

# BULLETIN

A PUBLICATION OF THE SLEEP RESEARCH SOCIETY, USA

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Volume 7, No. 1, Spring, 2001



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## Background

The Sleep Research Society (SRS) is a not-for-profit professional organization of basic and clinician scientists engaged in sleep research. The SRS is the pre-eminent scientific organization representing sleep researchers. The society is dedicated to the continued

advancement of knowledge on sleep and its disorders, to training and education in sleep research, and to providing a forum for the exchange of information pertaining to sleep research.

The Sleep Research Society has developed the J. Christian Gillin Endowment for Junior Faculty to provide \$45,000 of salary support for a 3-year junior faculty appointment. The selected faculty member must be an individual with a dedicated interest in sleep research at an accredited degree-granting North American academic institution.

### Review and Announcement of the Award

An expert panel of the Sleep Research Society will evaluate all complying applications utilizing established criteria and will present one award. The award will be offered to the highest rated academic institution on the criteria outlined above. The Sleep Research Society will commit an amount of \$45,000 a year for not more than 3 years to the selected academic institution (to be renewed annually after review to ensure that award criteria are still being met). No indirect costs will be paid. Notice of award will be made no later than June 1, 2001.

Send the original and 5 copies of the application to:  
Lance S. Brink  
Association Coordinator  
Sleep Research Society  
6301 Bandel Road, NW Suite 101  
Rochester, MN 55901

### Request for Applications for Academic Appointment in Sleep Research

The SRS seeks to stimulate new academic appointments for junior faculty interested in sleep research within North American academic institutions. The appointment should be made at the Assistant Professor rank and candidates must have an established training record in sleep research. The applying institution or department should have sufficient resources and commitment to foster the research career of the selected researcher.

An original and 5 copies of the application must be received at the Sleep Research Society National Office by May 11, 2001. Late arriving applications will not be accepted.

*The application should include the following information:*

- Name and contact information of department chair.
- Name and contact information of prospective candidate(s) and /or of position for which candidates will be sought.
- General description of the research environment within the department (must include current department faculty, their research interests and current grant support in NIH "other support" format, and a bibliography of representative publications).
- Names, department affiliation and research interests of any other sleep researchers in the University but outside the department applying.
- Annual report of department for preceding year (submitted grants, papers published, honors/awards, etc).
- Description of resources available to prospective candidate for appointment utilization (must include space and equipment to be made available).
- Describe other departmental obligations for prospective candidate (e.g., teaching, clinical work, committees, etc.).
- A description of the advertisement to be used in recruiting for the position.

- Provide a brief history of sleep research or research in closely related areas (e.g. biological rhythms, chronobiology) within the institution or department (no more than 2 pages).

### Responsibilities of Applicant Institution

*The applying institution in accepting this award must make assurances for the following conditions:*

- The institution must supplement the remaining salary requirements for the selected researcher throughout the period of the faculty endowment award. This provision can be met by the candidate faculty member receiving other grant support as a P.I. or coinvestigator.
- The institution must commit to an academic track appointment (e.g., tenure track, clinical-educator track, research track) at the level of assistant professor.
- The institution must protect a minimum of 50% of the appointee's time to perform sleep research for the duration of the award.
- The institution must provide the Sleep Research Society with an annual report on the candidate's research and academic activities for the duration of the grant, from the department in which the academic appointment was made, for each of the three years that the SRS contributes the award.

### Criteria for Selection

*Applying institutions will be rated on the following criteria:*

- Quality of the resources available to conduct the sleep research (space and equipment or relevant research infrastructure for human, animal, molecular studies, depending on the focus of the position).
- Strength of the institution's current research environment.
- Nature of the academic appointment.
- Strength of the candidate(s)

*Sleep Research Society, Junior Faculty Development Program  
Request for Applications for the J. Christian Gillin Endowment for Junior Faculty*

# J. Christian Gillin Endowment for Junior Faculty

# BULLETIN

A Publication of the Sleep Research Society, USA  
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## Dear SRS Members,

My final message as President is a sincere "thank you" to the SRS members for the opportunity to serve the society during the past year. I have had valuable advice and support from individual SRS members, from the SRS Board of Directors, and from Lance Brink and his colleagues in the home office. The SRS Bylaws insure that a Presidential term of office benefits from a close working relationship with the past President, President elect, and Secretary/Treasurer. It was my good fortune to have as co-members of the SRS Executive Committee Dr. Mary Carskadon, Dr. David Dinges, and Dr. Merrill Mitler. Dr. Daniel Buysee, President of the American Academy of Sleep Medicine, has helped in every way to facilitate projects of mutual interest to the AASM and the SRS.

A highlight from the past year included the opportunity to observe -from a broader perspective- the scientific growth of sleep-related research. The 2000 APSS meeting in Las Vegas was the largest APSS meeting to date. The continued growth of sleep research, and the efforts of the Program Committee, insures that the 2001 APSS meeting in Chicago will exceed the Las Vegas meeting. In 2002, the meeting moves to Seattle, and in 2003 -back at the Chicago venue- the meeting will celebrate the 50<sup>th</sup> anniversary of the discovery of rapid eye movement sleep. This will be the sleep education and public relations opportunity of our lifetime. Dr. Tim Roehrs is working even now on plans for the 50<sup>th</sup> anniversary meeting. Please contact Dr. Roehrs with your ideas and offers to contribute to the 2003 meeting.

Thanks to the work of a committee chaired by Dr. Thomas Roth, and to the generosity of the Gillin family, the SRS has established during the past year the J. Christian Gillin Endowment for Junior Faculty. This fund will be used to enhance the career development of new faculty having research efforts focused on some aspect of sleep. No gift is too small, or too large, to make a contribution to this program. Individuals who wish to contribute to the J. Christian Gillin Endowment for Junior Faculty can make individualized arrangements by contacting Mr. Lance Brink (Tel. 507-285-4397).

By the time this issue of the Bulletin reaches us, the membership will have elected an incoming slate of SRS officers. Thanks to the SRS nominations committee and to all the nominees for a stellar list of candidates. A number of individuals recently have completed SRS terms of office. For past service, the society gratefully acknowledges the work of Dr. James Krueger (former Publications Chair), Dr. Adrian Morrison (former Chair of the Awards Committee), Dr. Robert Sack (former Section Head for Circadian Rhythms), and Dr. Mary Carskadon (most recent past President). In June 2001, the SRS presidency moves to the capable hands of Dr. David Dinges. Some of David's work was highlighted in the January 2001 issue of *National Geographic*.

In the past year the SRS Board of Directors reviewed several proposals for special programs aiming to promote sleep research. Based on that review, the SRS Board recommended support for a meeting on the topic of Bioinformatics. The meeting will be held on the NIH campus during the summer of 2001. Additional workshop details are outlined later in the bulletin.

The SRS Executive Committee initiated in February, a yearly strategic planning meeting focused on the future of the society. During that meeting Dr. Mitler noted that the good financial health of the SRS will provide novel opportunities to promote sleep research. As always, your suggestions for strategic planning are welcomed. For example, based on input from members of the SRS Board, the society is creating an Education Committee. Individuals with a special interest in serving on the Education Committee are encouraged to communicate that interest to any member of the SRS Board of Directors.

Finally, this is the first issue of the SRS Bulletin published under the Editorship of Dr. Larry Sanford. Member contributions to the Bulletin are encouraged and may be sent directly to Dr. Sanford.

*I look forward to seeing you in Chicago.*

—Ralph Lydic

# SRS & AASM ATTEND NIH MEETINGS

Representatives from the Sleep Research Society and American Academy of Sleep Medicine attended meetings with several Institute Directors within the National Institutes of Health (NIH) on March 1 – 2, 2001. Dr. Steven Henriksen and Lance Brink represented the SRS and Drs. Daniel Buysee and Stuart Quan with Jerry Barrett represented the AASM. This was an attempt of both societies to ensure the communications from the sleep field to the NIH Directors were heard as one voice. These meetings were very successful and future trips to the National Institutes of Health Campus are being planned in this manner.

The group initially met with Dr. Duane Alexander, Director of the National Institute of Child Health and Human Development (NICHD). Discussions included ways the AASM and SRS could facilitate better communications with the Institute as well as a new initiative of the NICHD. This new initiative is a Longitudinal Cohort Study of Environmental Effects on Child Health and Development. Other topics covered included a June conference on Teen Driving that the institute is organizing. Both Societies relayed to Dr. Alexander the interest in this subject as a Drowsy Driving workshop has been tentatively scheduled in 2002.

The Societies met with Dr. Claude Lenfant, Director of the National Heart, Lung, and Blood Institute (NHLBI). These discussions included the recent launch of the Sleep and Children Education Program with Garfield as “Spokescat”. This is a five-year educational initiative to reach young children, their parents, teachers, and health care providers - with the message that adequate nighttime sleep is important to their health, performance, and safety. Both Societies offered to help distribute and disseminate the program information through their existing program and membership channels.

Dr. Steven Hyman, Director, and a constituency from the National Institute of Mental Health (NIMH) were able to meet with the representatives from both societies. A workshop on Insomnia that will focus on the mechanisms of Insomnia is in early planning stages with the NIMH, NCSDR, and both societies. This workshop is tentatively scheduled to happen in September. The AASM related to Dr. Hyman that a working group is reviewing literature in an effort to develop clinical definitions on Insomnia.

The group was able to meet with Dr. Carl Hunt, Director of the National Center on Sleep Disorders Research (NCSDR). The NCSDR and both societies discussed their support for the Bioinformatics workshop that is scheduled for July 16 & 17, 2001. Discussions covered the workshop on Insomnia that the NCSDR, NIMH and both Societies are working on for September. Dr. Hunt also conversed about the Sleep Academic Awards and his interest in the continuation of curriculum development in medical training. Both societies conveyed to Dr. Hunt their support for a workshop that will discuss sleep and fatigue in medical training.

Dr. Richard Hodes, Director of the National Institute on Aging (NIA) along with Dr. Andrew Monjan, Chief, Neurobiology of Aging Branch for NIA and Mary Jo Hoeksema, NIA Legislative Officer were able to meet with the representatives of both societies to discuss the institutes support of sleep needs and ways to better communicate common interests of the groups. The representatives of the institute and both societies also discussed the importance of including sleep data in Cohort Studies.

All representative members were enthusiastic about the substantive nature of the two days of discussions. There is a strong consensus that both societies endorse further and more regular meetings with these important NIH decision-makers for our constituent societies.

## Sleep Research Society Membership Meeting

All SRS members are encouraged to attend the Sleep Research Society general membership meeting that will take place on Friday, June 8, 2001 at 12:30 p.m. at the Hyatt Regency Hotel in Chicago, Illinois.

# Editor's Column

It is with considerable excitement, and more than a little trepidation, that I assume the editorship of the SRS Bulletin. Dr. Mark Opp, and Dr. Peter Shiromani before him, established a newsletter that was informative and that attempted to address the membership's needs. The Bulletin will continue with those aspirations. As before any input regarding the content or suggested features is welcome.

I would also like to thank Scott Doran and Wilfred Pigeon who have enthusiastically taken over the chores of putting together Student BITS. This issue they have compiled a list and description of web sites that should have something to interest trainees and regular members alike.

There have been tremendous changes in the sleep field over the last several years, both in the science and, thanks to tireless efforts by leaders in the field, in public perception of the importance of sleep for health and well-being. This widespread surge in interest in sleep is thankfully slowly being translated into opportunities for sleep scientists that did not exist only a few years ago. Taking advantage of some opportunities will require working in a variety of environments, some of which will have little or no previous sleep presence. I have asked several researchers at different stages of their careers to discuss their work and some of the challenges involved in performing it in different academic environments. Dr. Gina Poe presents the perspective of a beginning faculty member and newly independent researcher, and gives advice on dealing with issues that graduate school does not prepare you for. Dr. Subimal Datta discusses the promise and peril of conducting science and carving out a career based on the capriciousness of soft money. Dr. James Schaffery talks about moving an established laboratory whole cloth from one institution to another. And finally, Dr. Gerald Marks discusses how available resources affect the work of a scientist. I thank them for their contributions, and for the glimpse into their personal odysseys their writing provides. The issues they raise are relevant to people beginning their careers, but also to those of us working in sleep away from the traditional powerhouses in the field. They may also become relevant to more and more of our membership as the base of sleep researchers broadens and the number of sleep laboratories increases.

## DR. WILLIAM C. DEMENT HONORED WITH NSF LIFETIME ACHIEVEMENT AWARD

The National Sleep Foundation presented Dr. William C. Dement with a Lifetime Achievement Award for Accomplishments and Contributions to Sleep Science, Sleep Medicine, and Public Health, on March 26, 2001, during the "Night of a Thousand Dreams" gala banquet. The fund-raiser event was held in Washington DC, during the kick off of NSF's sleep awareness week. Present among the 380 people at the banquet were Dr. Dement's family, friends, and corporate well-wishers. Dr. Mary A. Carskadon, SRS Past President and scientific collaborator with Professor Dement while at Stanford University Medical School, presented the award. The presentation was preceded by a video collage of Bill's contributions during the past 50 years, and remarks from Dr. David Hamburg, President Emeritus, of the Carnegie Corporation of New York, life-long friend and mentor to Dr. Dement. In graciously accepting the award, Bill assured the audience that it would not be for what he has done, but rather for what he hopes to accomplish in the future.

# NIMH NATIONAL ADVISORY MENTAL HEALTH COUNCIL MEETING HELD

I was privileged to represent the Sleep Research Society and American Academy of Sleep Medicine at the meeting of the NIMH National Advisory Mental Health Council on January 19, 2001. Council had undertaken its research grants review on the day before (a private session) and was in public session on this day. I will review the public sessions below.

The morning began with an overview of NIMH activities by Dr. Steven Hyman, the director. Dr. Hyman emphasized youth violence in his discussion. A conference on this topic will likely take place within the next year. He summarized several areas in which research and public health initiatives could make significant inroads to reduce youth violence. Dr. Hyman also noted that the institute's director of planning has departed and the search is on for a new planning director.

The second phase of the meeting was an overview of "Science Advances and NIMH Human Genetics Research." The emphasis from NIMH program and council members was on preparing to take advantage of opportunities by having phenotypically well characterized samples, since the illnesses the NIMH is concerned with are nonMendelian and complex in nature and it will be difficult to sort out hereditary components.

Dr. Francis Collins addressed the group for about 30 minutes, and the main conclusion of his remarks was that the methods for applying the increasing knowledge base, with emphasis on the high resolution SNP map, will soon become both efficient and effective in addressing mental illness. He predicted that within 5 years all genes involved in these illnesses with a relative risk of 1.5 (perhaps as low as 1.3) will be identified...presupposing appropriate sample characterization and application of methods. The CIDR (Center for Inherited Disease Research) was highlighted as an important and effective mechanism for this type of research. Dr. Collins also mentioned microarray approaches and noted that pharmacogenomics will escalate remarkably in coming years.

The second half of the morning was spent in a review of the institute's epidemiology portfolio. Again childhood mental illness was an emphasis, with notation that work in this area is not up to par yet. The institute is approaching epidemiology in several ways: national surveys (piggy backing on ongoing efforts, such as NHANES, NHIS, and ECLS-B);

periodic large-scale population surveys, such as the national comorbidity survey, national survey of African Americans, and national survey of Latino and Asian Americans. Dr. Kathleen Merikangas, who will soon be moving from Yale to NIMH, spoke about the change from descriptive to analytic epidemiology that is needed.

After lunch, several speakers and discussants spoke about issues of training. One point that was made was that the number of Ph.D.'s trained in behavioral and social sciences was not in "glut," nor perhaps even adequate as has been noted by one or two recent reports. The need for research training for clinicians was emphasized by speakers and the theme was echoed by members of the council. Finally, the need for minority research training was also emphasized. In each case, the emphasis was on developing mechanisms that actually will result in enhanced retention of the best clinicians and researchers in mental health research. This discussion was lengthy and passionate.

The review of the NIMH's new programs to implement translational research highlighted the Program Announcement for centers that is currently out. Dr. Lederhendler noted that this might be a particularly ripe area for sleep researchers to mine.

The final session included votes by the council members on concepts for development of future initiatives in three areas.

I did talk to remind the council and others of the exciting research findings in our field, emphasizing the progress in orexin/hypocretins and reminding them, too, of the importance of sleep in phenotyping. Dr. Hyman said that the orexin/hypocretin story is in his opinion the most important in the last year and the program person in the genetics branch noted that mouse phenotyping using sleep and circadian parameters was indeed in the portfolio for a mutagenesis project.

Thank you for asking me to go. I was very proud to represent both societies.

*Mary A. Carskadon, PhD*

**T**he Student BITS segment is an ongoing forum for issues pertaining to sleep and to the training and retention of sleep scientists, from a trainee's perspective. The function of sleep represents one of the most compelling questions of our time, or any time, and the answer could be found within our generation. How will we recognize that answer and all of its implications for brain function, once we have found it? How will we continue to attract and retain highly intelligent, well-trained, and motivated people into this endeavor?

All trainees, undergraduate, graduate, or postdoctoral, who are interested in submitting an article for Student BITS are invited to contact Scot Doran, Assistant Editor, SRS Bulletin: Student BITS:

email: [SMDORAN@mail.med.upenn.edu](mailto:SMDORAN@mail.med.upenn.edu)

### Connecting Sleep Trainees to a Wide World of Worthwhile Information

Scott M. Doran

Contributors: Wilfred R. Pigeon and Michael Twery

Electronic communication, via e-mail and the World Wide Web, provides a great service to young researchers by helping us stay informed about new scientific discoveries and the changing priorities in research funding. Sleep research trainees are fortunate to be part of a small scientific community with several email lists and web sites that supply information about the history and future of sleep research. This column is meant to provide a survey and review of several electronic resources useful to beginning sleep researchers. This list is far from all-inclusive so there are sure to be other important list services and web sites that have been overlooked. Such lists also become dated very quickly so if you know of another useful list service or web site, please email the editor of this newsletter, write to the Sleep-L email distribution list, start your own page of useful research links, start (or join) a discussion through one of the web sites listed below, or use whatever avenue of communication you prefer. Opportunities to share information and speak your mind have broadened considerably in the last decade as evidenced by the lists and sites reviewed below.

Email distribution lists have become so commonplace that you may already be inundated with unwanted letters each day. The list services presented in the first section are not overly active and the best of them provide an essential service by helping you stay up to date with new findings and funding in sleep research. Websites have been grouped into three different categories: professional societies, the government, and miscellaneous resources. Each of these services was designed to improve our understanding of the mysteries of sleep. You are likely to find something interesting in each of them but to better guide you each service has been subjectively assessed for its relative sleep trainee interest (STI) using a five ★ system (with more being better). So read, surf, enjoy, and suggest.

#### Email Lists

**NAPS**, Monday morning just wouldn't be the same without NAPS, a delicious jolt of e-mail that lists recent publications related to sleep, circadian rhythms, and sleep disorders research. Each week you receive an email that lists recent publications in each of the topic areas you originally selected (from a list of 28) as well as links to major news stories about sleep research. The beauty part is that the title of each article is a hypertext link (meaning clickable) that immediately brings the on-line abstract for selected paper to your browser window. This essential service is guaranteed to help keep you up-to-date (and heading to the library) each and every week.

Sign up and select your areas of interest by visiting the NAPS website at

<http://www.websciences.org/bibliosleep/NAPS/>.

**STI=★★★★★**

**SleepRFA** is an invaluable new list service designed to alert scientists about NIH research and funding opportunities of potential interest to sleep and/or circadian rhythms researchers. New trainee-level grant initiatives are rarely proposed but just knowing which Requests For Applications (RFA) the NIH has approved is important, maybe not now, maybe not tomorrow, but someday, and forever. Another wonderfully realized effort with clickable links to the full text requests.

Sign up at

<http://list.nih.gov/cgi-bin/wa?SUBED1=sleeprfa-l&A=1>.

**STI=★★★★★**

**Sleep-L** (aka "slumber") is a list service hosted by Queens College and moderated by the Canadian Sleep Society's Trainee Representative. It is designed to facilitate discussions, notices, and requests for information among sleep

technicians, clinicians, and researchers from all levels. Discussions tend to be on the clinical side but research topics do arise and thoughtful readers often suggest useful or interesting articles in response to questions. Furthermore, the tone of those participating is very accepting and virtually all inquiries evoke helpful responses. Many advertisements for research assistant, pre-doctoral, and post-doctoral positions have been advertised first on Sleep-L.

Sign up at

<http://post.queensu.ca/cgi-bin/listserv/wa?SUBED1=sleep-l&A=1>.

STI=★★★★

**The Sleep Trainee List** is a private list open only to dues-paying SRS trainees in order to allow for discussions related specifically to our interests. As this list is driven by participation it is typically rather quiet but when someone hits on a hot topic the postings can get interesting.

Sign up by writing to Phil Gehrman, your SRS Trainee Representative ([pgehrman@ucsd.edu](mailto:pgehrman@ucsd.edu)).

STI= ★★★

## Web Sites for Professional Sleep Research Societies

### The Sleep Home Pages

(<http://bisleep.medsch.ucla.edu/>) is absolutely in a class by itself. Clearly the most professional academic sleep site on the net and the one with the best content. The Sleep Home Pages houses the annual APSS meeting abstracts, the NAPS database, BIBLIOSLEEP, the directory of sleep researchers, discussion groups, and links to professional and academic sleep and circadian rhythms research organizations. The managers of this site also maintain the world's only on-line sleep journal, Sleep Research Online. This site is really optimal in its scope and effort to appeal to clinicians, researchers, and the general public. There are, however, some disappointments because the discussion boards are not moderated, the calendar of events is very limited, and a few promising links (like "news") turn out to be blind alleys. Regardless, this site is the best in the world affiliated with sleep research and truly a mandatory browsing destination.

STI=★★★★★

### The American Academy of Sleep Medicine

(<http://www.aasmnet.org/>) has an excellent web page providing information for those who focus on clinical sleep medicine and clinical sleep research. Young M.D.s will benefit from the professional affiliation and board certification information while full-time researchers can benefit from the training, legislative, and research funding initiatives of the AASM. For example, the AASM site focuses on

medical sleep and sleep disorders education by providing course outlines, powerpoint slides, and case vignettes useful for supplementing your own education or for help teaching sleep courses

(<http://www.aasmnet.org/MEDSleep/title.htm>).

The site still relies on an outdated use of frames but whether you are a clinician or basic sleep researcher you are sure to find something of interest at this site.

STI=★★★★

### The Sleep Research Society Home Page

(<http://www.srsssleep.org>) provides an electronic method for joining the SRS, reading the SRS society minutes, and is a good source for information about the annual APSS meeting. Unfortunately this site does not provide any resources outside the goings-on of the society itself and a very few links to other web-based sleep resources. One parenthetical star is earned because it does house a hypertext version of Sleep Trainee Manual

(<http://www.srsssleep.org/trainee/TraineeManIntro.htm>),

a compendium of degree and grant-sustaining sleep research laboratories around the world. Although this manual is rather dated (last updated in 1997), I hear that an update is in the works. Another serious drawback to the SRS site is that it houses the official Sleep Trainee web page but that part of the site is completely derelict having been essentially abandoned in about 1996.

STI= ★★★(★)

### The National Sleep Foundation

(<http://www.sleepfoundation.org/>) is a private, non-profit organization dedicated to professional lobbying and information distribution regarding the importance of sleep. This organization also sponsors the prestigious Pickwick Postdoctoral Research Award and all details for this grant are available on-line

(<http://www.sleepfoundation.org/activities/pickwick.html#postdoc>). While the value of this site to trainees is only moderate it does contain an impressive set of links to information about disorders and sleep advocacy materials. Who among us has not been asked to diagnose or politic at some time? The NSF site provides a convenient resource to help us help others understand the importance of good sleep and the nature of good sleep gone bad.

STI=★★★★★

### The World Federation of Sleep Research Societies

(<http://www.WFSRS.org/>)

shows the world a very pretty web presence that includes information about WFSRS meeting and links to all the sleep research societies in the Whole Wide World. An excellent feature is the posting of the WFSRS newsletter online, allowing you to read the last several issues without

wasting a single leaf of paper. Still, as it is the WORLD'S authority on sleep research some more data about napping in Mali, stone pillows in ancient China, or something a little juicier seems to be in order.

**STI= ★★★**

### **The Association for the Study of Dreams**

(<http://www.asdreams.org/>) home page is rather eclectic as it features material that goes far beyond academic dream research. This makes it hard to find research-related information although it does contain the abstracts from the journal "Dreaming" and bulletin boards with well-moderated discussions that include dream research and education discussion threads.

**STI= ★★**

**The Society for Research on Biological Rhythms** home page (<http://www.srbr.org/>) is very limited, only providing information about their annual meeting and a few other links. One gem of a link directs you to the site developed by the Center for Biological Timing (<http://cbt4pc.bio.virginia.edu/>), a training program for circadian rhythms research that provides didactic material useful for you and/or your students or research assistants. Unfortunately, the CBT site did not appear to contain any trainee specific information and the site itself has not been updated in about 4 years.

**STI= ★★**

## **The National Institutes of Health**

**The National Center on Sleep Disorders Research** has a home page ([www.nhlbi.nih.gov/sleep/](http://www.nhlbi.nih.gov/sleep/)) for the office that coordinates sleep and sleep disorders research within the NIH and across several federal agencies. This is a very useful and professional site that includes expert panel reports on selected sleep disorders including non-technical summaries and guidance for physicians. This site is indispensable to trainees because it provides an annual report on sleep research, a list of NIH funded sleep research (and their summary budget tables), and the primary staff contacts in several NIH Institute regarding sleep research grant applications and training. Use this site to learn which sleep research initiatives most interest the NIH today and to discover which helpful civil servants you should contact when you need help attracting sleep research resources.

**STI= ★★★★★**

### **The Individual National Research Service Award**

(<http://grants.nih.gov/grants/funding/416/phs416.htm>) provides trainees working in an established sleep laboratory the opportunity to fund their own pre- or post-doctoral project for two or three years. This site contains all the rules, regulations, and forms necessary to help you submit

your application. From here you will proceed directly to the Center for Scientific Review page (listed below) hopefully you will pass go and you will collect \$15,000 (or more!).

**STI: ★★★★★**

**Computer Retrieval of Information on Scientific Projects** (<http://crisp.cit.nih.gov/>) is an online database of all NIH-supported grants awarded to universities and in the NIH laboratories. This resources if of high interest to trainees because you can search NIH-wide for training grants with funds for pre- or post-doctoral positions. You can also identify NIH-supported laboratories doing research that interests you. From there you may be able to write your own grant to work in that lab as a graduate student, postdoctoral fellow, or staff person.

**STI= ★★★★★**

### **The NIH Center for Scientific Review**

(<http://www.csr.nih.gov/>) is the source for learning about the NIH grant application referral and review process, review study sections, and learning how to contact review administrators. If these services do not yet sound important to you, once you submit an NIH grant, they will be.

**STI= ★★★**

### **NIH Guide for Grants and Contracts**

(<http://grants.nih.gov/grants/guide/index.html>) is a searchable database containing the full text of all NIH announcements. It can give you an idea of which general research topics the NIH regards as important as well as many of the specific questions the NIH regards as crucial to advance our understanding of both the nature of sleep and improving the sleep of the citizenry.

**STI= ★★★**

## **Miscellaneous Web Sites**

**Science Magazine's Next Wave** (<http://nextwave.sciencemag.org/>) is an on-line weekly magazine, sponsored by the journal "Science" as well as a resource portal providing career information, classified listings, grant-writing tips, and shared personal stories for young researchers from all fields. This is really a great website, wonderfully designed, informative, interesting, and easy to use. An abundance of free information is available and if your university has a subscription to Science Magazine it is likely you can access the full range of resources (contact your librarian for help). This site also houses GrantsNet (<http://www.grantsnet.org>) a large searchable grants database but one that tends to be a bit light on sleep-specific grants.

**STI=★★★★★**

**Grateful Med** (<http://igm.nlm.nih.gov/>) is perhaps the best public interface for searching MedLine because you can search in specific fields and construct boolean (and/or etc.) searches.

**STI=★★★★**

**PubMed** (<http://www.nlm.nih.gov/medlineplus/>) provides a simpler medline search tool but without the same interface to construct boolean searches.

**ST=★★★**

### **The Sleep Medicine Home Pages**

(<http://www.users.cloud9.net/~thorpy/>) is one of the oldest pages listing sleep-related web resources and it is enormous. It encompasses information for doctors, patients, students, and the public making it a site of high general interest but finding stuff for sleep trainees is hit and miss and many of the links are out of date. Still not a bad stop if you need information on a sleep topic that you are just beginning to study.

**STI=★★★**

**SleepNet** (<http://www.sleepnet.com/research.htm>) is a site dispersing general sleep and sponsored by a medical supplies company. However, it also contains the WWW's only list rating sleep research sites! Far from inclusive but none the less interesting to find web pages from some of the world's leading sleep research labs.

**STI=★★**

So, that is the list this month. Did we miss a good one? Please let us know so that no one goes without the avalanche of information we so desperately seek.

## **CALL FOR TRAINEE WORKSHOP PROPOSALS**

In previous years the Sleep Research Society has provided funds towards an Annual Trainee Workshop designed to educate and foster the professional development and advancement of graduate students and postdoctoral fellows in the field of sleep research. In 1997, the Executive Committee of the Sleep Research Society voted to revise the funding process and to solicit proposals for the Annual Trainee Workshop. By soliciting formal applications, the SRS creates an opportunity for all interested SRS members to submit Training Workshop proposals and to have these proposals objectively considered based on merit. The selected application will receive official endorsement by the Sleep Research Society, and contingent on the financial status of the Society, a limited amount of funds will be made available to support trainee travel and lodging to attend the Trainee Workshop. The selected applicant is responsible for organizing the Workshop and for raising funds to cover instruction, organization, facility, and other costs. SRS support for Training Workshops is limited to travel and lodging stipend assistance paid directly to, or on behalf of, the trainees. In the case of limited funds, the SRS may not be able to reimburse trainees for 100% of the cost to attend an SRS-sponsored Trainee Workshop.

Available funds may vary from year to year depending on the financial status of the SRS. It is possible that Workshop Applications will not be solicited every year due to funding limitations. It is anticipated that up to \$25,000 will be available to help sponsor trainee travel and lodging to attend a Training Workshop in 2001.

The SRS Training and Education Advisory Council (TEAC) chaired by the SRS Program Chair for Trainees will evaluate all applications. One application will be selected for nomination by TEAC for 2001 (June 1, 2001- May 31, 2002). The SRS Program Chair for Trainees will present the nominated application to the SRS Executive Committee for funding consideration. An award will be granted only with a majority approval of the SRS Executive Committee. If the Executive Committee does not issue approval, TEAC will be asked to make another nomination. Applications will be judged based on the proposed scientific curriculum, social program, creative/entertaining educational approaches, total number of trainees invited, proposed faculty, and the amount of matching funds indicated in the workshop proposal.

**Applications should not exceed 5 pages.** Examples of previous workshops organized by the applicant can be used

as a model description of organizational plan for the proposed Trainee Workshop. Note, however, that all applications should include the following information:

1. **Name and Institutional Affiliation of the applicant.** If organized by committee, please list the committee participants and committee chairperson.
2. **Location of Proposed Trainee Workshop.** Please include a brief description of the accommodations and meeting rooms that will be available.
3. **Proposed Workshop Dates.** Indicate the total number of days, including arrival and departure days.
4. **Education and Training Objectives (Educational Theme).** The applicant should describe the educational objectives, the overall educational theme or focus of the Workshop, why it is important and timely, and provide a preliminary program that outlines how the educational objectives will be met. Note: The Workshop should be organized so that all participants can participate in all scheduled events (single tract).
5. **Preliminary list of participating faculty.** The applicant should list the faculty who will participate in the workshop. Please note any special lecturers or participants from outside the Sleep community and the special role they will play in the program. Also indicate whether travel and lodging funds will be provided or are being requested for participating faculty.
6. **Recreational Activities.** The applicant should describe any special activities that are planned to promote socializing among trainees, one-on-one interaction between trainees and faculty, and recreation during the Workshop.
7. **Proposed Budget and Description of Matching funds.** All applicants should provide a budget with sub-totals for the following costs categories:

Trainee Air Travel (total SRS + matching)  
Trainee Lodging & Meals (total SRS + matching)  
Trainee Ground Transportation  
Faculty Transportation Cost  
Meeting Room costs  
Instructional Media and Materials  
Refreshments (non-alcoholic)  
Refreshments containing alcohol

All applicants are expected to raise separate funds to cover the cost of organizing and implementing the Trainee Workshop. Applications with an outstanding scientific program that are also committed to providing matching funds equal to or greater than the amount provided by the SRS are highly desirable. Since the SRS has limited funds for trainee travel, lodging, and meal expenses, additional funding should be raised by the applicant to cover these and other expenses adequately. Raising funds for ground transportation, meeting rooms, outdoor activities, program entertainment, refreshments, and instructional materials are also the responsibility of the applicant.

8. **Total number of Participating Trainees.** The applicant should indicate the total number of trainees that the Workshop will accommodate.

#### **Notification**

The organizer of the Trainee Workshop Proposal selected for sponsorship by the SRS will be notified approximately 60-90 days after the application deadline.

### **Trainee Workshop Proposals must be received by June 1, 2001**

#### **MAIL APPLICATIONS TO:**

Program Chair for Trainees  
Sleep Research Society  
6301 Bandel Road, Suite 101  
Rochester, MN 55901

For preliminary feedback on proposals or questions pertaining to application procedures in 2001, you can contact Dr. Ronald Szymusiak, the SRS Program Chair for Trainees, at 818-891-7711 ext. 7568 or via E-mail at [rszym@ucla.edu](mailto:rszym@ucla.edu).

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# Announcing the 2001 Trainee Symposium Series Wednesday, June 6, 2001

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## Program Highlights:

- Trainee talks on Educating the Public about Sleep
- Workshops on academic skills & cutting-edge science!
- Discussion-oriented Luncheons
- Training/Career Fair
- Trainee Reception

## The Outstanding Faculty Who Have Volunteered to Participate:

Claudio Bassetti, M.D.	Julie Carrier, Ph.D.
Mary A. Carskadon, Ph.D.	Yaron Dagher, M.D., D.Sc.
David Dinges, Ph.D.	Sean Drummond, Ph.D.
Dale Edgar, Ph.D.	Carol Everson, Ph.D.
Timothy Hays, Ph.D.	Megan Jewett, Ph.D.
Marc Jobert, Ph.D.	Thomas Kilduff, Ph.D.
Barry Krakow, Ph.D.	Lena Lavie, Ph.D.
Peretz Lavie, Ph.D.	Mark Mahowald, M.D.
Emmanuel Mignot, M.D., Ph.D.	Jodi Mindell, Ph.D.
Harvey Moldofsky, M.D.	Robert Ogilvie, Ph.D.
Christelle Peyron, Ph.D.	Thomas Roth, Ph.D.
Helmut S. Schmidt, M.D.	Amita Sehgal, Ph.D.
Mircea Steriade, Ph.D.	Patrick Strollo, Jr., M.D.
Linda Toth, D.V.M., Ph.D.	Fred Turek, Ph.D.
Michael Twery, Ph.D.	Hans Van Dongen, Ph.D.
Ken Wright, Ph.D.	Amy Wolfson, Ph.D.



**Trainee Program Committee:** Phil Gehrman(Chair), Scott M. Doran, Ilana Hairston, Jennifer Martin, Douglas Moul, Tim Murphy, Christelle Peyron, Dante Picchioni, Ron Szymusiak, Ph.D. (SRS Program Chair for Trainees)

## On Being A Newly Independent Investigator

Gina Poe

**D**on't be a loner! The very first and most important piece of advice I can give is to **stay in touch with your colleagues and peers, and forge a wider network of colleagues and peers beyond your university.** Use the phone and email a lot. Communication is key, especially when you are in danger of feeling isolated – and no matter what central locale you have joined, you will feel isolated.

I was blessed with the best advisors anyone could ever hope for: Ron Harper (graduate) at UCLA and Carol Barnes (postdoctoral) at U of A. They remain available to answer questions and give helpful advice. This is an invaluable commodity. Try to cultivate such a relationship before you go to a new position if you don't already have that with advisors. "Peer" faculty advisors (tenured faculty) are also invaluable. If there is no formal program in the department to which you are headed, develop one on your own. Jim Krueger volunteered to serve that function for me when I came to Washington State University, and his advice has been golden.

Who do you turn to when you have an equipment or technique question? This is where it is extremely advisable to use the contacts you have made thus far and feel free to pelt these people with questions. Pick up that phone and call the first author of a paper that uses a similar technique. Talk freely about the science you want to do and do not be afraid to ask for advice. I peeked into the office of a very successful scientist at my university just to say hello when I first arrived, and he was talking on the phone, feet on his desk, speaking jovially. His research associate told me he spent hours on the phone. I was mystified. How did he publish so many papers, and get so well known if he was yakking it up all the time. Well, how do you get well known, especially in a small university, but by reaching out continually? How do you avoid the pitfalls of unfruitful backwaters (mixing my metaphors, here) but by consulting colleagues? How else would you find out whether your new venture was not already being done by someone else?

Do not be afraid to ask graduate students for advice. You were there not very long ago yourself, and so you know that

often you are the world's leading expert on the technique or the approach, even as a graduate student. Sometimes when you call the senior author, and the most well-known, you will get someone who can speak to the generalities and to the justification and background very well, but they won't be able to tell you much about how it was done, specifically, and may be embarrassed to tell you so.

Teach those you hire to help you with contacts as well. It can save lots of time and wasted energy. Thus, one of the most important bits of advice I can give you is to call-email-FAX those who can help you out. You'll be surprised at how helpful people can be, even about things you did not imagine you'd need help doing, like finding a postdoc.

Which brings us to the next important issue. **How on earth does one find help in the lab?** This is my current challenge, and one to which I wish I knew the answer. I will tell you how I am searching... asking colleagues (see 1). Get involved in lecturing to students right away, even if it is only a single lecture here and there, so they can get to know of your existence and will think of you when they are thinking of working in a lab (for course credit, work study or straight pay). Don't forget that undergraduate assistants can help you with a lot of the time-consuming work that does not involve a whole lot of decision-making. If they are reliable (i.e. they come in when they say they will), they can be wonderful aids. Advertise with the work-study office. Tell fellow faculty you are looking for student assistance. Advertise, even, in *Science* or *Sleep* for full time help – although I could not give you advice on how to screen applicants, and if your assistants or postdocs have to move there from another city, they can be hard to get rid of if they don't work out. Slowly, graduate students at your university will see you as an established lab, find out about what you do, talk about it amongst themselves, trust that you'll stay, and put their faith in you enough to sign on for the time it will take them to do their graduate work (years and years). Since as a new faculty, it was not long ago that you made such decisions yourself, you know well what is going on in their brains as they make this decision. One problem could be you identify all TOO well. Which brings us to the next issue.

**How to stop being a student.** Gosh, this one is tough. When your colleagues all have been there awhile, and are established in their circle of friends, and have children, and tame little tea parties, what do you do when the graduate students look like they are having all the fun, and you'd

rather hang out with them? Can you? Will it cost you respect in their eyes and in the eyes of your fellow faculty to socialize with the students? I have to admit, I hang out with the students, and techs, and other unmarried adults. However, I've seen it played both ways. Many faculty would not consider socializing after hours with their students. Others may get smashing drunk and hit on the grad students' friends. I guess as a relatively young, unmarried, child-free faculty member I have played it somewhere in the middle. Don't worry about losing respect unless you plan to act in a disreputable manner. Feel free to be the basic human being you are. Even if students initially feel awkward around you, in the end it will be good for them to see that a degree and title does not make you a demigod. Dance if you want to. HOWEVER, remember that no matter what kind of friend you make of yourself, there will always be the advantage of power that you must not abuse. Be highly aware of the official university policies regarding student faculty interaction. Consult with your faculty peers (see 1) and with the office of human resources. Being a friend becomes the most difficult is when you find you have to put on your boss hat.

**Adjusting to being the boss.** Many of you will have no trouble with this one, as you are given such responsibility as a postdoc, or even over undergraduates as a graduate student. However, before you are PI you rarely get much say over who is hired – you just deal with you're PI's decision. Now, it is you making those decisions, and they can be difficult. Suddenly you become acutely aware of what a wrong choice in research associate/assistant, even undergraduate helper can cost you. I really have no advice in this regard. I just twisted the arm of an old friend to come help me set up the lab in the first few months, then took anyone who wandered in the door first. It has worked out beautifully, thank God. The most personnel trouble I have has been in people in which I have had to invest the least – the occasional undergraduate. But even they, who are sometimes blessedly transient, can ruin an entire experiment. I think it does not hurt to begin with caution, and start every new position with a trial period. If someone proves trustworthy in the small things, trust them with larger responsibilities. Another part of being the boss is that you have no buffer to take the heat or accept responsibility for the decisions you make. If you want to buy a piece of equipment, for example, you cannot go to the PI and ask advice for which one to purchase. It's your money. It's all up to you. However, thank goodness you have your peers (see 1) to ask .

**Adjusting to being a faculty member** – being a colleague, being a good committee member. One area where it is a little more difficult to ask your colleagues, at least the ones in your own department, is on the proper conduct of being a member of the faculty. When you are new to a department at the Asst. Prof level, you will be considered a junior mem-

ber, and your fellow faculty will not expect (one hopes) you to know how to do everything from the get-go. You do have some leeway to find your way.

For example, you may have to learn the hard way how to have a voice without making a fool of yourself. I *have* put my foot in my mouth on more than one occasion at a faculty meeting. Believe me, it's embarrassing. But here again, the first piece of advice I gave (see 1) still is your best bet in learning your way. There are all kinds of hidden mines in even the most congenial of departments – a history of which you are unaware. To help you avoid those mines, consult freely with veteran faculty members (more than one may be better) before weighing in with your opinion, unless it is truly a simple and clear cut matter. You will be surprised, however, with how many matters which seemed like they would be clear cut, in the end are not. However, don't be timid, for if you never open your mouth, you cannot show yourself to be an asset to the faculty. But also, look before you leap. Different departments have different personalities – and being on the wrong political side can only hurt your chances at tenure.

If you are still in the interview or pre-interview stage of the game, don't forget that the people you meet may be lifelong colleagues, and in accepting a position, you are choosing your faculty family for what may be the rest of your career. Make sure you like them.

**You still have a boss!** I was under the impression that if you went into an industry job, such as working with a pharmaceutical company, that you would have a boss, but the joy of academia was true independence. Not exactly. The strangest thing I discovered when I became a new faculty member was that I still had a boss, the Chair of the department. I don't know what I thought Chairs did, except go around and make sure everyone was comfortable and happy, and had enough (and not too much) space. Even there I was wrong. Space is ultimately the Dean's job, and it is the Chair who fights with the Dean for more space for the department, and who assigns what space they get from the Dean to the faculty members. The Chair does a whole lot of other things, too, like being the one who puts forward the name of the one the department wants to hire to the dean. Though there are lots of committees in a department, the Chair decides whether or not to take each committee's recommendation. The Chair hands out and takes back and reassigns space/teaching assignments/TA ships/committee membership, and a host of other things. Most importantly, the Chair conducts your annual review which impacts your chances at tenure. A good Chair can make life grand for you or can make life hard indeed. Still, academic life is relatively free, and it takes some adjusting to feel really comfortable with the amount of independence.

There are other issues that may pester you in the first couple years of adjusting to an academic lifestyle, such as: Can I hack this life, this job? What am I doing here? Do I belong? Do I deserve this kind of freedom? Don't worry, you'll get used to being free and rolling on at your own pace. Many things just come with time. Don't give up easily. Of course, if you have already made it through graduate school and a postdoc, you have already learned that lesson well.

## Quest to reveal nature's secrets about sleep: A journey along a soft and unpredictable road

*Subimal Datta*

**A**fter finishing my post-doctoral training, I joined the Department of Psychiatry at Harvard Medical School as an Assistant Professor. With the help of my mentor, Professor J. Allan Hobson, and funding from NIH and the Milton Award from Harvard, I started to build my laboratory within Dr. Hobson's research program at the Massachusetts Mental Health Center. This was a productive time. I localized the pontine PGO wave generating cells in the cat, and to our surprise, soon after, soon after discovered that the localized cholinergic-M2-receptor-activation of PGO-wave-generating-cells produces a long-term increase in REM sleep by inducing long-term synaptic potentiation. However, time passed, and the state lost interest in maintaining the old buildings at Massachusetts Mental Health Center and Harvard Medical School did not want to invest money in a building owned by the state. Poor maintenance of our facility became a chronic problem (frequently stopped by Institutional Animal Care and Use Committee) and it became necessary to relocate my laboratory to another facility to continue my research.

With a number of good sleep laboratories in the Boston area, it was surprising that Boston University School of Medicine had no laboratory for basic sleep research. When I approached that institution, they offered me laboratory space and the position of Associate Professor in the department of Psychiatry. In 1996, I established a basic sleep research laboratory in the Boston University School of Medicine, and became its founding director. Our Sleep Research Laboratory has three units outfitted with modern equipment purchased with funds from a NIH research grant. 1. Physiology: This unit has two 24-channel recording set-ups. Each set-up is capable of simultaneously recording 12-channels of polygraphic signals and 12-channels of single-cell action potentials from a single freely moving rat. In

addition to the chronic recording set-up, we have one acute electrophysiological recording set-up. 2. Behavior: This unit is dedicated to the study of sleep-dependent learning and memory behavior. This unit has two Shuttle Scan II shuttle boxes, controlled by computer, to control and record a two-way active avoidance learning task. 3. Histology and Microscopy: This unit is equipped for histological sectioning, tissue processing for neurochemical and immuno-histological staining, and digital microscopy.

There are four members of my research team (Elissa H. Patterson, Research Associate; Dr. Donald F. Siwek, Assistant Professor; Eric Spoley, Research Assistant and Ph.D. student, and myself) working on different projects with a common central theme. I direct all operations of the Sleep Research Laboratory on a day-to-day, hands-on basis. Because the laboratory is small, there is no middle management which means I meet directly with my team of researchers. I am directly responsible for all fund-raising and for budget management with the help of departmental and school administrative staff. I write and directly supervise all laboratory publications. We take great pride in our written work and in our illustrative graphic arts.

Our basic sleep research program, though still in a relatively early stage of development, is flourishing. A few achievements of the laboratory include demonstrating show that glutamatergic excitation of the PPT cholinergic cell compartment increases wakefulness and/or REM sleep in the freely moving cat and rat depending on L-glutamate dosage and showing that increased endogenous nitric oxide in the PPT cholinergic cell compartment increases both slow-wave sleep and REM sleep. We also systematically mapped the pontine P-wave (PGO) generator and identified input-output pathways in the rat and we have found that the improvement of learning in post-sleep retest trials is proportional to the increase in P-wave density between REM sleep episodes 1 and 3 after learning trials.

I believe it is my moral responsibility to motivate students to learn about the neurobiology of sleep and to train future sleep researchers. Soon after I joined Boston University School of Medicine, I realized that the neurobiology of sleep was missing in the curriculum. I suggested to the chairmen of the Physiology and Neurobiology departments that the neurobiology of sleep should be included in their teaching curricula. I was successful in designing a course on the Neurobiology of Sleep. This course is now included in a MS/Ph.D. degree program of Behavioral Neuroscience in the division of graduate medical sciences. More recently, I received a request from the Medical school to design a regular course for the medical students. Each spring I teach Neurobiology of Sleep in the program of Behavioral Neuroscience. Teaching gives me the platform to share the

knowledge derived from my research and in return, stimulates our research program in two ways: First, each class generates new ideas as part of its education. Second, while teaching, I am able to recruit new researchers, either via the master's or doctoral degree programs. Half of the members of my laboratory research seminar have been recruited from this course and all of them are actively involved in the ongoing projects in the laboratory.

As a regular faculty member in the graduate school of medicine, I perform important but minimal committee duties, occupying less than two hours per month. In this time, I normally evaluate applicants for the admission in the MD and MD/Ph.D. programs and serve as an examination committee member for Ph.D. thesis. However, I have no direct administrative responsibility for the school, and I am under no pressure to divert my attention from research. The dark side of the silver lining of full time research is the process of obtaining continuous funding to support salary, position and research endeavors. No funds quickly translates into no job and no laboratory.

## The Animal Sleep Laboratory

*James Schaffery*

The Animal Sleep Laboratory (ASL) has been based at the University of Mississippi Medical Center School of Medicine, Jackson, since 1995 when Howard Roffwarg and I moved our research project here from UT Southwestern at Dallas. Given the key role sleep has in mental health, it is at once appropriate and fortuitous that in moving to the Department of Psychiatry and Human Behavior, the ASL joined nine other laboratories comprising the basic research component of that Department, the Division of Neurobiology and Behavior Research (DNBR). In addition to our studies on the role of REM sleep in brain maturation, other laboratories in the DNBR are doing ground-breaking work on the neurobiological underpinnings of affective disorders, major depression, suicide, and addictive behavior.

Besides the ever pressing necessity of obtaining extramural funding to keep the work going, by far the most challenging aspect of having a basic sleep research laboratory in a medical school, even in the research-oriented DNBR-setting, is connecting with students. As faculty in a clinical department, my teaching responsibilities are directed primarily at a relatively small group of medical students and residents. Being focused upon their own clinical education, most of these students are not, by and large, research-oriented and are difficult to attract into the laboratory. Liaisons with basic science departments in the Medical School are another

way of connecting with students, however, many of those students are working on their doctoral research projects in laboratories from their own primary departments. While the teaching load is relatively small, obtaining research funds and students to help in the research remain vitally important keys to the success of a basic research laboratory.

For the ASL, the research focuses upon the neurobiology of the as yet unanswered question of the function of REM sleep. Our work is aimed at providing evidence for the proposed role REM sleep-controlled neuronal activity seems to have in brain development. Both sensory driven and endogenously generated neural activity, such as that seen during the REM sleep state, are required for brain maturation to proceed normally. This is not an entirely surprising observation, considering that immature animals spend more time than adults in the REM sleep state during a phase of extensive brain development. We believe that REM sleep is necessary for brain development and, as such, mental health. The several lines of work ongoing in the ASL are directed at uncovering data relating to this basic question: "What is the biological function of REM sleep?"

One line of research in the ASL is directed at understanding how the state of REM sleep functions as one component in a series of CNS processes that guide and establish the maturational development of the brain. Our recent work has shown that removal of REM sleep in young kittens by instrumental-deprivation techniques maintains CNS developmental plasticity. In these studies, the effects of REM sleep manipulations on visual-system maturation are investigated to determine the more fundamental and enabling neurophysiological (e.g., brain excitability), neurochemical (e.g., calcium-binding proteins), and neural-signaling (e.g., neurotrophins) mechanisms that possibly mediate the effects REM sleep has on brain maturation.

In a separate line of work, *in vitro* models are utilized to investigate the role of REM sleep in synaptic plasticity and neuronal connectivity during brain maturation. An age- and experience-dependent form of long-term potentiation (LTP) can be induced in brain slices taken from visual cortex, starting around the time of eye-opening until the end of the postnatal critical period of visual system development. Recently, however, Kirkwood and his co-workers showed that removal of visual activity, by rearing animals in complete darkness, extends the period when this developmental form of LTP can be reliably produced. We have since shown that removal of REM sleep-controlled activation of central visual areas in normally sighted animals also extends the time when this developmental type of LTP can be produced. These findings indicate that REM sleep-related processes alter the molecular and perhaps genetic make-up of neurons and their functional connectivity in immature

visual cortex and further confirm a role for REM sleep in brain maturation. Future studies on this project are aimed at discovering the cellular processes that allow REM sleep to affect developmental synaptic plasticity.

Since joining the DNBR, we have undertaken a third line research investigating whether suppressing REM sleep in neonatal rats produces behavioral symptoms in adults that are analogs of those behavior observed in patients with major depressive disorder (MDD). Several investigators have shown that injecting neonatal rats with certain antidepressants that suppress REM sleep, e.g. clomipramine, produces behavioral and sleep alterations in adults similar to those seen in MDD patients. The model of MDD we study substitutes for antidepressant-deprivation of REM sleep in young rats an instrumental REM sleep deprivation. Data from these experiments will establish the validity of this model and perhaps finally the relationship of REM sleep to the neuropathology of MDD.

Moving a research laboratory is an arduous and risky undertaking. However, often significant gains are not made without taking significant risks. Moving the ASL to Jackson has had significant rewards in terms of access to facilities and fruitful collaborations. From a personal as well as a professional perspective, the DNBR has been a fertile environment for fostering a number of productive collaborative efforts with other DNBR researchers that have been, and continue to be, instrumental to our success here. For example, our efforts to establish how REM sleep affects brain growth and maturation during development have been assisted greatly by Dr. Grazyna Rajkowska, a well known neuroanatomist working in the area of non-biased, stereological assessment of the brain morphometry. Similarly, we recently have begun to investigate how developmental changes in neuropeptides and receptor systems in brain are affected when REM sleep is manipulated in rats and cats, the animal models utilized in our investigations. These studies are being aided by collaborations with DNBR researchers, Drs. Garth Bissette and Konstantine Kalogaris, both neuroendocrinologists, and, Dr. Ian Paul, a behavioral pharmacologist. Ultimately, the research being conducted in the ASL, with the aid of our collaborators, will contribute to a better understanding of the functional role of REM sleep in normal CNS development.

## Know Your Resources

*Gerald Marks*

Discovery is the most exciting and valuable part of the basic science endeavor. To the extent that the probability of discovery is dependent on the questions asked, or more properly, the hypotheses tested, researchers start with an equal opportunity to discover. All have similar access to the literature and the knowledge needed to assess and determine the important unanswered questions in a particular field. Individual researchers are, however, far from equal in the resources available to them for addressing these questions. Important resources are training and experience, not only in terms of quality but also in terms of specialization. For example, it is unlikely that a biophysicist would be interested in pursuing, or even asking, questions that an animal behaviorist might ask. Although there are many molecular biologists who are eager to know the behavioral phenotype of their latest genetically engineered mouse, it would not be reasonable for them to set up a lab for chronic EEG recording. Thus, what makes increasing ones resources reasonable is the cost in terms of both funds and time. This is why NIH is usually not willing to fund a grant applicant proposing important questions while also requesting funds for purchasing and training on new equipment. Consider, that if the questions are important, then someone with the appropriate resources will eventually answer them. What if questions arise in one field but are best addressed by another? The most efficient resolution of this problem is the least expensive way to increase resources - through collaboration.

At an early point in my research career, before I considered the issues discussed above, I developed an interest in the mechanisms controlling the pronounced changes in thalamic cell activity that occur with changes in state of arousal. At this time, intracellular recording in the thalamic-slice preparation was beginning to reveal the intrathalamic network and intrinsic properties of different neuronal populations that underlie these state-related activities. However, because the *in vitro* preparation could not express sleep and wake, addressing some of the important questions required an intact, unanesthetized animal model. Without considering the true cost of developing new resources, we devised a method that allowed extracellular single cell recording along with the iontophoretic application of drugs to the cell being recorded. This is a very powerful technique that we used successfully to examine the role of acetylcholine in thalamus. The time to develop this resource was about two years. The full actual cost was two people at 100 percent effort producing enough data for only one publication every two years, which in retrospect was certainly unreasonable.

While we stopped that project, work in the lab studying thalamic activity and sleep continues. In a current project, through collaboration, we are investigating mutant mice deficient in certain potassium channels that are normally expressed in specific thalamic cell populations. Selective alterations in firing pattern and neurotransmitter release in the null mutants result in conditions permitting us to address many of the unanswered questions about state-related activity in the thalamus. Without the cost of development, the resources are affordable.

Concern for resources lead to another major project in the laboratory. It has been known for quite some time that injection of cholinergic agonists into the pontine reticular formation of cats induces a long-lasting increase in REM sleep. This has clear implications for a role of brainstem cholinergic neurons and the reticular formation in the generation of REM sleep, but the specific cellular mechanisms by which this may be accomplished are largely unknown. An investigation of these mechanisms was a perfect match to the resources of the laboratory. First we had a long standing interest in the mechanisms of REM sleep. This interest was peaked by the findings of Shuman and colleagues implicating mediation of the carbachol effect on REM sleep through the cAMP second messenger system. At about the same time, Bourgin and colleagues demonstrated the suitability of the rat as a model for REM sleep induction by carbachol injected into a highly circumscribed region of the pontine reticular formation. The laboratory had all the

resources to perform sleep/wake behavioral pharmacology and doing it in rat made it all the better. Intracerebral injection is a simple technique to perform. Its power, however, derives from the great number of highly selective pharmacological agents available directed at both extracellular receptors and intracellular mechanisms. Among our recent findings is that inhibition of adenylyl cyclase in the reticular formation is sufficient to induce a long-lasting increase in REM sleep. Adenosine receptor agonists also were found to effectively increase REM sleep with independent effects mediated by different adenosine receptor subtypes: A2a receptor agonists act through the cholinergic system while A1 receptor agonists do not and are probably acting through inhibition of cAMP. Our working hypothesis is that inhibition of cAMP in GABAergic interneurons of the pontine reticular formation induces a long-term depression in these neurons, which serves to increase the propensity for REM sleep.

The take home point is that the skills and resources available to a lab impacts the science it conducts. In our case, we have been able to delineate and study several important mechanisms involved in REM sleep control in the reticular formation. However, we also have identified many questions that can not be addressed by our present repertoire of techniques and available resources. It may only be possible to pursue these investigations through collaborations, because the cost of developing them in house would be too high in terms of lost productivity.

## SRS CLUB HYPNOS—SOCIETY OF BEHAVIORAL MEDICINE

**SRS Club Hypnos-Society of Behavioral Medicine**  
**Seattle, WA**  
**March 23rd, 2001**

Edward Stepanski, Ph.D.

**A** Sleep Research Society - Club Hypnos reception was held in conjunction with the Society of Behavioral Medicine Meeting in Seattle Washington. The reception was held on March 23, 2001 at 8pm in the Aspen Room of the Seattle Sheraton Hotel. The event was advertised in the Final Program, and also on a flyer included with the registration materials that advertised meetings by special interest groups. Almost 20 people attended, which was less than was anticipated, but about half of the attendees were students. One advantage of the smaller turnout was that the students received plenty of

attention and all their questions were answered. All of the students were interested in pursuing careers in sleep research, and the time with them was well spent. Brochures for SRS membership were distributed to all attendees.

I believe that this is a good society to interact with as many individuals stated that they are now incorporating concerns about sleep into their research or clinical work. In particular, sleep disturbance in patients with pain was a common interest. I think we could draw more and more people if there was a continued presence at the annual meetings.

# PRELIMINARY CONFERENCE ANNOUNCEMENT BIOINFORMATICS IN NEUROSCIENCE AND SLEEP DISORDERS RESEARCH

NHLBI National Center on Sleep Disorders Research  
American Academy of Sleep Medicine  
Sleep Research Society

**NIH Natcher Conference Center  
Bethesda, Maryland**

**July 16-17, 2001**

A rapidly growing biomedical knowledge base on the regulation and function of sleep and circadian rhythms requires the development of new tools for analysis and approaches to enhance the integration of sleep/circadian knowledge with that of other physiological systems. New informatic approaches are needed to systematically analyze the temporal changes in gene expression, protein levels (proteomics), and cell function over the long periods of time represented by sleep and its disorders. New database technologies will be required to collect, store, and retrieve this information.

This conference will discuss the importance of bioinformatics approaches for sleep/circadian research in areas such as genomics, neurobiology, imaging, and medicine to identify potential directions for future research. These knowledge building strategies should also accelerate the process of

integrating the experience and knowledge of researchers working in different model systems and using a variety of clinical and basic approaches.

The main conference sessions will be Internet broadcast live from <<http://videocast.nih.gov>> (high-speed connection and real player(r) plug-in required for video). The broadcast will also be archived and remain available for Internet viewing from approximately September, 2001 to August, 2002.

A preliminary agenda will be posted to the National Center on Sleep Disorders Research (NCSDR) listserv SleepRFA-L shortly. Sign-up for SleepRFA-L or view archives at the following web site: <<http://list.nih.gov/archives/sleepRFA-L.html>> [small letters required].

Further information about the conference should be obtained by contacting Lance Brink by E-mail at [Lbrink@aasmnet.org](mailto:Lbrink@aasmnet.org) or by phone at 507-285-4384.

## WOMEN IN SLEEP AND RHYTHMS RESEARCH SESSION AT APSS MEETING

**D**on't forget to mark your calendars now to attend the Women in Sleep and Rhythms Research session at APSS 2001! The meeting is scheduled for **June 8th from 6:00-7:30 pm** in a meeting room at the APSS conference site.

We have recruited another outstanding speaker to address the group this year. Dr. Elga Wasserman earned her Ph.D. in organic chemistry from Harvard University in 1949 and a J.D. from Yale University Law School in 1976. She has had years of experience as a researcher, attorney and administrator at Yale University. In fact, her first administrative position at Yale was as the *Special Assistant to the President on the Education of Women and Chairman of the Committee on Coeducation*. Most recently, she wrote, *The Door in the Dream: Conversations with Eminent Women in Science*

(National Academy of Sciences, National Academy Press, 2000). In her 30-minute presentation, she will speak about career development issues for women, highlighting some of the key areas that she addressed in her recent publication.

Wyeth-Ayerst and Sonata have once again graciously agreed to sponsor a reception for us. So, don't miss this wonderful opportunity to hear an inspirational talk, and to network with peers and colleagues! We look forward to seeing you there!

*Amy Wolfson, PhD*  
*Jodi Mindell, PhD*  
*Susan Labyak, PhD, RN*

REVIEW REFLECTIONS ON THE  
“ANIMAL-RIGHTS” PHENOMENON BY  
ADRIAN R. MORRISON, THE  
PHYSIOLOGIST, VOLUME 44, NUMBER 1,  
FEBRUARY 2001,

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Medicine.

<http://www.theaps.org/publications/journals/tphys/tphys.htm>

Dr. Morrison has been, and continues to be, an active proponent of animal research. In this essay he candidly sets forth thoughts on his efforts over the last decade to promote an understanding of the use of animals in research. This includes an account of battles with, and tactics of the “animal-rights” movement, beginning in 1990 when his office was ransacked by the Animal Liberation Front. As a post doc in his lab at that time, I can attest to the toll that attack and its aftermath took on him, and to the effect it had on those around him. However, rather than deterring Dr. Morrison, the experience hardened his resolve to educate the public and expose the tactics of those who use misinformation to attack medical science. He also discusses the animal rights movement in a broader context, touching on the far-reaching effects it is having on the regulatory and economical factors impacting medical research, and on philosophical arguments for and against using animals in research. In sum, this essay presents the views of one who has thought deeply about and fought hard for the right side of an issue that affects all of us conducting animal research. Highly recommended.

*by Larry Sanford, PhD, SRS Bulletin Editor*

## PRESIDENT BUSH’S ECONOMIC BLUEPRINT FOR NIH, NSF AND VA

**O**n February 28, 2001, President Bush released his economic blueprint for FY 2002, the first budget of his presidency. The “Blueprint for New Beginnings” is intended to serve as a placeholder for a more detailed budget that the White House will present this April.

### **NATIONAL INSTITUTES OF HEALTH**

The plan includes the largest increase for the National Institutes of Health (NIH) in history. The president is requesting a \$2.8 billion increase for NIH, bringing total funding to \$23.1 billion in FY 2002. President Bush also noted in his address to Congress that he supports the goal of doubling NIH funding over a five-year period.

### **NATIONAL SCIENCE FOUNDATION**

The president recommended a \$56 million increase in funding for FY 2002 for the NSF, which would provide a total of \$4.5 billion for the agency. This represents a meager one percent increase. It also provides approximately \$1.5 billion for new research and education awards for FY 2002.

### **VETERANS AFFAIRS**

Details are not yet available regarding VA funding, as they are not published in the blueprint. They will become available on April 2, 2001.

## WORKSHOP ON SLEEP AND FATIGUE IN PHYSICIAN TRAINING

**T**he topic of sleep and fatigue in physician training has significant implications for patient safety and the overall quality of health care. Despite the growing concerns and attention to this issue in other industries, medical education and training has lagged far behind.

The American Academy of Sleep Medicine, the Sleep Research Society, the American Medical Association Council on Medical Education, and the National Institute of Health plan to hold a Sleep and Fatigue in Physician Training workshop in September to address issues relating to sleep and fatigue in the medical community.

In March, the group began with preliminary planning to establish the workshop goals (i.e. define issues, evaluate current data, develop plans for data collection and use, define a timeline for completion of the research, identify the education gaps, and identify the audience).

This workshop will bring together opinion leaders and experts from relevant specialties and interest groups who, as a group, have the potential to advance this important issue and ultimately set well-founded policy to improve patient care, medical professionalism, and reinforce in young physicians the importance of sleep medicine. A final report and “white paper” will be published based on recommendations from the workshop.

### SECTION ON CIRCADIAN RHYTHMS

by Robert L. Sack, M.D.

Section Head/Circadian Rhythms

sackr@ohsu.edu

What do you think of a joint meeting of the SRS Section on Circadian Rhythms with the Society for Research in Biological Rhythms (SRBR)? Our society has a provision for a "Section Program" which would provide matching-funds to organize a course, symposium, workshop, etc. targeting (but not limited to) members of the SRS of a specific section. Awards in the amount of up to \$25,000 can be made to support logistic expenses, trainee participation or other expenses (not including honoraria and a few other exclusions). SRS funds must be matched from other sources (e.g., NIH, charitable foundations, or other professional organizations).

It occurred to me that that our section could request these funds for an "extra-day" symposium in conjunction with the SRBR meeting at Amelia Island on May 22, 2002 (mark your calendars — if they go out that far — or your Palmtops).

How about a program focusing on the circadian control of sleep? I have contacted Rae Silver, President of the SRBR and she is enthusiastic about the idea and has obtained the support of the SRBR board. Amelia Island has the space available. We could hold the meeting on the day of the SRBR opening reception (May 22). I would hope that most attendees could then stay for the main meeting. (Amelia Island is a great place.) I also talked to Israel Lederhendler, Director of the Behavioral and Systems Neuroscience Program at the NIMH. He suggested several very promising mechanisms for obtaining the requisite matching funds.

I think the theme for the extra meeting should be on building bridges between animal, human and clinical research. I hope that bringing the sleep research community together with the basic circadian rhythms crowd would spark some creative ideas. I hope that a publication will result (e.g., a special issue of a journal).

I am soliciting feedback from the Section on Circadian Rhythms. Of course I would like volunteers for the planning process. Please let me know what you think of the idea, and what you would like to do to help.

## U.S. ARMY TO PROVIDE \$50 MILLION IN GRANTS FOR MEDICAL RESEARCH

Sleep Management is one of the topics included in the United States Army Medical Research and Materiel Command (USAMRMC) Peer Reviewed Medical Research Program (PRMRP). According to the Defense Appropriations Act of 2001 (Public Law 106-295) \$50 million dollars is allotted to fund peer-reviewed research pertinent to the health of military forces. However, no individual award will be more than \$2 million (including direct and indirect costs), and a maximum period of performance of four years.

Proposals for the program can be submitted from agencies of local, state, and federal governments; educational institutions; nonprofit organizations; and private industry. Applicants are also encouraged to collaborate with federal agencies (military treatment facilities and research laboratories, Department of Veterans Affairs, Centers for Disease Control, etc). All proposals must address the military relevance of the proposed efforts since the PRMRP was estab-

lished to support the military healthcare related research. Application materials, procedures, and instructions on how to submit the proposal can be obtained by visiting the U.S. Army Medical Research Acquisition Activity website at [www-usamraa.army.mil](http://www-usamraa.army.mil).

A one-page Letter of Intent (LOI) is to be submitted by April 25, 2001. All proposal packages are due to the office of the U.S Army Medical Research Acquisition Activity by May 16, 2001 at 4:00 p.m. EST.

Once proposals are received, a two-tiered review process will be conducted, and scientifically sound proposals that meet all of the required criteria will be recommended to the Commanding General, USAMRMC, for funding.

## **RENÉ BERNARD RECEIVES “BEST PAPER” AWARD AT EXPERIMENTAL BIOLOGY 2001 MEETING**

René Bernard, a Ph.D. candidate in the Department of Pharmacology at the University of Michigan, received a "Best Paper" award from the American Society for Pharmacology and Experimental Therapeutics at the Experimental Biology 2001 meeting in Orlando, FL. The title of Mr. Bernard's award-winning paper was "Hypocretin-1/Orexin-A Activates G Proteins in Locus Coeruleus and Pontine Reticular Nucleus, Oral Part". René is a student in the laboratory of Dr. Helen Baghdoyan. Congratulations, René!

## **AMERICAN SOCIETY OF ANESTHESIOLOGISTS**

The journal of The American Society of Anesthesiologists, Inc. (ASA) is entitled "Anesthesiology" and it has a circulation of approximately 38,000. In October 2001, the "Anesthesiology" sponsored symposium at the ASA meeting will be entitled "Cellular and Molecular Control of Sleep: Relevance for Anesthesiology"

The ASA web site announcing this event is:  
<http://www.anesth.uiowa.edu/symposium/>

## **NIH UNDERGRADUATE SCHOLARSHIPS FOR ACADEMIC YEAR STARTING SEPTEMBER, 2001**

The National Institutes of Health (NIH) has announced the Undergraduate Scholarship Program (UGSP) offering awards on a competitive basis to students from disadvantaged backgrounds pursuing careers in biomedical research. Undergraduate Scholarship recipients spend 10 weeks each summer in NIH laboratories and one year of full time NIH employment after graduation.

*Application Receipt Date: April 27, 2001*

For further information and to determine your eligibility see the full text of the program at the following web site:  
<http://ugsp.info.nih.gov/InfoUGSP/glance.htm>

NIH researchers participating in the scholarship program are listed on the following web page:  
<http://ugsp.info.nih.gov/Mentors.htm>

Join/Leave SleepRFA-L or view archives at the following website:

<<<http://list.nih.gov/archives/sleeprfa-l.html>>> [small letters]

NIH/NHLBI National Center on Sleep Disorders Research (NCSDR)

<<<http://www.nhlbi.nih.gov/about/ncsdr/index.htm>>>

This message was transmitted by the NCSDR to the public and researchers that may be interested in activities relevant to sleep and circadian biology research. Questions about the listserv should be sent to [ncsdr@nih.gov](mailto:ncsdr@nih.gov) or contact the NCSDR by phone at (301) 435-0199, or by FAX at (301) 480-3451.

## **NINDS**

The March issue of the "NINDS Notes" is now online at <http://www.ninds.nih.gov/funding/nindsnotes03-01.htm> and contains information that may be of interest to your membership and staff. Some items might be appropriate for publication in your newsletter.

## **CANADIAN SLEEP SOCIETY SOCIÉTÉ CANADIENNE DU SOMMEIL**

Dear Colleagues,

The Canadian Sleep Society is proud to announce its First Scientific Meeting, to be held at the Ottawa (Ontario) Congress Center on May 11 and 12, 2001. Activities will include Oral and Poster presentations, Symposia, Students and Technologists events in addition to a CME day.

More information is available on the CSS web page:  
[www.css.to](http://www.css.to)

*Roger Godbout, Ph.D.*

*Vice-President (Research)*

*Chairperson, Scientific committee*

*CSS 1<sup>st</sup> scientific meeting, Ottawa 2001*

**Sleep Research Fellowship**—Emory University Sleep Disorders Center at Wesley Woods Geriatric Hospital offers a two-year NIH-sponsored fellowship starting July 1, 2001 for research involving sleep in aged patients with neurodegenerative disease (AD, PD) and stroke. Position open to Ph.D. and/or M.D. with an interest and experience in studying clinical aspects of sleep and chronobiology in aged populations. Interested applicants should send a CV and 3 letters of recommendation to: Donald L. Bliwise, Ph.D., Sleep Disorders Center, Wesley Woods Geriatric Hospital, Emory University Medical Center, 1821 Clifton Road, NE., Atlanta, GA 30329. Emory University is an Affirmative Action/Equal Opportunity Employer.

**Behavioral Neuroscience Faculty Position (Tenure Track)**—Research should employ molecular/genetic approaches to study sleep, stress, emotion and/or learning and memory. Applicants using mouse genetic models are especially encouraged to apply. The successful applicant must have a strong interest in collaboration, and have an established research program or outstanding potential to develop and maintain externally funded research. The ability to teach in an anatomy sub-discipline is desirable. The division of anatomy includes a growing group of neuroscientists and hosts an active neuroscience focus group. Submit a statement of research and professional goals, a curriculum vitae, and three letters of reference to: Larry D. Sanford, Ph.D., Neuroscience Search Committee, Department of Pathology and Anatomy, Eastern Virginia Medical School, 700 Olney Road, Norfolk, VA 23501. Eastern Virginia Medical School is an Affirmative Action/Equal Opportunity Employer.

**Postdoctoral Position in Basic Sleep Research**—Position to become available April, 2001, on NIH-funded study of the developmental consequences of rapid eye-movement (REM) sleep for brain maturation. Studies focus upon the effects of manipulations of REM sleep on cytoarchitecture, neurophysiology, and, receptor expression in central visual areas in immature cats and rats. Experience with immunohistochemistry or in situ hybridization techniques, electrophysiological recording in freely moving animals, or behavioral pharmacology is preferred. Individuals with other backgrounds including, intracellular techniques, and molecular biology also will be considered. Send curriculum vitae, statement of interests, and, names of three references by post to Dr. James P. Shaffery, University of Mississippi Medical Center, Department of Psychiatry and Human Behavior, Division of Neurobiology and Behavior Research, Animal Sleep Laboratory, 2500 North State Street, Jackson, MS 39216-4505, or by email to [jshaffery@psychiatry.umsmed.edu](mailto:jshaffery@psychiatry.umsmed.edu). EOE, M/F/D/V.