Table of Contents

President's Column 1

Editor's Column 2

Student BITS: Why Study Sleep? 2 - 3

Special Feature: The SRS, where do we go from here? 4 - 8

Laboratory Spotlight 9

Announcements

American Psychiatric Association Award for Research 10

Vision 2020 Task Force 10

Annual Meeting 11
President's Column

On behalf of the Sleep Research Society and its Executive Committee I wish to welcome Mark Opp Ph.D., as the new editor of the SRS Bulletin. Dr. Opp replaces Priyattam Shiromani Ph.D., who served as the first editor of the Bulletin. We thank Dr. Shiromani for his service as the Bulletin Editor. Dr. Opp plans to build upon the basic format and content of the Bulletin to create a forum for discussion of the important questions and issues of sleep research. We welcome his ideas and leadership to the Bulletin. One of the principle missions of the SRS is the communication of sleep science. The Bulletin was established to be one vehicle to address this mission, the annual meeting being an example of another such vehicle. Doing sleep science is a uniquely challenging enterprise, which involves formulating appropriate questions, choosing appropriate methods, and controlling the appropriate extraneous variables. Although I am certain most any scientist considers that his or her own area of investigation presents unique challenges, sleep investigation stands out as it involves so many systems and is so easily disturbed by the very methods used to measure it. In that sense it is truly multidisciplinary involving many systems, methods, and levels of analyses. And thus, communication and discussion among investigators is vital to our field. We welcome your leadership in this vital discussion and dialogue Dr. Opp.

Tim Roehrs
Editor’s Column

Dr. Priyattim J. Shiromani served as the first editor of the SRS Bulletin, and we are indebted to him for his efforts in the development of this publication. Previous volumes of the SRS Bulletin focused on a particular theme, and provided mini-reviews from investigators actively working in that area of research. Although the primary focus of the SRS Bulletin will continue to be sleep science, as the new editor I wish to expand the scope of the SRS Bulletin beyond a theme-based mini-review publication. With the exception of the annual SRS Business meeting, there has not been a viable forum for discourse among and between the membership at large and the SRS Executive Committee. It is my desire that the SRS Bulletin provide one such forum; this issue represents the first attempt. Ultimately of course, the success (or failure) of this effort depends on the willingness of members of the society to participate.

In addition to the major focus of each issue, there will be two regular features. I have asked Timothy Hays to serve as Assistant Editor for the Student BITS feature. We are all aware of the importance of trainees to the future of our field. This feature will be developed, organized, and written by and for trainees. The focus will be issues that are relevant to the training environment and process, as well as to future employment and career decisions.

The second regular feature will be a Laboratory Spotlight. In each issue of the SRS Bulletin a sleep research laboratory will be featured with a short synopsis of the global questions being explored, some of the techniques employed, and recent findings of interest. It is my intention to alternate between laboratories that focus on basic or clinical human research and basic animal research. Hopefully this approach will allow us to learn more about what we as sleep researchers are doing.

We will also continue to print announcements and general information of interest to the SRS. I would like to implement a “Letters to the Editor” column in each issue, and I encourage you to send letters with questions or comments that are relevant to the SRS. Finally, this is our Bulletin, and I invite each and every one of you to provide input and suggestions as to what you think the role of the Bulletin should be, and what should appear in its pages.

Mark R. Opp

Student BITS (Brief Insights for Training in Sleep)

Hello Everyone!

I am writing to introduce each of you to a new feature in the SRS Bulletin: Student BITS (Brief Insights for Training in Sleep). This segment will be an ongoing forum of concept and insight for issues pertaining to sleep from a sleep trainee’s perspective. The articles found here will vary in subject matter and allow pertinent sleep related questions and topics to be addressed and brought to the forefront of discussion and thought in the sleep community.

The first article, written by Sally Wurts entitled “Why Study Sleep?”, is a superb introduction to the forum, in that it brings each of our thoughts back to the sole purpose of why we each chose to spend our lives devoted to the study of sleep. Although each of us is pursuing the function of sleep, in it’s intricate parts, from different perspectives, and using a wealth of techniques, we are engaged in the same quest to unravel the purpose and necessity of sleep. Therefore we, as trainees, hope to use this forum to arouse the sleep community and ask questions that stimulate thought in a forum unknownst to other scientific and medical communities.

How did this forum get started, you might ask? Well, with each new editor of the SRS bulletin comes an infusion of new ideas and a transformation. Dr. Mark Opp, the new editor, is definitely no exception! His insight, like that of the Sleep Research Society, is to promote the opinions of Sleep Trainees and offer them to the sleep community as a way of fostering the dissemination of concepts, ideas and even abstraction as a backbone for thought and discussion. For that, we would like to thank Dr. Opp for giving us this forum to advance the ideas of Sleep Trainees especially those that help bring the sleep community together as an integrated whole.

Timothy Hays

If you are interested in submitting an article for Student BITS please contact Timothy Hays: e-mail hays@ucla.edu, tel (818) 891-7711 ext. 7576, fax (818) 895-9575 or VAMC 151A3, 16111 Plummer Street, North Hills, CA 91343.
Why Study Sleep?
by Sally Wurts

The function of sleep remains a mystery, but what is the function of sleep research? As trainees, we learn a lot about how to do sleep research, yet the question of why is too often ignored. I recently asked a group of trainees to explore the root of what compels them to devote so much of their lives to studying this odd state of existence. Their answers were personal, practical, sometimes poetic—and above all—genuinely uplifting.

Many trainees enter the sleep field on a personal endeavor to answer questions. Some of us became curious about sleep because we think we need too much (i.e. Dr. Foster Olive, the self-described “sleep mutant” who sleeps out of phase and longer than the rest of his family) or too little, like Stéphanie Gaus (a.k.a. “the woman without an SCN”) who has enjoyed pulling all-nighters since childhood. Certainly, those of us who have had mononucleosis have deepened our respect for sleep. Other trainees had witnessed the havoc disordered sleep wreaks on lives, through clinical work experience or knowing someone who fell asleep at the wheel. They urge that sleep must be better understood. We need to understand why we feel the powerful drive to sleep, so that the sleep deficit is not paid for with human lives.

Other trainees cultivated their interest in sleep during college classes, from formal courses on sleep neurobiology to informal snoozefests in dark lecture halls too early in the morning. Dr. Gina Poe marks the conception of her fascination with sleep when “Dr. Craig Heller gave a lecture in my class telling me that he had recently discovered that mammals don’t thermoregulate during REM sleep. That’s a very dangerous state, so REM sleep must be important.” My reaction to that lecture was: My God, Why?” Phil German was hooked from the beginning of his class on sleep and chronobiology. He was drawn, like many of us, to the paradox that much remains to be discovered about this familiar phenomenon that we spend a third of our lives doing and have in common with virtually all other animals. Geoff Ott shares his inspiration “sleep is almost mystical, kind of like a vast frontier that is so close but so unexplored. As an analogy, I think it is kind of like the ocean—so obvious a presence, yet so mysterious.”

The mysterious yet prevalent nature of sleep lends additional reasons to pursue sleep research in graduate school. Need a dissertation topic? Katie Sharkey suggests trainees can have their pick, as “sleep is pretty complicated and we don’t have it figured out yet—there are areas of sleep research which remain barely touched, and that is kind of exciting.” Just as sleep pervades the animal kingdom, sleep research falls under many disciplines. Sleep trainees are in a unique position to learn from respiratory physiologists, molecular neurobiologists, and cognitive psychologists, just to name a few. “Especially for neuroscience graduate students, studying sleep is a great way to prevent yourself from getting bogged down in one small area of research,” advises Dr. Doug Nitz, “The range of experiment types that you need to be familiar with is wide.”

Despite the litany of unanswered fundamental questions, the knowledge that has developed about sleep broadly impacts neuroscience. Our concept of brain functioning has radically matured from viewing sleep as the passive absence of wake to an active, whole brain process. The solid framework of neural mechanisms that control sleep behavior attracting systems neurobiologists to the field. Ann Miller believes studying sleep provides a great introduction to learning about the brain. “I don’t think any field makes you learn more neuroanatomy than what you have to learn to understand sleep,” she says, “The Paxinos and Watson Rat Atlas has so many sleep researchers cited!” The broad background we learn while studying sleep equips us well should we ever decide to focus on other areas of research.

Regardless of their many personal and academic reasons for entering sleep research, many trainees stay in the field because of the positive support they receive. According to Sean Drummond, “the field treats its trainees very well professionally and financially. I like the way the field is still small enough to feel part of a research community.” Because of the multidisciplinary nature of sleep, trainees usually have more venues to choose from when presenting their work than students in other areas of research. The public also supports our efforts. “Everybody wants to know about sleep; it’s like the weather, it affects us all,” remarks Polly Moore. And in return, trainees can feel satisfied knowing they help the public, as basic research begets clinical therapeutics that directly affect the welfare of people.

Why do we study sleep? A clever analogy from Sean Drummond summarizes the answer nicely. The reasons we do sleep research are like the reasons we have insomnia: predisposing factors stem from personal fascination with sleep; precipitating factors, such as a class on sleep or work experience in a sleep lab, introduce us to formal sleep research; and maintaining factors renew our spirit of inquiry through justification and support of our work.
Special Feature: The SRS, where do we go from here?

We will soon begin the third millennium. Such milestones, be they the end of a new decade or century, seem to foster both retrospection and visions of the future. Such is the case for this issue of the SRS Bulletin. This first issue of the SRS Bulletin under my editorship focuses on the mission and goals of the SRS. I asked 12 individuals to address, in a short opinion piece, the following three specific questions:

1) What is the role, or mission of the Sleep Research Society?

2) Does the Sleep Research Society currently meet the needs of the sleep research community? If the SRS is not currently meeting the needs of the membership, what obstacles/issues need to be removed/addressed before the society can fulfill its mission?

3) What changes, if any should be implemented to strengthen the society?

You will read in the pages that follow the opinions of the six individuals who responded to this request. As expected, their opinions and passion differ not only as to the current status of the SRS, but what the future of the SRS should or could be. In the months ahead, important decisions will be made that will affect the future of our society. These decisions must be made only after there has been ample and appropriate discourse between the membership of the society and the Executive Committee. The establishment of the Vision 2020 Taskforce is one important step in this process. This feature is another. However, this process should not, nor can it be limited to only a few members of the society. We are obligated as members of the society to actively participate in this process. I urge each of you to complete the Society Membership Survey if you have not already done so (see page 10 of this issue). I also invite you to respond with letters or comments that address either the specific questions outlined, or the opinions of the individuals presented in this feature. As members of the SRS, we will not be able to shape the future of our society, indeed of sleep research in the next millennium if we do not participate in this process.

Mark R. Opp

In only five years, shortly into the new millennium, we will celebrate the 50th anniversary of the discovery of REM sleep. As we approach these historic milestones, it is only fitting that we take pride in past accomplishments which were stimulated by this discovery. At the same time, however, it is indispensable that we reflect upon the future of the field of sleep, its goals and the best means to accomplish those ends. On the occasion of this issue of the Bulletin, the Editor, Mark Opp, Ph.D., has asked that some of us consider the current state of the SRS. Concurrently, the SRS Board recently established the Vision 2020 Task Force to develop a vision for the future. Tim Roehrs, the President of the SRS, is to be congratulated for establishing this important task force. Hopefully, we will all begin a fruitful dialogue about the future of sleep research.

1. Who are we? When the precursor of the SRS was founded in the early 1960s, it was the only organization representing professionals in the field of sleep. It was the leader of the field. Now the SRS is one among many. While the SRS has maintained a relatively constant membership and relatively constant scientific interests over the past decades, the American Sleep Disorders Association (ASDA) has grown in membership, wealth, visibility, breadth of interests, and influence. The National Sleep Foundation probably has more public visibility than the SRS and perhaps more influence.

The SRS may not even be the leading home for research scientists whose work is significantly related to sleep. Much sleep related research is presented by non-SRS members at other meetings: the Society of Neuroscience, the Society for Research in Biological Rhythms, the European Sleep Research Society, the American Thoracic Society, Society for Biology Psychiatry or other specialty societies. Furthermore, much of the newest clinical sleep research is conducted by ASDA members who are not members of the SRS. The ASDA has recently established an office for research, with a full time staff, and a reasonable budget. They sponsor research support grants, give out research awards, conduct lobbying activities with the Congress for sleep-related research budgets for the NIH and other federal agencies, and meet regularly with the Directors and staff of the NIH.

Whether rightly or wrongly, some prominent outsiders have the perception that sleep research is not a cutting edge area, that we have not kept up with newest scientific developments and methods in basic and clinical neuroscience. I personally disagree with this perception and would defend the best of our science with that of any other field, but that attitude is a problem we have to counteract. But defending and promoting our science has not been a priority of the SRS. In contrast, both ASDA and NSF have actively and conscientiously promoted themselves and their interests. In this age, nearly all health related societies and professions have found it necessary to interact on a regular basis with the federal agencies and the Congress in support of their research objectives or other needs. This is particularly important since the establishment of the National Center for Sleep Disorders Research and, more importantly, at a time when the Congress is actively discussing the possibility of doubling the NIH research budget over the next five years. We have a choice: either take a passive position (a rising tide lifts all boats) or we work together to shape federal policies which will promote support sleep research in the future. Nor should we limit our activities to the government. Pharmaceutical companies, private foundations, wealthy donors, and others may very well be interested in working with sleep researchers.

2. What has the SRS been doing? As a small society, the SRS has few resources. Over the past 10-15 years, 50-
100% of its budget has been committed to fixed activities, some associated with the UCLA-Brain Information Service and its affiliated private foundation, others to bringing students to the meeting. We should take pride in the fact that our long term support has helped establish the sleep home page and other activities, some of which may now become self sustaining from an impressive group of corporate sponsors and NIH funding through a small business grant. The time has come for the SRS to re-evaluate how it allocates its resources, the success of these past activities, and consider other means to support the future of sleep research.

3. Some Organizational Considerations. Let us begin with the assumption that the major goals of the SRS are to promote the very best science within the field of sleep and to disseminate this information. The general areas will include basic, clinical, and applied sciences. In my view, we need to pay attention to three organizational issues to support these goals. First, the opportunities for advancing the field of sleep research may come from many scientific areas in the future which are not currently strongly represented in our membership. We need to reach out and to welcome new comers and new ideas.

Secondly, the SRS needs to re-evaluate its current governance structure. The Executive Committee is too large to conduct useful monthly teleconference calls. While the concept of the four interest groups was noble, it is not working. A smaller working group would be more efficient. In addition, the Executive Committee should consider hiring an executive director to help with the activities of the organization.

Third, the SRS needs to continue on-going discussions with the ASDA about the optimal organizational relationship between the “clinical” and the “research” branches. While both societies decided last year that neither was ready for full merger at the time, the optimal relationship has not been decided. More time and more trust-building joint activities are probably necessary before a consensus is reached. In my view, however, both branches of the family need each other in the long run. The ASDA needs to be more than a one-disease entity and needs the scientific support to become a successful clinical field of medicine. The SRS needs the resources, the stimulation of clinical research questions, and the political clout with the public and policy makers which comes from the clinical-research enterprise.

J. Christian Gillin, M.D.
Department of Psychiatry
University of California, San Diego
jgillin@ucsd.edu

I was asked to provide a perspective on the past and future of the Sleep Research Society. While one might focus on issues about concerns of functioning of the Society, particularly related to management of its finances and decision making, there are, in my view, more major issues. This does not deny the importance of the organizational issues and, indeed, without dealing with them the Society will have difficulty prospering.

The most major issue, in my view, relates to the mission of the Society. In particular, what is the goal (or goals) of the Society, and how would one measure whether the Society was, or was not, successful in achieving these goals? While this has probably not been defined in these terms, one has a sense that the Society sees its mission as fostering the science, in particular basic science of our field, with a particular emphasis on training. If this is the case, then, in my view, the leadership of the Society needs to address some important questions. First, why have we witnessed a lack of growth in basic sleep research in the United States at a time that clinical sleep disorders medicine has undergone explosive growth and there has been what appears to be a significant growth in basic neuroscience research in other areas? The leadership also needs to ask itself why we have not seen much development in basic sleep research using approaches such as genetics and molecular biology which, in studies of other behaviors, e.g., obesity, memory, circadian rhythm, etc., have led to such major advances in understanding.

A particular issue relates to training. I have concerns that the number of investigators in sleep research is small and, moreover, many are relatively senior. If our discipline is to prosper, we need to attract the brightest and the best young individuals and try to ensure that they are competitive in applying for the limited positions that become available in the basic science departments in the United States. The SRS has been committed to this goal and seems to have expended significant resources in these endeavors. The question that, in my view, the leadership now needs to address is whether the strategies that it has adopted are working. There are two metrics of success. First, how does the quality of the individuals entering our training programs compare to those entering general neuroscience training programs? Second, are the graduates of our training programs competitive when it comes to applying for tenure track faculty positions?

It is my own sense that at the present time we do not have the critical mass of established investigators to provide training, particularly in new approaches to studying the neurobiological basis of behavior. We need to reach out of our field and co-opt some of the talent in other areas of neuroscience research to help us move our field and training mission forward. It is my view that obtaining perspectives from other established investigators outside our field about directions to follow, mechanisms to train, can only enrich us. I personally look forward to the day when programs that the SRS supports for training include a number of investigators from other areas of neuroscience with different perspectives.

In conclusion, the training of future investigators in sleep research is a noble, indeed essential, goal. The issue is not this goal. It is whether the current strategies being used by the SRS are working. A strong, secure Society would encourage an open debate on this. I congratulate Dr. Opp for inviting these comments. We are all committed to enhancing our field. It is
just that we have different views about how to get there.

Allan I. Pack, M.B., Ch.B., Ph.D.
Center for Sleep and Respiratory Neurobiology
University of Pennsylvania
pack@mail.med.upenn.edu

Belonging to SRS is an important part of my identity as a sleep scientist, and probably most other members feel the same. The yearly meeting and the opportunity to talk shop and learn from people with like interests would be an adequate incentive for membership without other benefits. However, the SRS mission statement reveals the broader goals of the society in promoting sleep research, training future generations of sleep researchers and in ensuring that basic research findings impact the public well-being. Rather than comment on these stated goals of the society, I want to address an area in which I believe the society should take a more active role, that is in aiding its members in coping with the rapidly changing scientific environment in which sleep research must now be conducted.

Interestingly, one of the criticisms when I first entered the field as a post-doc was that sleep research was behind the times. However, the field has changed perceptibly in a short while, particularly with the influx into the field of new ideas, new researchers and the adoption of techniques from other fields. A quick glance through the Sleep Research abstracts of the last few years illustrates this change. As a consequence, sleep is an even more satisfying field in which to work, as our efforts hold the promise of bringing new insights and understanding to the questions that interest us all. The change also brings the problem of deciding which approaches and techniques to employ in tackling the issues that most interest us as individual scientists, and then once decided, learning or developing and troubleshooting a technique until we can obtain useful data, and use it productively in our research. This is a process that can take up valuable time in this “publish or perish,” support your work with grant funds universe that we inhabit. It is in facilitating the process of going from research idea to productive science that I think the society could serve its members. Some ways in which this could be accomplished include providing research oriented, “nuts and bolts” courses or workshops at the annual meeting, discussion sessions that are more how-to than look at my data, producing an index of technical methods and/or listing member expertise in addition to research interests in the membership directory.

These are exciting times for sleep research and science in general. They can also be challenging for younger researchers seeking to find their niche and for established scientists seeking to maintain productive careers. As scientists, we chose paths that entail a lifetime of learning and trying to push the envelope of human knowledge. This necessitates constantly updating or learning new skills in an effort that goes well beyond merely keeping up with the current literature. It is here that the society could play a greater role, by fostering easier access to the tools members need in order to do their jobs as sleep scientists.

Larry D. Sanford, Ph.D.
Department of Animal Biology
University of Pennsylvania
lsanford@vet.upenn.edu

As members of the SRS, we are very lucky; few societies have such an important subject to organize around. To understand how the brain works, we will first have to understand the functions of sleep. Sleep function is the most important physiological enigma; it is central to all problems in neurobiology. Further, sleep and associated problems are of clear and direct importance to the quality of our life and society. The importance of sleep to how the brain works, to performance, and to consciousness will not dissipate in the foreseeable future. So why should we be worrying about the future of the SRS? It is precisely because the importance of sleep to progress in neurobiology is becoming increasingly apparent and the fact that the SRS has stopped rapid growth, failed to attract many top researchers from other fields and has become a wilted appendix of the APSS meeting, that we worry. Where have we gone wrong? What can we do? Why have we failed to get the message out about being the most necessary and exciting field in all of science?

There are no simple answers to these questions, no quick solutions to perceived problems, or even agreement on the problem definition. Nevertheless, there is widespread belief that something has run amuck. My impressions of past SRS activities (they may not necessarily be fact and that also is a problem as mentioned below) are as follows:

1) Societal leadership has remained within a relatively small group of people.
2) Societal funds have been spent, often without membership knowledge or approval. For example, I learned this year that a large portion of SRS funds have been spent for many years on the Lake Arrowhead meeting, a meeting that I was never invited to attend until this year; I have yet to attend.
3) There is a general failure to communicate with the membership (this new format of the Sleep Bulletin is a good step in the right direction).
4) We have failed to attract top researchers in other fields into the SRS (e.g., 10-15 years ago when it became apparent that sleep apnea was an important problem; few respiratory physiologists, who by and large, are excellent scientists, joined the SRS though many are now associated with the ASDA).
5) Our training programs have, with only a few exceptions, been a failure and furthermore, benefited only a few within SRS.
6) Our efforts (i.e., SRS’s efforts, not those of the ASDA or the National Sleep Foundation) at political organization or public education, or image building have been almost nonexistent. I cannot recall a single SRS press release though there should have been many.

7) As a group of scientists, we need to fight over who gets the ‘spilled milk;’ we should be focusing on how to improve “milk production and milk products.”

I have a few suggestions as to things we should contemplate and discuss if we are to remain a viable society:

1) Open up our society by actively recruiting individuals of other disciplines to our research ranks. We have to make it clear to molecular biologists, circadian rhythm people, cognitive psychologists, neuromodelers, etc., that they will not solve their problems until they address sleep. How to do this? Spend our money and invite them to our meetings; attend their meetings and organize symposiums at their meetings under SRS sponsorship (lots of exciting things are going on in sleep, but we are the only people who know about them). Collaborate with them on grants, and always write, write, and write about the wonders of sleep!

2) Stop meeting with the ASDA. We will never have an independent identity if we continue to meet with them. We should not be lured by all the money associated with the APSS meeting. I suggest we meet every other year as a separate small meeting focused on science, not clinical disorders. If we cannot, or do not wish to establish our independent identity, we should disband the SRS and transfer our assets to the ASDA or the NSF.

3) End our training programs; they have not worked. The money should be spent to attract well-trained people of other disciplines into sleep.

4) Forbid any SRS officers from holding the same office twice. Along the same lines – do not allow non-elected members onto the SRS executive committee; participating in decisions as to how SRS money is spent should be strictly limited to either elected board members or to the entire society membership.

We probably would not be having this discussion if our research area were intellectually dead. Further we have examples of functioning sleep societies that we can emulate, e.g., ESRS and the ASDA. With so much going for us, it behooves us to think, reorganize and continue to support what could be mankind’s greatest quest.

James M. Krueger, Ph.D.
Department of Veterinary and Comparative Anatomy
Washington State University
krueger@vetmed.wsu.edu

I am delighted to describe the forward-looking efforts of the SRS Vision 2020 Task Force. Conceived by Tim Roehrs and convened in February, the charge of the Task Force is to examine the future of SRS in four broad domains: 1) internal governance and organization, 2) intersociety relationships, 3) member services, 4) training and job development. The Task Force is further charged to develop programs and projects that will address the identified SRS needs and to develop a schedule for implementation of the programs and projects.

As the title of the Task Force indicates, the goal of the effort is to position SRS for the future, to strengthen the society, and allow it to be a vital resource for the membership in the foreseeable future. The Task Force has met biweekly for several months to discuss these issues and plan ways to address them. Early on the Task Force identified that we required more information about the present position of the society (who are we? what are we currently doing?) and a broader source of input to the deliberations. We have begun to assay these issues by a review of our society’s structure and bylaws and through a survey of the membership.

The survey was mailed to the members on May 9, 1998, and was also placed on the SRS web site, where members can complete it on-line and have data submitted electronically. This effort, by the way, represents the first focused attempt by SRS to acquire information from the membership by electronic means.

Initial discussions of the Task Force have identified a number of areas where bylaws are not reflective of current operations. For example, the sectional structure, which has been in place for several years, is not identified in the bylaws and could be bolstering and definition in such areas as how sections are born and die and what their role is in societal governance. Other issues the Task Force is evaluating include structural concerns over “job descriptions” for elected and appointed officers, terms of office, functional operations including consultation of the board with the executive committee, and administrative support.

Exciting ideas are surfacing regarding upgrading participation by more members in the society’s operations, improvement of member services, job development for trainees, and so forth. The Task Force is eager for input from the membership and has attempted to make such input easy and direct through the survey’s hard-copy comment page or electronically from the “What do you think?” web site (http://bisleep.medsch.ucla.edu/SRS/vision2020/what.html). An interim report will be presented at the annual SRS business meeting in New Orleans, including initial survey results.

Mary Carskadon, Ph.D.
Sleep Research Laboratory
E.P. Bradley Hospital
mary_carskadon@brown.edu

As the next millennium rapidly approaches, it is timely that we as a society review our mission, develop a shared vision among the diverse membership of our society, develop
strategic plans to address that vision, and explore partnerships and alliances to implement our plans. Since assuming SRS leadership, I have begun to read articles about voluntary organizations and their design and practice. One article by Timothy Wilmot outlined a process of inquiry by which an organization might plan strategies for the future. He described a four-stage process consisting of discovery, dream, design, and delivery, a process that can be applied to our society.

Discovery
The discovery phase according to Wilmot involves looking at the history of the organization to find those factors that give life, those times of excellence, and those characteristics unique to the organization. The principal purpose and product of the SRS is our science and demand for scientific rigor, data to support or refute hypotheses, and lively scientific and theoretical debate has always been a strong suit of our society. I recall at one of the first annual meetings that I attended, while a student, one of the leading figures of the field reported that the results and conclusion of his report at the previous year’s meeting were wrong. He had collected more data that led to an alternative conclusion. Now that is passion for data and discovery, for the truth, not person. Also, the multidisciplinary nature of sleep science, the variety of levels of analysis used to investigate sleep, and the methodological challenges to doing sleep science that fosters scientific creativity, are characteristics that can be valued. As to moments, I will never forget the moments when Nathaniel Kleitman, the father of sleep research, was honored at the annual meeting for the occasion of his 100th birthday and when those scientists involved in the discovery of REM sleep described that discovery process. Our partnership with the American Sleep Disorders Association in producing the annual meeting and the journal Sleep also reflects a very unique cooperative working agreement between the clinical and research branches of our field in communicating basic and clinical sleep science. The reader may wish to pause to make his or her own reflections regarding what is valued. From my perspective, it is the passion for data, the excitement of discovery, and the challenge of creating a whole new body of basic and clinical science that is the life giving force of our society. Wilmot points out that planning strategies for the future depends on valuing and nurturing these aspects of societal continuity.

Dream
This phase challenges the planner to build upon the continuity of the past in order to envision a more valued and vital future. For me the World Wide Web (WWW) can serve as both a model and a vehicle for the future of our society. As a vehicle the WWW can be used to increase the visibility of the SRS among other science organizations, funding agencies, and policy making bodies. The new discoveries and developments in sleep science can be publicized through the WWW. Scientific discussion and debates among members can be fostered through the WWW, access to sleep literature and previous annual meeting proceedings can be facilitated, and

finally our society’s business can be conducted through the WWW. The nature of the WWW makes for the possibility of wider, open, and international participation in the business of the SRS.

The WWW also serves as a model by the manner in which it makes multiple and wide linkages. The SRS can partner with a variety of different scientific organizations to promote favorable funding decisions, gather existing scientific information from different lines and traditions of research, and explore new cross-disciplinary research ideas and opportunities. The SRS can make partnerships with various societies to address mutual goals and develop projects that meet the overlapping needs of the groups. The relationships and alliances might be very time-limited and goal-oriented and need not be permanent. And these alliances may involve a large number of societies with very divergent primary purposes.

Design
As the title of this phase indicates planners next design their organization to better achieve the dreams and goals identified in phase two. The process of facilitating wider and more open participation of membership in the workings of the society can be achieved by organizing and charging committees with specific tasks and decisions, and thus expanding the decision making and ownership of the society. Establishing a democratic system of officer selection is also important and was recently implemented to some degree. The present societal structure with membership assigned to sections organized around research areas does provide for equal representation from the different research areas to the governing body of our society. There may be need to consider the addition of another section or two while balancing that need against producing an unwieldy total number of board members. Next, intentional inclusion of the under represented members of the society, women or non-US members, on the various committees and boards is another goal to be achieved through the organization’s design. But a more systematic and organized society is going to be more expensive, requiring more support staff. Careful financial planning and assessments will be an essential component of the design process.

Delivery
This is the obvious last phase which attempts to bring the dreams to fruition. This phase must be a process of continued learning in which there is a periodic evaluation of efforts and programs to achieve the goals and the utility of the organizational design to meet the goals. Flexibility, improvisation, and adjustment are essential during this phase to achieve goals.

Timothy Roehrs, Ph.D.  
Henry Ford Sleep Disorders Center  
Detroit Michigan  
TARoehrs@aol.com
Laboratory Spotlight

The University of Texas Medical Branch
General Clinical Research Center Sleep Laboratory

The UTMB General Clinical Research Center Sleep Laboratory was established in 1976 by John Remmers, M.D., and William de Groot, M.D. It was one of the first sleep laboratories in the country which was directly affiliated with a General Clinical Research Center and one of the first with a primary research interest in respiratory physiology during sleep. The laboratory's early research on obstructive sleep apnea is universally recognized as the foundation of our current understanding regarding the pathogenesis and treatment of this disorder. This research proposed that pharyngeal airway patency during sleep is dependent on two counteracting forces: subatmospheric intraluminal pressure during inspiration collapsing the airway, and simultaneous activation of upper airway dilating muscles. Remmers and colleagues proposed that normally during wakefulness and sleep, the net balance of these forces acting on the pharyngeal airway is directed outward, favoring airway patency; but, in patients with obstructive sleep apnea, a disruption in the balance of these forces during sleep shifts the net vector to an inward direction, favoring airway closure. The publication of this research in 1979 has stimulated nearly two decades of research in our laboratory and numerous others on the control of motor output to the upper airway during wakefulness and sleep.

While investigating the role of upper airway muscles in the pathogenesis of obstructive sleep apnea, other research projects in the laboratory focused on the respiratory-related control of intrinsic laryngeal muscles in humans during wakefulness and sleep. These studies were carried out by Sam Kuna, M.D., who has been medical director of the UTMB GCRC Sleep Laboratory since 1984. Electromyographic techniques were developed to obtain recordings of the vocal cord abductor and adductor muscles with hooked wire electrodes. Studies in normal human subjects demonstrated that the vocal cord adductors exhibit respiratory-related activity during quiet breathing in wakefulness with phasic activation in expiration and tonic activity in inspiration. The adductors are electrically silent in NREM sleep with abrupt, sporadic, non-respiratory bursts of activity in REM sleep. In contrast, during wakefulness, the principal vocal cord abductor, the posterior cricoarytenoid muscle, is phasically active on inspiration with tonic activity during expiration. During Stage 3-4 NREM sleep, phasic posterior cricoarytenoid activity is preserved, but tonic activity is absent. Fiberoptic studies have shown that the vocal cords abduct during inspiration and adduct during expiration. Our electromyographic results reveal that vocal cord adduction during expiration is an active phenomenon during wakefulness, controlled by the balance of forces between the simultaneously active abductor and adductor muscles. However, vocal cord adduction during expiration in NREM sleep is a passive phenomenon, both the abductor and adductor muscles are electrically silent.

The most recent research in the UTMB GCRC Sleep Laboratory has provided new insights into the respiratory-related activity of the pharyngeal constrictor muscles and their role in the pathogenesis of obstructive sleep apnea. Electromyographic recordings of the superior, middle and inferior pharyngeal constrictors in normal adults humans showed that these muscles infrequently show phasic expiratory activation during quiet breathing in wakefulness and exhibit no respiratory-related activity during sleep. Under hypercapnic or hypoxic conditions, all three muscles develop phasic expiratory activity. In obstructive sleep apnea patients, similar findings were obtained for the superior pharyngeal constrictor in wakefulness, but during apneic episodes, the pharyngeal constrictor had an activation pattern very similar to that of known upper airway dilators. In addition, it was possible to induce an upper airway closure without activation of the pharyngeal constrictor. This latter finding provides evidence that activation of the pharyngeal constrictors is not an essential component of upper airway closure during sleep. But the electromyographic recordings did not explain why a "constrictor" muscle surrounding a potentially collapsible airway would be activated during increased chemical drive and at the end of an apneic episode. To answer this question, experiments were performed in decerebrate cats. Using an isolated sealed upper airway preparation, we found that stimulation of the motor output to the pharyngeal constrictor muscles stiffens the airway over a wide range of airway volumes. Activation of the pharyngeal constrictors constricts the airway when airway volume is at or above resting volume, but dilates the airway at relatively low airway volumes. The results suggest that pharyngeal constrictor activation during pathologic airway narrowing, i.e. small airway volume and increased chemical drive, would help protect airway patency by stiffening and dilating the airway. The results of the animal research also help to explain how the pharyngeal constrictors and probably other upper airway muscles perform the different upper airway functions of phonation, deglutition, and respiration. Rather than a separate set of muscles performing one particular upper airway function, the pharyngeal constrictor results predict that the pattern of activation of pharyngeal muscles and the conditions under which they are activated allow a given muscle to have different mechanical effects on the airway and thereby perform very disparate functions.
Robert W. McCarley, M.D., a graduate of Harvard College and Harvard Medical School, is Professor and Chair of the Harvard Department of Psychiatry at the Brockton/West Roxbury VAMC. He is also Director of the Neuroscience Laboratory and the VA Center for Basic and Clinical Neuroscience Studies of Schizophrenia, and Deputy Chief of Staff for Mental Health Services. His research interests include the neurophysiology and neuropharmacology of control of the states of sleep and wakefulness. His work in the field of sleep research has been published extensively in the highest quality journals. His research productivity has been recognized by two successive 10-year MERIT Awards from NIMH. Dr. McCarley has served as chairman of the Clinical Neuroscience and Biological Psychopathology NIMH study section. He has been recognized by numerous honors, including the Sleep Research Society’s Distinguished Scientist Award, and has served as President of the Sleep Research Society. This year, Dr. McCarley will present the keynote address at the annual AESS meeting. We congratulate Dr. McCarley on being recognized by the American Psychiatric Association with their highest research award.

Vision 2020 Taskforce
Sleep Research Society Membership Survey

By now you should have received the Sleep Research Society Membership Survey mailed in mid-May by the Vision 2020 Taskforce. This survey is part of a comprehensive effort to evaluate future directions for the SRS. The completed questionnaires will provide to the task force a variety of information about the educational and scientific backgrounds of the respondents. More importantly, it serves as a mechanism by which members of the SRS will have input into recommendations that will be made concerning the future of the society. The preferred mechanism for responding is to fill out the survey electronically. The questionnaire may be accessed online at:

http://bileep.medsch.ucla.edu/srs/vision2020

If you did not receive a questionnaire and do not have the means to complete one electronically, you may contact the SRS Central Office at (507) 287-6006.
"Jazzed on Sleep"

12th Annual APSS Meeting
June 18 - 23, 1998
New Orleans Hilton Riverside Hotel
Poydras at the Mississippi River
New Orleans, LA 70140
(504) 561-0500

Keynote Address:
Robert McCarley, M.D.: Brain Control of Sleep and Wakefulness: Molecules, Systems, and Diseases.

Plenary Lectures:
Neil Douglas, M.D.: Sleep Apnea/Hypopnea Syndrome: Advances and Diagnosis and Therapy?
Torbjorn Åkerstedt, Ph.D.: The Regulation of Human Sleep Quality.
Pier Luigi Parmeggiani, M.D.: Sleep as Seen by a Physiologist.
Patricia Prinz, Ph.D.: Sleep and Aging.
Richard Verrier, Ph.D.: Sleep Related Cardiac Risks: Physiologic and Pathophysiologic Considerations.

Symposia:
Ronald S. Szymusiak, Ph.D. Hypothalamic Mechanisms of Sleep and Arousal Regulation.
Derk-Jan Dike, Ph.D. Circadian and Homeostatic Determinants of the EEG During Wakefulness: Implications for EEG Monitoring of Vigilance.
James Kiley, Ph.D. A Decade of Progress in Cardiopulmonary Disorders of Sleep.
Jack D. Edinger, Ph.D. Recent Developments in the Behavioral, Chronobiologic, and Pharmacologic Treatment of Insomnia.
Helen Driver, Ph.D. Gender Differences in Sleep and Rhythms.
Robert Strickgold & Sleep and Learning
Carlyle Smith, Ph.D. Sleep-related Erections: Major Update on Basic and Clinical Perspectives.
Markus H. Schmidt, M.D., Ph.D.

Postgraduate Courses, Meet the Professor Sessions, Discussion Groups, Workshops, Original Investigations and More!