisconsin-Madison and by Daniel Bushey, Ph.D., who is a postdoctoral fellow. Research trainees and staff include Roman Aykido, Tamika Jaja, Anne Luebke, and Martha Pfister-Genskow.

**Long-term Research Goal of the Laboratory**
Our research aims at understanding the function of sleep and clarifying the functional consequences of sleep loss. We believe that the key to understanding sleep is to be found at the intersection between the cellular and the system’s level. This is why our laboratory uses a combination of different approaches, from genetics in fruit flies to whole-genome expression profiling in invertebrates and mammals, to behavioral and EEG analysis in mice and rats.

**Lines of Work**

1. **Identification of genes involved in sleep regulation using forward genetics in Drosophila.** We and others have recently demonstrated that fruit flies sleep and need sleep in much the same way as mammals do (Shaw et al., 2000; Hendricks et al., 2000; Huber et al., 2004; Cirelli et al., 2005a,b). This finding has opened the way to the genetic dissection of sleep using mutant screening and other powerful tools of genetic manipulation that are available in Drosophila. Over the past 4 years our laboratory has performed a large-scale mutagenesis screening for sleep phenotypes in Drosophila. Our goal is to identify flies that need little sleep as well as flies that are resistant to sleep deprivation. We have screened so far more than 9000 mutant lines (> 150,000 individual flies) and identified several candidate lines (Cirelli, 2003). We are now performing the necessary molecular and genetic characterization of such mutant lines. The characterization of one of the most extreme short sleeper mutants has just been completed (Cirelli et al., 2005a). This study demonstrated that a point mutation in the voltage-sensing module of the voltage-dependent potassium channel Shaker abolishes the Shaker current and decreases sleep from 900 to 300 min/day. Thus, Shaker appears to be a key regulator of sleep amount in fruit flies. Importantly, Shaker-like channels are also present in mammals, and we are currently studying their role in mammalian sleep regulation using mice and rats.

2. **Molecular correlates of sleep and spontaneous wakefulness.** Our laboratory has pioneered the use of whole-genome profiling to identify the genes whose expression changes in the brain in sleep relative to wakefulness. Since 1998 we have pursued such genome-wide screening using high-density DNA microarrays in fruit flies, rats, hamsters and humans. In rats, we have found that hundreds of genes are differentially expressed in the brain during sleep and waking (Cirelli et al., 2004). These genes belong to diverse and often complementary functional categories, suggesting that sleep and wakefulness favor different cellular processes. Waking-related transcripts are involved in energy metabolism, excitatory neurotransmission, transcriptional activation, synaptic potentiation and memory acquisition, and the response to cellular stress. Sleep-related transcripts are involved in brain protein synthesis, synaptic depression, as well as membrane trafficking and maintenance, including cholesterol metabolism, myelin formation, and synaptic vesicle turnover.
Recently we have found that molecular correlates of sleep and wakefulness are also present in flies, and that they are often similar to those described in rats (Cirelli et al., 2005b). We also found that a key factor that controls the modulation of gene expression by behavioral state is the activity of the noradrenergic system, which is high during wakefulness and low during sleep (Cirelli et al., 1996; 2000, 2004). High noradrenaline levels during wakefulness are required for the induction of transcripts involved in synaptic plasticity and in the cellular response to stress. By contrast, low noradrenaline levels during sleep are associated with the increased expression of transcripts favoring protein synthesis.

3. **Molecular correlates of sleep deprivation.**

In a recent transcriptomic analysis of the brain of rats sleep deprived for several days we have found that prolonged sleep loss induces the expression of several antibodies, including autoantibodies, and glial genes. We are now performing additional experiments to determine whether continuous wakefulness may be detrimental to glial functions. We are also performing a systematic transcriptomic analysis in the brain of patients who died of fatal familial insomnia, to determine whether transcripts coding for autoantibodies and glial proteins are also specifically induced by prolonged sleep loss in humans. Finally, we have just started a large-scale proteomic profiling in flies, rats, and sparrows. The goal is to identify brain proteins specifically affected by sleep loss.

4. **The synaptic homeostasis hypothesis.**

The results of these and other studies have prompted a new hypothesis about the functions of sleep that needs to be examined through follow-up experiments. Specifically, we have hypothesized that the amount of synaptic potentiation that occurs during waking is a major determinant of sleep intensity, and that sleep is needed to down-regulate synaptic weight. The synaptic homeostasis hypothesis (Tononi and Cirelli, 2005) is being tested at several different levels in a joint effort with the laboratory of Dr. Giulio Tononi. Dr. Tononi's team uses computer simulations and performs human experiments with high-density EEG and transcranial magnetic stimulation. Dr. Cirelli's team uses flies, mice and rats to test the hypothesis at a molecular, behavioral, and electrophysiological level. In a recent experiment in rats we have found that a waking period associated with reduced neural plasticity results in a blunted induction of plasticity-related genes and is followed by a sleep period of reduced intensity (Cirelli et al., 2005c). We are now determining whether the converse is also true, i.e. whether an increase in synaptic potentiation during waking is associated with a stronger induction of plasticity-related genes and is followed by a sleep period of increased intensity. Moreover, we are studying specific molecular markers of synaptic depression to determine whether sleep is indeed associated with a decrease in synaptic strength.

**Technical Capabilities**

- Fly genetic lab
- Wet lab equipped for transcriptomic and proteomic analysis, quantitative PCR, immunocytochemistry, in situ hybridization
- Access to High Performance Liquid Chromatography (HPLC)
- Electrophysiology recordings in mice and rats; short and long-term sleep deprivation in rodents; local field potentials and deep brain stimulation in rodents; power spectrum analysis of EEG

**Training Opportunities**

Dr. Cirelli is one of the 75 faculty members of the Neuroscience Training Program at the University of Wisconsin-Madison. The NTP Ph.D. program offers a very broad and eclectic education in neuroscience (http://ntp.neuroscience.wisc.edu). Additional support possibilities exist through the MD/PhD program of the UW Medical School (http://mstp.med.wisc.edu).

**Representative Publications**


*Our research is made possible by grants to CC from NIH (GM075315), DoD (SBIR 48019-LS-SB1) and DARPA.*
Sleep & Behavior Section Update
by Daniel Taylor, PhD

Sleep and Behavior section members suggested, at the 2005 APSS conference section meeting, that the role of the section head could be to serve as a conduit to help members within the section contact each other to set up symposiums to submit for inclusion in the 2006 APSS meeting. The members felt this would serve the dual purpose of (a) keeping scientists who are interested in sleep and behavior connected during the year, and (b) allow those same scientists the opportunity to have their research interests championed.

In keeping with those wishes, once the announcement was made that the APSS program committee was accepting submissions, a request was sent out for symposium proposals within the Sleep and Behavior section. Members were emailed asking for suggestions for symposiums they would like to see at the 2006 APSS meeting. The following six suggestions were made: College Student Sleep, Effects of Total and Partial Sleep Deprivation, Napping Behavior, Sleep and Serious Mental Illness, Uses of Actigraphy, and Combination Cognitive Behavioral Therapy and Pharmacotherapy for Insomnia.

A second email was then posted to section members asking for volunteers to present in each of these areas. We have received an excellent response rate for all of the proposed sections except the last, likely because it fits more with the interests of those in the Sleep Disorders Section. We are now in the beginning stages of organizing the symposiums, deciding roles, and recruiting extra presenters. Symposium submissions should be ready for submission to the APSS program committee sometime in mid-November. If for some reason any of the section members did not receive the two emails, but would like to be involved in some capacity or would like to suggest other symposium ideas, they can still email djtaylor@unt.edu.

Sleep Disorders Research Section Update
by Christopher L. Drake, Ph.D.

Greetings to the SRS membership. I am glad to have this opportunity to address the membership regarding the activities of the Sleep Disorders Research Section. As many of you are aware the section has begun to implement several initiatives that we believe will foster a more involved membership. Our membership has never been stronger, but growth is not enough. As the SRS becomes a larger and scientifically more diverse organization, it is incumbent upon the sections to help define the research identity of individual members. Thus, the section seeks new and creative ideas with the intent of improving the interaction between members, a goal fostered by the SRS. As a member of the SRS as well as section head, I think there is a need for this type of activity within the sections as our membership grows and the identity of each section becomes more solidified. The specific activities that have recently been undertaken include an email list for section members. This communication has already generated several potential projects within the Sleep Disorders Research Section. Specifically, Dr. Sandra England and colleagues have agreed to write a short piece for the SRS Bulletin updating the membership on specific research findings of members in the section. In addition, there has been increasing interest in sponsoring an award for an outstanding abstract dealing with Sleep Disorders Research as a way of further recognizing section contributions to the field and encouraging more section involvement. A proposal for such an award is currently under consideration by the SRS executive committee. Finally, several section members have expressed their desire to organize a symposium for the APSS meeting on behalf of the section. Although this proposal is still under development and will require additional time and effort for completion, there is strong support to continue this endeavor. Clearly, these are small steps toward increasing the involvement of individual members at the section level, but the goal is an essential one to continue growing the field. With persistence, I believe many of these initiatives will be completed. Throughout the course of the year I have received numerous words of encouragement and support for these activities from individual section members as well as the SRS leadership. I want to personally thank all of those who have contributed to these endeavors and ask for your continued support in helping to evolve the SRS and expand its influence in the field. I also want to encourage the entire SRS membership to become more involved at their section level, as I believe that the sections are an as yet untapped resource. If you are interested in joining and participating in section emails/activities please do not hesitate to email me regarding your interest and I will gladly add you to our list (email: cdrake1@hfhs.org). With the continued activity of section members, it is likely that we can turn this relatively informal email communication into an even more active “listserv” for exchanging ideas related to research and other section activities in the future. Thanks again for your support!

Sincerely,

Christopher L. Drake, Ph.D.
Section Head, Sleep Disorders Research
Basic Sleep Research Section Update  
by Robert Greene, MD, PhD

The basic research section met at the last national meeting of the Sleep Research Society. Two issues were discussed at this time. First, we raised the possibility of combining the basic research portions of the Circadian section with the basic sleep section somewhat similar in makeup to the NIH study section known as Behavioral Rhythms and Sleep (BRS). The second issue discussed was the value of program project grant funding mechanisms like the SCOR. It was felt that this provided an important means of funding for participating young investigators in search of that difficult RO1. Unfortunately, the SCOR grants will come to an end and at present there is nothing in the sleep basic research field to replace them. It is hoped that recommendations might be forthcoming from the SRS as a body, that could be delivered to the upcoming National Advisory Board on Sleep Disorders Research (part of NIHLB) meeting this coming December 6.

Finally, The SRS program committee would welcome a basic sleep section initiated symposium. I would more than welcome any suggestions and will help to circulate them amongst our section. My e-mail is robertw.greene@utsouthwestern.edu. I am looking forward to hearing from you!

Circadian Rhythms Section Update  
by Helen Burgess, PhD

The circadian rhythms section, consisting of 143 members, last met during the recent APSS meeting in Denver. There was general recognition that circadian rhythms research was well featured in the APSS program (although some hoped for more animal and cell research). Two interesting proposals included (1) that a regular communication “newsletter” from the section head to the members to facilitate communication between members be established and (2) that SRS host a “Sleep Day” at the Society for Research on Biological Rhythms’ (SRBR) next meeting in Florida, May 21-26, 2006.

In response, the inaugural Circadian Rhythms Section Newsletter was sent out on June 29, 2005. This posting that you are reading right now is Newsletter #2. Much discussion between the SRS and SRBR regarding the possibility of such a “Sleep Day” ensued and 30 circadian rhythm section members positively responded to an email I sent out asking all members if they were interested in attending. (If you didn’t get the email please check that your email address registered with SRS is correct). However, in the end, financial and time constraints led all involved to sadly conclude that a Sleep Day would work best for the following SRBR meeting in 2008.

Upcoming circadian rhythm related conferences include:

The Gordon Research Conference on Pineal Cell Biology  
will be held from January 15-20, 2006 in Buellton, California. See www.grc.org/programs/2006/pineal.htm for details.

The Society for Research on Biological Rhythms meeting, as mentioned above,  
will be held from May 21-25, 2006 at the Sandestin Resort in Destin, Florida (www.sandestin.com). See www.srbr.org for contact details.

Finally, I would like to remind all section members that the circadian rhythm content of the Sleep Program in Salt Lake City, 2006 will only be as good as the proposals that are submitted! So I encourage you all to visit www.apss.org and please seriously consider submitting proposal(s) for courses, workshops, discussion groups and symposia. We will all benefit from such submissions.

Please feel free to contact me with any comments or questions or with further news to be communicated to the other members.

Your faithful section head,

Helen Burgess, Ph.D.
Circadian Rhythms Section Head
Sleep Research Society
### New Members

**June - September, 2005**

#### Regular Members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution and Location</th>
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<tbody>
<tr>
<td>Bhargavi Gali</td>
<td>Mayo Clinic, Rochester, MN</td>
</tr>
<tr>
<td>Carolyn H. Welsh, MD</td>
<td>Denver VAMC/Eastern Colorado Health Care System, Denver, CO</td>
</tr>
<tr>
<td>Charles P. Pollak, MD</td>
<td>New York Presbyterian Hospital, New York, NY</td>
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<tr>
<td>Christopher J. Reynolds, MD</td>
<td>Alpine Sleep Center, American Fork, UT</td>
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<tr>
<td>Christopher S. Parshuram, MBChB, PhD</td>
<td>University of Toronto, Toronto, Canada</td>
</tr>
<tr>
<td>Claude Gautier, MD, PhD</td>
<td>Hospital Robert Debre, Paris, France</td>
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<tr>
<td>Colina E. Sullivan, PhD</td>
<td>University of Sydney, Sydney, Australia</td>
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<tr>
<td>David A. Amato, PhD</td>
<td>Sepracor, Inc., Marlborough, MA</td>
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<tr>
<td>David M. Rapoport, MD</td>
<td>NYU Medical Center, New York, NY</td>
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<tr>
<td>Dean W. Beebe, PhD</td>
<td>Children’s Hospital Medical Center, Cincinnati, OH</td>
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<tr>
<td>Diane P. Parton</td>
<td>Southern Sleep Diagnostics, LLC, Metairie, LA</td>
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<tr>
<td>Dmitry Gerashchenko, MD, PhD</td>
<td>SRI International, Menlo Park, CA</td>
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<tr>
<td>Fredrick F. Samaha</td>
<td>University of Pennsylvania, Philadelphia, PA</td>
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<tr>
<td>Gerald Rosen, MD</td>
<td>Hennepin County Medical Center, Minneapolis, MN</td>
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<tr>
<td>Gregory D. Roach, PhD</td>
<td>University of South Australia, Woodville, Australia</td>
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<tr>
<td>Houman Dahi, MD</td>
<td>Tulane University HSC, New Orleans, LA</td>
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<tr>
<td>Jeffrey R. Hammersley, MD</td>
<td>Medical College of Ohio, Toledo, OH</td>
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<tr>
<td>John Hey, MD</td>
<td>Greenwood-Leflore Hospital, Greenwood, MS</td>
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<tr>
<td>Jon C. Kaeuper</td>
<td>Knoxville, TN</td>
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<tr>
<td>Jonathan S. Emens, MD</td>
<td>Oregon Health and Science University, Portland, OR</td>
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<tr>
<td>Kathy C. Richards, PhD</td>
<td>University of Arkansas for Medical Sciences, Little Rock, AR</td>
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<tr>
<td>Maninder Kalra</td>
<td>Cincinnati Children’s Hospital Medical Center, Cincinnati, OH</td>
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<tr>
<td>Mary A. Kautz, PhD</td>
<td>USAARL-North, Silver Spring, MD</td>
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<tr>
<td>Melanie J. Marshall</td>
<td>Cochlear UK Ltd., United Kingdom</td>
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<tr>
<td>Miquel D. Gomez, MD</td>
<td>Glendale, AZ</td>
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<tr>
<td>Patrick J. Strollo, Jr., MD</td>
<td>Montefiore University Hospital, Pittsburgh, PA</td>
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<tr>
<td>Paula L. Watson, MD</td>
<td>Lung Associates of Sarasota, Sarasota, FL</td>
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<tr>
<td>Ravi K. Singareddy, MD</td>
<td>Penn State University College of Medicine, Hershey, PA</td>
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<tr>
<td>Rick Donaldson, PhD</td>
<td>RMD Medical Consultants, San Diego, CA</td>
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<tr>
<td>Russell Gilbert, MD</td>
<td>Sun City, AZ</td>
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<tr>
<td>Ruth M. O’Hara, PhD</td>
<td>Stanford University School of Medicine, Stanford, CA</td>
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<tr>
<td>Sean M. Caples, DO</td>
<td>Sleep Disorders Center, Rochester, MN</td>
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<tr>
<td>Shantha M. Rajaratnam, PhD</td>
<td>Division of Sleep Medicine, Brigham and Women’s Hospital, Boston, MA</td>
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<tr>
<td>Stuart F. Quan, MD</td>
<td>University of Arizona/Respiratory, AHSC College of Medicine, Tucson, AZ</td>
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<tr>
<td>Susan Zafarlofi, PhD</td>
<td>Hackensack University Medical Center, Hackensack, NJ</td>
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<tr>
<td>Theresa M. Buckley, MD</td>
<td>Stanford Sleep Disorders Clinic, Department of Psychiatry, Stanford, CA</td>
</tr>
<tr>
<td>Ulla Edell-Gustafsson, PhD</td>
<td>University of Linkopings, Linkoping, Sweden</td>
</tr>
</tbody>
</table>
Associate Members:

Brian Chamberlin  Atigo, Inc, Yorba Linda, CA
Colleen Green  PsyPharma Clinical Research, Tucson, AZ
Jennifer L. Lapierre  Univ. of California Los Angeles and VA-GLAHS, North Hills, CA
Joseph W. Burns, PhD  Altarum Institute, Ann Arbor, MI
Li Lang Lim  Singapore General Hospital, Singapore
Russell J. Clark, PhD  Saginaw Valley State University, University Center, MI

Postdoctoral Students:

Asim Roy, MD  Cleveland Clinic Foundation, Sleep Disorder Center, Cleveland, OH
Carmen M. Schroder, MD  Stanford University School of Medicine, Stanford, CA
Christopher Nissen, MD  Western Psychiatric Institute and Clinic, Pittsburgh, PA
Eliot B. Friedman, MD  University of Pennsylvania, Philadelphia, PA
Jason C. Ong  Stanford University School of Medicine, Stanford, CA
Lucila Prado, MD, PhD  Federal University of Sao Paulo, Sao Paulo, Brazil
Mei Stan Chong  Tan Tock Seng Hospital, Singapore
Simone Litsch, MD  Duke University Medical Center, Durham, NC
Susan T. Harbison, PhD  University of Pennsylvania Medical School, Philadelphia, PA
Tami Martino  Toronto General Hospital, Toronto, Canada
Viktor Hanak, MD  Mayo Clinic Foundation, Rochester, MN

Predoctoral Students:

Alana O’Malley  Brown University, Providence, RI
Andrew J. Gall  University of Iowa, Iowa City, IA
Beverly J. Myers  University of Alabama at Birmingham, AL
Bryce Mander  Northwestern University, Chicago, IL
Emily Stephen  Brown University, Providence, RI
Jean D. Humphries, RN  Plymouth, MN
Joshau Rodgers  University of Colorado at Boulder, Boulder, CO
Mark Kohler  Women’s and Children’s Hospital, North Adelaide, Australia
Martin Striz  University of Kentucky, Lexington, KY
Mike Kologianiss  New York Medical College, Valhalla, NY
Milagros I. Figueroa, RN  San Francisco, CA
Renewing Your SRS Membership is A Greater Value to You Than Ever Before!

The Sleep Research Society fosters scientific investigation, professional education, and career development in sleep research and academic sleep medicine.

The Sleep Research Society exists for and because of you. With over 1,100 members from a broad range of medical disciplines, we are strategically placed to take the lead in promoting an understanding of the processes of sleep and its disorders. As grand as that goal may sound, at its core it all comes back to solid research. That research begins with you. As the 2005 year quickly approaches the end, it is time once again to renew your membership. The SRS has a very exciting year planned for 2006, below are a few of the new initiatives the SRS has been working on.

The Sleep Research Society Foundation (SRSF) established to award two grants: the J. Christian Gillin, MD Research Grant and the Elliott D. Weitzman, MD Research Grant. The Gillin grant is intended for beginning investigators in sleep research for the purpose of gathering pilot data to be used for future grant applications.

A Primer of Sleep Research course provides an insight on a number of relevant techniques and content areas of sleep research. The Society was successful with it’s first-ever Primer of Sleep Research course, held in Miami in February. The Second Primer of Sleep Research Course is set for February 10-12, 2006. The course will be held at the beautiful oceanside resort location of the Hilton LaJolla Torrey Pines just north of San Diego, CA. From this world famous resort you can take in the panoramic views of the gardens, Torrey Pines Golf Course and the Pacific Ocean just beyond from the balcony or patio of your room. Begin marking your calendar now to be part of this course. Information on specifics of the course and how to register will be available within the next month or so at the SRS website at www.sleepresearchsociety.org.

Sleep & Public Safety Task Force created to respond to articles and issues and make recommendations to the legislature concerning sleep and public safety.

SRS/AASM Joint Mentorship Program goals of this program are to match up young researchers with accomplished researchers in the field of sleep. Eventually this program will be facilitated on line.

For more information concerning your SRS membership please contact the membership department at bfairchild@aasmnet.org or (708) 492-1093.
The Sleep Research Society continues to grow with benefit to all members. This report briefly summarizes our financial position at the close of FY 2004 and provides current membership numbers. Most of this information was provided at the Annual Business meeting of the SRS held at the APSS Annual Meeting in Denver.

The SRS remains in good financial position. The audit of FY 2004 finances indicated that, as of December 31, 2004, total assets of the SRS were $1,893,345 with total liabilities of $112,365. As such, our net assets were $1,780,980 (see Table). At the present time, our primary sources of revenues are membership dues and disbursements from the APSS LLC partnership, which is the governing body that oversees publication of the journal SLEEP and the annual APSS meeting.

**Assets**
- Cash & Cash Equivalents $624,008
- Investment Securities $1,169,347
- Receivables $44,433
- Equity in APSS $51,608
- Property & Equipment, net $3,950

**Liabilities**
- Accounts Payable $24,345
- Deferred Revenue $88,020
- Net Assets $1,780,980

**Total** $1,893,346

Membership in the SRS grew during 2004 and continues to do so. As reported by Dr. Mark Opp, outgoing Secretary-Treasurer at the June, 2005 SRS business meeting, total membership in the SRS was 1036 as of May 31, 2005. The majority of SRS members are Full members (665), with Trainee members (289) constituting the second greatest membership category. Of the Trainee members, 194 are pre-doctoral and 95 postdoctoral trainees. These numbers represent an increase of 80 members across all categories relative to one year ago. Membership has continued to grow throughout 2005 and, as of September 30, 2005, stands at 1097 total members.

The increase in membership and strong financial standing have provided the means to implement new initiatives that will benefit SRS members and the field of sleep research. As reported in last year’s Secretary-Treasurer’s Report, the SRS, the AASM and several institutes of NIH have commissioned a study by the Institute of Medicine entitled Sleep Medicine and Sleep Research. This study will result in a report that will be widely disseminated and is expected to have considerable impact on the future of sleep research and sleep disorders medicine in academic institutions. In 2004, the SRS created the SRS Foundation to allow the receipt of charitable donations and disbursement of funds. The first agenda item of the Foundation was the establishment of two categories of research grant awards. The SRSF J. Christian Gillin, M.D. Research Grant was established to support beginning investigators in sleep research with the purpose of collecting pilot data to be used for future grant applications. The SRSF Elliott D. Weitzman, M.D. Research Grant is intended for seasoned researchers to gather additional pilot data for NIH or other federal grants that are scored, but not funded. Proposals that will be considered for this award are ones that have a strong foundation, but may have lacked adequate preliminary data or evidence of feasibility. The first Gillin and Weitzman Awards are announced elsewhere in this issue; the next application due date is December 15, 2005. The SRS also offered two new courses in 2005 for its members. The “Primer of Sleep Research” course was held on February 4-6, 2005 at the Fontainebleau Hilton Resort in Miami, Florida. Secondly, a course entitled “Establishing a Career in Sleep Research and Developing Leadership Skills” was held at the APSS meeting in Denver in June, 2005; the registration fee was waived for the 65 SRS members who enrolled for this course. These new initiatives have been in addition to the traditional SRS support for Travel Awards for trainees to attend SRS Trainee Day on the day preceding the APSS meeting. In 2004, 88 Travel Awards were made; in 2005, 98 awards were made.

Resources available for implementing Foundation initiatives include funds obtained from the “Discovering the Secrets of Sleep” fundraising dinner. This joint venture with the AASM was such a success in its first two years that the event was held again this year in Denver. The 400 tickets available for the dinner sold out in advance and, consequently, several former SRS Presidents were unable to purchase tickets. The SRS and AASM are examining ways to increase the number of attendees while still maintaining the intimate feel of this special event. The SRS share of the revenues from the 2005 dinner was $34,759 and these revenues were deposited in the SRS Foundation. We encourage all SRS members to attend this dinner with their lab members and to otherwise support the Foundation in its effort to help SRS members cope with the challenging and rapidly changing funding environment expected in the coming years.

The SRS also expanded its programs to increase the visibility of the society. Club Hypnos, traditionally an event sponsored by the SRS at the Society for Neuroscience (SfN) annual meeting, was held at the San Diego Marriott on October 25, 2004. Another Club Hypnos event was held at the Association for the Advancement of Behavioral Therapy at the Hilton New Orleans Riverside on Friday, November 19, 2004. Club Hypnos was once again held at this year’s SfN meeting in Washington, D.C. on Monday, November 14, 2005 from 6:30 – 8:30 PM at the Renaissance Washington DC Hotel and was followed by the popular Neuroscience Sleep and Circadian Biology Data Blitz from 8:30 – 10:00 PM.

Although the SRS is in good financial standing with new initiatives and programs, the SRS Board of Directors continues to work to identify sources of revenue independent of the APSS LLC partnership. Diversification of the revenue stream for the SRS and increasing society membership are high priorities vital to the long-term financial health of our Society. To this end, the SRS Board organized and published the “SRS Basics of Sleep Guide” in June, 2005 as a didactic resource. The “Guide” is already being used at multiple levels in higher education: from advanced undergraduate and graduate courses to postdoctoral fellows new to the sleep field to postgraduate physicians preparing for the Board Examinations. SRS encourages all its members to become familiar with the Guide to determine whether it would be useful in courses that they or their colleagues may teach. The officers of the SRS Board of Directors are committed to managing the resources of the SRS to provide benefits of high quality to the membership.

Respectfully submitted,

Thomas S. Kilduff, Ph.D.
SRS Secretary/Treasurer
"So, How Did You Land Up in Sleep Research?"

by Fiona Baker

I’m sure you’ve all been asked this question numerous times, whether it’s while chatting to the person sitting next to you on the plane, at a friend’s party, or at the APSS meeting in Denver. It’s always fascinating to hear how someone lands up pursuing a career in sleep research and I’m sure you’ll enjoy reading the stories below from some Trainees in sleep research and I’m sure you’ll enjoy hearing how someone lands up pursuing a career in sleep research.

Ana Ribeiro, PhD, Post-doc
The Rockefeller University, New York, NY

Coming from a small graduate program in cell and molecular biology, people often wonder how I dwelled into the science of sleep. It was somewhat of a chance occurrence, but one that has captured my brain and my heart.

In my second semester of graduate school at Fordham University, there was an open faculty position and Dr. Levente Kapás came for an interview. Like most of the faculty and students, I too was fascinated by the topic of sleep. And so, on March 16th 1997, the day after my Masters Comprehensive Exam, I joined a sleep physiology laboratory. The road to getting my Ph.D. was not always a smooth one, but despite the challenges, the unwavering emotional support from my friends and mentors in the sleep field strengthened my resolve to achieve my goals. In addition, the financial support by the sleep research society has enabled me to attend many professional meetings, meet illustrious scientists and contribute a small amount of knowledge to the growing field of sleep research.

No matter how you are first introduced to the field of sleep, one thing is for certain, you will always be welcomed into a family of scientists trying to unravel the ultimate mystery of the brain.

Valérie Mongrain, PhD student in Neuroscience
University of Montréal, Canada

I’m studying mechanisms of sleep regulation in morningness-eveningness with Marie Dumont at the Chronobiology Laboratory of the Sacré-Cœur Hospital of Montréal Sleep Research Center. My primary interest in sleep research resides in chronobiological aspects of sleep. I began my student career in chronobiology as I realized that owls are not necessarily lazy people. Since this time, I learned that we behave in a clock world and have so much to learn about it. I’m planning to study molecular chronobiology next year in my post doc to make myself ready to unravel as many aspects as possible of sleep regulation.

Robin LeWinter, PhD, Post-doc
SRI International, Menlo Park, CA

While I got my undergraduate degree in astronomy, I wanted to ultimately do research which allowed me to perform manipulations of the subject (and astronomy experiments only involve observing what is already out there). This brought me to biology, and neuroscience as a subfield as the brain is the most fascinating organ in the body. I was interested in how neural circuits lead to a behavior, and ended up getting a PhD in Neuroscience with a focus on functional neuroanatomy of nociception.

I wanted to develop my neuroscience skills in my post-doc, and decided to focus on a new system to probe similar questions (ie, how do brain circuits influence behavior). At around the same time, Dr. Tom Kilduff at SRI was looking for a post-doc who had neuroanatomy skills, and the lab focuses on sleep. Sleep is an intricate behavior which incorporates many brain regions and seemed an ideal system to study complex behavior.

I have greatly enjoyed learning about sleep and how different subregions of the brain contribute to alertness or sleepiness and the switch between the two. Ultimately, I hope to combine my PhD studies in pain with my post-doctoral studies of sleep to probe the interaction of the two systems.

Ima Gvilia, PhD, Post-doc
VA/UCLA, North Hills, CA

To be honest, I was brought into the sleep field accidentally, by a mysterious dream seen 20 years ago. By that time, I had made a decision to become a lawyer, to follow my family’s tradition. The decision was so strong that I could not imagine that anything may change it. The University I was studying at had six buildings located close to each other. But I had not seen them all before that mysterious dream I am now going to talk about: I cross an alley and get to an unknown building; Then I suddenly stop at the central entrance asking myself “Is it the right one?” In a moment, it becomes so windy and cool…and, a low, tender voice whispers “You should go to the red one, across the alley.” I wake up.

19 months later, I am going to the University to accomplish my paperwork for the examinations. I am crossing an alley and, suddenly, it becomes so windy and cool… I am frightened! I see an exact replication of the dream that had been forgotten.
for a long time... all around is so identical to what I saw 19 months ago...even my hair style, my clothes, etc...That day, of course, I did not get into any of these buildings... It took some time for me to decide what to do – to go to "the red building" following my "destiny" or not. What was there? Faculty of Biology.

This fascinating incident drove me to biology and then to basic sleep research. A lucky chance brought me to my mentor – a great neuroscientist, Dr. Tengiz Oniani (Tbilisi, Georgia), then to Dr. Hartmut Schulz (Erfurt, Germany) who supervised me to become familiar with human sleep. And again a chance...Dr. Michael Chase supported my application for a grant to attend the sleep workshop in Uruguay, 2001. Right after my presentation at a symposium, led by Dr. Schulz, I saw a flyer for a research assistant in the sleep research lab. That led to the...

Precipitating factors. These were mainly that once I was allowed into the UA sleep lab, I found a PI (Dick Bootzin) who was encouraging of undergraduates gaining experience and a graduate student (Michael Perlis) who had an infectious enthusiasm for the science of sleep. This opened a whole new world of interesting ideas and questions to me, and I never even worked on a dream study! Soon, I found myself gripped by...

The Perpetuating Factors. These included gaining more responsibilities in the UA lab, working full time for a great mentor (Sarah Mosko) after college, and wiggling my way into a graduate program and the lab of an amazing mentor (Chris Gillin). At this point, every experience I was having reinforced my interest in sleep research. The nail in the coffin was experiencing the generosity and push for professional development from the SRS. Everything from travel awards to the APSS meetings, to intense training and networking experiences like Lake Arrowhead, to the genesis of the Trainee Symposia Series convinced me that sleep research was my professional home.

Now when I find I cannot research, I leave my office and go somewhere quiet and reflective until I feel the urge to publish, and then I go back to my computer and try again (repeat as necessary).

Sean Drummond, PhD, Asst. Prof  
UCSD, San Diego, CA

My path into sleep research was a lot like the path into chronic insomnia. There were predisposing factors, precipitating factors, and perpetuating factors.

The predisposing factors were a strong interest from an early age in psychology, and through that, an interest in dreams. Adding to these factors was the consideration that I knew I wanted to go to grad school and I needed to get some research experience to make myself a better candidate. So, one day while wandering aimlessly around the halls of the Psych Building at the University of Arizona (UA), I saw a flyer for a research assistant in the sleep research lab. That led to the...

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"To be honest, I was brought into the sleep field ACCIDENTALLY, by a mysterious dream seen 20 years ago."

— Irma Gvilia, PhD, Post-doc

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Trainee Day 2006

Plans for Trainee Day at the 2006 APSS in Salt Lake City are already under way. The members of the Trainee Day 2006 sub-committee are: Fiona Baker, Chair; Sabra Abbott, Chair-elect; Henry Orff; Krishna Jhaveri; Teresa Ward; Ana Ribeiro; Christopher Davis; Preetam Bandla; Nadia Gosselin; Mark Robert Smith; Melissa St Hilaire. If you have any suggestions for session topics, please email Fiona at: Fiona.baker@sri.com.
We’ve Adopted A New Name!

The APSS Board has adopted a new name!
The annual meeting is now referred to as

**SLEEP 2006,**

20\(^{th}\) Anniversary Meeting of the
Associated Professional Sleep Societies,

and will be held in Salt Lake City, Utah.
For the most current information please visit

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

Call for Abstract and Proposal information
is now available online at [www.apss.org](http://www.apss.org)