Issue Highlights:

• Resident Work Hour Reform
• Applying Sleep Science in Operational Practice
• From the Desk at NIH: NIH Grant Application Process Update and New NHLBI Funding Strategy
Like those early explorers, the scientists of today don’t always know what lays ahead, but their pursuit of knowledge drives them ever closer to new, profound discoveries every day.

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THE DISCOVERIES OF TOMORROW DEPEND UPON THE INVESTMENTS OF TODAY.

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Dear Colleagues,

I hope the New Year has started well for each of you. As we begin 2010, we see the number of activities in the SRS increase as preparations for the annual SLEEP meeting shift into high gear. Since my last message in the autumn, society volunteers have been active in undertaking the business of the SRS. I am pleased to update you on these activities and to inform you of events to come over the next several months.

Communications with NIH

One of the goals I set forth when I became President of the SRS is to increase interactions and communications with the National Institutes of Health (NIH). As part of this ongoing effort the SRS developed and submitted, in conjunction with the AASM, a set of recommendations and goals for the 5-year update of the National Sleep Disorders Research Plan. The National Sleep Disorders Research Plan sets a blueprint for sleep and circadian-related research across all NIH Institutes. The recommendations were developed with input from SRS members whose expertise spans the spectrum of sleep and circadian research.

In order to enhance the relevance of sleep in every institute, the recommendations submitted by the SRS and AASM coincide with the NIH emphasis on personalized medicine and translating research from the bench to the bedside. The SRS also included a recommendation on enhancing the infrastructure of sleep and circadian research through the formation of a national sleep research network. The creation of this network will help facilitate research for years to come by providing large pools of data on common and uncommon sleep and circadian disorders, help retain and train investigators, and provide the structure for clinical trials of new treatments for sleep and circadian disorders.

The SRS also sent a letter to the Director of NIH, Francis Collins, M.D., Ph.D. recommending a member of the SRS be part of the search committee for the new director of the National Heart, Lung and Blood Institute (NHLBI). As many of you know, Elizabeth Nabel, M.D. the director of NHLBI since 2006 resigned her position with the Institute for a new opportunity at Harvard. The reason it is important for a member of the sleep community to be part of a search committee for the new NHLBI Director is that the National Center for Sleep Disorders Research (NCSDR) is part of NHLBI and thus NHLBI provides a “home” for sleep and circadian research within NIH, although support for specific projects on sleep and circadian research is spread across many different institutes.

I am hopeful that with our new emphasis on communicating with NIH as well as a new National Sleep Disorders Research Plan coinciding with the appointment of a new director of NHLBI, sleep and circadian research will continue to occupy an important role within NIH.

SRS Advocacy

The task of drafting a letter to the Director of NIH requesting a member of the SRS be placed on the search committee for the new NHLBI Director was the first activity carried out by the recently created SRS Committee for Advocacy of Sleep Research. The Advocacy Committee has two roles. One is to serve this liaison function with the NIH. The second is organizing Society members to work with key members of Congress to secure NIH funding. If you are interested in working with members of Congress from your own state and district to advocate for sleep and circadian research funding please contact Nick Cekosh in the SRS National office at ncekosh@srsnet.org.

Research Funding Opportunities

The Sleep Research Society Foundation (SRSF), which was founded in 2004, continues to provide research funding opportunities for SRS members. The J. Christian Gillin, M.D. Grant is intended to support beginning investigators in sleep research for the purpose of gathering pilot data to be used for future grant applications. The Elliot D. Weitzman, M.D. Grant is for more experienced researchers to gather additional pilot data for NIH or other federal grants that scored well but were not funded. Announcements for the Gillin and Weitzman Awards have appeared in the SRS Update and on the SRS and SRSF websites. Applications were due November 30, 2009 and are currently being reviewed by the Research Committee, chaired by Dr. Andrew Krystal. Grant recipients will be announced at SLEEP 2010. Look for the next round of grants to be announced in autumn 2010.

A major source of support for the SRSF is an annual fundraising event held jointly by the SRS and AASM at the annual APSS meeting. I invite you to attend the fundraising event this year, which will be a “research reception” held on Sunday, June 6. The reception will take the place of a dinner that was held in previous years. The reception will be a great way to network with colleagues while supporting research through the SRSF.

In addition to the funds received through the annual fundraising event at the SLEEP Meeting, the SRS runs courses that generate funds that it then donates to the SRSF. I am pleased to report that the SRS was able to make a generous donation to the SRSF in December in order to continue providing funding for innovative sleep research for years to come.

SRS Elections and Bylaw Revisions

Over the next few months members will be asked to choose a president for the 2011-2012 program year, and one new Director-at-Large, as Dr. Phyllis Zee rotates off the Board of Directors after three years of outstanding service.

In addition to the elections, the Board of Directors is recommending a number of changes to the SRS Bylaws. The proposed changes
SRS Committees

Volunteers on SRS committees perform the preponderance of work within the SRS. Below are brief updates on some of the activities our committees are carrying out.

Membership Committee: The 2010 renewal period for SRS Memberships is well underway. Dr. Kathryn Reid, Chair of the Membership Committee, has been working with committee members to increase membership this year. Despite numerous efforts of the committee last year, membership growth was flat, due to the economic turbulence. Under Dr. Reid’s leadership numerous recruitment activities are continuing including Club Hypnos events, mailings, and a colleague referral program. If you haven’t done so yet, please renew your SRS Membership today on the SRS website at www.sleepresearchsociety.org. Renewing today ensures you have continued access to member benefits including reduced registration costs for SLEEP 2010.

Communications Committee: The Communications Committee, under the guidance of SRS Bulletin Editor, Dr. J. Todd Arnedt and Chair, Dr. Steve Lockley brings you this publication three times per year. Dr. Arnedt and the committee have been busy putting together this issue of the SRS Bulletin. The Communications Committee has also been busy seeking potential candidates for the next Editor of the SRS Bulletin as Dr. Arnedt’s three-year tenure as Editor will conclude in June. I am pleased to announce that the SRS Board of Directors has approved the appointment of Dr. Helen Burgess as the next Editor of the SRS Bulletin. Dr. Burgess came highly recommended from the members of the Communications Committee, and I have the utmost confidence that she will build upon the exceptional work of Dr. Arnedt over the next three years.

Trainee Education Advisory Committee (TEAC): The members of TEAC, led by Chair, Dr. Jennifer Martin, have been busy organizing Trainee Day 2010, which will take place on Saturday, June 5, 2010 at SLEEP 2010. This is the 15th year the SRS has held Trainee Day and the program will feature renowned experts from across the spectrum of sleep and circadian research. New this year, the breakout sessions have been categorized into “levels” from basic to advanced to help Trainees select sessions appropriate for their level of knowledge on specific topics. There are also sessions that are appropriate for Trainees at all levels of their academic career. It should be noted that a group of Trainees known as the Trainee Subcommittee recommended a large number of the breakout session topics that will be included in the Trainee Day program.

In addition to organizing the Trainee Day, TEAC is in charge of determining Merit-Based Travel Awards. These awards are given to Trainees who submit the best abstracts for either oral or poster presentations at the annual SLEEP meeting. This year TEAC, with the assistance of a number of outside reviewers, evaluated the trainee abstracts submitted for the Merit-Based Travel Awards.

Educational Programs Committee: Dr. Charles Amlaner and the members of the Educational Programs Committee have begun the process of revising and expanding the SRS Slide Set Series to coincide with the revised Basics of Sleep Guide, which was released in June 2009. Revising and expanding the Slide Set Series will be a tremendous endeavor. With the steadfast dedication of the members of the Educational Programs Committee and volunteer authors, this project will be another in a long line of successes. The new Slide Set Series will be available for sale at SLEEP 2011.

Research Committee: The Research Committee, Chair by Dr. Andrew Krystal, is currently reviewing applications for the J. Christian Gillin, M.D. Research grant, the Elliot D. Weitzman, M.D. Research grant and the Sanoft-Aventis Insomnia Subtypes grant. Prior to beginning grant reviews, the Research Committee was busy formulating a session proposal for SLEEP 2010. This session proposal they submitted for SLEEP 2010 is a discussion group on grant writing. This discussion group will include instruction on writing a grant, an in-depth explanation of the grant review process, and conclude with a mock review of a NIH R01 grant application. This discussion section will be valuable for young investigators looking to submit their first NIH grant application and it will also be useful for experienced investigators as it will address the new NIH scoring system.

SLEEP 2010

Registration is currently open for SLEEP 2010, the 24th Annual Meeting of the APSS, in San Antonio, Texas. You may register for the meeting at http://www.sleepmeeting.org. SLEEP 2010 will begin on Sunday, June 6th and end on Wednesday, June 9th. I encourage you to register early to take advantage of early registration discounts.

The annual SLEEP meeting will also coincide with the 50th meeting of the SRS. Currently, the 50th Anniversary Task Force chaired by Dr. Sonia Ancoli-Israel is planning a number of activities that will take place during the annual meeting. In this issue of the Bulletin, you will find an article from Dr. Ancoli-Israel detailing some of the events the task force is planning. Keep an eye out for announcements related to this celebration in the coming months.

Other Activities: The SRS is currently planning to host two half-day Basic Science of Sleep for the Sleep Specialist courses in 2010. These courses provide knowledge that is fundamental to the understanding of sleep and its disorders and are of particular use for individuals interested in taking the board exam for sleep specialists.

I close with a heartfelt thank you to all of the volunteers within the SRS whose work and dedication continue to make this a dynamic organization while advancing the science of sleep and circadian research. Your ongoing efforts will ensure the success of the SRS throughout 2010 and for years to come. As always, if you are interested in volunteering your time or have a suggestion regarding current or future activities of the SRS, please relay your thoughts to the national office at ncekosh@srsnet.org.

Sincerely,

Clifford B. Saper, M.D., Ph.D.
President, Sleep Research Society
By J. Todd Arnedt, Ph.D.

There is snow on the ground (here in the North anyway) but preparations for SLEEP 2010, which will be held from June 5 to 9 in San Antonio, TX, are heating up. This SLEEP meeting will be particularly special, since it coincides with the 50th meeting of the SRS. In this issue of the bulletin, Dr. Ancoli-Israel, Chair of the Presidential Task Force on the 50th Meeting of the Sleep Research Society, gives us a preview of some of the planned events for this special celebration. As detailed in Dr. Saper’s Presidential Message, the various SRS committees have also been especially active conducting the Society’s business and, with the recent establishment of the SRS Committee for Advocacy of Sleep Research, increasing communication with NIH. The chairs of the Communications and Membership Committees provide updates on the specific activities of their respective committees in this issue. As the national economy has shown recent glimmers of hope, the financial picture of the Society was similarly brighter in 2009. Please see Secretary-Treasurer Dr. Ron Szymusiak’s report for a summary of the SRS financial status in FY2009 and strategies to secure the financial future of the SRS.

This past fall, cutting edge sleep and circadian research from around the world was on display in Sao Paulo, Brazil at the World Association of Sleep Medicine’s 3rd International Congress. In this issue, one of the conference organizers provides a summary of the highlights complete with pictures and looks forward to the next meeting in 2011 in Québec City, Québec, Canada.

The U.S. Department of Transportation’s Federal Aviation Administration (FAA) and Federal Motor Carrier Safety Administration (FMCSA) are in the process of developing new hours of service rules for, respectively, commercial aviation and commercial trucking. An encouraging sign is that both organizations are drawing on the science of sleep and fatigue to inform the deliberations as they decide how to change the hours of service regulations. In this bulletin issue, Dr. Gregory Belenky, M.D. provides an overview of this process based on his first-hand involvement.

It has been a year since the Institute of Medicine (IOM) issued several recommendations regarding medical resident work hours, based largely on sleep and circadian science. Dr. Christopher Landrigan contributes an update on the status of work hour regulatory reform in this issue, including consideration of principal barriers to the implementation of the IOM recommendations.

As most of us are aware, substantial changes to the NIH granting process have taken effect. This issue of the bulletin features a contribution by Dr. Michael Twery, Director of the National Center on Sleep Disorders Research, providing an update on the new grant application process and highlighting a change in funding strategy that has been initiated at NHLBI. We continue to be extremely thankful to Dr. Twery for keeping open the lines of communication between NIH and the SRS.

Sadly, we lost Dr. Ismet Karacan in 2009, a member of the pioneering sleep team at the University of Florida in Gainesville. Dr. Max Hirshkowitz, who worked with him nearly every day for 20 years, provides a heartfelt glimpse into the man behind the scientist in this issue. Dr. Karacan made several critical contributions to the field of sleep that will no doubt remain his legacy.

Comments about the bulletin and ideas for future issues can be submitted to me at tarnedt@med.umich.edu. Wishing you a happy and productive winter season.
This report briefly summarizes the financial status of our organization. 2009 has been much better for the SRS than 2008.

As of October 31, 2009, the unaudited financials for 2009 show total assets of $2,787,042, as compared to $2,317,853 at this same time in 2009. The increase in assets of $469,189 is primarily due to a recovery in value of the Society’s investment portfolio over 2008. The SRS also experienced an overall decrease in expenses, year-to-date, compared to 2008 and increased income due to the success of the two ½ day courses the society hosted in conjunction with the AASM Board Review Courses in August and September 2009. The SRS donation of $90,000 to the Sleep Research Society Foundation (SRSF) in December, which consisted of the proceeds from the two ½ day courses, will affect the overall increase in SRS net assets.

The SRS Board of Directors continues to work to secure the financial future of the SRS. Although the financial situation of the society is better than in 2008, the continued slow economy gives cause for concern. In addition to identifying additional savings in the organizational budget, the Board of Directors will continue working to identify sources of revenue independent of the APSS LLC partnership. Diversification of the revenue stream for the SRS and increasing society membership remain high priorities vital to the long-term financial health of our Society.

Currently, the Educational Programs Committee is working on a revision of the Basics of Sleep Slide Set Series, first published in June 2007. The revised version of the Basics of Sleep Slide Set Series is scheduled to be ready for sale at SLEEP 2011. In August and September 2010, the SRS will offer a ½ day course in conjunction with the AASM Board review course titled “Basic Science of Sleep for the Sleep Specialist.” It is anticipated that the success of this course in 2009 will be repeated in 2010.

Respectfully submitted,

Ronald Szmyusiak, Ph.D.
Secretary/Treasurer
Communications Committee Report

The Communications Committee welcomes any suggestions from members on ways to improve interactions within the Society and with the larger scientific community. To this end, we have been exploring new methods to communicate with our members including a Facebook page and other electronic media. With over 4.5 million Facebook users already registered on an ‘I ♥ Sleep’ page, there are also great opportunities to reach the public at large. Let us know if you have suggestions for improving our links.

We are continuing to develop our library of trainee theses and will be launching the first part in the coming year. We hope that this initiative will provide trainees with the opportunity to gain greater recognition within the Society and to publicize their work. Please support this initiative and encourage your trainees to submit their thesis details when requested.

A major part of the Committee’s work is in the production of the SRS Bulletin. The Bulletin Editor, J. Todd Arnedt, intends to step down from the role he has fulfilled with great success. I will also be stepping down as Committee Chair in June 2010 so there are great opportunities for new faces to step in and provide new impetus to the Committee’s work.

Steven W. Lockley, Ph.D.
Chair, Communications Committee

Membership Committee Update

I began my tenure as chair in June 2009 and I hope to continue to see the membership of the Sleep Research Society grow, by retaining current members and encouraging new members to join including junior sleep researchers. As of December 2009 there are 1319 members of the Sleep Research Society. The renewal period is currently underway so I encourage all members to renew and to reach out to potential new members to join the society. Members can join or renew their membership online at www.sleepresearchsociety.org.

The membership committee meets several times a year to address membership issues and to review and/or create innovative ways of recruiting and retaining members to the society. If you have any suggestions or comments about membership to the society feel free to contact me (email srsmemberships@srsnet.org) and your comments can be raised at committee meetings for discussion.

An example of a recent change is an extension of the number of years junior members can belong to the pre-doctoral or postdoctoral membership categories. Postdoctoral Fellows now have a 5-year limit and pre-doctoral students have a 7-year limit to membership in each category.

Kathryn J. Reid, Ph.D.
Chair, Membership Committee
SRS Will Celebrate Its 50 Year Anniversary

In July of 2008, then SRS President Michael Vitiello and the SRS Board of Directors formed a special Presidential Task Force on the 50th Meeting of the Sleep Research Society. The first sleep meeting was held in 1961 in Chicago. At that time, the society was called APSS – the Association for the Psychophysiological Study of Sleep. In recognition of the proud heritage of our society and of this “golden anniversary” in the history of sleep research and of the SRS, the task force was charged with ensuring that this important event be appropriately recognized and celebrated.

The committee, chaired by Sonia Ancoli-Israel, composed of Donald Bliwise, Mary Carskadon, Melissa Burnham, Sean Drummond, Martica Hall, Robert McCarley, Gina Poe, Howard Roffwarg, Thomas Roth, and Kenneth Wright, and staffed by Nick Cekosh and Annie Walker-Bright, has been busy working on plans for a celebration, beginning at the 2010 APSS in San Antonio and continuing for the full 50th year.

As part of the events being planned to celebrate the history of the SRS, we plan to “publish” 25 articles that helped to define the field of sleep research. We hope to identify articles from each of the 5 decades of the society’s tenure as well as from all of the topics that encompass the field of sleep research. To that end, the committee is soliciting nominations from SRS members for up to 50 articles that should be included in this compilation. To get a broad representation, we ask that you not only consider articles that impacted the field as a whole, but also articles that most influenced YOUR career in sleep. Suggestions should be emailed to the SRS national office at awalker-bright@srsnet.org. Part of the heritage of the SRS has been the strong support of trainees and this will also be highlighted as part of the anniversary events. If you ever received SRS trainee support, please plan on attending the opening ceremonies in San Antonio and please send your name to the SRS national office at awalker-bright@srsnet.org. We would like to be able to recognize all former trainees.

Many other activities – some still secret – are being planned and will be announced at the opening ceremonies. Keep your eyes and ears out for recorded interviews with our founding leaders, for a chance to honor our past and an opportunity to share in the overall celebration. We look forward to seeing you in San Antonio in 2010 and celebrating this momentous occasion with you.

Sonia Ancoli-Israel, Ph.D.
Committee Chair

A reception to celebrate the 50th Anniversary of the first meeting of the SRS will be held on Monday, June 7, 2010 from 6:30 p.m. to 8:00 p.m. at SLEEP 2010. All SRS Members are invited to attend the reception to celebrate the history of our organization.

Members are also invited to attend the general membership meeting which will be held prior to the reception at 5:15 p.m. The meeting offers members the opportunity to give input on the future direction of the society.

Please check the SRS Update and the next issue of the SRS Bulletin for more details.
On November 9-11, 2009 more than 2000 delegates from almost 60 different countries converged on Sao Paulo, Brazil to participate in the World Association of Sleep Medicine’s 3rd International Congress. Nearly six hundred of these attendees arrived early to attend pre-congress educational courses. The meeting, which featured keynote addresses by Eve Van Cauter, Al Lewy, Carlos Schenck, Helen Driver, and Eric Nofzinger also included a special presentation by Stanley Fahn for the Wayne Henning Memorial Lecture. During the three days, congress-goers could also pick from a diverse assortment of clinical and scientific presentations including a dozen platform sessions, 25 member-submitted symposia, 5 sponsored luncheon symposia, and nearly 300 posters. There was also a featured symposium in which winners of the three WASM-sponsored awards presented their work, including Shirley Li (winner of the Elio Lugaresi Award), Taeko Sasai (winner of the Christian Guilleminault Award), and Garima Shukla (winner of the Young Investigator Award).

The meeting opened with much fanfare in the Amphitheatre on Sunday evening. After welcomings from Max Hirshkowitz (Congress Chairman), Sergio Tufik and Dalva Poyares (Congress Co-Chairs), Sudansu Chokroverty (WASM President), and Lucia-no Ribeiro Pinto, Jr. (Brazil Sleep Society President), Brazilian Drumming and Dancers took center stage. A samba line eventually formed and snaked its way to the ballroom for a memorable evening of food, drink, and dancing. Other social events included a dinner and floor show at Mooca Mia that also, as per local custom, continued late into the warm Brazilian night.

The World Association of Sleep Medicine is committed to advancing sleep health worldwide. This international congress represents an important part of its mission, as did its past meetings in Bangkok and Berlin. The WASM congress provides the opportunity for sleep clinicians and scientists, spanning the globe, to offer their perspective concerning sleep and its disorders. Symposia focusing on sleep disorders’ epidemiology, causes and treatments for restless legs syndrome, sleep apnea and cardiovascular disease, pediatric sleep disorders, sleepwalking-sleepeating-sexomnia variations, insomnia and sleep instability, and sleep in shift workers (to mention only a few), created a forum for the exchange of information and ideas. Simultaneous translation in all of the sessions facilitated this process. We also had special presentations by Felix Gradinger (Switzerland) and Alison Bentley (South Africa) on the cutting edge work from the WASM-WHO collaboration in developing International Classification of Functioning, Disability, and Health (ICF) as it relates to sleep disorders. The next meeting is scheduled for September 10-15, 2011 in Quebec City (watch the website http://www.wasm2011.org for details).

Max Hirshkowitz, Ph.D.
Baylor College of Medicine & VAMC, Houston, Texas
Applying Sleep Science in Operational Practice

The Developing Art and Science of Fatigue Risk Management

Fatigue is a function of the interaction of sleep/wake history, circadian rhythm, and workload. In the transportation industry, fatigue risk is managed by hours of service regulations. These regulations typically specify maximum hours on duty and minimum hours off duty before going on duty again. They do not generally take into account circadian rhythms in fatigue and performance and in the ability to initiate and maintain sleep. By not incorporating circadian effects, these regulations have the potential to be at some clock times overly restrictive and at other clock times unsafe. For example, for commercial truck drivers, current hours of service regulations specify a maximum of 14 hours on duty followed by a minimum of 10 hours off duty. Because of circadian factors, there is considerable difference in nominal performance and in total sleep time obtained with the same overall work/rest schedule if work is during the day and sleep is during the night versus if sleep is during the day and work is during the night. Such considerations, based on experimental data and/or on the results of mathematical modeling predicting performance from sleep/wake history and circadian rhythm, serve to illustrate the inadequacy of simple, “one-size-fits-all”, prescriptive rules.

The U.S. Department of Transportation's Federal Aviation Administration (FAA) and Federal Motor Carrier Safety Administration (FMCSA) are in the process of developing new hours of service rules for, respectively, commercial aviation and commercial trucking. An exciting development is that both efforts are drawing on the science of sleep science for evaluating proposed work rest schedules and hours of service regulations. The ARC members made good use of the information presented in the sleep science presentations and considered throughout their deliberations mathematical model runs evaluating the potential impact of the developing hours of service proposals on performance and fatigue risk. At the end of its deliberations, the ARC produced a report to the FAA of its findings. This report is confidential to the FAA but it is highly likely that it includes substantial information about the effect of sleep/wake history and circadian rhythm on performance and fatigue risk and that it effectively melds the science of sleep with operational experience.

For the FMCSA, the initial phase of the rule-making process involved convening the Motor Carrier Safety Advisory Committee (MCSAC). The MCSAC was established by the U.S. Department of Transportation on 6 September 2006 and is composed of fatigue and safety experts from the motor carrier industry, safety advocates, and representatives from the FMCSA. The MCSAC met in early December 2009 to develop advice for the FMCSA on the proposed rulemaking. On the first day of the meeting, similar to the FAA's ARC, the MCSAC received a series of briefings on the science of sleep and fatigue.

In a further integration of the science of sleep and operational practice in transportation, mathematical models predicting performance from sleep/wake history, circadian phase and workload could be used to augment or even replace prescriptive hours of service regulations. Use of validated models would allow evaluation of any conceivable schedule to assess fatigue levels and thereby intrinsic safety. This would help to identify schedules permitted by regulation that have high fatigue risk and, conversely, schedules forbidden by regulation that have low fatigue risk. Moreover, alternative schedules could be compared to see which schedule is safest, or, if multiple schedules are similarly safe, which schedule is most efficient. Thus, a modeling-based approach, taking sleep science into account, could be both safer and more productive than prescriptive hours of service regulations. This suggests a regulatory future in which hours of service regulations are used only to set very broad prescriptive limits, or are abandoned entirely. Mathematical modeling of fatigue risk from sleep/wake history, circadian rhythm, and workload could effectively replace prescriptive hours of service regulations; the model would become the rule.

The integration of the science of sleep and fatigue into the deliberations of management, labor, and regulator around proposed hours of service rules and the integration of fatigue risk modeling into the operational environment constitute new and exciting directions in fatigue risk management in which the science of sleep is playing a central role.

Gregory Belenky, M.D.
Washington State University

References

The Sleep Research Society Educational Programs Committee is excited to announce the new, fully peer-reviewed *SRS Basics of Sleep Guide, second edition*. The newly revised *SRS Basics of Sleep Guide, second edition* has been significantly expanded in both scope and content, including the addition of 10 new chapters authored by esteemed international experts covering all fields of basic and applied sleep research. Each of the original *Basics of Sleep Guide* chapters has been completely revised by the authors to reflect the ‘state of the art’ in the particular area of sleep. Many of the chapters now include ‘Sleep Pearls,’ an invaluable tool for those preparing for specialty exams associated with basic and clinical sleep sciences. The chapters and figures have also been coordinated with the new SRS Slide Sets (v1.1), providing an excellent foundation for a graduate or medical course in sleep medicine or research.

**Features:**

- Chapters are authored by over 40 internationally recognized experts
- Original 15 chapters are fully updated and expanded in content
- 10 new chapters have been added in critical areas of sleep
- Now including ‘Sleep Pearls’ especially designed for those who are studying for a specialty sleep examination
- Over 1000 references are provided throughout the Sleep Guide
- Every chapter has been fully peer reviewed
- New figures are added and coordinated with the latest SRS Slide Sets (v1.1)
- Keyword index has been added
Update on Resident Work Hour Reform

Still on Hold: One Year after the Institute of Medicine’s Landmark Call for Resident Work Hour Reform

Background

In July 2003, the Accreditation Council for Graduate Medical Education (ACGME) implemented nationwide work hour regulations for all physicians-in-training (residents). These regulations require that residents: 1) work no more than 30 consecutive hours, including time for handoffs and education; 2) work no more than 80-88 hours per week, averaged over 4 weeks; 2) have at least one in seven days free of work, averaged over 4 weeks; 4) have a 10-hour period off between shifts; and 5) work extended shifts (24+ hours) no more often than one night in three (or every other shift), averaged over 4 weeks.

These limits have been the subject of considerable controversy. Critics of work hour regulation suggest that the limits are too restrictive, impeding medical education, continuity of care, and the development of residents’ professionalism. Conversely, many sleep and patient safety proponents have suggested that the regulations did not go far enough, as extended shifts exceeding 24 hours have been well-demonstrated in both residents and others to convey a high risk of performance decrements. Over the past several years, a growing body of field data has demonstrated that not only are residents neuro-cognitively impaired when working extended shifts, but in fact they make significantly more serious medical errors, and suffer significantly more occupational injuries and motor vehicle crashes. Studies also indicate that the ACGME’s current limits have had only a modest impact on residents’ actual hours of work and sleep, and minimal or no effect on patient safety.

As data on the hazards of residents’ traditional work patterns began to mount, the Sleep Research Society convened a Presidential Task Force to study the issue. After reviewing the literature, the task force recommended in 2006 that residents’ work shifts should optimally be limited to 12 consecutive hours, and should in no circumstance exceed 18 consecutive hours; in addition, they recommended that weekly work hours should ideally be reduced and time off between shifts increased to mitigate the potential for a buildup of chronic partial sleep deprivation. These recommendations were endorsed both by the SRS and the National Sleep Foundation, but were adopted neither by the ACGME nor any other regulatory agency.

The IOM Recommendations

Concerns about resident work hours have only continued to grow, however. Following publication of a study in which 1 in 5 interns reported having made a fatigue-related error that led to a patient injury, and 1 in 20 reported having made a fatigue-related injury that led to a patient’s death, the Institute of Medicine initiated a formal, multi-disciplinary investigation of resident work hours. After holding hearings over the course of a year, and comprehensively reviewing the body of research on this issue, the IOM concluded a year ago that it is unsafe for residents to work more than 16 consecutive hours without sleep, and that sufficient evidence existed to make the following recommendations:

• Residents should either a) work no more than 16 consecutive hours; or b) if working traditional 30-hour shifts, should be provided with a 5-hour period of fully protected time for sleep at night;
• Time off between shifts should be increased to 10 hours off after a day shift, 12 hours off after a night shift, and 14 hours off after an extended duty shift;
• Residents should work no more than four consecutive night shifts;
• Any series of three or more consecutive night shifts should be followed by a 48-hour free period of work;
• Residents should have a minimum of 5 days off per month, including at least one consecutive 48-hour period;
• Moonlighting both within and outside of residency programs should be included when accounting for resident work hours;
• Given concerns about the inadequacy of existing handoff processes, efforts should be made to optimize handoffs;
• Resident on-site supervision should be improved;
• Efforts should be made to reorganize medical education to accommodate reduced hours;
• Each specialty should establish workload caps for residents, to ensure that reductions in work hours do not result in an overburdening of residents working shorter shifts;
• Residents working extended shifts, and those feeling tired, should be provided with taxi or public transport vouchers to address the hazards of resident drowsy driving;
• The ACGME should continue to regulate resident work hours, with oversight provided both by the Joint Commission, which accredits hospitals, and the Center for Medicare and Medicaid Services (CMS), the major payor both of graduate medical education and hospital care in the U.S.

Barriers to Implementation

Up-front costs. A recent study found that the hiring of needed providers to implement the IOM recommendations would cost $1.6 billion. Such a cost could potentially be recouped if reduction in work hours leads to a reduction in costly adverse events (an 11% reduction would make the intervention cost-neutral to society), but due to the fragmented nature of the American healthcare system, savings due to improved care accrue primarily with payors, rather than with those expected to hire the needed providers, hospitals and residency programs. As such, widespread implementation of work hour reform would require the up-front investment of Medicare and other payors, its downstream financial beneficiaries. In one randomized study, implementation of a 16-hour shift limit in ICUs led to a reduction in adverse events and errors more than twice as great as the projected 11% cost-neutrality level, suggesting that the up-front
investment of CMS and other payors in work hour reform may yield downstream dividends.\textsuperscript{10} Thus far, however, neither CMS nor other payors have taken any action on this issue. At a time when healthcare reform is a top agenda item, but concerns about the cost of reform are also high, reducing work hours could be an important opportunity for cost-effective healthcare system improvement.

Handoffs. Another objection to reducing work hours is that shorter shifts tend to increase handoffs of care, which have been shown to convey risk.\textsuperscript{11} However, systematic studies have found decreases in rates of overall errors when shifts of greater than 16 consecutive hours are eliminated, despite the increase in handoffs.\textsuperscript{4,10} As such, while optimizing the handoff is an important goal in its own right, it should not preclude work hour reduction.

Education. Although sleep deprivation has been found to impair learning,\textsuperscript{12} critics of the IOM recommendations have suggested that their implementation would interfere with resident training. Most studies conducted to date, however, do not substantiate this concern. Elimination or reduction of shifts exceeding 16 hours has not generally been found to lead to reductions in either surgical case volume or the performance of trainees on standardized exams,\textsuperscript{13-16} as long as programs make concerted efforts to re-design their curricula to ensure adequate case volume and education in reduced-hours systems. Data continue to be needed evaluating longer-term educational outcomes and graduates’ competencies in those programs that have eliminated extended shifts.

**Stakeholders**

In order for any of the IOM’s recommendations to become reality, the ACGME or other policy makers must take action on them. In the year since their release, the ACGME has been actively working on this issue, and is expected to announce revised work hour regulations for residents later this year. How closely these will, in the end, reflect the IOM’s recommendations remains unclear.

While graduate medical educators and academic physicians have been outspoken about the IOM’s proposed changes, the voices of the public (who have the greatest stake in the safety of the healthcare system), consumer advocates, and policy makers other than the ACGME have been largely absent from the discussion. The IOM called upon the Joint Commission and CMS to oversee the ACGME’s efforts at reform, but to date, neither has implemented policies in response. Similarly, the House Energy and Commerce Committee, which commissioned the IOM study, has yet to call for policy change.

CMS in particular has a complex and important role, as it is in the unique position of being both the major supporter of graduate medical education in the U.S., and the leading potential financial beneficiary of more efficient, error-free care. Were it to implement a “pay-for-adherence” program, financial incentives to programs to adhere to the IOM recommendations (which could potentially lead to savings to CMS if effective), change could potentially come about rapidly.

**Conclusions**

A compelling body of research demonstrates that residents’ traditional 24+ hour shifts pose hazards both to residents themselves and to their patients. The Institute of Medicine’s recommended resident work hour reforms are based on this research, and have the potential to transform graduate medical education and patient safety in the U.S. Whether these recommendations will be fully implemented, however, and whether – in the form they are implemented – they will in fact yield widespread safety improvements remains uncertain. The active involvement of sleep scientists, safety experts, medical educators, residents, patients, and policy makers is needed to ensure that these recommendations lead to evidence-based policies that will improve the safety of the healthcare system.

**References**


Christopher P. Landrigan, M.D., M.P.H.\textsuperscript{1,2,3}

1Harvard Work Hours, Health, and Safety Group, Division of Sleep Medicine, Department of Medicine, Brigham and Women’s Hospital, Harvard Medical School; 2Division of Sleep Medicine, Harvard Medical School; 3Division of General Pediatrics, Department of Medicine, Children’s Hospital Boston, Harvard Medical School.
The consideration of grant applications at the NIH is divided into two administratively distinct processes. The receipt, referral and review of applications is led by the NIH Center for Scientific Review (CSR). The consideration of individual grant applications for funding and programmatic relevance is decided by the 27 individual Institutes and Centers that make awards. Considerable attention has been devoted to recent changes led by CSR in application format, the peer review scoring system, and the type of feedback in summary statements (http://grants.nih.gov/). However, individual NIH Institutes and Centers also routinely monitor the relationship between peer review, trends in funding, success rates, and can make adjustments needed to best accomplish their scientific mission (http://www.nih.gov/about/organization.htm).

The NHLBI has observed an overall decline in the funding success rate of original, unamended versions of new and competing renewal grant applications (A0), and increasing numbers of amended and re-submitted applications (A1, A2). Historically, an estimated 70% of applications assigned to NHLBI with a percentile ranking of 25 or better were eventually funded. In order to fund meritorious science earlier and encourage investigators to pursue scientific careers, the NHLBI announced plans in late 2008 to identify regular R01 applications with a high probability of achieving a fundable score and fund them promptly starting in fiscal year 2010 (http://www.nhlbi.nih.gov/funding/policies/rsr.htm). The new fiscal policy may allow the NHLBI to award 60% of its R01 awards on the first submission (A0) of a competitive application. Separate paylines will be established for amended applications and early stage investigators (ESI). In effect, the plan is to equalize success rates for A0, A1, and A2 applications.

The new NHLBI funding strategy has profound implications for applicants. Under the new fiscal policy, the greatest opportunity for NHLBI grant funding consideration will be with those applications that receive the most meritorious scores (percentile ranking) on the initial submission of a competing application. Correspondingly, the number of amended and re-submitted applications funded will decline. NHLBI paylines for fiscal 2010 have been posted on the website listed below and are not expected to change during the remainder of the year. http://www.nhlbi.nih.gov/funding/policies/operguid.htm

Please note that this funding strategy has been announced by the NHLBI and has not been adopted NIH-wide. Applicants are encouraged to stay abreast of Institute-specific policies affecting their application(s) by checking the NIH Institute website and periodically communicating with the assigned program officer.

There are also changes underway to grant applications NIH-wide. Generally speaking, the A2 revised application is being phased out with the last possible date for submission of an A2 revision application in January 2011. Page limits and the standard application forms are also changing for most grant mechanisms. The change in page limits affects all new and revision applications submitted on/after January 25, 2010. Additional preparation time may be needed to select the package of information that fits the new 12 page R01 research plan format while remaining the strongest, most compelling plan possible from the perspective of peer review competition. Revised applications submitted on/after January 25 will also need extra time and careful thought in order to reduce the length of the research plan and specific aims in the prior application from the old 25 page format to the new 12 page length with no more than one page for specific aims. The length of the “Introduction” used to summarize the applicant response to the prior summary statement is also limited to one page. Please note that each grant mechanisms may have its own special page format and instructions under the new system. You can keep track by consulting the NIH website listed below, and reading the latest instructions for the FOA of interest. http://enhancing-peer-review.nih.gov/index.html

The development of new investigators remains an important focus for NIH. Applicants identified as “Early Stage Investigators” (ESI) based on the date of their terminal research degree may be considered under special funding guidelines. The special funding guidelines are determined by each individual Institute and can be modified by the Institute just like regular paylines. ESI applicants are encouraged to check Institute-specific webpages for the specific policy that may affect their application. The definition of who is potentially eligible for ESI status is determined centrally for the entire NIH and recorded in the NIH Commons account associated with individual applicants. Because individual career paths vary significantly, the NIH has developed an extensive FAQ page to help applicants plan and anticipate their ESI status. The NIH has also established a process to consider requests for changes and extensions of ESI eligibility. Details can be found on the NIH website listed below. Please note that Institutes and Program Officers are not involved in the determination of ESI eligibility by NIH. http://grants.nih.gov/grants/new_investigators/investigator_policies_faqs.htm

Whether you are planning, competing, or renewing an NIH grant in 2010, the latest round of changes is likely to affect you. Proactively cultivating awareness of grant policies, grantsmanship skills, and peer review practices may put you in a better position in NIH grant competition. An array of opportunity windows exists in relationship to postdoctoral trainee and new investigator career timelines. Updating your long-range vision may help individuals optimize the potential contribution of these opportunities to their career development. There are many additional considerations for particular research plans. NIH program officers can help explain policies and how specific Institute areas of emphasis may impact the consideration of your application. A list of NIH staff representing sleep and circadian research is available on the webpage listed below. Please note that the Program Officer assigned to a particular application may be different. http://www.nihbi.nih.gov/about/ncsdr/comm/content2.htm

Announcements of potential interest to sleep and circadian researchers regarding federally funded activities are available on the SleepRFA-L listserv. Subscribe or view the archive at the website listed below. https://list.nih.gov/archives/sleeprfa-l.html

Best,

**Michael Twery, Ph.D.**

*Director, National Center on Sleep Disorders Research*

*National Heart, Lung, and Blood Institute, NIH*
In Memoriam:

Ismet Karacan, Ph.D.

Professor Dr. Ismet Can (pronounced John)
Karacan, M.D., D.Sc. (circa 1927-2009)

You’ve likely already read Dr. Karacan’s obituary published in Sleep or Clinical Sleep Medicine. It is not my intention here to enumerate his achievements or list his accomplishments. His CV speaks for itself. It is vast, impressive, and reflects his untiring efforts to explore and understand sleep. These next few paragraphs focus more on providing a flavor for what Dr. Karacan was about, at least my impressions from having worked with him nearly every day for more than 20 years. ISMET KARACAN earned the rank of Professor and directed the Sleep Disorders and Research Center in the Department of Psychiatry at Baylor College of Medicine. He also served as Chief of Research Service at what is now the Michael E. DeBakey Veterans Affairs Medical Center in Houston, Texas. That was what he DID, not who he WAS. He WAS a pivotal member of the pioneering sleep team at the University of Florida in Gainesville. Notable Gators in sleep also include Robert L. Williams, Wilse “Bernie” Webb, Jack Smith, John I. Thornby, A.J. Block, and Pat Salis. Williams-Karacan-Thorby-&-Salis relocated to Houston in the early 1970’s and J. Catesby Ware and I joined them about a half-decade later. Ismet, or John as his friends called him, was tireless, inquisitive, fearless, quirky, and a prankster. He could at one moment be brilliant with penetrating clear insight and at the next be virtually impossible to understand (which I usually ascribed to my own lack of ability to follow his train of thought). One thing was for sure, he early on understood that mathematics is the language of science, methodology is its backbone, and the devil is always in the details. It took me years to really begin to understand him. For some reason he was captivated by the Rubik’s Cube and I spent years trying to teach him the strategy for solving it from any starting point. It fascinated (and frustrated) him. He liked puzzles and mastering their solutions.

From where I sat, the best part of his tutelage came from listening to him critique studies, cases, places, people, individual’s motivations, tactical approaches, and observable behaviors. We spent many nights discussing this-and-that as a tangent to what we were really working to complete. In his professional environment, he eschewed fanciness and preferred workplace functionality. By contrast, he spared no expense on equipment and technology when it was needed to do research. He avoided individuals with entitlement issues. He frowned on having a big office; he valued having a corner office. A small corner office trumped a big non-corner office any day in his mind. Although I asked about that many times, I never quite understood the logic. When it came to doing something he thought was interesting or important, he worked around the clock (and so did his team). It could be an exhausting (but heady) experience. We did many projects, grants, and papers together and traveled extensively. Undoubtedly, John was best known for his work with nocturnal penile tumescence (NPT) and for years it was the clinical standard for differentially diagnosing erectile dysfunction. If you could attach a monitoring device to the penis, you can bet that we did. My interest in autonomic nervous system function dovetailed nicely with this work as we attempted to unravel the physiological mechanisms underlying erectile responsivity.

Karacan SHOULD BE remembered in the sleep community as the first winner of the Kleitman Award and as the key editor/author of a triad of textbooks on sleep. The first book included sleep normative data (The EEG of Human Sleep), the second was one of the earliest sleep disorders textbooks (Sleep Disorders: Diagnosis and Treatment (1978)), and the third was devoted to the pharmacology of sleep. As a founder and a prime-mover at the very beginning of sleep medicine, he was pivotal in advancing the Association for the Psychophysiological Study of Sleep (the original APSS) and the Association of Sleep Disorders Centers (which later became American Sleep Disorders Association and eventually the American Academy of Sleep Medicine). Interestingly, as much as John understood, insisted, and taught young researchers the importance of finding an area of interest and pursuing it continually in greater and greater detail in order to ultimately compile a body of knowledge, he preached the opposite but rather to do their service and move up and ultimately to move on. He felt that in this manner ONE’S interests would influence an ever more widely expanding group of colleagues. He was always developing new contacts, relationships, and networks.

He was also a prankster. He once sent a belly dancer to RL “Bob” Williams hotel room at a conference (Bob was Department Chairman and about as reserved and straight-laced as one can imagine). I never did figure out how he managed to get my Mustang convertible up onto the loading dock of the research building. He liked practical jokes (and didn’t mind being on the other end of them either). We zinged him more than a few times. April 1 was always a day to be on your guard. Oh the stories I could tell… John also had, let us say, a unique sense of style. For instance, he owned the largest collection of Hawaiian shirts between the Mississippi and Brazo Rivers (and kept...
Two SRS Members Elected to the IOM

In the fall of 2009, the Institute of Medicine (IOM) announced the election of 65 new members and 5 foreign associates. Among the new IOM members are two members of the SRS, Clifford B. Saper, M.D., Ph.D., and Amita Sehgal, Ph.D.

Dr. Saper is the President of the SRS and the James Jackson Putnam Professor of Neurology and Neuroscience at Harvard Medical School. He is also a professor and head of the Department of Neurology at Beth Israel Deaconess Medical Center in Boston.

Dr. Sehgal is an investigator at the Howard Hughes Medical Institute. She is also the John Herr Musser Professor of Neuroscience and vice chair of the department of Neuroscience at the University of Pennsylvania School of Medicine in Philadelphia.

Election to the IOM is considered one of the highest honors in the fields of health and medicine. It recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. New members are elected by current active members through a highly selective process that recognizes individuals who have made major contributions to the advancement of the medical sciences, health care, and public health.

Congratulations to Drs. Saper and Sehgal on this tremendous honor!

SLEEP 2010 Meeting Registration is Now Open

Registration for SLEEP 2010, the 24th Annual Meeting of the Associated Professional Sleep Societies, LLC (APSS), is now open. Be sure to register early to gain access to the most popular courses and sessions before they sell out. You may also reserve your hotel room through the SLEEP Housing Bureau, after completing their meeting registration by clicking on the “Reserve a Hotel” link on the confirmation page.

SLEEP 2010 will be held June 5, 2010-June 9, 2010 in San Antonio, Texas. New this year: the SLEEP 2010 general session will begin the afternoon of Sunday, June 6, 2010 and conclude the evening of Wednesday, June 9, 2010; sessions will not be held on Thursday, June 10, 2010. Information about postgraduate courses, meet the professor sessions, lunch and learn sessions, registration and hotel reservations can be found at the meeting’s Web site at www.sleepmeeting.org.

A full Preliminary Program will be available in late February. Contact the APSS Meeting Department at sleepmeeting@apss.org with any questions.

15th Annual Trainee Day to be Held Saturday, June 5, 2010

The Sleep Research Society will be sponsoring the 15th Annual Trainee Day on Saturday, June 5, 2010 in conjunction with SLEEP 2010 the 24th Annual APSS Meeting in San Antonio, TX.

The purpose of Trainee Day is to foster scientific investigation, professional education and career development in sleep research and academic sleep medicine. Trainee Day offers young researchers and scientists an unparalleled opportunity to glean knowledge and experience from established and renowned professionals on current topics in the field of sleep and circadian research.

Immediately following the Trainee Day Program, the SRS will present a Trainee Reception and Career Development Fair. Here trainees will find many top institutions ready and willing to spend time with them on an individual basis answering any questions they
may have concerning possible career choices in the field of sleep and circadian research. The Trainee Day Reception also gives trainees an opportunity to network with each other and with senior investigators in a more informal atmosphere.

Registration for Trainee Day is now open for SRS members and will conclude on April 20, 2010. Only Trainees who pre-register for the event will be able to attend.

The 50th Meeting of the SRS

As part of the work to commemorate the 50th meeting of the SRS, the SRS 50th Anniversary Task Force requests that members submit annotated photos of past SRS event or photos of a historic nature relating to sleep and circadian research. The photos will be used in the 50th meeting celebration at SLEEP 2010 and may be posted on the SRS website to commemorate the rich history of our society.

Photos may be sent electronically via e-mail to ncekosh@srsnet.org; however, if you plan to submit more than five photos please copy them to electronic media (CD-ROM, DVD, Flash Drive) and send them to the SRS national office at the address below:

Sleep Research Society
Attn: Nick Cekosh
One Westbrook Corporate Center, Suite 920
Westchester, IL 60154

SRS Announces Vote on Proposed Bylaws Changes

The Board of Directors is recommending a number of changes to the SRS Bylaws. The proposed changes more clearly define the existing membership categories and will allow members to join more than one Research Section. The changes are being recommended in response to input received from members at the annual SRS business meeting that was held in June 2009 at the APSS meeting, and also to more clearly reflect current operations of the society. All changes must be approved by a vote of the membership.

Before voting, members have an opportunity to view the proposed changes. A cover page describing the proposed revisions to the bylaws as well as a copy of the bylaws with the recommended changes have been posted on the SRS Website, and will remain available until March 17, 2010.

Voting via electronic ballot on the recommended changes to the bylaws will begin March 5, 2010 and conclude March 17, 2010. Only Regular and Emeritus SRS Members are eligible to vote.

Submit a Sleep Abstract for the American Neurological Association (ANA) and Participate in the ANA Club Hypnos Event

New this year, the ANA will host a Club Hypnos event sponsored by the SRS as part of the ANA Sleep and Circadian Special Interest Group at its Annual Meeting, in San Francisco, CA, September 12-15, 2010. This event will include a DATABLITZ, consisting of brief presentations by abstract presenters. The SRS urges those who are going to the ANA meeting to consider submitting an abstract, even if it presents research that has been presented at another meeting but has been modified to reflect further developments or to apply to the ANA audience. Abstracts for the DATABLITZ will be chosen from those submitted for the meeting. The American Neurological Association (ANA) is now accepting abstracts which are due by March 5th and are being accepted online only at http://www.call4abstracts.com/ana.

Circadian Rhythms and Metabolic Disease Workshop

The National Institute of Diabetes and Digestive and Kidney Diseases has announced a workshop on the link between circadian rhythms and human health and disease to be held April 12-13, 2010 at the North Marriott Conference Center in Bethesda, Maryland. A particular emphasis will be on the influence of both central and cellular clocks on the physiology of behavior and metabolism, specifically effects on overall energy balance and obesity.

For more information on this workshop please visit: http://www3.niddk.nih.gov/fund/other/circadian2010/index.htm

It’s Not Too Late - Register Now for Sleep Health & Safety 2010!

The National Sleep Foundation will host Sleep Health & Safety 2010 and its Annual Awards Dinner at the Gaylord National Harbor, just outside Washington, DC, March 5-6. Drs. Andrew Krystal and Gregory Belenky will co-chair the conference, featuring topics in sleep medicine, transportation safety and fatigue, and school start times. The National Sleep Foundation invites its friends at the SRS to attend. For more information, please visit http://www.sleepfoundation.org/events-activities/sleep-health-safety-2010-preliminary-program

NIH Center for Scientific Review Requests Volunteers for Peer Review Study Sections

The National Institutes of Health Center for Scientific Review (CSR) is requesting volunteers to participate in peer review study sections. SRS members have a great record of being active participants in peer review study sections and we would like to continue this tradition. Members who are interested in volunteering should e-mail Nick Cekosh in the SRS National Office at ncekosh@srsnet.org. When e-mailing your response, please include keywords related to your area of expertise.

NIH is Accepting Applications for the Director of NICHD

The NIH is seeking exceptional candidates for the position of Director of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). For a full job description and instruction on how to apply for the position, please see the
The deadline to apply for this position is 11:59 p.m. EST, Friday, February 26, 2010.

NHLBI Clinical Trial Pilot Studies

The National Heart, Lung, and Blood Institute (NHLBI) invites applications proposing pilot studies to obtain data that is critical for the design of robust clinical trials. This Funding Opportunity Announcement (FOA) should be used to fill gaps in scientific knowledge necessary to develop a competitive full-scale clinical trial. Appropriate pilot studies might demonstrate feasibility of an intervention or an experimental design, estimate intervention parameters, or gather other data important for the design of a trial. Applicants who propose solely to write a protocol or manual of operations or to develop infrastructure for a clinical trial will not be considered appropriate for this announcement.

Applications must demonstrate that the proposed pilot studies are both necessary and sufficient to permit the design of the clinical trial. During the evaluation of applications in response to this FOA, the review group will also consider the significance and potential public health impact of the full-scale clinical trial that would be proposed following the R34 award period. The NHLBI anticipates that the R34 award period will yield more competitive investigator-initiated clinical trial grant applications and more robust and successful clinical trials that evaluate interventions for the treatment or prevention of heart, lung, blood, or sleep disorders.

Note that this FOA has been updated to reflect the new requirements from NIH’s Enhancing Peer Review Initiative. Investigators must now use the Adobe-Forms-B version of the application forms and instructions.

Other NIH Funding Opportunities

Obesity Policy Research: Evaluation and Measures

Participating NIH Institutes have announced a new program (R01/R21/R03) for 1) evaluation research on obesity-related “natural experiments”, and/or 2) develop and/or validate community-level measures to inform public policy relevant to “diet” and “physical activity behaviors”. This PA may be of interest to sleep/circadian researchers working closely with obesity experts and researchers with experience in community-based evaluation approaches. R01 -> PA-10-027,
R21 -> PA-10-028,
R03 -> PA-10-029, (NCI Only)

NIBIB Quantum Projects: Implementation Phase II

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) has announced phase II of a program (U01) to achieve profound (quantum) advances over present-day approaches in the prevention, diagnosis, or treatment of a major disease or national public health problem. This initiative may be of interest to sleep/circadian researchers working as part of multi-investigator, inter-disciplinary technology teams with significant development activity already underway.

For additional information please view the full RFA via the link below:

Reducing Cardiovascular Disease Risk Through Treatment of Obstructive Sleep Apnea

The National Heart, Lung, and Blood Institute (NHLBI) solicits three-year Clinical Trials Planning Grant Cooperative Agreement (U34) applications for pilot studies evaluating the treatment of obstructive sleep apnea (OSA) using positive airway pressure (PAP). Proposals must aim to 1) “inform” the feasibility of long-term PAP treatment of OSA in patients at risk of CVD, and 2) provide data regarding the effects of PAP on surrogate markers of cardiovascular disease risk.

This program is of potential interest to sleep and circadian researchers who intend to establish collaborations with cardiologists, clinical trial, epidemiology, and biomarker experts with experience leading studies of cardiovascular disease risk assessment and intervention.

For more information on this funding opportunity view the RFA via the following link:

Transdisciplinary Research in Energetics and Cancer (U54)

The National Cancer Institute (NCI) solicits applications for the centers for Transdisciplinary Research on Energetics and Cancer (TREC) in nutrition, physical activity, energy balance, obesity, and cancer. Special focus on children, groups at high risk for obesity, and cancer survivors is encouraged. This program might be of potential interest to sleep and circadian researchers as part of transdisciplinary cancer research teams planning to submit applications. Sleep and/or circadian factors may modify domains of interest to the TREC program.

For more information on this funding opportunity view the RFA via the following link:
SLEEP AND PERFORMANCE RESEARCH CENTER

Washington State University’s Sleep and Performance Research Center (SPRC) consists of several core sleep research laboratories, led by Gregory Belenky, M.D.; Levente Kapás, Ph.D.; James Krueger, Ph.D.; David Rector, Ph.D.; Éva Szentirmai, Ph.D.; Hans Van Dongen, Ph.D.; Bryan Vila, Ph.D.; and Jonathan Wisor, Ph.D. This “Domestic Laboratory Spotlight” focuses on the human research programs of Drs. Belenky, Van Dongen and Vila. These are housed in a 10,000 ft², state-of-the-art research facility on the Spokane campus of Washington State University. This facility integrates a 4-bedroom sleep laboratory, an operational task simulation laboratory, a wet-lab area and medical exam room, a staging area for field studies, high-end computational modeling infrastructure, and offices for faculty, postdocs, staff and graduate students.

RESEARCH INTERESTS

We perform internationally leading human research on fatigue risk management and occupational sleep medicine with a wide range of basic and applied research projects. Most of our research fits in “Pasteur’s Quadrant” – seeking fundamental understanding of underlying mechanisms while addressing applied research questions related to sleep and fatigue. Broadly, our lines of research are:

- Strictly controlled laboratory studies of sleep, circadian rhythms, cognitive performance, and physiological health under conditions of sleep deprivation and circadian misalignment;
- High-fidelity simulator studies of real-world performance in the face of fatigue and stress in the operationally relevant yet highly controlled environment of the integrated simulation and sleep laboratories;
- Field studies of sleep and performance in operational environments;
- Mathematical modeling to predict fatigue and performance of individuals in the laboratory and in the field.

With collaborators from around the world, our group is contributing to the scientific fundamentals on which contemporary fatigue risk management strategies are based. Our contributions to date include inventing new approaches for measuring performance in the field, demonstrating the cumulative adverse effects of chronic sleep restriction on cognitive performance, discovering that individual differences in vulnerability to sleep deprivation constitute a trait, showing the importance of differentiating distinct components of cognition in studies of sleep loss, bringing simulated real-world task environments into the controlled laboratory environment, developing improved mathematical models for the prediction of fatigue and performance, introducing mathematical tools for performance prediction at the level of individuals, and integrating fatigue modeling with scheduling and rostering in real-world operations.

CURRENT RESEARCH

With more than ten grants and contracts from the federal government, industry, and private foundations currently active, we have many research projects running in parallel. These projects are interrelated and supported by our integrated team of faculty and postdocs, graduate and undergraduate students, and support staff. Listed here is a sampling of our ongoing research:

- Laboratory studies of the effects of sleep deprivation on dissociated components of cognition;
- Laboratory studies of the duration of the “restart period” (time off duty) needed to limit fatigue in truck drivers, as a function of circadian timing;
• Laboratory validation of high-fidelity violent encounter police training simulators for research on the impact of sleep loss and stress on decision making;
• Field studies of the impact of hours-of-service regulations on actigraphically measured sleep and smartphone-based psychomotor vigilance test performance in commercial aviation and in motor coach operations;
• Electrophysiological and optical measurement of use-dependent, local sleep in the sleep-deprived human brain;
• Laboratory research on the impact of shifted and split sleep schedules on cognitive performance and physiological indices of long-term health;
• Development of a physiology-based mathematical model for the prediction of fatigue under conditions of acute total sleep deprivation, sustained sleep restriction, circadian misalignment, and high workload; and integration thereof with computational models of cognitive task performance.

TECHNICAL CAPABILITIES

The integration of a 4-bed sleep laboratory with a high-fidelity simulator laboratory and computational modeling infrastructure in one self-contained, contiguous space yields numerous possibilities for new research projects ranging from the very basic to the highly applied. The sleep laboratory has, in each separate bedroom, standard digital polysomnography as well as high-density, high-sampling-rate EEG amplifiers, near-infrared optical topography, Windows- and Linux-based performance testing computers, blood pressure monitors, and full audio and video monitoring and recording (including infrared). The simulation laboratory has two high-fidelity driving simulators, two realistic violent encounter police training simulators, linked eye-tracking devices, and ambulatory EEG and autonomic physiological status recording. The medical exam room has a fully functional polysomnography system for hook-ups and is equipped for sampling, processing, and (long-term) storage of blood, urine and saliva. All laboratory areas are time-synchronized, power-outage protected, and integrated with dedicated computer infrastructure. Our offices are equipped with high-performance computer hardware and software for mathematical model development, EEG spectral analysis, and state-of-the-art statistical data analysis, and a staging area for field studies with actigraphy and ambulatory performance testing.

TRAINING OPPORTUNITIES

Graduate, post-baccalaureate, and undergraduate trainees can readily become involved in our ongoing research projects. Graduate students perform their Master’s thesis or Ph.D. dissertation research with us, and typically enroll in the Neuroscience, Experimental or Clinical Psychology, Mathematics, or Criminal Justice programs of Washington State University – although we also work with graduate students from other universities. Our post-baccalaureate research assistants join the team for one or two years to support the research and analyze a subset of the data for presentation and/or publication, which often results in a peer-reviewed article or book chapter. We provide all-year stipends for graduate students and full-time salaries for post-baccalaureate research assistants, and we cover travel expenses for at least one national meeting per year (usually the APSS SLEEP meeting). We have collaborations nationally and world-wide, and exchange students and visiting scholars are welcome to join our group.

REPRESENTATIVE PUBLICATIONS

The Sleep Research Society welcomes members who recently joined the organization. Our membership continues to grow — help us strengthen the impact of the profession by encouraging your colleagues to join. Information regarding membership can be found on the Society website (www.sleepresearchsociety.org).

**Full Members:**
- Jed Black, M.D.  Stanford Sleep Medicine Center, Redwood City, CA
- Luis Carcoba, Ph.D.  Texas Tech University Health Science Center, El Paso, TX
- Francesca Facco, M.D.  Northwestern University, Chicago, IL
- Robert Gerbasi, Ph.D.  University of Chicago, Chicago, IL
- Akram Khan, M.D.  Oregon Health and Science University, Portland, OR
- Kyungho Koh, Ph.D.  University of Pennsylvania, Philadelphia, PA
- Ernesto Kufoy, M.D.  Saint Mary's Sleep Center, DeRidder, LA
- Peter Liu, M.B.B.S., Ph.D.  Woolcock Institute of Medical Research, Glebe, NSW, Australia
- Yuksel Peker, M.D., Ph.D.  Skaraborg Hospital, Skovde, Sweden
- Donald Woloszyn, M.D.  Parkview Adventist Medical Center, Brunswick, ME

**Associate Members:**
- Roy Raymann  Philips Research, Eindhoven, Netherlands

**Post Doctoral Fellows:**
- Melinda Jackson, Ph.D.  Sleep & Performance Research Center, Spokane, WA
- Benjamin Mullin, Ph.D.  University of Pittsburgh Medical School, Pittsburgh, PA
- Surilla Randall,  Henry Ford Hospital, Detroit, MI
- Jennifer Schreiter, Ph.D.  University of Pennsylvania, Philadelphia, PA
- Koi Spiegholder, M.D., Ph.D.  University of Freiburg Medical Center, Freiburg, Germany

**Predoctoral Students:**
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